



FISCAL RESEARCH CENTER

A HISTORICAL SHIFT SHARE ANALYSIS FOR GEORGIA

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Executive Summary

Over the period 1970-2000, Georgia's industrial composition underwent changes similar to those experienced by the rest of the country. The major changes were to the service sector and the manufacturing sector. The service sector of the economy grew in terms of percentage of non-farm employment, while manufacturing declined. This report also examines Georgia's employment trends using shift share analysis. Shift share analysis offers another perspective on a state's economic transition relative to the industrial composition and employment trends in the rest of the country.

Historical Perspective of Employment Percentages in Georgia and U.S.

The changes in Georgia's industrial composition are fairly consistent with those for the U.S. as a whole. Georgia's economy has not always mirrored the U.S. national economy, for example in 1950 Georgia had a 10 percent greater share of its employment in agriculture than the U.S. national economy. However, by 1970 the difference was only 0.6 percent (Boldt and Kassis, 2005).

The greatest employment shift since 1970 was from the manufacturing sector to the services sector.^A Even though the manufacturing sector in Georgia employed a smaller share of total non-farm employment in 2000 than it did in 1970, the state still employed more people in manufacturing in 2000 than it did in 1970. This was not true for the U.S. as a whole.

Georgia has seen only very minor changes in its industrial composition in the remaining sectors. The combined employment for the remaining private sectors in Georgia, excluding manufacturing and services, was 58 percent in both 1970 and 2000. Of the non-manufacturing sectors, only the government sector experienced a sizable change in its percentage of total non-farm employment, decreasing 6.2 percentage points over the 30-year period.

^A The non-farm industrial sectors used for this section of the report are: mining, manufacturing, construction, transportation and public utilities, wholesale trade, retail trade, finance Insurance and real estate, services, and government.

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Shift Share Analysis

Another method of analyzing changes in industrial structure over time is shift share analysis. Shift share analysis is an attempt to ascertain how well a state or region's economy is doing relative to the country as a whole. Shift share analysis separates employment growth of the state into three components: a national growth effect, which is the increase associated with the growth of the national economy; an industry mix effect, which is the growth in an industrial sector in excess of the national rate of growth; a competitive effect, which is the difference between the actual change in employment in a sector and the expected employment change if the sector had grown at the national growth rate for that sector. The sum of the three effects is the actual total increase in employment in the state. The third effect attempts to capture the state's comparative advantages in certain sectors and translates that into job creation above or below the national averages. I refer to this third effect as competitive share jobs.

Overall Georgia has seen tremendous competitive growth in all nine major industrial categories. The two dominant competitive share industries in Georgia over the 30 year period have been services and retail trade. Forty-seven percent of the competitive share jobs created in Georgia were in these two industries. Unfortunately these are two of the lowest paying industries. Based on personal income in the industry per employee for the year 2000, services generated \$30,112 per job in Georgia, while retail trade only netted \$18,965 per job.

Post Recession 2002-2004

The official dates of the most recent recession were March 2001 to November 2001 (NBER, 2006). Thus, for the period 2002-2004 the state economy should show employment growth. However, Georgia, in comparison with the rest of the country, appears to have struggled in this period. If not for Atlanta, the state's economic bright spot, the situation in Georgia would be even worse.

There is considerable difference between the performance of Atlanta in this period compared with the rest of Georgia. If the competitive share growth

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experienced by Atlanta is subtracted from the Georgia figures, the bleak position of the rest of the state is revealed.

During this period the national growth component was only 0.8 percent. However, Georgia did better than the rest of the nation in only three of the eleven categories.^B Georgia's greatest competitive share job creation was in the government sector. The other two positive competitive share industries were educational and health services, trade, and transportation and utilities. These three sectors contributed a total of 31,980 competitive share jobs. Georgia lost 73,674 competitive share jobs in the other eight categories. Georgia's biggest area of weakness was in professional and business services, where Georgia's competitive share jobs declined by 22,100.

Atlanta outpaced the rest of the country in all but three categories in competitive share jobs. The overall competitive share jobs in Atlanta increased by 68,350. This is striking when compared to the overall state figure of a total loss of 52,274 competitive share jobs. Thus, the rest of Georgia, excluding Atlanta, lost 120,624 competitive share jobs in the post recessionary period. This would seem to indicate that while the Atlanta area is keeping pace with the nation in terms of job creation, the rest of Georgia is falling farther behind.

Conclusion

Georgia has done well historically in terms of competitive share jobs created. For the period 1970-2000, Georgia mirrored the rest of the country in that it lost jobs in the manufacturing sector while gaining jobs in the service and retail trade sectors. Unfortunately, the jobs in these two sectors are associated with considerably lower state personal income per job (a measure of salary) than jobs lost in the manufacturing sector.

For the period 2002-2004, it appears that Georgia, excluding the Atlanta area, has not fully recovered from the 2001 recession. Georgia trails the nation in eight of eleven industrial sectors in competitive share jobs. If Atlanta's competitive share jobs

^B It is important to note that employment in the period 2002-2004 is based on the North American Industrial Classification System (NAICS) while employment in the period 1970-2000 is based on the Standard Industrial Classification (SIC) system.

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are subtracted from the state figures, the rest of Georgia exceeds the nation in only one category, educational and health services.

I. Introduction

Over the period 1970-2000, Georgia's industrial composition underwent changes similar to those experienced by the rest of the country. The major changes were the growth of the services sector and the relative decline in the manufacturing sector. The service sector of the economy grew significantly as a percentage of non-farm employment, while manufacturing declined. This trend is also seen in the national economy. However, Georgia's economy has not always mirrored the U.S. national economy. For example, in 1950 Georgia had a 10 percent greater share of its employment in agriculture than the national economy, but by 1970 the difference was only 0.6 percent (Boldt and Kassis, 2005). Georgia's current non-farm sector employment tends to reflect that of the national economy. In the aggregate, over the period 1970-2000, changes in Georgia's economy tracked the national economy fairly consistently.

However, employment percentage by sector does not tell the whole story of a state's economy in relation to the country as a whole. Shift share analysis offers another perspective on a state's economic transition. Shift share analysis separates employment growth of the state into three components: a national growth effect, which is the increase associated with the growth of the national economy; an industry mix effect, which is the growth in an industrial sector in excess of the national rate of growth; a competitive effect, which is the difference between the actual change in employment in a sector and the expected employment change if the sector had grown at the national growth rate for that sector. The sum of the three effects is the actual total increase in employment in the state. The third effect attempts to capture the state's comparative advantages in certain sectors and translates that into job creation above or below the national averages.

In this report I analyze Georgia's performance over the 30-year period 1970-2000 and for each decade for that period. Particularly important sectors are broken down and analyzed by sub-sector, with emphasis placed on sub-sectors with the largest competitive effect. This report also examines how Georgia has done since the end of the last recession. In addition, the report compares how the Atlanta region has fared in comparison to the U.S. and to the rest of Georgia. The data on state and

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national employment and income comes from the U.S. Bureau of the Census, the Bureau of Labor Statistics, the Bureau of Economic Analysis, and the Georgia Department of Labor.

Section II looks at the historical (1970-2000) industrial sector employment percentage for Georgia and the U.S. Section III examines this same period using shift share analysis. Section VI considers the period 2002-2004 and examines Georgia's emergence from the recession. It also analyzes the Atlanta regional economy and compares it to the economy for the rest of Georgia. Section V concludes the report.

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II. Historical Perspective of Employment Percentages in Georgia and U.S.

To gain a general perspective of Georgia's economic transitions over time I compare the percentage distribution of non-farm employment by industrial sector for 1970 and 2000 and compare that to the change for the U.S. economy (Table 1). The changes in Georgia's industrial composition are fairly consistent with those for the U.S. as a whole.

TABLE 1 NON-FARM EMPLOYMENT BY SECTOR

Sector	Percent of Non-Farm Employment			
	U.S. 1970	U.S. 2000	GA 1970	GA 2000
Mining	0.9%	0.5%	0.4%	0.2%
Construction	5.0%	5.8%	5.0%	6.3%
Manufacturing	22.5%	11.7%	23.4%	12.5%
Transportation and Public Utilities	5.6%	5.0%	5.5%	6.3%
Wholesale Trade	4.8%	4.6%	5.4%	5.7%
Retail Trade	15.7%	16.6%	14.2%	16.9%
Finance, Insurance, and Real Estate	7.0%	8.1%	6.7%	7.2%
Services	19.5%	32.4%	18.2%	29.4%
Government and Government Enterprises	18.4%	14.0%	20.6%	14.4%

The greatest employment shift for the period was from the manufacturing sector to the services sector. Even though the manufacturing sector in Georgia employs a smaller share of total non-farm employment in 2000 than it did in 1970, the state still employs more people in manufacturing in 2000 than it did in 1970. This is not true for the U.S. as a whole.

Georgia has seen only very minor changes in its industrial composition in the remaining sectors. The combined employment for the industrial sectors in Georgia, excluding manufacturing and services, was 58 percent in both 1970 and 2000. Of the non-manufacturing sectors, only the government sector experienced a sizable reduction in its percentage of total non-farm employment, decreasing 6.2 percentage points over the 30-year period. The other sectors have remained relatively unchanged and mirror the sector employment percentages of the U.S.

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I calculated the sum of the absolute value of the differences between Georgia and the U.S. in the percentage of employment in each sector. Using this simple measure of the difference in the structure of the Georgia and the U.S. economy, I find that the Georgia economy more closely matched the U.S. economy in 1970 than it did in 2000.

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III. Shift Share Analysis

A method for analyzing changes in industrial structure over time is shift share analysis. Shift share analysis is an attempt to ascertain how well a state or region's economy is doing relative to the country as a whole. The analysis takes into account the national growth rate as well as changes in the industry mix. The states competitive advantage is then calculated by subtracting the above rates from the state's growth rate. An example is shown in Table 2.

TABLE 2. AN ILLUSTRATION OF SHIFT SHARE ANALYSIS

Employment in 1000's Industry	U.S. 1990	U.S. 2000	GA 1990	GA 2000	National Growth Rate	Industrial Mix Effect	Competitive Effect Rate	Competitive Effect Jobs
Non-Farm Employment	136,228	163,646	3,615	4,825	20%	N/A	13%	482
Construction	7,262	9,446	212	302	20%	10%	12%	25

The national growth rate is simply the percentage growth in non-farm employment from 1990-2000, which is calculated in equation 1,

$$(163,646-136,228)/ 136,228 = 20.1\%. \quad [1]$$

Thus, the national growth rate effect for construction in Georgia is 43 jobs (20.1 percent of 212); if construction employment had grown by 20.1 percent, employment in 2000 would have been 255, not the actual growth of 302.

The industrial mix effect is the percentage increase in U.S. employment in that sector minus the national growth rate of total non-farm employment. Nationally, construction grew by 30.0 percent or 10.0 percentage points more than the overall national rate of 20.1 percent. The calculation is shown in equation 2,

$$((9,446-7,262)/7,262) - 20.1\% = 10.0\%. \quad [2]$$

This measures the sector growth in excess of the overall national growth, and thus determines whether the sector in Georgia is growing faster or slower than the national growth rate. The industrial mix effect is 21 jobs (10.0 percent of 212).

The competitive effect for Georgia' construction industry is calculated by figuring the percentage growth for the construction industry in Georgia and subtracting the national growth rate for that sector. This is shown in equation 3,

$$((302-212)/212) - 30.1\% = 12.3\%. \quad [3]$$

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Thus, the competitive effect is 26 jobs (12.3 percent of 212). The three effects sum to 90 ($43+21+26=90$), which is the total increase in construction employment in Georgia (302 less 212).

The 12.3 percent competitive effect indicates that construction employment grew more rapidly than construction in the U.S., and thus that Georgia had a positive local advantage in construction compared to the rest of the country. This could be due to various factors such as competitive wages, low union presence or cheap energy. However, the shift share analysis does not determine which of these factors is responsible for the growth.

Competitive share jobs are the jobs created within the state due to the competitive effect, as defined above. It subtracts from actual employment in the sector the jobs that can be attributed to the national growth in that sector. To calculate the competitive share jobs one multiplies the Georgia employment in the base year by the competitive effect growth rate. In the rest of this report I focus on job growth by sector in excess of the national growth in that sector. I refer to this as competitive share jobs, and as noted above these are the jobs created in Georgia beyond what would have been created if that sector had growth at the national rate for that sector. Thus, a competitive share job of zero means that for Georgia that sector increased at the national average for that sector, i.e., Georgia just kept up with the national trends. (The appendix shows the job growth for all three effects.)

Georgia 1970-2000

For the period 1970-2000, major industries were used as defined by the Standard Industrial Classification (SIC) system. Table 3 lists the nine broadest SIC industry classifications in order of the jobs created in Georgia due to the competitive effect. The last column is the amount of personal income per employee in the sector, calculated by dividing actual sector personal income by sector employment for 2000; it is a proxy for the salary level for an average job in the sector.

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TABLE 3 GEORGIA COMPETITIVE EFFECT 1970-2000

Industry	Competitive Effect*	Competitive Share Jobs Created	Personal Income Per Job
Services	73%	270,865	\$30,112
Retail trade	84%	243,052	\$18,965
Manufacturing	29%	139,886	\$44,321
Transportation and public utilities	101%	112,714	\$53,045
Government and government enterprises	24%	99,393	\$41,033
Construction	81%	82,444	\$28,635
Wholesale trade	71%	77,379	\$57,131
Finance, insurance, and real estate	42%	56,855	\$35,635
Mining	23%	1,692	\$45,935

*Growth rate for Georgia less growth rate for the nation.

Overall, Georgia has seen tremendous competitive growth in all nine major industrial categories. Over the 30-year period in Georgia the most competitive share jobs were added in the services sector, 270,865 jobs, i.e., jobs in excess of the national growth rate in the services sector.

Unfortunately, the two dominant competitive share industries in Georgia over the 30-year period are two of the lowest paying industries. Based on personal income in the industry for the year 2000, services generated \$30,112 per job in Georgia, while retail trade only netted \$18,965 per job. Forty-seven percent of the competitive share jobs created in Georgia were in these two low-paying industries. Wholesale trade was the sector with the highest personal income per job in Georgia at \$57,131. Jobs in the transportation and public utilities sectors had the second highest personal income per job in Georgia at \$53,045. This sector had the highest rate of competitive share growth rate in Georgia for the 30 year period at 101 percent, creating 112,714 competitive share jobs.

Georgia has managed to add competitive share jobs in the beleaguered manufacturing sector. The country as a whole has seen a sharp decline in manufacturing, as illustrated by the 90 percent drop in industrial mix rate over the 30 years. (See appendix for complete tables and calculations). Georgia added 139,886 competitive share jobs in manufacturing, growing by 29 percent relative to the U.S.

To get a clearer picture of the trends, it is helpful to break down the 30-year period into ten-year segments. The first period is from 1970 to 1980 (Table 4 below).

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TABLE 4 GEORGIA COMPETITIVE EFFECT: 1970-1980

Industry	Competitive Effect*	Competitive Share Jobs Created	Rank
Government and Government Enterprises	8%	32,754	1
Retail Trade	11%	30,845	2
Manufacturing	6%	27,249	3
Wholesale Trade	23%	24,571	4
Transportation and Public Utilities	20%	21,873	5
Construction	8%	8,067	6
Finance, Insurance, and Real Estate	5%	6,636	7
Mining	-54%	(3,988)	8
Services	-10%	(38,510)	9

*Growth rate for Georgia less growth rate for the nation.

This ten-year period was a low-growth period for Georgia compared to the U.S. The greatest number of competitive share jobs was created in the government sector. For this period Georgia actually had a competitive disadvantage in the services sector, falling behind the rest of the country by 10 percentage points, or by 38,510 jobs over 10 years.

The state economy began to pick up in the next decade, and Georgia experienced moderate competitive growth effects from 1980-1990 (Table 5). In this period Georgia had a competitive advantage in all industries other than finance, insurance and real estate. Georgia's leading competitive share job creating industry was the services sector. However, strong growth can be seen in most private sector industries, with the government sector falling to sixth in the rankings in competitive share job creation.

TABLE 5 GEORGIA COMPETITIVE EFFECT: 1980-1990

Industry	Competitive Effect*	Competitive Share Jobs Created	Rank
Services	20%	98,237	1
Retail Trade	21%	84,032	2
Manufacturing	13%	71,192	3
Transportation and Public Utilities	26%	39,587	4
Construction	24%	33,560	5
Government and Government Enterprises	5%	28,101	6
Wholesale trade	14%	24,749	7
Mining	39%	3,394	8
Finance, Insurance, and Real Estate	0%	402	9

*Growth rate for Georgia less growth rate for the nation.

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Georgia's economy really hit its stride in the 1990's (Table 6). Georgia had positive competitive share growth in all industry sectors during this ten-year period. In the services sector alone, Georgia grew at a 25 percent higher rate than the nation and created 217,933 competitive share service jobs. The retail trade sector was also experiencing very strong growth, increasing at a 16 percent higher rate than the nation and adding 96,144 competitive share jobs.

TABLE 6 GEORGIA COMPETITIVE EFFECT: 1990-2000

Industry	Competitive Effect*	Competitive Share Jobs Created	Rank
Services	25%	217,933	1
Retail Trade	16%	96,144	2
Finance, Insurance, and Real Estate	19%	46,361	3
Manufacturing	8%	45,725	4
Transportation and Public Utilities	14%	31,098	5
Government and Government Enterprises	5%	29,000	6
Construction	12%	25,310	7
Wholesale Trade	7%	16,995	8
Mining	15%	1,591	9

*Growth rate for Georgia less growth rate for the nation.

The transportation and public utilities, retail trade, and services sector were three of the four fastest growing sectors as measured by competitive share jobs created between 1970 and 2000. To gain further insight into industries in which Georgia showed comparative advantages Table 7 shows the competitive share growth over the 30-year period for the leading sub-sectors of the three major growth sectors. The last column presents personal income per employee in the sub-sector. Manufacturing, which contributed the third most competitive share jobs to the Georgia economy, was not included since this sector only grew by 29 percent over the 30-year period and is not likely to be a source of substantial future employment growth in Georgia.

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TABLE 7 GEORGIA COMPETITIVE EFFECT FOR SELECTED SUB-SECTORS: 1970-2000

	Competitive Share*	Competitive Share Jobs Created	Personal Income Per Job
Transportation and Public Utilities	101%	112,714	\$ 53,045
Communications	154%	41,370	\$ 72,332
Trucking and Warehousing	94%	29,099	\$ 30,271
Transportation Services	833%	12,883	\$ 38,249
Transportation by Air	35%	5,644	\$ 62,580
Retail Trade	84%	243,052	\$ 18,965
Eating and Drinking Places	242%	123,530	\$ 14,709
Food Stores	86%	36,906	\$ 17,747
General Merchandise Stores	36%	21,728	\$ 19,708
Building Materials & Garden Equipmt	138%	18,210	\$ 33,149
Services	73%	270,865	\$ 30,112
Business Services	691%	218,691	\$ 33,253
Health Services	301%	129,696	\$ 38,804
Educational Services	102%	23,705	\$ 24,012
Legal Services	173%	13,369	\$ 45,770
Private Households	-25%	-27,013	\$ 11,010

Services

The services sector contributed the greatest number of competitive share jobs for the 30-year period. The sub-sectors that experienced the greatest competitive share job growth were business and health services, educational services was a distant third.

Employment growth in Georgia in the business services sub-sector exceeded the national average, creating 218,691 competitive share jobs. Personal income per job in the state for these business service jobs was \$33,253. Business services include: advertising, temporary staffing agencies, consumer credit reporting and collection, and collection agencies, among others.

Health services created 129,696 competitive share jobs in Georgia, with personal income per job of \$38,804. These jobs include positions in doctor's offices, clinics and hospitals, among others.

While not in the top three in terms of employment growth, legal services also enjoyed above average growth in the period. The state added 13,369 competitive share legal services jobs in the period, with personal income per job averaging \$45,770, the highest of any sub-sector in the services sector.

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A service category that saw a decline relative to the nation is jobs in private households, largely household domestic workers. Georgia lost 27,013 competitive share jobs during the period. For these jobs personal income per job was only \$11,010.

Retail Trade

The retail trade sector contributed the second most competitive share jobs. The fastest growing sub-sectors were eating and drinking places and food stores. Eating and drinking places added 123,530 competitive share jobs in the 30-year period. These jobs are some of the lowest paid, with personal income per job of only \$14,709. Food stores were a distant second in competitive share jobs in the retail trade sector adding 36,906 competitive share jobs; personal income per job was \$17,747.

Of note for Georgia was the growth in building materials and garden equipment sub-sector, a category that includes local company Home Depot. This sub-sector gained 18,210 competitive share jobs in the period, of which 10,877 came between 1990 and 2000. Personal income per job for these jobs was \$33,149.

Transportation and Public Utilities

Communications was the leading growth sub-sector in the transportation and public utilities sector. Communications added 41,370 competitive share jobs at the state level, jobs that account for \$72,332 in personal income per job in 2000. This is the largest personal income per job for all sub-sectors listed in Table 7. The trucking and warehousing sub-sector added 29,099 competitive share jobs, with personal income per job of \$30,271.

Another sub-sector that is of local interest is the transportation-by-air sub-sector, which includes Delta Airlines. This sub-sector added 5,644 competitive share jobs over the period, with personal income per job equal to \$62,580.

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IV. Post Recession 2002-2004

The official dates of the most recent recession were March 2001 to November 2001 (<http://www.nber.org/cycles/july2003.html>). Thus, for the period 2002-2004 the state economy should show employment growth. However, Georgia, in comparison with the rest of the country, appears to have struggled in this period.

Table 8 illustrates the differences between the Atlanta Metropolitan area (Atlanta) and the rest of the state in terms of competitive share jobs created or lost. The three leading sectors are shown in Table 8. Comparing specific sub-sectors for 1970-2000 and 2002-2004 is difficult as only preliminary data are available for 2004, and thus not all sub-sector data are included. It is also important to note that employment in the period 2002-2004 is based on the North American Industrial Classification System (NAICS) while employment in the period 1970-2000 is based on the Standard Industrial Classification (SIC) system. While it is possible to make broad comparisons between the NAICS and SIC systems at the industry level, due to the changes in definitions of certain industries caution must be used.

I examine the three NAICS sectors that most closely resemble the SIC sectors of transportation and public utilities, retail trade, and services. The NAICS sectors are transportation-warehousing and utilities, retail trade, and professional and business services.

TABLE 8 GEORGIA AND ATLANTA COMPETITIVE EFFECT FOR SELECTED SUB-SECTORS: 2002-2004

Industry	Competitive -----Effect*-----		Competitive Share ----Jobs Created---	
	Georgia	Atlanta	Georgia	Atlanta
Transportation, Warehousing, and Utilities	-0.5%	-0.1%	-934	-116
Transportation & Warehousing	-16.9%	-17.0%	-26421	-18216
Telecommunications	-3.4%	-5.9%	-1961	-2773
Air Transportation	4.7%	4.4%	1909	1720
Retail Trade	0.9%	3.0%	4236	7317
Food Services and Drinking Places	-0.7%	4.3%	-1859	6482
Food and Beverage Stores	-1.6%	4.0%	-1351	1799
General Merchandise Stores	7.7%	5.9%	6827	2671
Professional and Business Services	-4.3%	-0.1%	-22100	-467
Health Care and Social Assistance	1.4%	2.6%	4352	4208
Educational Services	8.8%	-0.5%	5096	-194

*Growth rate for Georgia less growth rate for the nation.

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The professional and business services category is led by the sub-sector of health care and social assistance, which created 4,352 competitive share jobs at the state level and 4,208 competitive share jobs in Atlanta. Excluding Atlanta, that translates into a gain of only 144 competitive share jobs for the rest of the state, so Georgia is barely keeping up with the national trend.

Educational services were strong at the state level, creating 5,096 competitive share jobs in the three-year period. But Atlanta did not keep pace with the country in educational services, losing 194 competitive share jobs.

The largest competitive decline was in the professional and business services category in the sub-sector of management of companies and enterprises. Georgia lost 54,257 competitive share jobs while Atlanta lost 17,209 competitive share jobs. This classification includes corporate and regional headquarters as well as other firm offices. This is a new category under the NAICS that was culled from all major industrial sectors under the SIC system.

Retail trade was another strong sector for Georgia in 1970-2000. However, in 2002-2004 the retail trade sector provided mixed results. In food service and drinking places and food and beverage stores, Atlanta gained a total of 8,261 competitive share jobs. In Georgia the same two sub-sectors lost a total of 3,210 competitive share jobs. This is a dramatic decline for the rest of the state, losing 11,471 competitive share jobs in these two sub-sectors after taking into account the Atlanta gains. Only general merchandise stores experienced gains at both the state and Atlanta level. General merchandise stores gained 6,827 competitive share jobs at the state level and 2,671 competitive share jobs in Atlanta. This sub-sector includes department stores, discount retailers and super-centers such as Wal-Mart.

Another strong sector in 1970-2000 was transportation, warehousing, and utilities. The comparative sector in 2002-2004 experienced a loss of competitive share jobs at both the state and Atlanta level. The greatest share of these losses was in the transportation and warehousing sub-sector. This sub-sector lost 26,421 competitive share jobs at the state level and 18,216 competitive share jobs in the Atlanta area. Telecommunications also lost competitive share jobs at both levels, 1,961 jobs at the state level and 2,773 in the Atlanta area. Air transportation showed a surprising gain, adding 1,909 at the state level and 1,720 at the Atlanta level.

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Table 9 illustrates the broader picture for the state of Georgia in comparison to the Atlanta area. There is considerable difference between the performance of Atlanta in this period and the rest of Georgia. If the competitive share growth experienced by Atlanta is subtracted from the Georgia figures, a rather bleak position for the rest of the state is revealed. This is shown in the last column of the chart.

TABLE 9 GEORGIA AND ATLANTA COMPETITIVE EFFECT: 2002 - 2004*

Industry	Industrial Mix Effect	Atlanta Jobs	Georgia Jobs	Georgia less Atlanta Jobs
Total Non-Farm Employment	N/A	68,350	-52,274	-120,624
Professional and Business Services	2.20%	-467	-22,100	-21,633
Other Services	0.10%	-1,864	-21,096	-19,232
Leisure and Hospitality	0.30%	7,348	-11,908	-19,256
Construction	1.20%	3,609	-7,868	-11,477
Information	-9.60%	-4,223	-4,618	-395
Manufacturing	-7.90%	14,401	-2,611	-17,012
Financial Activities	2.30%	631	-2,441	-3,072
Natural Res & Mining	2.00%	219	-1,032	-1,251
Trade, Transportation and Utilities	-0.50%	18,739	5,867	-12,872
Educational and Health Services	6.30%	4,739	9,471	4,732
Government	0.10%	25,136	16,642	-8,494

* Preliminary State employment figures used

During this period the national growth component was only 0.8 percent. However, Georgia is only doing better than the rest of the nation in three of the eleven categories. Georgia's greatest competitive share job creation is in the government sector. Breaking this sector down further, almost all these jobs are at the local government level. Georgia's competitive share of federal government employment declined by 1,211 jobs, and state competitive share increased by only 707 jobs.

Georgia has a positive competitive share in educational and health services as well as trade transportation and utilities. Georgia was not able to continue to outpace the nation in manufacturing. Georgia lost 2,611 competitive share jobs in the manufacturing sector. Georgia's biggest area of weakness was in professional and business services, where Georgia's competitive share jobs declined by 22,100.

Atlanta outpaced the rest of the country in all but 3 categories in competitive share jobs. The overall competitive share jobs in Atlanta increased by 68,350. This is striking when compared to the overall state figure of a loss of 52,274 competitive

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share jobs. Thus, the rest of Georgia, i.e., excluding Atlanta, lost 120,624 competitive share jobs in the post recessionary period. This indicates that while the Atlanta area is keeping pace with the nation in terms of job creation, the rest of Georgia is falling behind.

V. Conclusion

Georgia has done well historically in terms of competitive share jobs created. For the period 1970-2000, Georgia mirrored the rest of the country in that it lost jobs in the manufacturing sector while gaining jobs in the service and retail trade sectors. Unfortunately, the jobs in these two sectors are associated with considerably lower state personal income per job (a measure of salary) than jobs lost in the manufacturing sector.

For the period 2002-2004, it appears that Georgia, excluding the Atlanta area, has not fully recovered from the 2001 recession. Georgia trails the nation in eight of eleven NAICS industrial sectors in competitive share jobs. If Atlanta's competitive share jobs are subtracted from the state figures, the rest of Georgia exceeds the nation in only one category, educational and health services.

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Appendix

Employment Year	US 1970	US 2000	GA 1970	GA 2000
Non-Farm Employment	87,320,600	163,645,800	2,026,651	4,825,039
Mining	743,900	784,200	7,451	9,547
Construction	4,398,800	9,446,300	102,043	301,578
Manufacturing	19,687,400	19,114,800	475,216	601,281
<i>Durable Goods</i>	<i>11,440,200</i>	<i>11,530,300</i>	<i>164,469</i>	<i>264,640</i>
Industrial Machinery and Equipment	2,015,700	2,148,700	14,288	41,262
Electronic and Other Electric Equipment	1,925,400	1,743,900	11,657	34,643
<i>Nondurable Goods</i>	<i>8,247,200</i>	<i>7,584,500</i>	<i>310,747</i>	<i>336,641</i>
Textile Mill Products	986,800	543,500	115,995	103,464
Printing and Publishing	1,148,000	1,646,100	16,136	46,452
Food and Kindred Products	1,799,600	1,733,600	53,183	73,656
Transportation and Public Utilities	4,865,500	8,244,400	112,132	302,717
Communications	1,126,200	1,756,400	26,846	83,239
Trucking and Warehousing	1,323,200	2,611,000	30,892	90,057
Transportation by Air	359,500	1,318,100	15,970	64,198
Wholesale Trade	4,172,700	7,584,100	108,658	274,871
Retail Trade	13,698,800	27,222,300	288,609	816,577
Eating and Drinking Places	2,998,000	8,704,200	50,970	271,513
Food Stores	2,104,500	3,711,300	42,673	112,160
Building Materials and Garden Equipment	653,600	1,111,800	13,168	40,609
Finance, Insurance, and Real Estate	6,125,400	13,193,800	135,192	348,052
Other Finance, Insurance, and Real Estate	4,681,500	10,392,300	102,374	270,376
Real Estate	2,066,000	4,810,200	37,696	128,809
Services	17,021,800	52,990,800	368,887	1,419,252
Business Services	2,035,000	12,296,500	31,671	410,063
Health Services	3,283,100	11,443,000	43,083	279,859
Educational Services	1,369,000	3,113,700	23,193	76,456
Legal Services	453,600	1,607,200	7,728	40,751
Government and Government Enterprises	16,081,000	22,944,000	417,613	695,234
Federal, Civilian	2,902,000	2,892,000	82,648	96,894
State and Local	9,947,000	17,977,000	219,932	503,961

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Jobs Created 1970-2000	----Nat. Growth----		-----Ind. Mix-----		GA Comp Share	
	%	Jobs	%	Jobs	%	Jobs
Non-Farm Employment	87%	1,771,455	0%	0	51%	1,026,933
Mining	87%	6,513	-82%	-6,109	23%	1,692
Construction	87%	89,194	27%	27,898	81%	82,444
Manufacturing	87%	415,377	-90%	-429,198	29%	139,886
<i>Durable Goods</i>	87%	143,759	-87%	-142,464	60%	98,876
Industrial Machinery and Equipment	87%	12,489	-81%	-11,546	182%	26,031
Electronic and Other Electric Equipment	87%	10,189	-97%	-11,288	207%	24,085
<i>Nondurable Goods</i>	87%	271,618	-95%	-296,588	16%	50,864
Textile Mill Products	87%	101,389	-132%	-153,497	34%	39,577
Printing and Publishing	87%	14,104	-44%	-7,103	144%	23,315
Food and Kindred Products	87%	46,486	-91%	-48,437	42%	22,423
Transportation and Public Utilities	87%	98,012	-18%	-20,141	101%	112,714
Communications	87%	23,466	-31%	-8,443	154%	41,370
Trucking and Warehousing	87%	27,002	10%	3,063	94%	29,099
Transportation by Air	87%	13,959	179%	28,625	35%	5,644
Wholesale Trade	87%	94,976	-6%	-6,142	71%	77,379
Retail Trade	87%	252,267	11%	32,648	84%	243,052
Eating and Drinking Places	87%	44,552	103%	52,461	242%	123,530
Food Stores	87%	37,300	-11%	-4,718	86%	36,906
Building Materials and Garden Equipment	87%	11,510	-17%	-2,279	138%	18,210
Finance, Insurance, and Real Estate	87%	118,169	28%	37,836	42%	56,855
Other Finance, Insurance, and Real Estate	87%	89,483	35%	35,399	42%	43,119
Real Estate	87%	32,949	45%	17,121	109%	41,043
Services	87%	322,437	124%	457,063	73%	270,865
Business Services	87%	27,683	417%	132,018	691%	218,691
Health Services	87%	37,658	161%	69,422	301%	129,696
Educational Services	87%	20,273	40%	9,285	102%	23,705
Legal Services	87%	6,755	167%	12,899	173%	13,369
Government and Gov. Enterprises	87%	365,027	-45%	-186,800	24%	99,393
Federal, Civilian	87%	72,241	-88%	-72,526	18%	14,531
State and Local	87%	192,238	-7%	-14,692	48%	106,483

About the Author

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