

# State of the Workforce Report IV: Region 3

Funding for this project  
was provided by

## ADECA

Alabama Department of Economic  
and Community Affairs



Alabama Department of  
Industrial Relations



Alabama Department of  
Postsecondary Education



Alabama Industrial Development Training



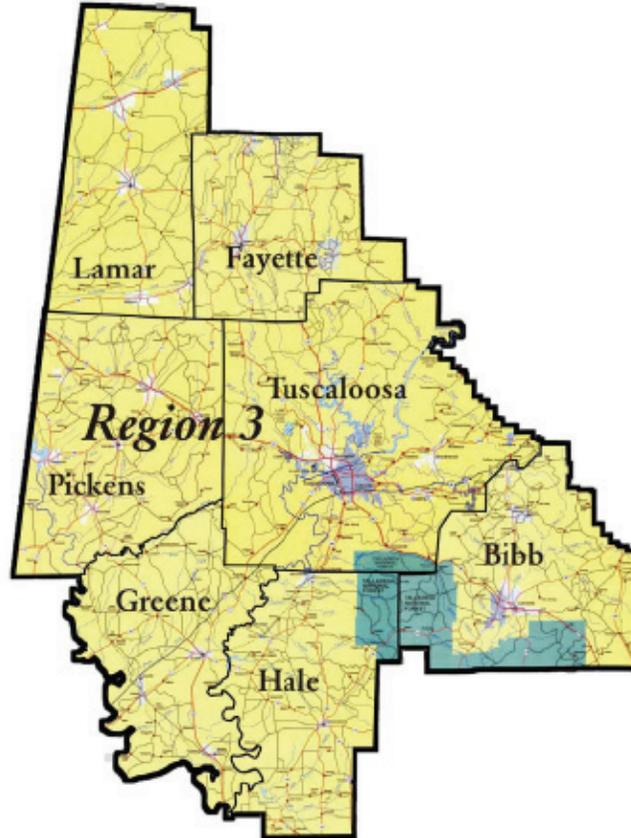
A SOUTHERN COMPANY  
Alabama Power Company



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**







## 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 provide 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

<b>Acknowledgments</b>	iii
<b>Summary</b>	vii
<b>Workforce Supply</b>	1
Labor Force Activity	1
Commuting Patterns	2
Population	4
Per Capita Income	5
Educational Attainment	5
Underemployment and Available Labor	6
<b>Workforce Demand</b>	10
Industry Mix	10
Job Creation and Net Job Flows	11
High-Demand, Fast-Growing, High-Earning, and Sharp-Declining Occupations	12
Skills and Skills Gap Analyses	16
Education and Training Issues	19
<b>Implications and Recommendations</b>	22



## Summary

- This report analyzes workforce supply and demand issues using available metrics of workforce characteristics for Workforce Development Region 3 and presents implications and recommendations.
- Region 3 had a 9.1 percent unemployment rate in May 2009, with 11,475 unemployed. An underemployment rate of 23.9 percent for 2009 means that the region has a 38,932-strong available labor pool that includes 27,457 underemployed workers who are looking for better jobs and are willing to commute farther and longer for such jobs.
- More job opportunities reduced net out-commuting from 8,563 in 2000 to 124 in 2006, but increased commuting within the region and higher in- and out-commuting levels are worsening congestion, which could slow economic development. This implies that continuous maintenance and development of transportation infrastructure and systems is important.
- By sector, the top five employers in the region are manufacturing; health care and social assistance; retail trade; educational services; and accommodation and food services. In the third quarter of 2008 these five industries provided 66,265 jobs, 63 percent of the regional total. Two leading employers had higher wages than the region's \$3,178 monthly average. Economic development should continue to diversify and strengthen the region's economy by retaining, expanding, and attracting more high-wage providing industries. Workforce development should also focus on preparing workers for these industries.
- On average 5,359 jobs were created per quarter from second quarter 2001 to third quarter 2008; quarterly net job flows averaged 607. 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; Retail Salespersons; Truck Drivers, Heavy and Tractor-Trailer; Registered Nurses; and Elementary School Teachers, Except Special Education.
- The top five fast-growing occupations are Network Systems and Data Communications Analysts; Industrial Engineers; Home Health Aides; Bill and Account Collectors; and Electrical Power-Line Installers and Repairers.
- The top 50 high-earning occupations are in management, engineering, health, legal, computer, and business fields and have a minimum salary of \$62,071. Five of the top 10 are health occupations.
- Of the top 40 high-demand, the top 34 fast-growing, and 50 high-earning occupations, three belong to all three categories: Physical Therapists; Electrical Engineers; and Industrial Engineers. Nine occupations are both high-demand and high-earning. Twenty-nine occupations are both high-demand and fast-growing.

- Of the region's 777 occupations and occupational categories, 52 are expected to decline over the 2006 to 2016 period, with 27 occupations expected to sharply decline by at least 10 percent and lose a minimum of 10 jobs each. Education and training for these 27 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 future 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. For Region 3 the pace of training needs to increase for technical and resource management skills. The scale of training should be raised for basic and social 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 worker surplus of almost 3,500 for 2016 and a worker shortfall of about 8,700 for 2025 are expected. This will demand a focus on worker skills through 2016, after which both skills and the expected shortfall must be priorities for 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) use of economic opportunities to attract new residents; (3) focus on hard-to-serve populations (e.g. out-of-school youth); (4) lowering the high school dropout rate; (5) continuation and enhancement of programs to assess, retrain, and place dislocated workers; (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) more 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 and also promote 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 important, especially for a region that has below-average population and labor force growth rates.
- Together, workforce development and economic development can build a strong, well-diversified Region 3 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 3.1 shows labor force information for Region 3 and its seven counties for 2008 and for May 2009.<sup>1</sup>

**Table 3.1 Region 3 Labor Force Information**

	<b>2008</b>			
	Labor Force	Employed	Unemployed	Rate (%)
Bibb	8,715	8,266	449	5.2
Fayette	7,063	6,607	456	6.5
Greene	3,277	3,029	248	7.6
Hale	6,961	6,503	458	6.6
Lamar	5,617	5,208	409	7.3
Pickens	7,834	7,330	504	6.4
Tuscaloosa	88,491	84,788	3,703	4.2
Region 3	127,958	121,731	6,227	4.9
Alabama	2,162,479	2,053,502	108,977	5.0
United States	154,287,000	145,362,000	8,924,000	5.8
	<b>May 2009</b>			
	Labor Force	Employed	Unemployed	Rate (%)
Bibb	8,724	7,757	966	11.1
Fayette	6,923	6,139	783	11.3
Greene	3,223	2,859	364	11.3
Hale	6,904	6,138	766	11.1
Lamar	5,649	4,887	761	13.5
Pickens	7,844	6,981	863	11.0
Tuscaloosa	86,997	80,025	6,972	8.0
Region 3	126,264	114,786	11,475	9.1
Alabama	2,124,766	1,938,686	186,081	8.8
United States	153,830,000	140,265,000	13,565,000	8.8

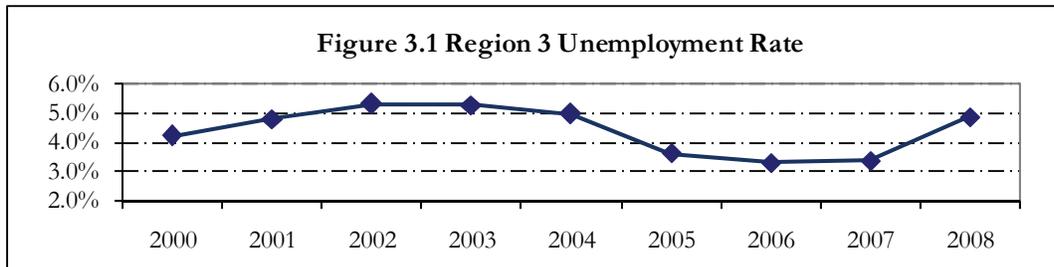
Source: Alabama Department of Industrial Relations and U.S. Bureau of Labor Statistics.

The recession that began in December 2007 has increased the number of unemployed and raised county unemployment rates from a range of 4.2 percent to 7.6 percent for 2008 (4.9 percent for the region) to between 8.0 percent and 13.5 percent in May 2009, with 9.1 percent for the region. The unemployment rate was lowest in Tuscaloosa County and highest in Lamar; Tuscaloosa was the only county with an unemployment rate below Alabama's 8.8 percent.

Annual unemployment rates for 2000 to 2008 are shown in Figure 3.1. The region's unemployment rates were low before the 2001 and the most recent recession. The 2002 and 2003 highs of 5.3 percent were due to the effects of the recession of 2001, but employment gains since then resulting from

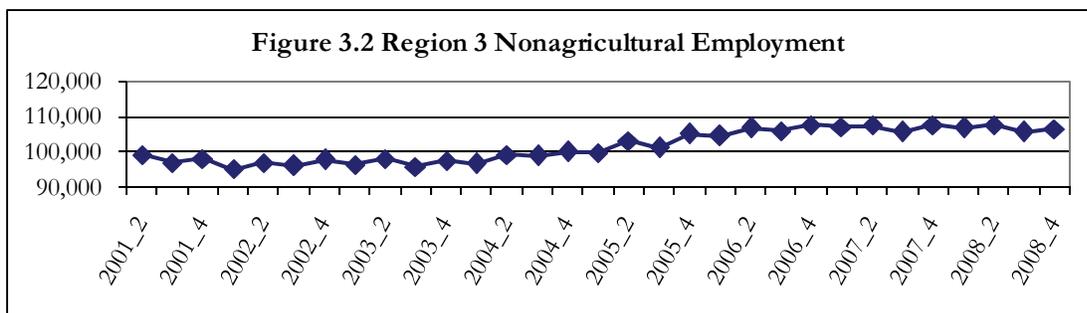
<sup>1</sup> Alabama labor force information is available from the Labor Market Information (LMI) Division of the Alabama Department of Industrial Relations. LMI compiles data in cooperation with the U.S. Bureau of Labor Statistics.

successful state and local economic development efforts reduced unemployment to record lows in 2006 and 2007. Year-to-date monthly labor force data point to a higher regional unemployment rate for 2009 than the 4.9 percent of 2008. Despite strong ongoing economic development efforts, the latest recession is expected to keep unemployment high for a few more years.



Source: Alabama Department of Industrial Relations.

Nonagricultural employment of the region's residents averaged 101,752 quarterly from the second quarter of 2001 to the fourth quarter of 2008 (Figure 3.2). The number of jobs slipped in the second half of 2008 after reaching a peak of 107,818 in the second quarter.



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

Table 3.2 shows worker distribution by age in Region 3 for the second quarter of 2007. The region's workforce is younger than the state's. Older workers, age 45 and over, are 38.3 percent of the region's nonagricultural employment versus 39.9 percent for the state. Those who are age 65 and over constitute 3.4 percent of nonagricultural employment compared to 3.7 percent for Alabama. Even so, labor force participation of younger residents must increase to meet long term occupational projections for growth and replacement; else older workers may have to work longer.

### Commuting Patterns

In 2000 about 8,560 more residents commuted out of the region for work than commuted in (Table 3.3). By 2006, commuting had more than doubled, but net outflow had shrunk to just 124 due to economic development successes. There is significant commuting inside the region as well. Table 3.3 shows that the one-way average commute time and distance for workers rose in 2009. Rising commute time and distance and more people traveling to work suggest that congestion in the region is worsening. Thus, regional transportation infrastructure and systems must be maintained and developed to ensure that the flow of goods and movement of workers are not interrupted. Congestion can impede this mobility and slow economic development.

**Table 3.2 Workers by Age Group Q3 2008**

	Nonagricultural Employment	
	Number	Percent
14-19	3,022	2.9
19-24	14,065	13.3
25-34	23,889	22.6
35-44	24,213	22.9
45-54	23,744	22.5
55-64	13,166	12.5
65+	3,595	3.4
45 and over total	40,505	38.3
Total all ages	105,692	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.

**Table 3.3 Commuting Patterns**

Area	Inflow, 2000			Outflow, 2000	
	Number	Percent		Number	Percent
Bibb	788	10.2		3,460	21.3
Fayette	578	7.5		1,715	10.5
Greene	184	2.4		626	3.8
Hale	455	5.9		808	5.0
Lamar	831	10.8		1,658	10.2
Pickens	326	4.2		1,326	8.2
Tuscaloosa	4,544	59.0		6,676	41.0
Region 3	7,706	100.0		16,269	100.0
<b>Inflow, 2006</b>					
	Number	Percent		Number	Percent
Region 3	27,659	100.0		27,783	100.0
<b>Outflow, 2006</b>					
<b>Percent of workers</b>					
<b>Average commute time (one-way)</b>	<b>2004</b>	<b>2005/2006</b>	<b>2008</b>	<b>2009</b>	
Less than 20 minutes	53.3	50.7	50.3	47.9	
20 to 40 minutes	24.8	28.2	29.4	27.7	
40 minutes to an hour	15.4	15.1	14.3	14.9	
More than an hour	2.9	3.0	3.7	2.1	
<b>Average commute distance (one-way)</b>	<b>2004</b>	<b>2005/2006</b>	<b>2008</b>	<b>2009</b>	
Less than 10 miles	43.8	42.9	42.5	39.8	
10 to 25 miles	26.3	25.2	27.0	31.8	
25 to 45 miles	19.0	21.6	20.4	18.2	
More than 45 miles	6.3	6.9	8.9	6.8	

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.

## Population

The 2008 Region 3 population of 279,904 is 4.4 percent more than was recorded for 2000 (Table 3.4). Population grew in three counties and shrank in four. The region's population is projected to grow 7.0 percent in this decade to about 287,000 by 2010. Population growth will be fastest in Tuscaloosa County. Fayette, Greene, Lamar, and Pickens counties are expected to lose residents.

**Table 3.4 Region 3 Population**

	1990 Census	2000 Census	2008 Estimate	% Change 2000-2008	2010 Projected	% Change 2000-2010
Bibb	16,576	20,826	21,629	3.9	22,551	8.3
Fayette	17,962	18,495	17,691	-4.3	17,803	-3.7
Greene	10,153	9,974	9,172	-8.0	9,168	-8.1
Hale	15,498	17,185	18,145	5.6	18,524	7.8
Lamar	15,715	15,904	14,295	-10.1	14,408	-9.4
Pickens	20,699	20,949	19,524	-6.8	19,653	-6.2
Tuscaloosa	150,522	164,875	179,448	8.8	184,785	12.1
Region 3	247,125	268,208	279,904	4.4	286,892	7.0
Alabama	4,040,587	4,447,100	4,661,900	4.8	4,768,769	7.2
U.S.	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 3.5 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. Growth of the prime working age group (20-64) and youth (0-19) will therefore lag that of the total population and pose 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.

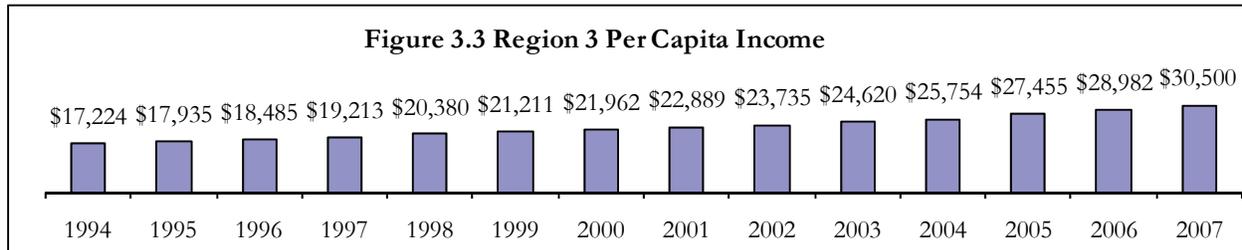
**Table 3.5 Population by Age Group (2000-2006) and Projections**

Age Group	2000	2006	2016	2025
0-19	76,831	75,589	76,997	79,379
20-24	25,257	27,049	28,008	27,322
25-29	18,834	18,143	20,030	20,678
30-34	17,275	17,185	18,727	19,700
35-39	18,707	17,142	17,213	18,669
40-44	19,689	18,609	17,930	19,238
45-49	18,729	19,635	18,066	17,434
50-54	16,247	19,094	19,489	18,635
55-59	12,442	16,457	20,096	18,086
60-64	10,636	12,512	18,479	18,865
65+	33,561	34,207	42,470	54,522
<b>20-64 Total</b>	<b>157,816</b>	<b>165,826</b>	<b>178,038</b>	<b>178,627</b>
<b>Total Population</b>	<b>268,208</b>	<b>275,623</b>	<b>297,505</b>	<b>312,528</b>
<i>Change from 2006</i>				
0-19			1.9%	5.0%
20-64			7.4%	7.7%
Total Population			7.9%	13.4%

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 3 was at \$30,500 in 2007 (Figure 3.3), up 77 percent from 1994, and \$1,919 below the state average of \$32,419. Tuscaloosa County had the highest PCI with \$33,916 and was the only county to exceed Alabama's. Hale County had the lowest with \$22,649.



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

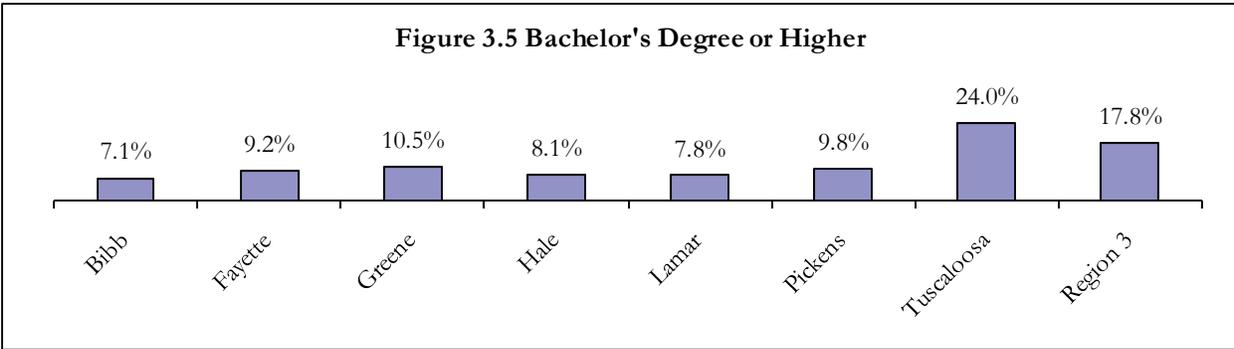
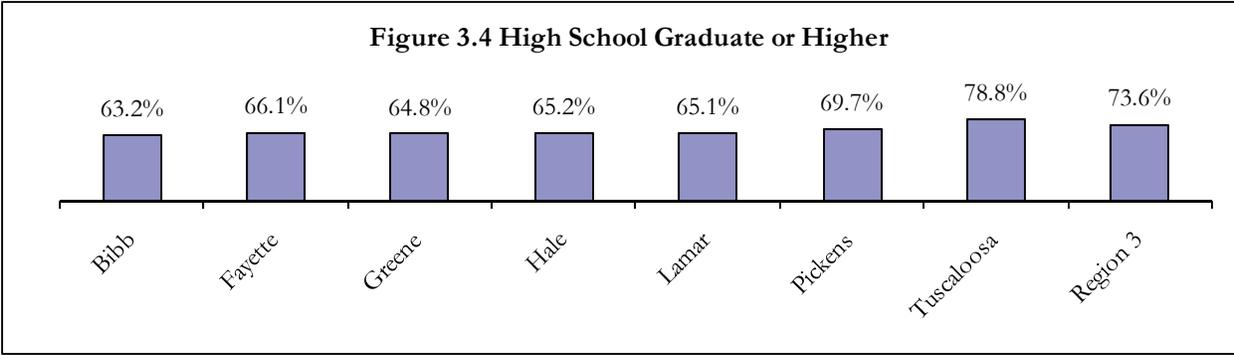
## Educational Attainment

Educational attainment in 2000 of Region 3 residents who were 25 years old and over is shown in Table 3.6 and Figures 3.4 and 3.5. Almost 74 percent graduated from high school and nearly 18 percent held a bachelor's or higher degree. Tuscaloosa County has higher educational attainment than the other six counties and the state as a whole. Educational attainment is important as skills rise with education and high-wage jobs for the 21st century demand more skill sets.

**Table 3.6 Educational Attainment in 2000, Population 25 Years and Over**

	Bibb	Fayette	Greene	Hale	Lamar	Pickens	Tuscaloosa	Region 3
Total	13,540	12,579	6,204	10,591	10,758	13,536	99,039	166,247
No schooling completed	261	177	239	258	107	283	1,402	2,727
Nursery to 4th grade	137	209	183	147	94	182	712	1,664
5th and 6th grade	484	395	249	359	340	399	1,380	3,606
7th and 8th grade	901	918	284	648	876	646	2,924	7,197
9th grade	862	793	284	510	632	583	3,005	6,669
10th grade	915	742	316	603	847	745	3,908	8,076
11th grade	648	540	305	525	442	620	3,812	6,892
12th grade, no diploma	776	491	322	633	421	650	3,838	7,131
High school graduate/equivalent	4,838	4,404	2,165	3,803	4,036	5,110	28,115	52,471
Some college, less than 1 year	718	829	266	631	646	672	6,177	9,939
Some college, 1+ years, no degree	1,355	1,344	734	1,094	956	1,612	14,597	21,692
Associate degree	683	580	205	522	523	711	5,365	8,589
Bachelor's degree	551	723	457	541	583	873	14,193	17,921
Master's degree	322	326	169	229	232	367	6,271	7,916
Professional school degree	67	79	21	62	23	71	1,586	1,909
Doctorate degree	22	29	5	26	0	12	1,754	1,848

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 3 had an underemployment rate of 23.9 percent in 2009. Applying this rate to May 2009 labor force data means that 27,457 employed residents were underemployed (Table 3.7). Adding the unemployed gives a total available labor pool of 38,932 for the region. This is 3.4 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 19.6 percent for Hale County to 30.3 percent for Tuscaloosa. Greene County had the smallest available labor pool and Tuscaloosa had the largest.

**Table 3.7 Underemployed and Available Labor by County**

	<u>Region 3</u>	<u>Bibb</u>	<u>Fayette</u>	<u>Greene</u>	<u>Hale</u>	<u>Lamar</u>	<u>Pickens</u>	<u>Tuscaloosa</u>
Labor Force	126,264	8,724	6,923	3,223	6,904	5,649	7,844	86,997
Employed	114,786	7,757	6,139	2,859	6,138	4,887	6,981	80,025
Underemployment rate	23.9%	22.0%	25.9%	20.7%	19.6%	25.9%	20.0%	30.3%
Underemployed workers	27,457	1,707	1,592	592	1,204	1,267	1,396	24,216
Unemployed	11,475	966	783	364	766	761	863	6,972
<b>Available labor pool</b>	<b>38,932</b>	<b>2,673</b>	<b>2,375</b>	<b>956</b>	<b>1,970</b>	<b>2,028</b>	<b>2,259</b>	<b>31,188</b>

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.

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 838 complete responses were obtained from Region 3. About 47 percent (393 respondents) were employed, of whom 94 stated that they were underemployed. A lack of job opportunities in their area, low wages at available jobs, living too far from jobs, and child care responsibilities are the primary reasons given for being underemployed. Ongoing economic development efforts can help in this regard. Nonworkers cite retirement and disability or other health concerns as the main reasons for their status, but some also cite a lack of job opportunities in their area and living too far from jobs as additional major reasons. Such workers may become part of the labor force if their problems can be addressed.

A comparison of underemployed workers to the overall workforce in Region 3 shows that:

- Fewer work full-time and more of the part-timers would like to work full-time.
- More hold multiple jobs.

- They commute slightly longer and farther.
- More are nurses or hotel and restaurant help.
- More are in retail and wholesale trade industries and healthcare, business, hotel, restaurant and household services.
- 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.
- More are willing to commute longer and farther for a better job.
- Fewer are satisfied with their current jobs.
- More are willing to train for a better job even if they have to pay part of the cost.
- More have sought better jobs in the preceding quarter.
- They are younger and have lower educational attainment.
- Fewer are married, male, or white.
- More are Hispanic.

Table 3.8 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 (73.1 percent) are satisfied or completely satisfied with their jobs. Workers are most satisfied with their work and least satisfied with the earnings they receive. Clearly, fewer underemployed workers are satisfied with their jobs (53.2 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 (80 percent vs. 65 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 3.8 Job Satisfaction and Willingness to Train (Percent)**

<b>Job Satisfaction</b>						
		Completely Dissatisfied	Dissatisfied	Neutral	Satisfied	Completely Satisfied
<b>Employed</b>						
Overall		2.8	6.1	18.1	24.7	48.4
	Earnings	10.7	9.9	25.5	23.9	30.0
	Retention	7.4	5.1	11.7	19.6	55.5
	Work	1.8	2.3	7.4	26.7	61.8
	Hours	6.4	3.6	9.7	21.4	59.0
	Shift	4.1	2.5	7.4	18.3	67.2
	Conditions	3.1	5.3	13.5	28.5	49.6
	Commuting Distance	5.9	7.9	12.0	14.0	60.1
<b>Underemployed</b>						
Overall		7.5	12.8	26.6	17.0	36.2
	Earnings	24.5	20.2	22.3	14.9	18.1
	Retention	16.0	8.5	13.8	18.1	43.6
	Work	4.3	4.3	12.8	22.3	56.4
	Hours	14.9	4.3	13.8	22.3	44.7
	Shift	8.5	5.3	6.4	18.1	61.7
	Conditions	5.3	10.6	7.5	34.0	42.6
	Commuting Distance	5.3	8.5	17.0	17.0	51.1
<b>Willingness to Train</b>						
		Completely Unwilling	Unwilling	Neutral	Willing	Completely Willing
<b>Employed</b>						
For a new or better job		15.4	3.4	16.4	13.0	51.9
	If paid by trainee	43.6	19.0	16.9	9.3	9.7
	If paid by trainee and government	8.1	8.5	31.5	27.0	23.4
	If paid by government	2.8	1.6	6.9	14.5	73.0
<b>Underemployed</b>						
For a new or better job		11.9	0.0	8.3	13.1	66.7
	If paid by trainee	33.8	21.6	21.6	10.8	9.5
	If paid by trainee and government	5.4	8.1	24.3	33.8	27.0
	If paid by government	0.0	1.4	2.7	14.9	79.7

Note: Rounding errors may be present.

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

## Workforce Demand

### Industry Mix

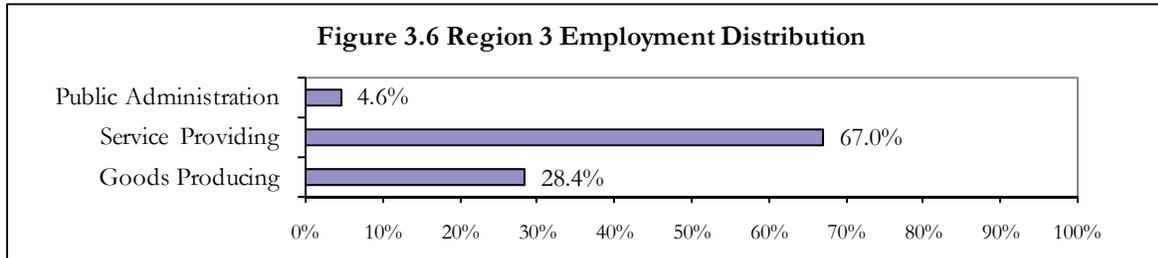
The manufacturing sector was the leading employer with 19,726 jobs in the third quarter of 2008 (Table 3.9). Rounding out the top five industries by employment are health care and social assistance; retail trade; educational services; and accommodation and food services. These five industries provided 66,265 jobs, 62.7 percent of the regional total. The average monthly wage across all industries in the region was \$3,178; two leading employers, manufacturing and healthcare and social assistance, paid more. New hire monthly earnings averaged \$1,896, about 60 percent of the region's average monthly wage. The highest average monthly wages were for mining at \$5,087, manufacturing \$4,359, and utilities \$4,157. Accommodation and food services paid the least at \$1,167. Mining had the highest average monthly new hire wages with \$4,162, followed by utilities at \$3,705, and manufacturing with \$3,032. Accommodation and food services paid newly hired workers the least, \$843.

**Table 3.9 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	1,124	1.06%	18	\$2,652	\$2,124
21 Mining	2,341	2.21%	14	\$5,087	\$4,162
22 Utilities	405	0.38%	19	\$4,157	\$3,705
23 Construction	6,788	6.42%	6	\$3,168	\$2,450
31-33 Manufacturing	19,726	18.66%	1	\$4,359	\$3,032
42 Wholesale Trade	2,521	2.39%	12	\$4,038	\$2,938
44-45 Retail Trade	12,092	11.44%	3	\$2,108	\$1,286
48-49 Transportation and Warehousing	3,127	2.96%	10	\$3,349	\$2,878
51 Information	1,147	1.09%	17	\$3,433	\$2,255
52 Finance and Insurance	2,609	2.47%	11	\$3,535	\$2,371
53 Real Estate and Rental and Leasing	1,763	1.67%	15	\$2,458	\$1,655
54 Professional, Scientific, and Technical Services	3,384	3.20%	9	\$3,710	\$2,451
55 Management of Companies and Enterprises	399	0.38%	20	\$3,594	\$1,767
56 Administrative and Support and Waste Management and Remediation Services	5,135	4.86%	7	\$1,984	\$1,471
61 Educational Services	11,050	10.46%	4	\$3,488	\$2,053
62 Health Care and Social Assistance	14,433	13.66%	2	\$2,980	\$2,052
71 Arts, Entertainment, and Recreation	1,460	1.38%	16	\$2,183	\$1,248
72 Accommodation and Food Services	8,964	8.48%	5	\$1,167	\$843
81 Other Services (Except Public Administration)	2,371	2.24%	13	\$2,042	\$1,352
92 Public Administration	4,851	4.59%	8	\$3,306	\$1,912
<b>ALL INDUSTRIES</b>	<b>105,692</b>	<b>100.00%</b>		<b>\$3,178</b>	<b>\$1,896</b>

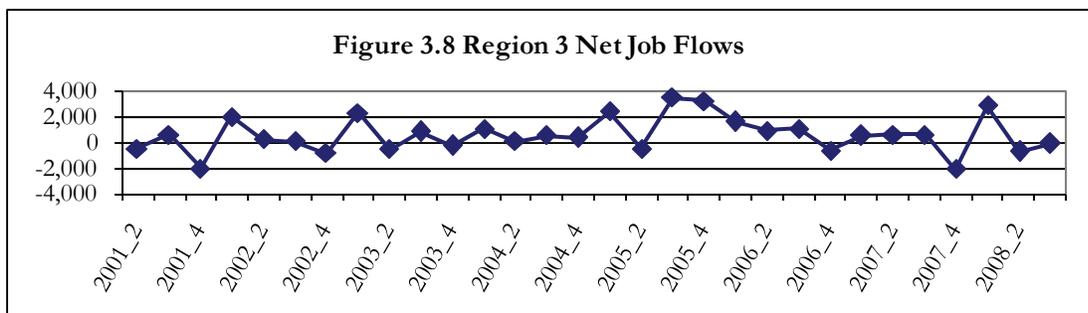
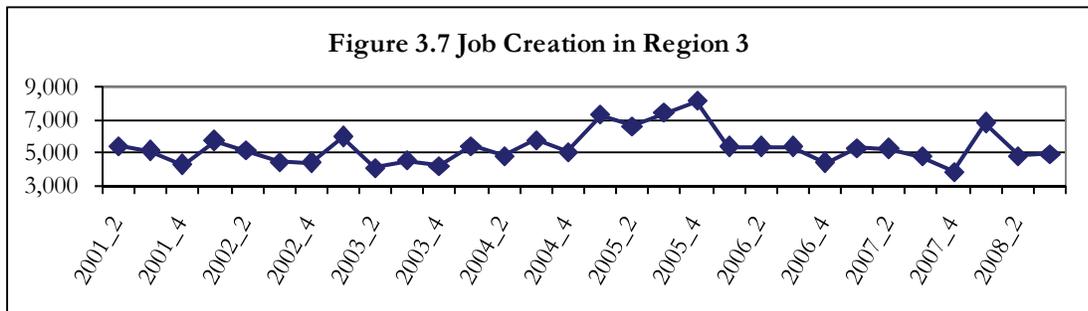
Source: Alabama Department of Industrial Relations and U.S. Census Bureau.

By broad industry classification, service providing industries generated 67 percent of jobs in third quarter 2008 (Figure 3.6). Goods producing industries were next with 28.4 percent and public administration accounted for 4.6 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, 5,359 jobs were created per quarter from second quarter 2001 to third quarter 2008 (Figure 3.7); quarterly net job flows averaged 607 (Figure 3.8). Both job creation and net job flows were up strongly in the latter half of 2005, but have not been generally very encouraging since, except for a jump in first quarter 2008. Quarterly net job flows fluctuate considerably and have ranged from a loss of 2,067 to a gain of 3,531. 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 777 occupations and occupational categories in the region, 662 are single occupations. Table 3.10 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 the five largest employment sectors identified earlier (Table 3.9): manufacturing; health care and social assistance; educational services; retail trade; and accommodation and food services. Thus, these sectors will continue to dominate employment in the region.

The top five high-demand occupations are Team Assemblers; Retail Salespersons; Truck Drivers, Heavy and Tractor-Trailer; Registered Nurses; and Elementary School Teachers, Except Special Education. Twenty-nine of the high-demand occupations are also fast-growing. This means that these 29 occupations have a minimum annual growth rate of 2.26 percent, much faster than the regional and state occupational growth rates of 1.35 percent and 1.38 percent, respectively.

The 34 fastest growing occupations ranked by projected growth of employment are listed in Table 3.11. Most of these occupations are related to health, educational services, and manufacturing industries. The top five fast-growing occupations are Network Systems and Data Communications Analysts; Industrial Engineers; Home Health Aides; Bill and Account Collectors; and Electrical Power-Line Installers and Repairers.

Table 3.12 shows the 50 selected highest earning occupations in the region. These occupations are mainly in management, engineering, health, legal, computer, and business fields. Five 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. Nine occupations are both high-earning and in high-demand (Table 3.10). The following three occupations are in high-demand, fast-growing, and high-earning:

1. Physical Therapists
2. Electrical Engineers
3. Industrial Engineers

Of the region's 777 occupations and occupational categories, 52 are expected to decline over the 2006 to 2016 period. Employment in the 27 sharpest-declining occupations will fall by at least 10 percent, with each losing a minimum of 10 jobs over the period (Table 3.13). 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 3.10 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 *	275	170	105
Retail Salespersons	150	65	85
Truck Drivers, Heavy and Tractor-Trailer *	115	70	45
Registered Nurses *	105	65	40
Elementary School Teachers, Except Special Education	50	25	25
Home Health Aides *	45	40	5
Accountants and Auditors	30	15	15
Pharmacy Technicians *	20	10	10
Bill and Account Collectors *	20	15	5
Electrical Power-Line Installers and Repairers *	20	10	10
<b>Industrial Engineers *</b>	<b>15</b>	<b>10</b>	<b>5</b>
Clergy *	15	10	5
Social and Human Service Assistants *	15	10	5
Fitness Trainers and Aerobics Instructors *	15	10	5
Medical Assistants *	15	10	5
<b>Pharmacists</b>	<b>10</b>	<b>5</b>	<b>5</b>
<b>Mechanical Engineers</b>	<b>10</b>	<b>5</b>	<b>5</b>
<b>Education Administrators, Postsecondary</b>	<b>10</b>	<b>5</b>	<b>5</b>
<b>Electrical Engineers *</b>	<b>10</b>	<b>5</b>	<b>5</b>
<b>Loan Officers</b>	<b>10</b>	<b>5</b>	<b>5</b>
<b>Computer Systems Analysts</b>	<b>10</b>	<b>5</b>	<b>5</b>
Coaches and Scouts	10	5	5
Special Education Teachers, Preschool, Kindergarten, and Elementary School *	10	5	5
Dental Hygienists *	10	5	5
Medical and Public Health Social Workers *	10	5	5
Mobile Heavy Equipment Mechanics, Except Engines *	10	5	5
Medical Records and Health Information Technicians *	10	5	5
Nonfarm Animal Caretakers *	10	5	5
Amusement and Recreation Attendants *	10	5	5
<b>Medical and Health Services Managers</b>	<b>5</b>	<b>5</b>	<b>0</b>
<b>Physical Therapists *</b>	<b>5</b>	<b>5</b>	<b>0</b>
Network Systems and Data Communications Analysts *	5	5	0
Cost Estimators *	5	5	0
Mental Health and Substance Abuse Social Workers *	5	5	0
Advertising Sales Agents *	5	5	0
English Language and Literature Teachers, Postsecondary *	5	5	0
Education Teachers, Postsecondary *	5	5	0
Art, Drama, and Music Teachers, Postsecondary	5	5	0
Business Teachers, Postsecondary *	5	5	0
Engineering Teachers, Postsecondary *	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 3.11 Selected Fast-Growing Occupations (Base Year 2006 and Projected Year 2016)**

Occupation	Employment		Percent Change	Annual Growth (Percent)	Average Annual Job Openings
	2006	2016			
Network Systems and Data Communications Analysts *	100	160	60	4.81	5
<b>Industrial Engineers *</b>	<b>220</b>	<b>330</b>	<b>50</b>	<b>4.14</b>	<b>15</b>
Home Health Aides *	810	1,190	47	3.92	45
Bill and Account Collectors *	350	510	46	3.84	20
Electrical Power-Line Installers and Repairers *	240	340	42	3.54	20
Fitness Trainers and Aerobics Instructors *	270	380	41	3.48	15
Nonfarm Animal Caretakers *	160	220	38	3.24	10
English Language and Literature Teachers, Postsecondary *	80	110	38	3.24	5
Medical Assistants *	220	300	36	3.15	15
Amusement and Recreation Attendants *	110	150	36	3.15	10
Tire Repairers and Changers	110	150	36	3.15	5
Team Assemblers *	4,980	6,700	35	3.01	275
Education Teachers, Postsecondary *	120	160	33	2.92	5
Dental Hygienists *	130	170	31	2.72	10
Business Teachers, Postsecondary *	100	130	30	2.66	5
Pharmacy Technicians *	320	410	28	2.51	20
Registered Nurses *	2,290	2,920	28	2.46	105
Clergy *	400	510	28	2.46	15
Mental Health and Substance Abuse Social Workers *	110	140	27	2.44	5
Advertising Sales Agents *	110	140	27	2.44	5
Engineering Teachers, Postsecondary *	110	140	27	2.44	5
Truck Drivers, Heavy and Tractor-Trailer *	2,560	3,250	27	2.42	115
Preschool Teachers, Except Special Education	560	710	27	2.40	25
<b>Electrical Engineers *</b>	<b>150</b>	<b>190</b>	<b>27</b>	<b>2.39</b>	<b>10</b>
Medical Records and Health Information Technicians *	190	240	26	2.36	10
Data Entry Keyers	190	240	26	2.36	10
Social and Human Service Assistants *	310	390	26	2.32	15
Special Education Teachers, Preschool, Kindergarten, and Elementary School *	240	300	25	2.26	10
Medical and Public Health Social Workers *	120	150	25	2.26	10
Mobile Heavy Equipment Mechanics, Except Engines *	200	250	25	2.26	10
<b>Physical Therapists *</b>	<b>120</b>	<b>150</b>	<b>25</b>	<b>2.26</b>	<b>5</b>
Cost Estimators *	120	150	25	2.26	5
Drywall and Ceiling Tile Installers	120	150	25	2.26	5
Service Station Attendants	80	100	25	2.26	5

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.

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

**Table 3.12 Selected High-Earning Occupations (Base Year 2006 and Projected Year 2016)**

Occupation	Employment		Annual Growth (Percent)	Average Annual Job Openings	Mean Annual Salary (\$)
	2006	2016			
Internists, General	70	80	1.34	0	206,398
Physicians and Surgeons, All Other	110	130	1.68	0	190,232
Psychiatrists	50	60	1.84	0	175,105
Chief Executives	230	240	0.43	5	158,790
Securities, Commodities, & Fin.l Services Sales Agents	40	50	2.26	0	108,300
Dentists, General	160	170	0.61	5	105,652
Sales Managers	130	150	1.44	5	105,530
Management Analysts	170	190	1.12	5	104,489
Pharmacists *	280	330	1.66	10	104,214
Lawyers	370	430	1.51	10	97,270
Family and General Practitioners	120	140	1.55	0	95,906
Financial Managers	320	360	1.18	10	93,430
Marketing Managers	50	60	1.84	0	91,766
Petroleum Engineers	NA	NA	0.00	0	89,487
Engineering Managers	90	100	1.06	0	89,450
Medical and Health Services Managers *	130	160	2.10	5	87,952
Mining and Geological Engineers, Inc. Mining Safety Engr.	40	40	0.00	0	86,365
Industrial Production Managers	190	220	1.48	10	86,266
General and Operations Managers	1,600	1,650	0.31	45	84,281
Mechanical Engineers *	230	280	1.99	10	83,689
Education Administrators, Postsecondary *	260	320	2.10	10	82,231
Sales Rep., Wholesale & Mfg., Tech. and Scien. Prod.	160	160	0.00	5	79,019
Environmental Engineers	30	30	0.00	0	77,604
Human Resources Managers, All Other	40	40	0.00	0	76,634
<b>Physical Therapists *</b>	<b>NA</b>	<b>NA</b>	<b>2.26</b>	<b>5</b>	<b>75,458</b>
Computer Software Engineers, Systems Software	10	20	7.18	0	75,167
Education Administrators, Elementary and Sec. School	180	200	1.06	5	74,029
Engineers, All Other	170	270	4.73	10	73,997
Computer and Information Systems Managers	70	80	1.34	0	73,446
Transportation, Storage, and Distribution Managers	40	40	0.00	0	72,516
<b>Electrical Engineers *</b>	<b>150</b>	<b>190</b>	<b>2.39</b>	<b>10</b>	<b>72,333</b>
Purchasing Managers	30	40	2.92	0	71,641
<b>Industrial Engineers *</b>	<b>220</b>	<b>330</b>	<b>4.14</b>	<b>15</b>	<b>71,075</b>
Construction Managers	480	540	1.18	15	70,349
Architects, Except Landscape and Naval	50	60	1.84	0	69,077
Computer Programmers	130	120	-0.80	5	68,903
First-Line Supervisors/Mgr. of Non-Retail Sales Workers	310	330	0.63	5	68,657
Market Research Analysts	90	90	0.00	0	67,754
Judges, Magistrate Judges, and Magistrates	20	20	0.00	0	67,326
Managers, All Other	630	680	0.77	20	66,516
Computer Systems Analysts *	130	160	2.10	10	66,028
Public Relations Managers	80	90	1.18	0	65,980
Precision Instrument and Equipment Repairers, All Other	NA	NA	-2.21	5	65,636
Veterinarians	50	70	3.42	0	65,169
Financial Analysts	30	30	0.00	0	64,526
Civil Engineers	240	270	1.18	10	64,099
Health & Safety Engr., Ex. Mining Safety Engr. & Inspect.	20	20	0.00	0	63,966
Loan Officers *	270	330	2.03	10	63,952
Administrative Services Managers	70	80	1.34	0	63,060
Occupational Therapists	60	80	2.92	0	62,071

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 3.13 Selected Sharp-Declining Occupations (Base Year 2006 and Projected Year 2016)**

Occupation	Employment		Net Change	Percent Change
	2006	2016		
Farmers and Ranchers	980	880	-100	-10
Paper Goods Machine Setters, Operators, and Tenders	NA	NA	-50	-28
Pressers, Textile, Garment, and Related Materials	110	60	-50	-45
Helpers--Extraction Workers	440	390	-50	-11
File Clerks	120	80	-40	-33
Machine Feeders and Offbearers	220	190	-30	-14
Order Clerks	90	70	-20	-22
Telecommunications Equipment Installers and Repairers, Except Line Installers	110	90	-20	-18
Earth Drillers, Except Oil and Gas	NA	NA	-10	-20
Tax Preparers	NA	NA	-10	-17
Mine Cutting and Channeling Machine Operators	NA	NA	-10	-13
Shuttle Car Operators	NA	NA	-10	-13
Pharmacy Aides	50	40	-10	-20
Agricultural Equipment Operators	50	40	-10	-20
Farmworkers, Farm and Ranch Animals	50	40	-10	-20
Rotary Drill Operators, Oil and Gas	50	40	-10	-20
Stationary Engineers and Boiler Operators	50	40	-10	-20
Photographic Processing Machine Operators	50	40	-10	-20
Electrical and Electronic Engineering Technicians	60	50	-10	-17
Credit Authorizers, Checkers, and Clerks	60	50	-10	-17
Conveyor Operators and Tenders	60	50	-10	-17
Postal Service Mail Sorters, Processors and Processing Machine Operators	70	60	-10	-14
Computer Operators	70	60	-10	-14
Mail Clerks and Mail Machine Operators, Except Postal Service	70	60	-10	-14
Maintenance Workers, Machinery	70	60	-10	-14
Fishers and Related Fishing Workers	90	80	-10	-11
Meter Readers, Utilities	100	90	-10	-10

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 3.14 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 3.15 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 3.15 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 3.14 Skill Types and Definitions

<p><b>Basic Skills:</b> Developed capacities that facilitate learning or the more rapid acquisition of knowledge.</p> <p>Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.</p> <p>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.</p> <p>Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.</p> <p>Learning Strategies — Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.</p> <p>Mathematics — Using mathematics to solve problems.</p> <p>Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.</p> <p>Reading Comprehension — Understanding written sentences and paragraphs in work-related documents.</p> <p>Science — Using scientific rules and methods to solve problems.</p> <p>Speaking — Talking to others to convey information effectively.</p> <p>Writing — Communicating effectively in writing as appropriate for the needs of the audience.</p> <p><b>Complex Problem Solving Skills:</b> Developed capacities used to solve novel, ill-defined problems in complex, real-world settings.</p> <p>Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.</p> <p><b>Resource Management Skills:</b> Developed capacities used to allocate resources efficiently.</p> <p>Management of Financial Resources — Determining how money will be spent to get the work done and accounting for these expenditures.</p> <p>Management of Material Resources — Obtaining and seeing to the appropriate use of equipment, facilities, and materials needed to do certain work.</p> <p>Management of Personnel Resources — Motivating, developing, and directing people as they work, identifying the best people for the job.</p> <p>Time Management — Managing one's own time and the time of others.</p> <p><b>Social Skills:</b> Developed capacities used to work with people to achieve goals.</p> <p>Coordination — Adjusting actions in relation to others' actions.</p> <p>Instructing — Teaching others how to do something.</p> <p>Negotiation — Bringing others together and trying to reconcile differences.</p> <p>Persuasion — Persuading others to change their minds or behavior.</p> <p>Service Orientation — Actively looking for ways to help people.</p> <p>Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.</p> <p><b>Systems Skills:</b> Developed capacities used to understand, monitor, and improve socio-technical systems.</p> <p>Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.</p> <p>Systems Analysis — Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.</p> <p>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.</p> <p><b>Technical Skills:</b> Developed capacities used to design, set-up, operate, and correct malfunctions involving application of machines or technological systems</p> <p>Equipment Maintenance — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.</p> <p>Equipment Selection — Determining the kind of tools and equipment needed to do a job.</p> <p>Installation — Installing equipment, machines, wiring, or programs to meet specifications.</p> <p>Operation and Control — Controlling operations of equipment or systems.</p> <p>Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.</p> <p>Operations Analysis — Analyzing needs and product requirements to create a design.</p> <p>Programming — Writing computer programs for various purposes.</p> <p>Quality Control Analysis — Conducting tests and inspections of products, services, or processes to evaluate quality or performance.</p> <p>Repairing — Repairing machines or systems using the needed tools.</p> <p>Technology Design — Generating or adapting equipment and technology to serve user needs.</p> <p>Troubleshooting — Determining causes of operating errors and deciding what to do about it.</p>
---

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

**Table 3.15 Percentage of Selected Occupations for Which Skill Is Primary**

	Selected High-Demand Occupations	Selected Fast-Growing Occupations	Selected High-Earning Occupations
<b>Basic Skills</b>			
Active Learning	70	62	62
Active Listening	88	79	76
Critical Thinking	73	62	76
Learning Strategies	28	26	4
Mathematics	28	26	28
Monitoring	38	29	28
Reading Comprehension	88	79	80
Science	13	12	20
Speaking	78	74	54
Writing	68	68	34
<b>Complex Problem Solving Skills</b>			
Complex Problem Solving	20	18	38
<b>Resource Management Skills</b>			
Management of Financial Resources	0	0	14
Management of Material Resources	0	0	4
Management of Personnel Resources	5	3	12
Time Management	70	59	60
<b>Social Skills</b>			
Coordination	25	21	36
Instructing	53	53	18
Negotiation	3	3	14
Persuasion	3	0	16
Service Orientation	35	35	14
Social Perceptiveness	55	53	18
<b>Systems Skills</b>			
Judgment and Decision Making	40	32	58
Systems Analysis	3	3	8
Systems Evaluation	0	0	12
<b>Technical Skills</b>			
Equipment Maintenance	8	12	0
Equipment Selection	13	21	2
Installation	8	15	0
Operation and Control	8	12	2
Operation Monitoring	5	6	0
Operations Analysis	3	0	12
Programming	0	0	4
Quality Control Analysis	5	3	4
Repairing	5	12	0
Technology Design	5	6	6
Troubleshooting	13	12	10

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 more complex problem solving, resource management, systems, negotiation, persuasion, and operations analysis skills than both high-demand and fast-growing jobs. These are skills that require long training periods and postsecondary education. However, high-earning jobs require slightly less social skills and significantly less technical skills. High-demand occupations require somewhat more basic and time management skills than fast-growing occupations; but less technical skills.

Table 3.16 shows skill gap indexes for all 35 skills in Table 3.14. 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 3.16 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 pace of training needs to increase for technical and resource management skills; the scale of training should be raised for basic and social skills.

### **Education and Training Issues**

Educational attainment in Region 3 is slightly below that of the state as a whole. Nearly 74 percent of residents age 25 and over had graduated from high school in 2000, compared to 75 percent for Alabama. Of that population, 17.8 percent have a bachelor's or higher degree versus 19.0 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 3.17 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 of the high-earning occupations do not require a bachelor's or higher degree. Twenty-four (60 percent) of the 40 high-demand occupations require an associate degree at the minimum and twenty-one (43 percent) require a bachelor's or higher degree. Fifteen (44 percent) of the 34 fast-growing occupations require an associate degree at the minimum, with twelve (35 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 777 occupations and occupational categories, 52 are expected to decline over the period and education and training for these should slow accordingly.

**Table 3.16 Skills Gap Indexes (Base Year 2006 to Projected Year 2016)**

<b>Skill</b>	<b>Total Openings (Projected Demand)</b>	<b>Replacement Index</b>	<b>Skills Gap Index</b>
Reading Comprehension	1,960	54	100
Active Listening	1,885	57	97
Critical Thinking	1,685	56	94
Speaking	1,505	55	91
Active Learning	1,455	57	88
Coordination	1,430	57	85
Instructing	1,410	56	82
Writing	1,325	56	79
Monitoring	1,335	56	76
Time Management	1,275	56	73
Social Perceptiveness	1,270	54	70
Learning Strategies	1,215	55	67
Service Orientation	990	55	64
Persuasion	940	56	61
Identification of Key Causes	900	57	58
Complex Problem Solving	790	54	55
Mathematics	775	58	52
Equipment Selection	645	56	50
Equipment Maintenance	490	55	47
Negotiation	430	62	44
Troubleshooting	400	58	41
Management of Personnel Resources	465	65	38
Installation	285	58	35
Repairing	245	53	32
Management of Financial Resources	220	64	29
Operation and Control	245	65	26
Operation Monitoring	250	70	23
Operations Analysis	145	55	20
Science	125	56	17
Quality Control	155	61	14
Systems Evaluation	130	62	11
Management of Material Resources	135	70	8
Judgment and Decision Making	65	54	5
Technology Design	60	58	2
Programming	10	50	0

Source: Alabama Department of Industrial Relations.

**Table 3.17 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	0	8
Doctoral Degree	2	2	0
Master's Degree	6	5	2
Work Experience Plus a Bachelor's or Higher Degree	2	0	16
Bachelor's Degree	10	5	18
Associate Degree	3	3	0
Postsecondary Vocational Training	2	3	0
Work Experience in a Related Occupation	1	1	4
Long-term On-the-job Training	2	1	0
Moderate-term On-the-job Training	6	8	2
Short-term On-the-job Training	5	6	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 worker surplus of almost 3,500 for 2016 and a worker shortfall of about 8,700 for 2025 are expected (Table 3.18). 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 addressed through 2025.

**Table 3.18 Expected Worker Shortfall**

	2006-2016	2006-2025
Total population growth (percent)	7.9	13.4
Age 20-64 population growth (percent)	7.4	7.7
Nonagricultural job growth (percent)	4.5	14.8
Worker shortfall (percent)	-2.8	7.0
Worker shortfall (number)	-3,477	8,671

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

Employment is critical to economic development and so strategies to address potential shortfalls must be adopted and implemented. Such strategies should aim at increasing labor force participation, encouraging in-migration, and raising worker productivity. Efforts to address the need for higher labor force participation, higher productivity, and faster labor force growth to meet workforce demand 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 of 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 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 pace of training needs to increase for technical and resource management skills; the scale of training should be raised for basic and social 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 27 sharp-declining occupations in Table 3.13 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 and 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 relatively low and may hinder the ability to meet the expected job demand barring future economic slowdowns. Higher employment demand could be alleviated somewhat with in-commuting. However, new residents can be attracted using the higher-paying job opportunities from the region's economic development successes. Investment in amenities and infrastructure may be needed to support such growth. In-migration is generally more beneficial to a region 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 3.5), 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 that (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 education systems to ensure a ready and available workforce for new and expanding businesses. The higher incomes earned by graduates of these institutions will 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 is an effective economic development strategy, especially for a region that has below-average population and labor force growth rates. Together, workforce development and economic development can build a strong, well-diversified economy. Indeed, one cannot achieve success without the other.