State of the Workforce Report IV: Region 5

Funding for this project was provided by

Alabama Department of Economic and Community Affairs

Alabama Department of Industrial Relations

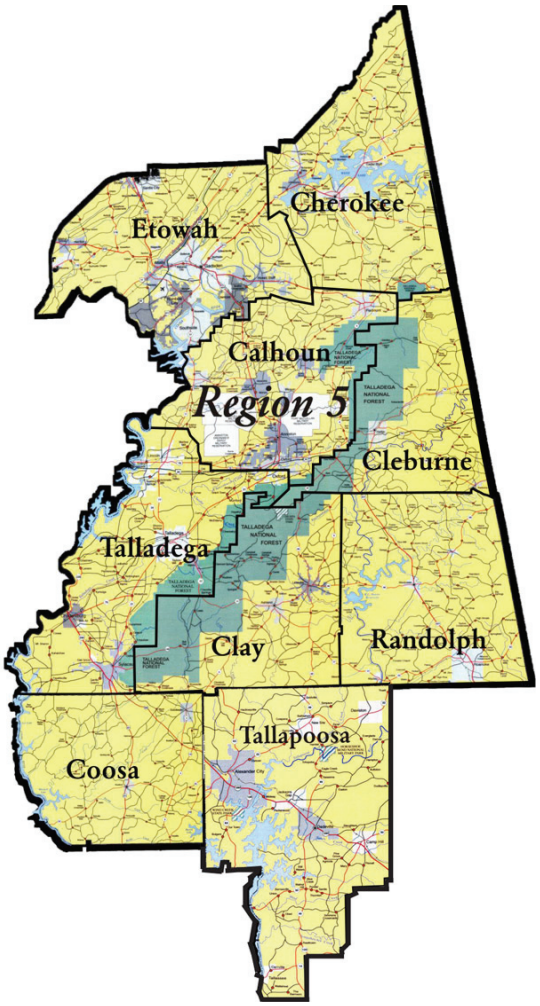
Alabama Department of Postsecondary Education

Alabama Industrial Development Training

Alabama Power Company

Governor's Office of Workforce Development

The University of Alabama

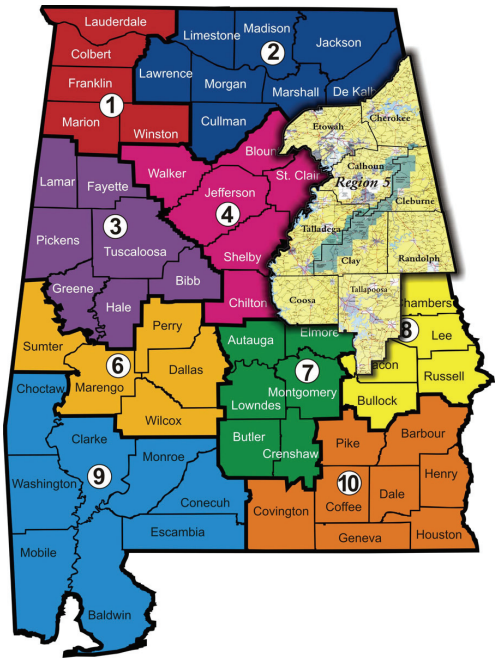


October 2009

Center for Business and Economic Research
University Center for Economic Development
Institute for Social Science Research

THE UNIVERSITY OF ALABAMA

State of the Workforce Report IV: Region 5



October 2009

by

Samuel Addy, Ph.D., *Director and Associate Research Economist*
Ahmad Ijaz, *Economic Analyst*
Carolyn Trent, *Socioeconomic Analyst*
Rui Chen, *Graduate Research Assistant*
Cristina Lira, *Graduate Research Assistant*
Dong-Yop Oh, *Graduate Research Assistant*

Center for Business and Economic Research
Culverhouse College of Commerce and Business Administration
The University of Alabama
Box 870221, Tuscaloosa, AL 35487-0221
Tel: (205) 348-6191 Fax: (205) 348-2951
uacber@cba.ua.edu

Results Dissemination: Nisa Miranda, *Director*, University Center for Economic Development
Underemployment Survey: Debra McCallum, *Research Social Scientist and Director of the Capstone Poll*
Michael Conaway, *Project Coordinator for the Capstone Poll*
Institute for Social Science Research

Acknowledgments

Completion of this project was due to the timely contributions of many people. We are very grateful to the Labor Market Information (LMI) Division of the Alabama Department of Industrial Relations (ADIR). In addition to financial support from ADIR for the project, LMI provided significant staff time and this report would not have been possible without large amounts of data from LMI.

Many thanks also to our colleagues at the Center for Business and Economic Research, Institute for Social Science Research, and University Center for Economic Development for their help on various phases of this research project. Last, but not least, much gratitude is owed to the thousands of Alabamians who responded to the extensive survey on the state's workforce and related issues, as well as to the community and industry leaders whose work on these issues provides the critical data required in reports of this kind.

Funding for this project was provided by:

Alabama Department of Economic and Community Affairs
Alabama Department of Industrial Relations
Alabama Department of Postsecondary Education
Alabama Industrial Development Training
Alabama Power Company
Governor's Office of Workforce Development
The University of Alabama

Contents

Acknowledgments iii

Summary vii

Workforce Supply 1

Labor Force Activity 1

Commuting Patterns 3

Population 3

Per Capita Income 5

Educational Attainment 5

Underemployment and Available Labor 7

Workforce Demand 11

Industry Mix 11

Job Creation and Net Job Flows 12

High-Demand, Fast-Growing, High-Earning, and Sharp-Declining Occupations 13

Skills and Skills Gap Analyses 17

Education and Training Issues 20

Implications and Recommendations 23

Summary

- This report analyzes workforce supply and demand issues using available metrics of workforce characteristics for Workforce Development Region 5 and presents implications and recommendations.

- Region 5 had a 10.2 percent unemployment rate in May 2009, with 19,509 unemployed. A 25.6 percent underemployment rate means that the region has a 63,747-strong available labor pool that includes 44,238 underemployed workers who are looking for better jobs and are willing to commute farther and longer for such jobs.

- The number of in- and out-commuters nearly tripled from 2000 to 2006 with net out-commuting more than doubling from 10,941 to 24,217. Commute distance increased in 2009 and there is also significant within region commuting. All this suggests that congestion, which can slow economic development, is rising and implies that continuous maintenance and development of the region's transportation infrastructure and systems is important.

- By sector, the top five employers in the region are manufacturing, health care and social assistance, retail trade, accommodation and food services, and educational services. In third quarter 2008 these five sectors provided 86,010 jobs, 67 percent of the regional total; two of them paid more than the region's average monthly wage of $2,835. Diversifying the region's economy to strengthen it by retaining, expanding, and attracting more high-wage providing industries, and preparing workers for those industries, is a worthy goal.

- On average 6,580 jobs were created per quarter from second quarter 2001 to third quarter 2008; quarterly net job flows averaged 571. Job creation is the number of new jobs that are created either by new businesses or through expansion of existing firms. Net job flows reflect the difference between current and previous employment at all businesses.

- The top five high-demand occupations are Team Assemblers; Registered Nurses; Elementary School Teachers, Except Special Education; Middle School Teachers, Except Special and Vocational Education; and Home Health Aides.

- The top five fast-growing occupations are Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders; Industrial Engineers; Physician Assistants; Medical Assistants; and Network Systems and Data Communications Analysts.

- The top 50 high-earning occupations are mainly in management, health, engineering, and computer fields and have a minimum salary of $62,751. Eight of the top 10 are health occupations.

- Of the top 40 high-demand, the top 36 fast-growing, and 50 high-earning occupations, three belong to all three categories: Pharmacists; Physical Therapists; and Industrial Engineers. Four occupations are both high-demand and high-earning. Thirty occupations are both high-demand and fast-growing.

- Of the region's 771 occupations and occupational categories, 89 are expected to decline over the 2006 to 2016 period. Twenty-six occupations are expected to sharply decline by at least 7 percent, with each losing a minimum of 30 jobs. Education and training for these 26 occupations should slow accordingly.

- Skill and education requirements for jobs keep rising. Educational and training requirements of high-demand, fast-growing, and high-earning occupations demonstrate the importance of education in developing the region's workforce. In the future, more jobs will require postsecondary education and training at a minimum.

- The importance of basic skills generally and for high-demand, high-growth, and high-earning jobs indicates a strong need for training in these skills. The scale of training needs to increase for basic and social skills; the pace of training should be raised for these and also for complex problem solving skills. Ideally, all high school graduates should possess basic skills so that postsecondary and higher education can focus on other and more complex skills. Employers should be an integral part of planning for training as they can help identify future skill needs and any existing gaps.

- From a 2006 base, a 741-worker surplus for 2016 and a 12,721-worker shortfall for 2025 are expected. This demands a focus on worker skills through 2016, after which both skills and the expected shortfall must be priorities through 2025. Worker shortfalls for critical occupations will need to be addressed continuously. Strategies to address skill needs and worker shortfalls might include: (1) improvements in education and its funding; (2) continuation and enhancement of programs to assess, retrain, and place dislocated workers; (3) focus on hard-to-serve populations (e.g. out-of-school youth); (4) lowering the high school dropout rate; (5) use of economic opportunities to attract new residents; (6) encouragement of older worker participation in the labor force; and (7) facilitation of in-commuting.

- Improving education is important because (i) a highly educated and productive workforce is a critical economic development asset, (ii) productivity rises with education, (iii) educated people are more likely to work, and (iv) it yields high private and social rates of return on investment. Workforce development must view all of education and other programs (e.g. adult education, career technical training, worker retraining, career readiness, etc.) as one system. Funding to support workforce development may require tax reform at state and local levels and should provide for flexibility as workforce needs change over time and demand different priorities. Publicizing both private and public returns to education can encourage individuals to raise their own educational attainment levels, while also promoting public and legislative support for education.

- Higher incomes that come with improved educational attainment and work skills will help to increase personal income for the region as well as raise additional local (county and city) tax revenues. This is especially important for a region that has low population and labor force growth rates.

- Together, workforce development and economic development can build a strong, well-diversified Region 5 economy. Indeed, one cannot achieve success without the other.

Workforce Supply

Labor Force Activity

The labor force includes all persons in the civilian noninstitutional population who are age 16 and over and who have a job or are actively looking for one. Typically, those who have no job and are not looking for one are not included (e.g. students, retirees, the disabled, and discouraged workers). Table 5.1 shows labor force information for Region 5 and its nine counties for 2008 and May 2009.[1]

Table 5.1 Region 5 Labor Force Information

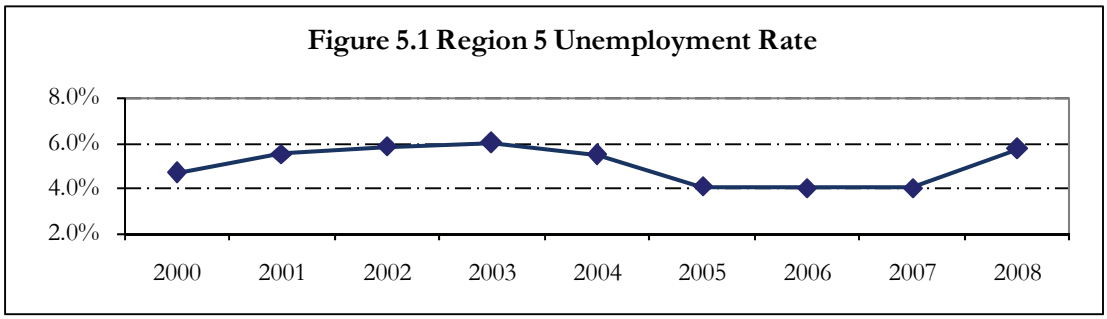
	2008			
	Labor Force	Employed	Unemployed	Rate (%)
Calhoun	54,277	51,522	2,755	5.1
Cherokee	11,918	11,303	615	5.2
Clay	5,693	5,286	407	7.1
Cleburne	6,501	6,207	294	4.5
Coosa	4,648	4,303	345	7.4
Etowah	45,487	43,054	2,433	5.3
Randolph	9,546	8,920	626	6.6
Talladega	38,096	35,625	2,471	6.5
Tallapoosa	18,068	16,902	1,166	6.5
Region 5	194,234	183,122	11,112	5.7
Alabama	2,162,479	2,053,502	108,977	5.0
United States	154,287,000	145,362,000	8,924,000	5.8
	May 2009			
	Labor Force	Employed	Unemployed	Rate (%)
Calhoun	53,231	48,520	4,711	8.9
Cherokee	11,765	10,568	1,197	10.2
Clay	5,664	4,872	792	14.0
Cleburne	6,368	5,865	503	7.9
Coosa	4,731	4,069	662	14.0
Etowah	45,059	40,860	4,200	9.3
Randolph	9,693	8,612	1,080	11.1
Talladega	37,826	33,320	4,506	11.9
Tallapoosa	17,843	15,985	1,858	10.4
Region 5	192,180	172,671	19,509	10.2
Alabama	2,124,766	1,938,686	186,081	8.8
United States	153,830,000	140,265,000	13,565,000	8.8

Source: Alabama Department of Industrial Relations and U.S. Bureau of Labor Statistics.

The recession that began in December 2007 has increased the number of unemployed and raised county unemployment rates from a range of 4.5 percent to 7.4 percent for 2008 (5.7 percent for the region) to between 7.9 percent and 14.0 percent in May 2009, with 10.2 percent for the region. Cleburne County had the lowest unemployment rate and was the only one with a rate below the state's 8.8 percent. Unemployment was highest in Clay and Coosa counties.

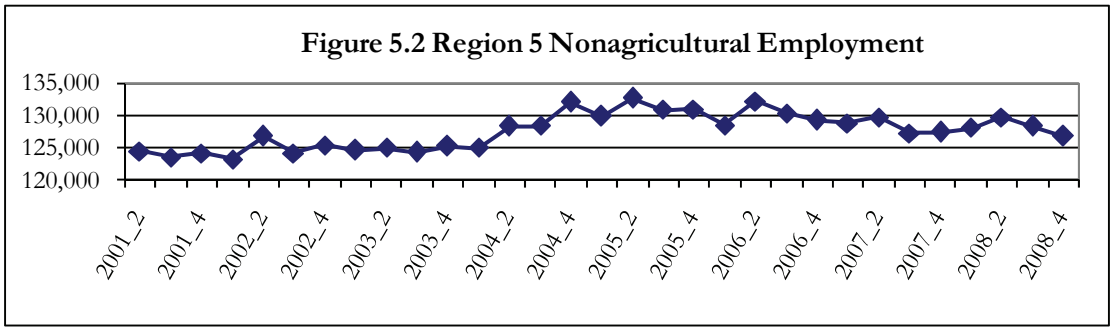
[1] Alabama labor force information is available from the Labor Market Information (LMI) Division of the Alabama Department of Industrial Relations. LMI compiles data in cooperation with the U.S. Bureau of Labor Statistics.

Annual unemployment rates for 2000 to 2008 are shown in Figure 5.1. The region's unemployment rates were low before the 2001 and the most recent recession. The 2003 high of 6.0 percent was due to the effects of the 2001 recession, which adversely affected manufacturing, the region's largest employer. Employment gains since 2003 brought unemployment to record lows in 2006 and 2007. However, monthly labor force data point to a higher regional unemployment rate for 2009 than the 5.7 percent seen in 2008. The recent recession is likely to keep unemployment high for a few more years despite strong ongoing economic development efforts.



Source: Alabama Department of Industrial Relations.

Nonagricultural employment of the region's residents averaged 127,656 quarterly from the second quarter of 2001 to the fourth quarter of 2008 (Figure 5.2). The number of jobs has been declining since second quarter 2008.



Source: Alabama Department of Industrial Relations and U.S. Census Bureau.

Table 5.2 shows worker distribution by age in Region 5 for the third quarter of 2008. Older workers, age 45 and over, are 40.1 percent of the region's nonagricultural employment, just slightly above the state's 39.9 percent. Similarly, the region has relatively more workers who are age 65 and over, 3.9 percent versus 3.7 percent for the state. To meet long term occupational projections for growth and replacement, labor force participation of younger residents must increase. Otherwise older workers may have to work longer.

Table 5.2 Workers by Age Group Q3 2008

	Nonagricultural Employment	
	Number	Percent
14-18	4,631	3.2
19-24	16,820	11.8
25-34	30,455	21.3
35-44	33,665	23.6
45-54	32,104	22.5
55-64	19,585	13.7
65+	5,546	3.9
45 and over total	57,235	40.1
Total all ages	142,808	100.0

Note: Rounding errors may be present. Nonagricultural employment is by place of work not residence.

Source: U.S. Census Bureau, Local Employment Dynamics Program.

Commuting Patterns

In 2000 more residents commuted out of the region for work than nonresidents who commuted in (Table 5.3). Commuter outflow exceeded inflow by 10,941. By 2006, more people were commuting and the net commuter outflow had more than doubled to 24,217. Table 5.3 also shows the one-way average commute time and distance for workers in various years. Commute time fell slightly in 2009 from the previous year, but commute distance increased. Significant commuting inside the region and increased in- and out-commuting point to rising congestion in the region and suggest that transportation infrastructure and systems must be properly maintained and developed to ensure that the flow of goods and movement of workers are not interrupted. Impeding the mobility of workers and goods can delay or slow economic development.

Population

The Region 5 population estimate of 424,361 for 2008 is 90 residents fewer than was recorded for 2000 (Table 5.4). Population grew in four counties and shrank in the others. However, the region's population is projected to grow 1.2 percent in this decade to about 429,700 by 2010. Population growth will be fastest in Cherokee and Cleburne counties; three counties will register population declines. Table 5.5 shows population counts, estimates, and projections by age group. The population aged 65 and over will grow rapidly after 2010, with the first of the baby boom generation turning 65 in 2011. Consequently, growth of the prime working age group (20-64) and youth (0-19) will lag that of the total population. This poses a challenge for workforce development. If employment growth outpaces labor force growth as is expected in the long term, communities that experience rapid job gains may need to consider investments in amenities and infrastructure to attract new residents.

Table 5.3 Commuting Patterns

Area	Inflow, 2000			Outflow, 2000	
	Number	Percent		Number	Percent
Calhoun	1,340	11.5		1,925	8.5
Cherokee	251	2.2		1,184	5.3
Clay	248	2.1		448	2.0
Cleburne	20	0.2		201	0.9
Coosa	463	4.0		2,256	10.0
Etowah	3,403	29.3		7,882	35.0
Randolph	621	5.4		526	2.3
Talladega	1,998	17.2		5,228	23.2
Tallapoosa	3,259	28.1		2,894	12.8
Region 5	11,603	100.0		22,544	100.0
	Inflow, 2006			**Outflow, 2006**	
Region 5	32,560	100.0		56,777	100.0

	Percent of workers			
Average commute time (one-way)	**2004**	**2005/2006**	**2008**	**2009**
Less than 20 minutes	59.1	55.4	53.1	50.0
20 to 40 minutes	25.2	28.3	30.3	32.1
40 minutes to an hour	7.8	10.7	10.5	10.5
More than an hour	3.2	2.0	3.8	2.2
Average commute distance (one-way)	**2004**	**2005/2006**	**2008**	**2009**
Less than 10 miles	44.4	45.0	42.4	38.6
10 to 25 miles	31.3	30.4	34.7	35.4
25 to 45 miles	12.5	15.0	14.9	18.9
More than 45 miles	5.9	4.4	7.3	5.5

Note: Rounding errors may be present.

Source: U.S. Census Bureau; Alabama Department of Industrial Relations; and Center for Business and Economic Research, The University of Alabama.

Table 5.4 Region 5 Population

	1990 Census	2000 Census	2008 Estimate	% Change 2000-2008	2010 Projected	% Change 2000-2010
Calhoun	116,034	112,249	113,419	1.0	114,408	1.9
Cherokee	19,543	23,988	24,545	2.3	25,496	6.3
Clay	13,252	14,254	13,809	-3.1	14,048	-1.4
Cleburne	12,730	14,123	14,799	4.8	15,154	7.3
Coosa	11,063	12,202	10,814	-11.4	11,030	-9.6
Etowah	99,840	103,459	103,303	-0.2	103,884	0.4
Randolph	19,881	22,380	22,620	1.1	23,170	3.5
Talladega	74,107	80,321	80,279	-0.1	81,371	1.3
Tallapoosa	38,826	41,475	40,773	-1.7	41,106	-0.9
Region 5	405,276	424,451	424,361	0.0	429,667	1.2
Alabama	4,040,587	4,447,100	4,661,900	4.8	4,768,769	7.2
United States	248,709,873	281,421,906	304,059,724	8.0	310,232,863	10.2

Source: Center for Business and Economic Research, The University of Alabama and U.S. Census Bureau.

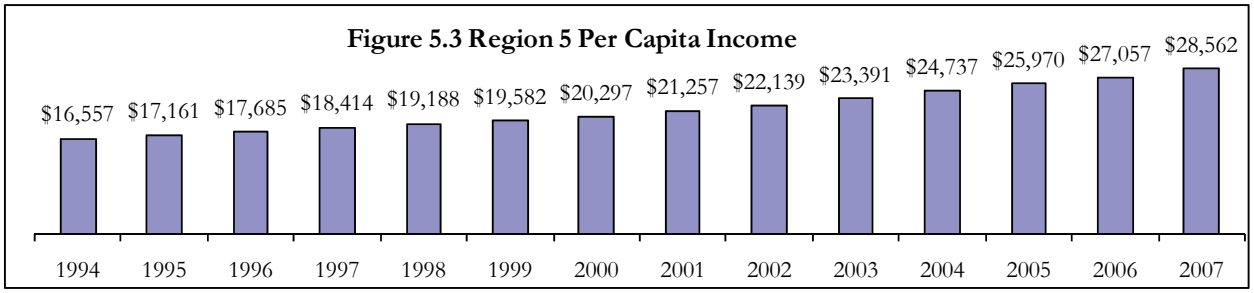
Table 5.5 Population by Age Group (2000-2006) and Projections

Age Group	2000	2006	2016	2025
0-19	113,661	109,192	107,803	109,375
20-24	26,386	26,994	27,869	27,244
25-29	27,135	24,260	26,360	26,145
30-34	28,064	25,993	26,112	27,633
35-39	30,533	27,780	25,293	27,427
40-44	32,170	29,870	27,501	27,414
45-49	30,594	31,465	29,063	26,026
50-54	29,028	30,523	31,025	29,054
55-59	23,313	28,611	32,223	29,904
60-64	20,173	23,306	30,196	31,041
65+	63,394	64,171	78,233	95,518
20-64 Total	**247,396**	**248,803**	**255,642**	**251,888**
Total Population	**424,451**	**422,166**	**441,678**	**456,781**
Change from 2006				
0-19			-1.3%	0.2%
20-64			2.7%	1.2%
Total Population			4.6%	8.2%

Source: Center for Business and Economic Research, The University of Alabama and U.S. Census Bureau.

Per Capita Income

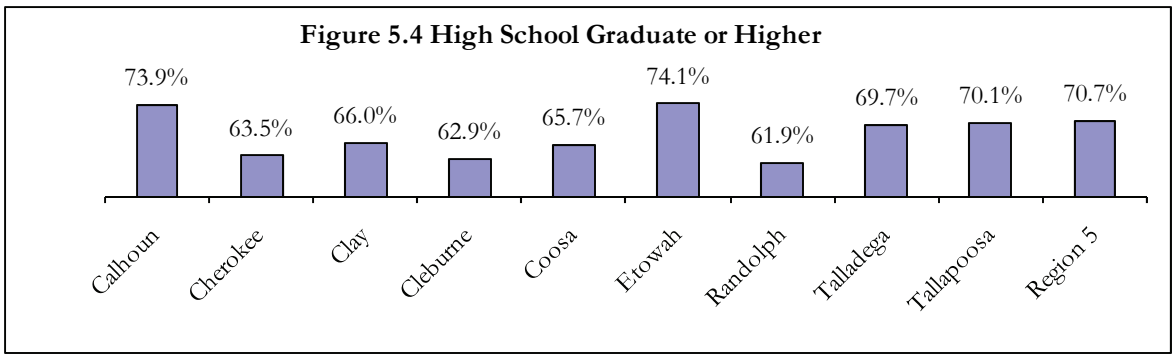
Per capita income (PCI) in Region 5 was at $28,562 in 2007 (Figure 5.4), up 73 percent from 1994, but $3,857 below the state average of $32,419. Calhoun County had the highest PCI with $30,907 and Coosa had the lowest with $23,445.



Source: U.S. Bureau of Economic Analysis and Center for Business and Economic Research, The University of Alabama.

Educational Attainment

Educational attainment in 2000 of Region 5 residents who were 25 years old and over is shown in Figures 5.4 and 5.5 and Table 5.6. About 71 percent graduated from high school and 12.7 percent held a bachelor's or higher degree. Calhoun, Etowah, and Tallapoosa counties have higher educational attainment than the others. Educational attainment is important as skills rise with education and high-wage jobs for the 21st century demand more skill sets.



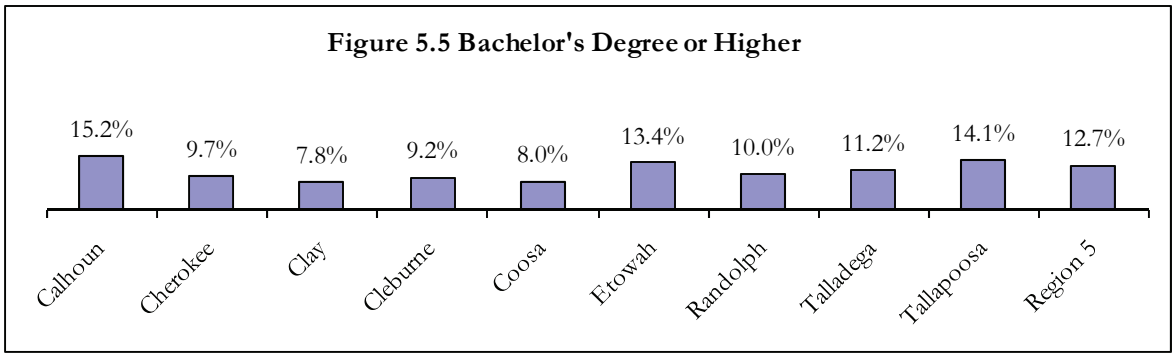


Table 5.6 Educational Attainment in 2000, Population 25 Years and Over

	Calhoun	Cherokee	Clay	Cleburne	Coosa	Etowah	Randolph	Talladega	Tallapoosa	Region 5
Total	74,015	16,825	9,767	9,533	8,255	69,829	14,762	53,060	53,060	256,046
No schooling completed	734	372	125	159	180	743	218	693	693	3,224
Nursery to 4th grade	438	176	36	127	63	432	246	442	442	1,960
5th and 6th grade	1,465	559	315	293	203	1,554	564	1,287	1,287	6,240
7th and 8th grade	3,521	1,215	721	663	398	3,294	981	2,886	2,886	13,679
9th grade	3,474	1,019	616	656	513	2,978	971	2,658	2,658	12,885
10th grade	3,795	1,105	611	816	593	3,532	1,061	3,149	3,149	14,662
11th grade	3,279	896	450	424	481	3,098	844	2,707	2,707	12,179
12th grade, no diploma	2,612	796	448	398	400	2,484	733	2,280	2,280	10,151
High school graduate/equivalent	23,856	5,865	3,690	3,417	3,164	22,531	4,723	18,270	18,270	85,516
Some college, less than 1 year	4,794	960	544	411	414	4,651	852	3,491	3,491	16,117
Some college, 1+ years, no degree	11,017	1,517	977	965	821	10,486	1,484	6,892	6,892	34,159
Associate degree	3,765	709	471	325	362	4,674	606	2,354	2,354	13,266
Bachelor's degree	6,612	928	486	463	428	5,679	919	3,663	3,663	19,178
Master's degree	3,332	537	219	344	174	2,653	413	1,685	1,685	9,357
Professional school degree	828	151	43	57	41	809	107	454	454	2,490
Doctorate degree	493	20	15	15	20	231	40	149	149	983

Source: Center for Business and Economic Research, The University of Alabama and U.S. Census Bureau.

Underemployment and Available Labor

Labor force data are often limited to information on the employed and the unemployed that is available from government sources. However, this information is not complete from the perspective of employers. New or expanding employers are also interested in underemployment because current workers are potential employees. In fact, experience requirements in job ads are evidence that many prospective employers look beyond the unemployed for workers.

Workers in occupations that underutilize their experience, training, and skills are underemployed. These workers might look for other work because their current wages are below what they believe they can earn or because they wish to not be underemployed. Underemployment occurs for various reasons including (i) productivity growth, (ii) spousal employment and income, and (iii) family constraints or personal preferences. Underemployment is unique to areas because of the various contributing factors combined with each area's economic, social, and geographic characteristics.

The existence of underemployment identifies economic potential that is not being realized. It is extremely difficult to measure this economic potential because of uncertainties regarding additional income that the underemployed can bring to an area. It is clear, however, that underemployment provides opportunities for selective job creation and economic growth. A business that needs skills prevalent among the underemployed could locate in places that have such workers regardless of those areas' unemployment rates. A low unemployment rate, which may falsely suggest limited labor availability, is therefore not a hindrance to the business.

The underemployed present a significant pool of labor because they tend to respond to job opportunities that they believe are better for reasons that include (i) higher income, (ii) more benefits, (iii) superior terms and conditions of employment, and (iv) a better match with skills, training, and experience. The underemployed also create opportunities for entry level workers as they leave lower-paying jobs for better-paying ones. Even if their previously-held positions are lost or not filled (perhaps due to low unemployment or adverse economic conditions), there is economic growth in gaining higher-paying jobs. Such income growth boosts consumption, savings, and tax collections. Quantifying the size of the underemployed is a necessary first step in considering this group for economic development, workforce training, planning, and other purposes. It is important to note that the underemployed can take on more responsibilities and earn more income, but they cannot be counted on to address possible future worker shortages as they are already employed.

Region 5 had an underemployment rate of 25.6 percent in 2009. Applying this rate to May 2009 labor force data means that 44,238 employed residents were underemployed (Table 5.7). Adding the unemployed gives a total available labor pool of 63,747 for the region. This is 3.3 times the number of unemployed and is a more realistic measure of the available labor pool in the region. Prospective employers must be able to offer the underemployed higher wages, better benefits or terms of employment, or some other incentives to induce them to change jobs. Underemployment rates ranged from 16.0 percent for Clay County to 32.2 percent for Randolph. Calhoun County had the largest available labor pool and Clay County had the smallest.

Underemployment rates for counties, Workforce Development Regions (WDRs), and the state were determined from an extensive survey on the state's workforce. A total of 1,075 complete responses were obtained from Region 5. About 49 percent (523 respondents) were employed, of whom 134

stated that they were underemployed. A lack of job opportunities in their area, low wages at available jobs, and living too far from jobs are the primary reasons given for being underemployed. Ongoing economic development efforts can help in this regard. Nonworkers cite retirement and disability as the main reasons for their status, but some also cite a lack of job opportunities in their area as an additional major reason. Such workers may become part of the labor force if their problems can be addressed.

Table 5.7 Underemployed and Available Labor by County

	Region 5	Calhoun	Cherokee	Clay	Cleburne
Labor Force	192,180	53,231	11,765	5,664	6,368
Employed	172,671	48,520	10,568	4,872	5,865
Underemployment rate	25.6%	31.3%	28.1%	16.0%	19.3%
Underemployed workers	44,238	15,206	2,966	780	1,132
Unemployed	19,509	4,711	1,197	792	503
Available labor pool	**63,747**	**19,917**	**4,163**	**1,572**	**1,635**
	Coosa	Etowah	Randolph	Talladega	Tallapoosa
Labor Force	4,731	45,059	9,693	37,826	17,843
Employed	4,069	40,860	8,612	33,320	15,985
Underemployment rate	25.9%	27.7%	32.2%	25.0%	22.4%
Underemployed workers	1,055	11,314	2,773	8,330	3,582
Unemployed	662	4,200	1,080	4,506	1,858
Available labor pool	**1,717**	**15,514**	**3,853**	**12,836**	**5,440**

Note: Rounding errors may be present. Based on May 2009 labor force data and 2009 underemployment rates.

Source: Center for Business and Economic Research, The University of Alabama and Alabama Department of Industrial Relations.

A comparison of underemployed workers to the overall workforce in Region 5 shows that:

- Fewer work full-time and more of the part-timers prefer full-time work.
- More hold multiple jobs.
- They have less commute time and distance.
- More are technicians, machine operators, assemblers, inspectors, and retail and wholesale salespersons.
- More work in manufacturing, construction, and firms that provide services for healthcare, businesses, hotels, restaurants, and households.
- They earn less and have shorter job tenure.
- Fewer believe their jobs fit well with their education and training, skills, and experience.
- More believe they are qualified for a better job.
- More would leave their current jobs for higher income.
- Slightly more are willing to commute longer and farther for a better job.
- Fewer are satisfied with their current jobs.
- More have sought better jobs in the preceding quarter.
- More are willing to train for a better job even if they have to pay part or all of the cost.
- They are younger and have slightly higher educational attainment.
- Fewer are married, male, white, or Hispanic.

Table 5.8 shows the detailed survey results on job satisfaction and willingness to train. Responses for overall job satisfaction as well as various aspects of the job were obtained. In general most of the region's workers (73.3 percent) are satisfied or completely satisfied with their jobs. Workers are most satisfied with the work that they do and least satisfied with the earnings they receive. Fewer underemployed workers are satisfied with their jobs (47.8 percent). The underemployed are also much more dissatisfied with their earnings.

Workers are generally willing to train for a new or better job, with the underemployed being much more willing (82.8 percent vs. 64.9 percent). However, the willingness to train is strongly influenced by who pays for the cost of training. Workers typically do not wish to pay for the training and so their willingness is highest when the cost is fully borne by government and lowest when the trainee must pay the full costs. In every case of cost burden considered, the underemployed are more willing to train for the new or better job. The results strongly show that workers expect the government to bear at least a part of the training cost. This expectation may result from worker awareness of government workforce programs that provide such assistance.

Table 5.8 Job Satisfaction and Willingness to Train (Percent)

Job Satisfaction	Completely Dissatisfied	Dissatisfied	Neutral	Satisfied	Completely Satisfied
Employed					
Overall	4.0	5.9	16.6	26.8	46.5
Earnings	12.2	11.1	22.8	23.9	29.1
Retention	5.5	6.7	14.5	18.6	53.0
Work	0.8	3.6	7.7	26.2	61.2
Hours	4.4	5.9	10.5	21.6	56.4
Shift	2.7	4.0	7.8	14.3	70.8
Conditions	2.7	6.1	14.7	24.7	50.9
Commuting Distance	5.5	5.7	13.6	17.4	57.0
Underemployed					
Overall	9.7	9.0	33.6	22.4	25.4
Earnings	25.4	19.4	26.1	17.9	11.2
Retention	11.9	11.2	23.1	17.9	34.3
Work	0.8	9.0	14.9	26.9	48.5
Hours	8.2	7.5	15.7	20.9	46.3
Shift	6.7	3.0	12.7	14.9	62.7
Conditions	5.2	11.2	20.9	32.1	30.6
Commuting Distance	9.0	6.0	11.2	19.4	53.7

Willingness to Train	Completely Unwilling	Unwilling	Neutral	Willing	Completely Willing
Employed					
For a new or better job	14.5	3.4	16.7	12.3	52.6
If paid by trainee	44.8	19.3	20.7	5.2	8.1
If paid by trainee and government	10.9	8.6	32.5	25.6	21.0
If paid by government	2.6	2.3	9.5	11.5	72.4
Underemployed					
For a new or better job	5.2	0.9	11.2	11.2	71.6
If paid by trainee	38.2	18.2	24.6	7.3	10.0
If paid by trainee and government	9.1	6.4	30.0	28.2	24.6
If paid by government	0.9	1.8	4.6	6.4	84.6

Note: Rounding errors may be present.

Source: Center for Business and Economic Research, The University of Alabama.

Workforce Demand

Industry Mix

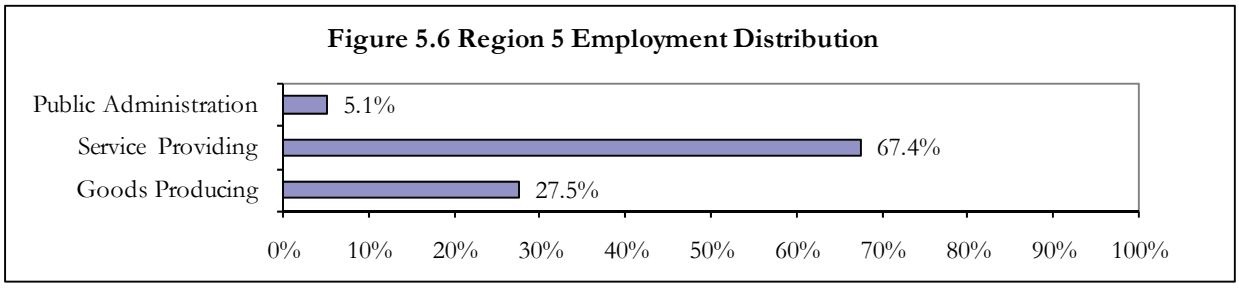
The manufacturing sector was the leading employer in Region 5 with 28,655 jobs in the third quarter of 2008 (Table 5.9). Rounding out the top five industries by employment are health care and social assistance, retail trade, accommodation and food services, and educational services. These five industries provided 86,010 jobs, 67.1 percent of the region's total. The average monthly wage across all industries in the region was $2,835; two of the leading employers paid more than this average. New hire monthly earnings averaged $1,858, about 66 percent of the region's average monthly wage. The highest average monthly wages were for mining at $4,617, utilities $4,147, manufacturing $3,657, and professional, scientific, and technical services $3,656. Accommodation and food services paid the least at $1,189. Mining also had the highest average monthly new hire wages with $5,226, followed by construction at $2,959, and professional, scientific, and technical services with $2,817. Arts, entertainment, and recreation paid newly hired workers the least, $763.

Table 5.9 Industry Mix (Third Quarter 2008)

Industry by 2-digit NAICS Code	Total Employment	Share	Rank	Average Monthly Wage	Average Monthly New Hire Earnings
11 Agriculture, Forestry, Fishing and Hunting	679	0.53%	18	$2,347	$2,080
21 Mining	574	0.45%	19	$4,617	$5,226
22 Utilities	1,127	0.88%	16	$4,147	$2,531
23 Construction	5,354	4.18%	8	$3,187	$2,959
31-33 Manufacturing	28,655	22.35%	1	$3,657	$2,659
42 Wholesale Trade	4,961	3.87%	9	$3,346	$2,425
44-45 Retail Trade	16,616	12.96%	3	$2,001	$1,229
48-49 Transportation and Warehousing	2,924	2.28%	10	$2,973	$2,466
51 Information	1,723	1.34%	14	$3,359	$2,089
52 Finance and Insurance	2,850	2.22%	11	$3,306	$2,308
53 Real Estate and Rental and Leasing	1,312	1.02%	15	$2,409	$1,469
54 Professional, Scientific, and Technical Services	2,837	2.21%	12	$3,656	$2,817
55 Management of Companies and Enterprises	270	0.21%	20	$2,355	$1,282
56 Administrative and Support and Waste Management and Remediation Services	7,230	5.64%	6	$2,520	$1,663
61 Educational Services	10,929	8.52%	5	$2,836	$1,408
62 Health Care and Social Assistance	18,509	14.43%	2	$2,732	$2,332
71 Arts, Entertainment, and Recreation	1,020	0.80%	17	$1,656	$763
72 Accommodation and Food Services	11,301	8.81%	4	$1,189	$813
81 Other Services (Except Public Administration)	2,828	2.21%	13	$2,346	$1,433
92 Public Administration	6,537	5.10%	7	$2,669	$1,822
ALL INDUSTRIES	128,234	100.00%		$2,835	$1,858

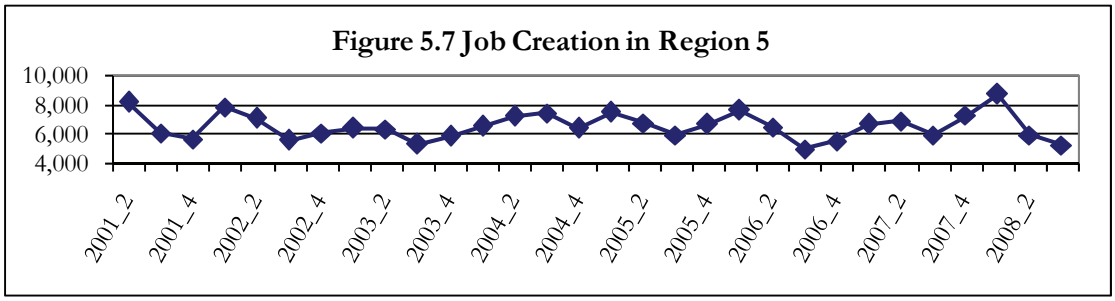
Source: Alabama Department of Industrial Relations and U.S. Census Bureau.

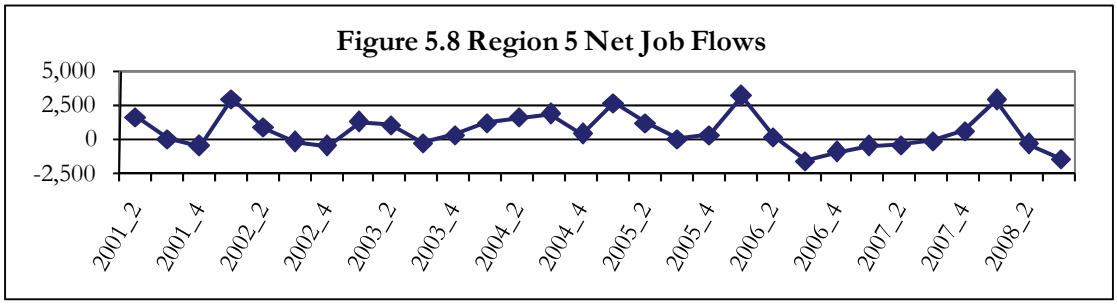
By broad industry classification, service providing industries generated 67.4 percent of jobs in third quarter 2008 (Figure 5.6). Goods producing industries were next with 27.5 percent and public administration accounted for 5.1 percent. The distribution is for all nonagricultural jobs in the region, but there is significant variation by county.



Job Creation and Net Job Flows

On average, 6,580 jobs were created per quarter from second quarter 2001 to third quarter 2008 (Figure 5.7); quarterly net job flows averaged 571 (Figure 5.8). Both job creation and net job flows have been declining since the first quarter of 2008. Quarterly net job flows fluctuate considerably and have ranged from a loss of 1,602 to a gain of 3,136. Job creation refers to the number of new jobs that are created either by new area businesses or through the expansion of existing firms. Net job flows reflect the difference between current and previous employment at all businesses.





Source: Alabama Department of Industrial Relations and U.S. Census Bureau.

High-Demand, Fast-Growing, High-Earning, and Sharp-Declining Occupations

Out of a total 771 occupations and occupational categories in the region, 656 are single occupations. Table 5.10 shows the 40 occupations that are expected to be in high-demand, ranked by projected average annual job openings over the 2006 to 2016 period. Many of these occupations are common to four of the largest employment sectors identified earlier (Table 5.9): manufacturing; health care and social assistance; retail trade; and educational services. Thus, these sectors will continue to dominate employment in the region.

The top five high-demand occupations are Team Assemblers; Registered Nurses; Elementary School Teachers, Except Special Education; Middle School Teachers, Except Special and Vocational Education; and Home Health Aides. Thirty of the high-demand occupations are also fast-growing. This means that these 30 occupations have a minimum annual growth rate of 2.0 percent, much faster than the regional and state occupational growth rates of 0.81 percent and 1.4 percent, respectively.

The 36 fastest growing occupations ranked by projected growth of employment are listed in Table 5.11. More than half of these occupations are health, manufacturing, or education-related. The top five fast-growing occupations are Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders; Industrial Engineers; Physician Assistants; Medical Assistants; and Network Systems and Data Communications Analysts.

Table 5.12 shows the 50 selected highest earning occupations in the region. These occupations are mainly in management, health, engineering, and computer fields. Eight of the top 10 listed are health occupations. Any discussion of earnings must consider that wages vary with experience. Occupations with the highest entry wages may not necessarily have the highest average or experienced wages.

The selected high-earning occupations are generally not fast-growing or in high-demand. Four occupations are both high-earning and in high-demand (Table 5.10). The following three occupations are in high-demand, fast-growing, and high-earning:

1. Pharmacists
2. Physical Therapists
3. Industrial Engineers

Of the region's 771 occupations and occupational categories, 89 are expected to decline over the 2006 to 2016 period. Employment in the 26 sharpest-declining occupations will fall by at least 7 percent, with each losing a minimum of 30 jobs over the period (Table 5.13). No efforts should be made to sustain these occupations because they are declining as a result of structural changes in the economy of the region.

Table 5.10 Selected High-Demand Occupations (Base Year 2006 and Projected Year 2016)

Occupation	Average Annual Job Openings		
	Total	Due to Growth	Due to Separations
Team Assemblers *	265	145	120
Registered Nurses	100	55	45
Elementary School Teachers, Except Special Education	75	35	40
Middle School Teachers, Except Special and Vocational Education	45	20	25
Home Health Aides *	45	35	10
Mobile Heavy Equipment Mechanics, Except Engines	40	20	20
Medical Assistants *	30	25	5
Pharmacy Technicians *	30	15	15
Clergy *	25	15	10
Computer-Controlled Machine Tool Operators, Metal and Plastic *	25	20	5
Mechanical Engineers *	20	10	10
Business Operations Specialists, All Other	20	15	5
Forging Machine Setters, Operators, and Tenders, Metal and Plastic *	20	10	10
Industrial Engineers *	**15**	**10**	**5**
Mental Health Counselors *	15	10	5
Emergency Medical Technicians and Paramedics *	15	10	5
Pharmacists *	**10**	**5**	**5**
Management Analysts	**10**	**5**	**5**
Physical Therapists *	**10**	**5**	**5**
Chemical Technicians *	10	5	5
Special Education Teachers, Middle School	10	5	5
Electrical and Electronics Repair, Commercial and Industrial Equipment	10	5	5
Sales Representatives, Services, All Other	10	5	5
Special Education Teachers, Preschool, Kindergarten, and Elementary School *	10	5	5
Dental Hygienists *	10	5	5
Kindergarten Teachers, Except Special Education *	10	5	5
Medical and Clinical Laboratory Technicians *	10	5	5
Directors, Religious Activities and Education *	10	5	5
Occupational Therapists *	5	5	0
Physician Assistants *	5	5	0
Nursing Instructors and Teachers, Postsecondary *	5	5	0
Vocational Education Teachers, Postsecondary	5	5	0
Network Systems and Data Communications Analysts *	5	5	0
Advertising Sales Agents *	5	5	0
Tool and Die Makers *	5	5	0
Physical Therapist Assistants *	5	5	0
Millwrights *	5	5	0
Employment, Recruitment, and Placement Specialists *	5	5	0
Dental Assistants *	5	5	0
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders *	5	5	0

Note: Occupations are growth- and wages-weighted and data are rounded to the nearest 5. Occupations in bold are also high-earning.

* Qualify as both high-demand and fast-growing occupations.

Source: Alabama Department of Industrial Relations and Center for Business and Economic Research, The University of Alabama.

Table 5.11 Selected Fast-Growing Occupations (Base Year 2006 and Projected Year 2016)

Occupation	Employment 2006	Employment 2016	Percent Change	Annual Growth (Percent)	Average Annual Job Openings
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders *	110	170	55	4.45	5
Industrial Engineers *	**240**	**360**	**50**	**4.14**	**15**
Physician Assistants *	100	150	50	4.14	5
Medical Assistants *	560	810	45	3.76	30
Network Systems and Data Communications Analysts *	100	140	40	3.42	5
Computer-Controlled Machine Tool Operators, Metal and Plastic *	460	640	39	3.36	25
Home Health Aides *	950	1,300	37	3.19	45
Tool and Die Makers *	150	200	33	2.92	5
Millwrights *	120	160	33	2.92	5
Dental Assistants *	120	160	33	2.92	5
Pharmacy Technicians *	460	610	33	2.86	30
Personal and Home Care Aides	360	470	31	2.70	15
Emergency Medical Technicians and Paramedics *	330	430	30	2.68	15
Occupational Therapists *	100	130	30	2.66	5
Physical Therapist Assistants *	100	130	30	2.66	5
Advertising Sales Agents *	140	180	29	2.54	5
Physical Therapists *	**220**	**280**	**27**	**2.44**	**10**
Employment, Recruitment, and Placement Specialists *	110	140	27	2.44	5
Forging Machine Setters, Operators, and Tenders, Metal and Plastic *	260	330	27	2.41	20
Mental Health Counselors *	300	380	27	2.39	15
Clergy *	680	860	26	2.38	25
Tire Repairers and Changers	230	290	26	2.35	10
Team Assemblers *	5,830	7,300	25	2.27	265
Dental Hygienists *	200	250	25	2.26	10
Directors, Religious Activities and Education *	NA	NA	25	2.26	10
Nursing Instructors and Teachers, Postsecondary *	120	150	25	2.26	5
Mechanical Engineers *	490	610	24	2.21	20
Medical Secretaries	250	310	24	2.17	10
Medical and Clinical Laboratory Technicians *	210	260	24	2.16	10
Counter and Rental Clerks	510	630	24	2.14	30
Kindergarten Teachers, Except Special Education *	300	370	23	2.12	10
Chemical Technicians *	130	160	23	2.10	10
Special Education Teachers, Preschool, Kindergarten, and Elementary School *	260	320	23	2.10	10
Molders, Shapers, and Casters, Except Metal and Plastic	NA	NA	23	2.10	5
Pharmacists *	**310**	**380**	**23**	**2.06**	**10**
Child Care Workers	1,640	2,000	22	2.00	80

Note: Employment data are rounded to the nearest 10 and job openings are rounded to the nearest 5. Occupations in bold are also high-earning.

* Qualify as both high-demand and fast-growing occupations. NA - Not available.

Source: Alabama Department of Industrial Relations and Center for Business and Economic Research, The University of Alabama.

Table 5.12 Selected High-Earning Occupations (Base Year 2006 and Projected Year 2016)

Occupation	Employment 2006	Employment 2016	Annual Growth (Percent)	Average Annual Job Openings	Mean Annual Salary ($)
Internists, General	80	100	2.26	0	226,866
Physicians and Surgeons, All Other	150	190	2.39	10	220,189
Surgeons	90	110	2.03	0	219,231
Anesthesiologists	50	50	0.00	0	214,308
Family and General Practitioners	90	110	2.03	0	185,162
Pediatricians, General	90	110	2.03	0	181,022
Dentists, General	120	130	0.80	0	137,878
Marketing Managers	60	60	0.00	0	135,782
Pharmacists *	**310**	**380**	**2.06**	**10**	**129,514**
Chief Executives	380	390	0.26	10	124,783
Managers, All Other	920	970	0.53	25	106,341
Lawyers	330	360	0.87	10	96,631
Engineering Managers	140	150	0.69	5	95,663
Engineers, All Other	90	110	2.03	0	91,611
Chiropractors	80	90	1.18	0	90,629
Computer and Information Systems Managers	70	80	1.34	0	88,445
Sales Engineers	NA	NA	0.00	0	85,794
Human Resources Managers, All Other	50	50	0.00	0	85,563
Medical and Health Services Managers	240	270	1.18	10	85,198
Veterinarians	60	80	2.92	0	82,882
Education Administrators, Postsecondary	120	140	1.55	5	80,822
Industrial Production Managers	260	260	0.00	10	80,768
Computer Software Engineers, Applications	40	50	2.26	0	80,594
Sales Managers	170	190	1.12	5	79,887
Securities, Commodities, & Fin.l Services Sales Agents	40	40	0.00	0	79,767
Financial Managers	320	340	0.61	5	77,875
Purchasing Managers	60	60	0.00	0	77,761
General and Operations Managers	2,090	2,110	0.10	50	77,726
Physical Therapists *	**220**	**280**	**2.44**	**10**	**76,883**
Electrical Engineers	120	130	0.80	5	76,255
Chemical Engineers	60	80	2.92	0	76,012
Electronics Engineers, Except Computer	60	70	1.55	0	74,980
Management Analysts *	340	390	1.38	10	73,359
Administrative Services Managers	100	100	0.00	5	72,542
Transportation, Storage, and Distribution Managers	80	80	0.00	0	72,433
Education Administrators, Elementary and Sec. School	370	420	1.28	15	71,656
Computer Specialists, All Other	100	110	0.96	5	71,081
Healthcare Practitioners & Technical Workers, All Other	20	20	0.00	0	69,582
Occupational Therapists	100	130	2.66	5	69,182
Business Teachers, Postsecondary	50	70	3.42	0	69,041
Environmental Engineers	110	130	1.68	5	68,851
Industrial Engineers *	**240**	**360**	**4.14**	**15**	**68,717**
Budget Analysts	20	20	0.00	0	67,915
Construction Managers	640	700	0.90	15	67,514
Market Research Analysts	90	90	0.00	0	66,792
Occupational Health and Safety Specialists	80	90	1.18	0	65,572
Sales Rep., Wholesale & Mfg., Tech. and Scien. Prod.	150	160	0.65	5	64,893
Speech-Language Pathologists	90	100	1.06	0	64,663
Optometrists	40	40	0.00	0	64,494
Public Relations Managers	70	90	2.54	0	62,751

Note: Employment data are rounded to the nearest 10; openings to the nearest 5. The salary data provided are based on the May 2008 release of the Occupational Employment Statistics (OES) combined employment and wage file. Estimates for specific occupations may include imputed data. Occupations in bold are also fast-growing. NA – Not available.

* Qualify as both high-earning and high-demand occupations.

Source: Center for Business and Economic Research, The University of Alabama and Alabama Department of Industrial Relations.

Table 5.13 Selected Sharp-Declining Occupations (Base Year 2006 and Projected Year 2016)

Occupation	Employment 2006	Employment 2016	Net Change	Percent Change
Sewing Machine Operators	1,340	790	-550	-41
Packers and Packagers, Hand	1,550	1,180	-370	-24
Textile Winding and Drawing Out Machine Setters, Operators, and Tenders	570	270	-300	-53
Textile Knitting and Weaving Machine Setters, Operators, and Tenders	660	370	-290	-44
Slaughterers and Meat Packers	NA	NA	-190	-48
Meat, Poultry, and Fish Cutters and Trimmers	360	250	-110	-31
Inspectors, Testers, Sorters, Samplers, and Weighers	1,420	1,320	-100	-7
Packaging and Filling Machine Operators and Tenders	620	520	-100	-16
Order Clerks	300	210	-90	-30
Textile Bleaching and Dyeing Machine Operators and Tenders	190	100	-90	-47
Textile Cutting Machine Setters, Operators, and Tenders	160	80	-80	-50
Machine Feeders and Offbearers	300	220	-80	-27
Textile, Apparel, and Furnishings Workers, All Other	NA	NA	-70	-39
Extruding, Forming, and Compacting Machine Setters, Operators, and Tenders	310	250	-60	-19
Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders	110	60	-50	-45
File Clerks	110	70	-40	-36
Food Cooking Machine Operators and Tenders	160	120	-40	-25
Mixing and Blending Machine Setters, Operators, and Tenders	430	390	-40	-9
Photographic Processing Machine Operators	80	40	-40	-50
Telephone Operators	NA	NA	-30	-27
Paper Goods Machine Setters, Operators, and Tenders	NA	NA	-30	-13
Butchers and Meat Cutters	280	250	-30	-11
Printing Machine Operators	290	260	-30	-10
Pressers, Textile, Garment, and Related Materials	130	100	-30	-23
Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass	80	50	-30	-38
Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	240	210	-30	-13

Note: Employment data are rounded to the nearest 10. NA - Not available.

Source: Alabama Department of Industrial Relations and Center for Business and Economic Research, The University of Alabama.

Skills and Skills Gap Analyses

Jobs require skill sets and it is necessary that jobholders have the relevant skills. Table 5.14 shows skill types and definitions as provided by O*NET Online, which offers skill sets for all occupations ranked by the degree of importance. High-earning occupations typically require skills that are obtained in the pursuit of the high educational attainment levels that such jobs require. Lower earning occupations require more basic skill sets. Some occupations have no minimum skill set requirements (e.g. dishwashers and maids).

Table 5.15 shows the percentage of selected occupations in the region that list a particular skill as primary. We define primary skills as the 10 most important skills in the required skill set for an occupation. It is important to note that a particular skill may be more important and more extensively used in one occupation than another. Table 5.15 does not address such cross-occupational skill importance comparisons. In general, basic skills are most frequently listed as primary, which means that they are important for practically all jobs.

Table 5.14 Skill Types and Definitions

Basic Skills: Developed capacities that facilitate learning or the more rapid acquisition of knowledge.

Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.

Learning Strategies — Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.

Mathematics — Using mathematics to solve problems.

Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Reading Comprehension — Understanding written sentences and paragraphs in work-related documents.

Science — Using scientific rules and methods to solve problems.

Speaking — Talking to others to convey information effectively.

Writing — Communicating effectively in writing as appropriate for the needs of the audience.

Complex Problem Solving Skills: Developed capacities used to solve novel, ill-defined problems in complex, real-world settings.

Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

Resource Management Skills: Developed capacities used to allocate resources efficiently.

Management of Financial Resources — Determining how money will be spent to get the work done and accounting for these expenditures.

Management of Material Resources — Obtaining and seeing to the appropriate use of equipment, facilities, and materials needed to do certain work.

Management of Personnel Resources — Motivating, developing, and directing people as they work, identifying the best people for the job.

Time Management — Managing one's own time and the time of others.

Social Skills: Developed capacities used to work with people to achieve goals.

Coordination — Adjusting actions in relation to others' actions.

Instructing — Teaching others how to do something.

Negotiation — Bringing others together and trying to reconcile differences.

Persuasion — Persuading others to change their minds or behavior.

Service Orientation — Actively looking for ways to help people.

Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.

Systems Skills: Developed capacities used to understand, monitor, and improve socio-technical systems.

Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.

Systems Analysis — Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.

Systems Evaluation — Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.

Technical Skills: Developed capacities used to design, set-up, operate, and correct malfunctions involving application of machines or technological systems.

Equipment Maintenance — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.

Equipment Selection — Determining the kind of tools and equipment needed to do a job.

Installation — Installing equipment, machines, wiring, or programs to meet specifications.

Operation and Control — Controlling operations of equipment or systems.

Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.

Operations Analysis — Analyzing needs and product requirements to create a design.

Programming — Writing computer programs for various purposes.

Quality Control Analysis — Conducting tests and inspections of products, services, or processes to evaluate quality or performance.

Repairing — Repairing machines or systems using the needed tools.

Technology Design — Generating or adapting equipment and technology to serve user needs.

Troubleshooting — Determining causes of operating errors and deciding what to do about it.

Source: O*NET Online (http://online.onetcenter.org/skills/).

Table 5.15 Percentage of Selected Occupations for Which Skill Is Primary

	Selected High-Demand Occupations	Selected Fast-Growing Occupations	Selected High-Earning Occupations
Basic Skills			
Active Learning	63	64	64
Active Listening	78	81	74
Critical Thinking	55	50	78
Learning Strategies	28	31	8
Mathematics	20	25	28
Monitoring	30	28	30
Reading Comprehension	78	78	78
Science	18	19	24
Speaking	63	69	60
Writing	50	50	38
Complex Problem Solving Skills			
Complex Problem Solving	13	11	28
Resource Management Skills			
Management of Financial Resources	0	0	12
Management of Material Resources	0	0	2
Management of Personnel Resources	0	0	10
Time Management	55	56	52
Social Skills			
Coordination	23	25	36
Instructing	58	56	24
Negotiation	3	6	14
Persuasion	0	0	16
Service Orientation	28	31	16
Social Perceptiveness	43	44	16
Systems Skills			
Judgment and Decision Making	23	19	56
Systems Analysis	0	0	8
Systems Evaluation	0	0	16
Technical Skills			
Equipment Maintenance	23	19	0
Equipment Selection	18	19	4
Installation	15	14	0
Operation and Control	13	11	6
Operation Monitoring	13	8	2
Operations Analysis	5	6	8
Programming	0	0	2
Quality Control Analysis	13	11	2
Repairing	10	8	0
Technology Design	5	6	6
Troubleshooting	10	6	8

Note: Rounding errors may be present.

Source: O*NET Online and Center for Business and Economic Research, The University of Alabama.

High-earning occupations require slightly more mathematics and science skills and much more critical thinking, persuasion, negotiation, complex problem solving, resource management, and systems skills than both high-demand and fast-growing jobs. These skills require long training periods and postsecondary education. However, high-earning jobs require less social and technical skills. High-demand occupations require roughly the same skill sets as fast-growing occupations.

Table 5.16 shows skill gap indexes for all 35 skills in Table 5.14. Skills gap indexes range up to 100 and are standardized measures of the gap between current supply and projected demand. The index does not provide any information about current or base year skill supply. Its focus is on the projection period, which for Table 5.16 is 2006 to 2016, and identifies critical skill needs. The index essentially ranks expected training needs. The higher the index the more critical is the skill over the specified projection period.

For policy and planning purposes, skill gap indexes have to be considered together with replacement indexes, which are the expected shares of job openings due to replacement. Replacement is necessary because of turnover and people leaving the labor force. The smaller the replacement index, the larger the share of job openings due to growth, which in turn implies a need to increase the pace of skill training. Skill gap indexes point to the need to ramp up the scale of skill training while replacement indexes address the pace of training.

By skill type the skill gap indexes show that basic skills are most critical followed by social, complex problem solving, resource management, system, and technical skills. The importance of basic skills generally and for high-demand, high-growth, and high-earning jobs indicates a strong need for training in these skills. The scale of training needs to increase for basic and social skills; the pace of training should be raised for these and also for complex problem solving skills.

Education and Training Issues

Educational attainment in Region 5 is low compared to the state as a whole. About 71 percent of residents age 25 and over have graduated from high school, compared to 75 percent for Alabama. Of the age 25 and over population, 12.5 percent have a bachelor's or higher degree versus 19 percent for the state. Skill and education requirements for jobs keep rising. This highlights a strong need to raise educational attainment in the region.

Table 5.17 shows the number of selected occupations in the region for which a particular education/training category is most common. In general, high-earning occupations require high educational attainment levels. Six high-earning occupations do not require a bachelor's or higher degree. Twenty-five (63 percent) of the 40 high-demand occupations require an associate degree at the minimum and twenty (50 percent) require a bachelor's or higher degree. Eighteen (50 percent) of the 36 fast-growing occupations require an associate degree at the minimum, with fourteen (39 percent) requiring a bachelor's or higher degree.

The 2006 to 2016 occupational projections indicate that future jobs will require postsecondary education and training at a minimum. Job ads are increasingly requiring a high school diploma or GED at a minimum. Of the region's 771 occupations and occupational categories, 89 are expected to decline over the period and education and training for these should slow accordingly.

Table 5.16 Skills Gap Indexes (Base Year 2006 and Projected Year 2016)

Skill	Total Openings (Projected Demand)	Replacement Index	Skills Gap Index
Reading Comprehension	2,305	64	100
Active Listening	2,280	66	97
Critical Thinking	2,110	65	94
Speaking	1,815	64	91
Active Learning	1,845	64	88
Coordination	1,740	66	85
Instructing	1,815	65	82
Writing	1,645	64	79
Social Perceptiveness	1,570	62	76
Monitoring	1,645	66	73
Learning Strategies	1,535	63	70
Time Management	1,490	65	67
Service Orientation	1,270	61	64
Persuasion	1,150	65	61
Complex Problem Solving	1,045	64	58
Identification of Key Causes	1,080	66	55
Mathematics	890	65	52
Equipment Selection	760	68	50
Negotiation	605	67	47
Troubleshooting	560	64	44
Equipment Maintenance	585	67	41
Management of Personnel Resources	560	77	38
Installation	340	71	35
Management of Financial Resources	310	73	32
Repairing	295	68	29
Operation Monitoring	415	71	26
Science	160	59	23
Operations Analysis	180	69	20
Quality Control	255	71	17
Systems Evaluation	145	76	14
Management of Material Resources	180	81	11
Judgment and Decision Making	60	67	8
Technology Design	45	78	5
Operation and Control	355	70	2
Programming	0	0	0

Source: Alabama Department of Industrial Relations.

Table 5.17 Number of Selected Occupations by Education/Training Requirement

Most Common Education/Training Requirements Categories	Selected High-Demand Occupations	Selected Fast-Growing Occupations	Selected High-Earning Occupations
First Professional Degree	1	1	12
Doctoral Degree	1	1	0
Master's Degree	4	4	4
Work Experience Plus a Bachelor's or Higher Degree	2	0	15
Bachelor's Degree	12	8	13
Associate Degree	5	4	1
Postsecondary Vocational Training	3	2	1
Work Experience in a Related Occupation	0	0	3
Long-term On-the-job Training	2	2	0
Moderate-term On-the-job Training	9	9	1
Short-term On-the-job Training	1	5	0

Note: The last three education and training requirements categories are based on the length of time it generally takes an average worker to achieve proficiency for occupations in which postsecondary training is usually not needed for entry. **Long-term** requires more than 12 months on-the-job training that can include up to four years of apprenticeship, formal classroom instruction, and short-term employer-sponsored training. Trainees are generally considered to be employed in the occupation. **Moderate-term** requires one to 12 months on-the-job experience and informal training. **Short-term** requires up to one month on-the-job experience and training.

Source: O*NET Online; Center for Business and Economic Research, The University of Alabama; and Alabama Department of Industrial Relations.

Implications and Recommendations

From a 2006 base, a 741-worker surplus for 2016 and a 12,721-worker shortfall for 2025 are expected (Table 5.18). A focus on worker skills must be a priority through 2016, after which both skills and the expected shortfall must be priorities for 2025. Worker shortfalls for critical occupations will need to be continuously addressed through 2025.

Table 5.18 Expected Jobs Shortfall

	2006-2016	2006-2025
Total population growth (percent)	4.6	8.2
Age 20-64 population growth (percent)	2.7	1.2
Job growth (percent)	2.3	8.6
Worker shortfall (percent)	-0.4	7.3
Worker shortfall (number)	-741	12,721

Source: Center for Business and Economic Research, The University of Alabama.

Employment is critical to economic development and so strategies to address potential skill needs and worker shortfalls must be adopted and implemented. Such strategies should aim at increasing labor force participation, encouraging in-migration, and raising worker productivity and must include: (1) improvements in education and its funding; (2) continuation and enhancement of programs to assess, retrain, and place dislocated workers; (3) focus on hard-to-serve populations (e.g. out-of-school youth); (4) lowering the high school dropout rate; (5) use of economic opportunities to attract new residents; (6) facilitation of in-commuting; and (7) encouragement of older worker participation in the labor force.

Improving education is vital because a highly educated and productive workforce is a critical economic development asset. The educational and training requirements of high-demand, fast-growing, and high-earning occupations show the significance of education in developing the workforce of the future. The importance of basic skills generally and for high-demand, high-growth, and high-earning jobs demonstrates a strong need for training in these skills. The scale of training needs to increase for basic and social skills; the pace of training should be raised for these and also for complex problem solving skills. Ideally, all high school graduates should possess basic skills so that postsecondary and higher education can focus on other and more complex skills while enhancing these basic skills. Employers should be an integral part of planning for training as they can help identify future skill needs and any existing gaps. Education and training for the 26 sharp-declining occupations in Table 5.13 should slow accordingly.

Another very important reason to improve education is that more educated people are more likely to work; data on worker participation and educational attainment show that labor force participation increases with worker education. Productivity also rises with education, which yields high private and social returns. Workforce development must view all of the education and other programs (e.g. adult education, career technical training, worker retraining, career readiness, etc.) as one system. Funding to support workforce development may require tax reform at state and local levels and must provide for flexibility as workforce needs change over time and demand different priorities.

Programs to assess, retrain, and place dislocated workers—especially those affected by outsourcing and structural changes in the economy—should be continued and enhanced because they can improve the labor force participation rate. Hard-to-serve populations include persons in poverty, those receiving welfare, those in sparsely populated areas, and those on active parole. These populations are often outside of the mainstream economy and are in poverty. They usually have difficulty finding work because they have low levels of educational attainment, lack occupational skills, or face geographic or other barriers. They are a potential human resource, but investment in training, transportation, child care, infrastructure, etc. may be needed to tap this resource.

In-migration is one way of growing the labor force as it helps population growth. The region's population growth rate is low and may hinder the ability to meet the expected job demand barring future economic slowdowns. Higher employment demand could be partially served by in-commuting. However, new residents can be attracted using higher-paying job opportunities from economic development successes. Investment in amenities and infrastructure may be needed to support such growth. In-migration is generally more beneficial than in-commuting since it grows the economy faster and adds to the tax base.

Policies that facilitate and encourage older worker participation are needed as older workers can help meet the region's workforce challenge. Such policies can be related to income taxation, job flexibility, and retirement programs. As the share of older people in the population is projected to increase (see Table 5.5), it becomes even more important that they be active in the workforce. Older worker participation has been rising nationally since the early 1990s. This has been attributed to reasons including:

- Older workers can work longer because they are healthier
- The number of physically demanding jobs is falling
- Defined contribution plans are replacing pensions
- There are fewer employer-paid retiree health insurance programs
- Social security reforms affecting those born after 1938 (i) gradually raise the normal retirement age from 65 to 67, (ii) increase the rate at which monthly payments rise with delayed benefits, and (iii) eliminate the reduction in benefits for those working beyond the full retirement age.

Diversifying the region's economy will strengthen it. This demands that economic development also focus on retaining, expanding, and attracting businesses that provide more high-earning jobs. Current workers—including the underemployed—would welcome higher-earning opportunities. An economic development focus on diversification would require that workforce development pay attention to postsecondary and higher educational systems to ensure a ready and available workforce for new and expanding businesses. The higher incomes earned by graduates of these institutions would help raise personal income for the region and provide additional local (county and city) tax revenue. Raising personal income by improving educational attainment and technological skills for a region that has low population and labor force growth rates is an effective economic development strategy. Together, workforce development and economic development can build a strong, well-diversified Region 5 economy. Indeed, one cannot achieve success without the other.