

State of the Workforce Report IV: Region 2

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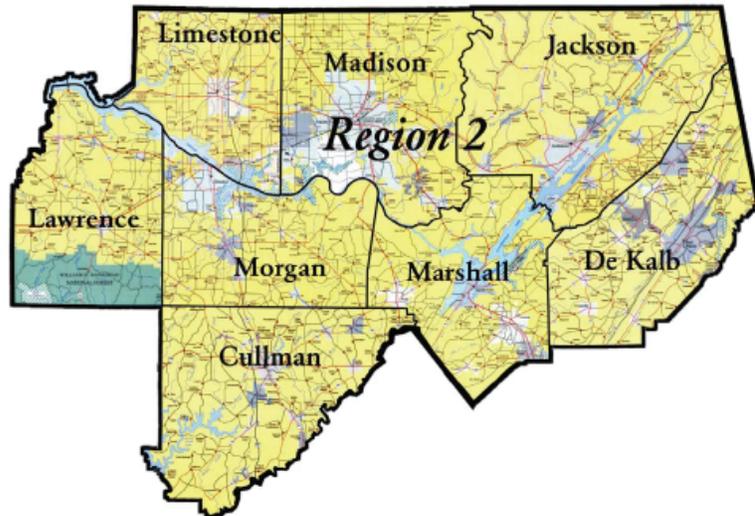
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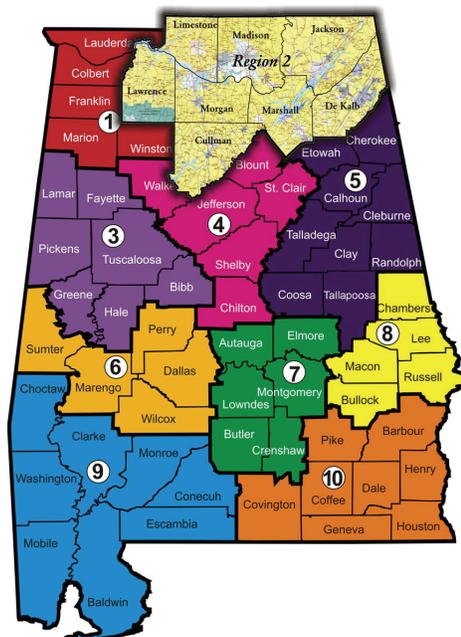


October 2009

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 2



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by

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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.

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Summary

- This report analyzes workforce supply and demand issues using available metrics of workforce characteristics for Workforce Development Region 2 and presents implications and recommendations.
- Region 2 had an 8.0 percent unemployment rate in May 2009, with 32,296 unemployed. An underemployment rate of 22.5 percent for 2009 means that the region has a 116,470-strong available labor pool that includes 84,174 underemployed workers who are looking for better jobs and are willing to commute farther and longer for such jobs.
- Net in-commuting fell from 4,527 in 2000 to 3,696 in 2006, but increased levels of commuting to, out of, and within the region are worsening congestion, which could slow economic development. This implies that continuous development and maintenance of transportation infrastructure and systems is important.
- By sector, the top five employers in the region are manufacturing; retail trade; health care and social assistance; professional, scientific, and technical services; and accommodation and food services. In the third quarter of 2008 these five industries provided 221,503 jobs, 62.9 percent of the regional total. Two of these leading employers had higher wages than the region's \$3,296 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 18,208 jobs were created per quarter from second quarter 2001 to third quarter 2008; quarterly net job flows averaged 1,933. 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 Combined Food Preparation and Serving Workers; Team Assemblers; Registered Nurses; Computer Systems Analysts; and Customer Service Representatives.
- The top five fast-growing occupations are Network Systems and Data Communications Analysts; Helpers, Construction Trades, All Other; Home Health Aides; Medical Assistants; and Veterinary Technologists and Technicians.
- The top 50 high-earning occupations are in health, management, engineering, computer, science, and legal fields and have a minimum salary of \$82,915. Eight of the top 10 are health occupations.
- Of the top 40 high-demand, the top 40 fast-growing, and 50 high-earning occupations, three belong to all three categories: Personal Financial Advisors; Management Analysts; and Computer Software Engineers, Applications. Seven occupations are both high-demand and high-earning. Twenty-seven occupations are both high-demand and fast-growing.

- Of the region's 843 occupations and occupational categories, 71 are expected to decline over the 2006 to 2016 period. Twenty-four occupations are expected to sharply decline by at least 8 percent, with each losing a minimum of 30 jobs. Education and training for these 24 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 2 the pace of training needs to increase for technical, systems, and complex problem solving 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 about 22,600 for 2016 and a worker shortfall of roughly 19,500 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 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) 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) 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 important, even for a region that has relatively high population and labor force growth rates.
- Together, workforce development and economic development can build a strong, well-diversified Region 2 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 2.1 shows labor force information for Region 2 and its eight counties for 2008 and May 2009.¹

Table 2.1 Region 2 Labor Force Information

	2008			
	Labor Force	Employed	Unemployed	Rate (%)
Cullman	38,872	37,190	1,682	4.3
DeKalb	30,568	28,986	1,582	5.2
Jackson	26,715	25,238	1,477	5.5
Lawrence	15,917	14,998	919	5.8
Limestone	36,895	35,357	1,538	4.2
Madison	167,399	161,283	6,116	3.7
Marshall	41,444	39,696	1,748	4.2
Morgan	56,707	54,070	2,637	4.7
Region 2	414,517	396,818	17,699	4.3
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 (%)
Cullman	38,441	35,276	3,166	8.2
DeKalb	30,270	26,847	3,423	11.3
Jackson	26,352	23,464	2,888	11.0
Lawrence	15,717	13,999	1,718	10.9
Limestone	36,359	33,490	2,869	7.9
Madison	162,901	152,768	10,133	6.2
Marshall	40,556	37,293	3,263	8.0
Morgan	55,306	50,470	4,836	8.7
Region 2	405,902	373,607	32,296	8.0
Alabama	2,124,766	1,938,686	186,081	8.8
United States	153,830,000	140,265,000	13,565,000	8.8

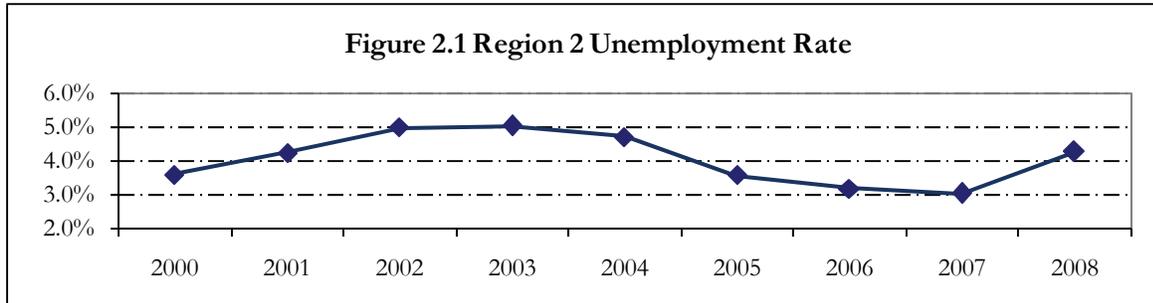
Source: Alabama Department of Industrial Relations and U.S. Bureau of Labor Statistics.

Job losses resulting from the recession that began in December 2007 have raised county unemployment rates from a range of 3.7 percent to 5.8 percent for 2008 (4.3 percent for the region) to between 6.2 percent and 11.3 percent in May 2009, with 8.0 percent for the region. The unemployment rate was lowest in Madison County and highest in DeKalb. Five of the region's counties had unemployment rates below Alabama's 8.8 percent.

Annual unemployment rates for 2000 to 2008 are shown in Figure 2.1. The region's unemployment rates were low before the 2001 and the most recent recession. The 2003 high of 5.0 percent was due to

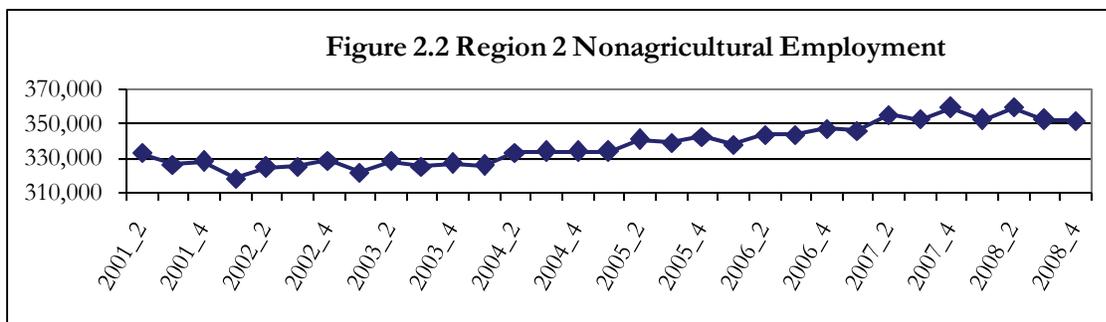
¹ Alabama labor force information is available from the Labor Market Information (LMI) Division of the Alabama Department of Industrial Relations. LMI compiles data in cooperation with the U.S. Bureau of Labor Statistics.

the effects of the 2001 recession. Employment gains since 2003 resulting from successful state and local economic development efforts brought unemployment to a record low 3.0 percent in 2007. Year-to-date monthly labor force data point to a higher regional unemployment rate for 2009 than the 4.3 percent seen in 2008, with the recession keeping rates high for a few more years.



Source: Alabama Department of Industrial Relations.

Nonagricultural employment of the region's residents averaged 337,766 quarterly from the second quarter of 2001 to the fourth quarter of 2008 (Figure 2.2). The number of jobs has been declining steadily since the peak of 359,718 in second quarter 2008.



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

Table 2.2 shows worker distribution by age in Region 2 for the third quarter of 2008. Older workers, age 45 and over, are 39.4 percent of the region's nonagricultural employment, slightly below the state's 39.9 percent. The region's 3.6 percent of workers who are age 65 and over is just less than the state's 3.7 percent. To meet future occupational projections for growth and replacement, labor force participation of younger residents must increase; else older workers may have to work longer.

Commuting Patterns

In 2000 workers who commuted into the region exceeded residents who commuted out by 4,527 (Table 2.3). Although net in-commuters dropped to 3,696 in 2006, the level of in- and out-commuting more than doubled. There is significant commuting inside the region as well. Table 2.3 shows that one-way average commute time and distance for workers are up in 2009. More people traveling to work and increased commute time and distance point to rising congestion in the region. Thus, transportation infrastructure and systems must be developed and maintained properly to ensure that the flow of goods and movement of workers are not hindered. Congestion slows the mobility of workers and goods and can thus impede economic development in the region.

Table 2.2 Workers by Age Group Q3 2008

	Nonagricultural Employment	
	Number	Percent
14-18	12,102	3.4
19-24	43,252	12.3
25-34	76,036	21.6
35-44	82,093	23.3
45-54	81,323	23.1
55-64	44,751	12.7
65+	12,817	3.6
45 and over total	138,909	39.4
Total all ages	352,375	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 2.3 Commuting Patterns

Area	Inflow, 2000			Outflow, 2000		
	Number	Percent		Number	Percent	
Cullman	2,602	10.2		4,937	23.5	
DeKalb	2,388	9.3		3,098	14.7	
Jackson	1,356	5.3		3,772	17.9	
Lawrence	1,451	5.7		1,244	5.9	
Limestone	2,395	9.4		1,542	7.3	
Madison	7,125	27.9		2,943	14.0	
Marshall	5,800	22.7		2,352	11.2	
Morgan	2,457	9.6		1,159	5.5	
Region 2	25,574	100.0		21,047	100.0	
	Inflow, 2006			Outflow, 2006		
	Number	Percent		Number	Percent	
Region 2	57,471	100.0		53,775	100.0	
			Percent of workers			
Average commute time (one-way)			2004	2005/2006	2008	2009
Less than 20 minutes			59.0	55.0	55.8	50.9
20 to 40 minutes			28.0	28.7	31.4	35.5
40 minutes to an hour			8.6	9.6	8.2	7.7
More than an hour			1.3	2.0	1.0	1.8
Average commute distance (one-way)			2004	2005/2006	2008	2009
Less than 10 miles			46.2	45.7	44.9	43.2
10 to 25 miles			31.6	31.2	37.6	36.4
25 to 45 miles			13.1	13.0	11.2	16.7
More than 45 miles			4.7	4.9	3.6	1.2

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 Region 2 population estimate of 837,227 for 2008 is 9.3 percent more than was recorded for 2000 (Table 2.4). Population grew in six counties and shrank in the other two. The region's population is projected to grow 12.9 percent in this decade to about 865,000 by 2010. Population growth will be fastest in Limestone and Madison counties, but flat in Lawrence County.

Table 2.4 Region 2 Population

	1990 Census	2000 Census	2008 Estimate	% Change 2000-2008	2010 Projected	% Change 2000-2010
Cullman	67,613	77,483	81,324	5.0	83,232	7.4
DeKalb	54,651	64,452	68,515	6.3	70,872	10.0
Jackson	47,796	53,926	53,134	-1.5	54,248	0.6
Lawrence	31,513	34,803	34,166	-1.8	34,758	-0.1
Limestone	54,135	65,676	76,135	15.9	80,704	22.9
Madison	238,912	276,700	319,510	15.5	331,991	20.0
Marshall	70,832	82,231	88,484	7.6	90,960	10.6
Morgan	100,043	111,064	115,959	4.4	118,210	6.4
Region 2	665,495	766,335	837,227	9.3	864,975	12.9
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 2.5 shows population counts, estimates, and projections by age group. The 65 and over age group will grow rapidly after 2010, with the first of the baby boom generation turning 65 in 2011. As a result, 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 as employment growth is expected to outpace labor force growth in the long term. Communities that experience rapid job gains may need to consider investments in amenities and infrastructure to attract new residents.

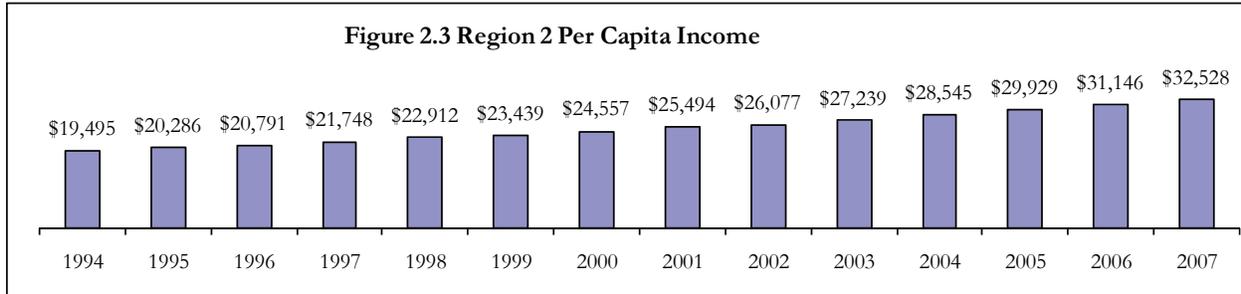
Table 2.5 Population by Age Group (2000-2006) and Projections

Age Group	2000	2006	2016	2025
0-19	213,316	220,313	232,740	245,212
20-24	47,346	53,805	63,180	62,725
25-29	51,060	47,724	59,569	61,831
30-34	55,058	52,580	57,766	66,359
35-39	64,096	56,855	54,338	64,150
40-44	61,995	64,050	58,426	61,195
45-49	54,050	64,014	61,783	56,374
50-54	50,071	56,775	69,003	62,254
55-59	40,575	50,569	66,932	63,175
60-64	34,428	40,620	56,151	67,780
65+	94,340	104,286	137,696	178,011
20-64 Total	458,679	486,992	547,148	565,843
Total Population	766,335	811,591	917,584	989,066
<i>Change from 2006</i>				
0-19			5.6%	11.3%
20-64			12.4%	16.2%
Total Population			13.1%	21.9%

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 2 was \$32,528 in 2007 (Figure 2.3), up 67 percent from 1994, and \$108 above the state average of \$32,419; Madison (\$38,263) and Morgan (\$33,938) counties had higher PCIs than the state. PCI was highest in Madison County and lowest in DeKalb (\$25,327).



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

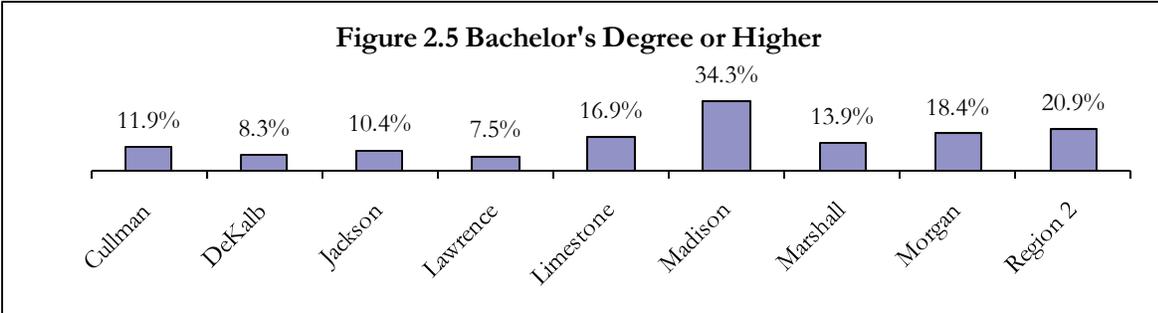
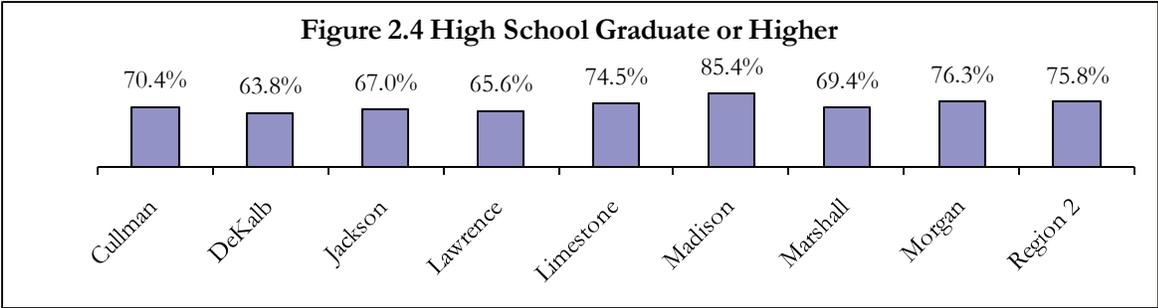
Educational Attainment

Educational attainment in 2000 of Region 2 residents who were 25 years old and over is shown in Table 2.6 and Figures 2.4 and 2.5. About 76 percent graduated from high school and nearly 21 percent held a bachelor's or higher degree. Madison and Morgan counties have higher educational attainment than the other six. Educational attainment is important as skills rise with education and high-wage jobs for the 21st century demand more skill sets.

Table 2.6 Educational Attainment in 2000, Population 25 Years and Over

	Cullman	DeKalb	Jackson	Lawrence	Limestone	Madison	Marshall	Morgan	Region 2
Total	51,787	42,740	36,435	22,894	43,456	180,389	54,961	73,331	505,993
No schooling completed	452	826	521	281	357	1,152	691	875	5,155
Nursery to 4th grade	403	610	456	220	408	801	607	545	4,050
5th and 6th grade	1,537	1,611	1,213	779	1,152	2,006	1,794	1,369	11,461
7th and 8th grade	3,398	3,110	2,572	1,558	2,059	4,430	3,400	3,169	23,696
9th grade	2,882	2,766	2,194	1,332	1,761	4,099	2,882	2,746	20,662
10th grade	2,724	2,928	2,082	1,623	2,091	4,989	3,127	3,335	22,899
11th grade	2,290	1,875	1,813	1,274	1,859	4,477	2,465	2,719	18,772
12th grade, no diploma	1,636	1,743	1,155	805	1,394	4,354	1,879	2,589	15,555
High school graduate/equivalent	16,584	14,549	12,707	9,029	14,102	39,591	16,758	22,252	145,572
Some college, less than 1 year	3,758	2,595	2,249	1,272	2,968	12,372	3,616	5,608	34,438
Some college, 1+ years, no degree	6,469	4,588	3,790	2,149	5,861	29,277	7,022	10,429	69,585
Associate degree	3,492	2,011	1,885	849	2,095	11,027	3,081	4,205	28,645
Bachelor's degree	3,845	2,095	2,400	1,159	5,166	40,961	4,997	9,287	69,910
Master's degree	1,660	1,059	1,023	392	1,705	15,894	1,948	3,203	26,884
Professional school degree	527	278	284	147	270	2,569	489	682	5,246
Doctorate degree	130	96	91	25	208	2,390	205	318	3,463

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 2 had an underemployment rate of 22.5 percent in 2009. Applying this rate to May 2009 labor force data means that 84,174 employed residents were underemployed (Table 2.7). Adding the unemployed gives a total available labor pool of about 116,500 for the region. This is 3.6 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 12.1 percent for Cullman County to 30.7 percent for Morgan. Lawrence County had the smallest available labor pool and Madison had the largest.

Table 2.7 Underemployed and Available Labor by County

	<u>Region 2</u>	<u>Cullman</u>	<u>DeKalb</u>	<u>Jackson</u>	<u>Lawrence</u>
Labor Force	405,902	38,441	30,270	26,352	15,717
Employed	373,607	35,276	26,847	23,464	13,999
Underemployment rate	22.5%	12.1%	17.9%	23.2%	19.6%
Underemployed workers	84,174	4,275	4,795	5,446	2,749
Unemployed	32,296	3,166	3,423	2,888	1,718
Available labor pool	116,470	7,441	8,218	8,334	4,467
		<u>Limestone</u>	<u>Madison</u>	<u>Marshall</u>	<u>Morgan</u>
Labor Force		36,359	162,901	40,556	55,306
Employed		33,490	152,768	37,293	50,470
Underemployment rate		17.9%	24.8%	23.0%	30.7%
Underemployed workers		5,981	37,825	8,566	15,479
Unemployed		2,869	10,133	3,263	4,836
Available labor pool		8,850	47,958	11,829	20,315

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 1,386 complete responses were obtained from Region 2. About 54 percent (750 respondents) were employed, of whom 169 stated that they were underemployed. A lack of job opportunities in their area, low wages at available jobs, other family or personal obligations, 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 low wages as additional key factors. 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 2 shows that:

- Fewer work full-time and more of the part-timers prefer full-time work.
- Fewer hold multiple jobs.
- Their commute times are longer although the distance traveled is only slightly farther.
- More are retail or wholesale salespersons, administrative support and clerical workers, and hotel and restaurant help.
- More are in finance, insurance, and real estate industries and state and local government.
- 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 or all of the costs.
- More have sought better jobs in the preceding quarter.
- Their median age is higher.
- They have lower educational attainment.
- Fewer are married, male, or white.
- More are Hispanic.

Table 2.8 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 (80.4 percent) are satisfied or completely satisfied with their jobs. Workers are most satisfied with their shift and least satisfied with the earnings they receive. Clearly, fewer underemployed workers are satisfied with their jobs (63.3 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 more willing (65 percent vs. 60 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 2.8 2009 Job Satisfaction and Willingness to Train (Percent)

Job Satisfaction						
		Completely Dissatisfied	Dissatisfied	Neutral	Satisfied	Completely Satisfied
Employed						
Overall		2.3	4.1	13.1	33.6	46.8
	Earnings	6.5	10.1	18.1	30.5	34.0
	Retention	3.7	5.1	11.5	21.5	56.3
	Work	1.1	1.9	8.7	22.8	65.5
	Hours	2.9	4.8	11.2	19.7	60.9
	Shift	1.7	2.7	5.7	16.5	72.8
	Conditions	1.7	4.7	11.6	29.6	52.3
	Commuting Distance	2.8	6.1	12.8	16.9	60.5
Underemployed						
Overall		5.9	7.7	23.1	36.7	26.6
	Earnings	12.4	22.5	22.5	24.3	18.3
	Retention	1.8	8.3	16.6	27.8	42.0
	Work	3.6	1.8	16.0	32.5	46.2
	Hours	5.9	13.6	12.4	17.2	50.3
	Shift	3.0	5.3	7.7	23.7	60.4
	Conditions	3.0	8.3	14.2	35.5	39.1
	Commuting Distance	4.7	7.7	16.0	19.5	52.1
Willingness to Train						
		Completely Unwilling	Unwilling	Neutral	Willing	Completely Willing
Employed						
For a new or better job		17.8	4.0	17.3	15.8	44.3
	If paid by trainee	39.0	20.7	23.8	6.1	6.7
	If paid by trainee and government	10.2	13.4	32.8	22.3	18.0
	If paid by government	4.4	2.3	11.5	17.8	61.6
Underemployed						
For a new or better job		13.6	1.5	16.7	16.7	48.5
	If paid by trainee	40.4	16.7	24.6	9.7	4.4
	If paid by trainee and government	8.8	11.4	33.3	21.1	21.9
	If paid by government	3.5	1.8	9.7	17.5	64.9

Note: Rounding errors may be present.

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

Workforce Demand

Industry Mix

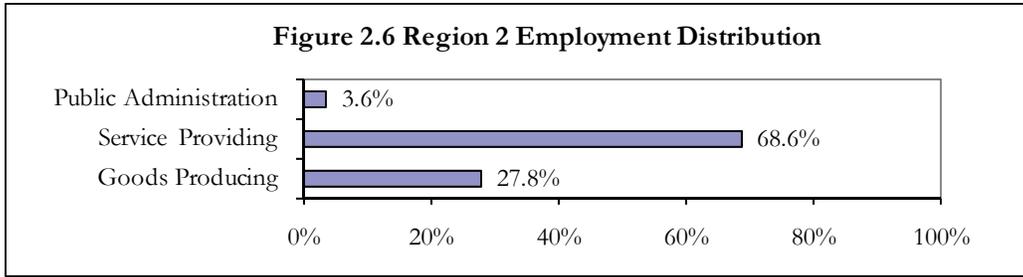
The manufacturing sector was the leading employer in Region 2 with 79,384 jobs in third quarter 2008 (Table 2.9). Rounding out the top five industries by employment are retail trade; health care and social assistance; professional, scientific, and technical services; and accommodation and food services. These five industries provided 221,503 jobs, 62.9 percent of the regional total. The average monthly wage across all industries in the region was \$3,296; two of the leading employers paid more than this average. New hire monthly earnings averaged \$2,157, about 65 percent of the region's average monthly wage. The highest average monthly wages were for professional, scientific, and technical services at \$5,848, mining \$4,783, wholesale trade \$4,221, and utilities \$4,213. Accommodation and food services paid the least at \$1,273. Professional, scientific, and technical services had the highest average monthly new hire wages with \$4,903, followed by mining at \$4,409. Accommodation and food services paid newly hired workers the least, \$933.

Table 2.9 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	1,807	0.51%	18	\$2,931	\$1,826
21 Mining	549	0.16%	20	\$4,783	\$4,409
22 Utilities	2,527	0.72%	17	\$4,213	\$2,560
23 Construction	16,251	4.61%	8	\$3,133	\$2,500
31-33 Manufacturing	79,384	22.53%	1	\$3,910	\$2,952
42 Wholesale Trade	13,053	3.70%	9	\$4,221	\$3,190
44-45 Retail Trade	44,372	12.59%	2	\$2,183	\$1,373
48-49 Transportation and Warehousing	8,981	2.55%	11	\$2,958	\$2,377
51 Information	4,135	1.17%	14	\$3,515	\$2,425
52 Finance and Insurance	7,937	2.25%	12	\$3,691	\$2,630
53 Real Estate and Rental and Leasing	3,804	1.08%	15	\$2,564	\$1,839
54 Professional, Scientific, and Technical Services	31,648	8.98%	4	\$5,848	\$4,903
55 Management of Companies and Enterprises	1,621	0.46%	19	\$3,681	\$2,933
56 Administrative and Support and Waste Management and Remediation Services	22,586	6.41%	7	\$2,153	\$1,650
61 Educational Services	24,032	6.82%	6	\$3,073	\$1,367
62 Health Care and Social Assistance	37,130	10.54%	3	\$3,073	\$1,961
71 Arts, Entertainment, and Recreation	3,573	1.01%	16	\$1,493	\$1,074
72 Accommodation and Food Services	28,969	8.22%	5	\$1,273	\$933
81 Other Services (Except Public Administration)	7,392	2.10%	13	\$2,382	\$1,690
92 Public Administration	12,623	3.58%	10	\$2,952	\$1,576
ALL INDUSTRIES	352,375	100.00%		\$3,296	\$2,157

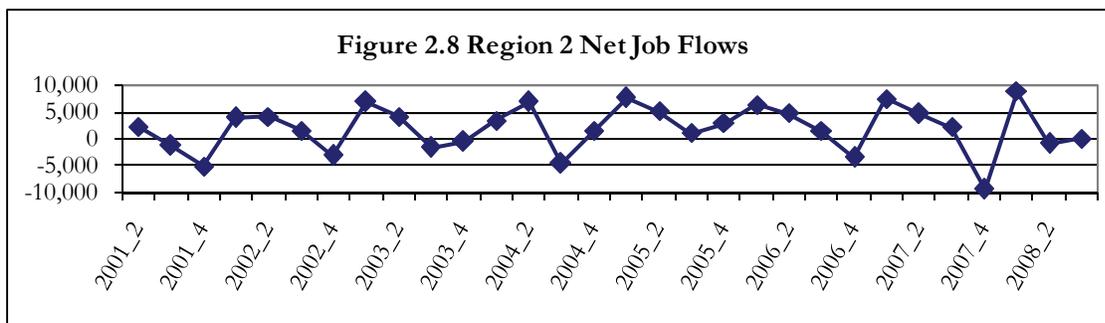
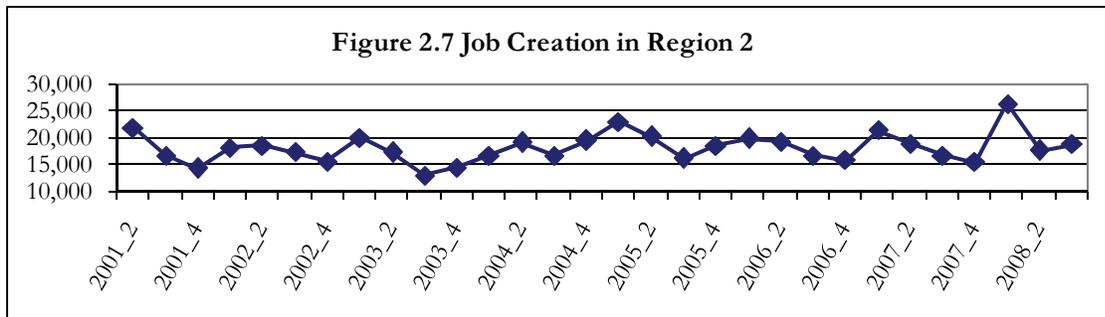
Source: Alabama Department of Industrial Relations and U.S. Census Bureau.

By broad industry classification, service providing industries generated almost 69 percent of jobs in third quarter 2008 (Figure 2.6). Goods producing industries were next with about 28 percent and public administration accounted for 3.6 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, 18,208 jobs were created per quarter from second quarter 2001 to third quarter 2008 (Figure 2.7); quarterly net job flows averaged 1,933 (Figure 2.8). Quarterly net job flows over the period have fluctuated between a loss of 9,345 to a gain of 8,875. Both job creation and net job flows declined significantly after reaching peaks in the first quarter of 2008. 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 843 occupations and occupational categories in the region, 726 are single occupations. Table 2.10 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 2.9): manufacturing; retail trade; health care and social assistance; professional, scientific, and technical services; and accommodation and food services. Thus, these sectors will continue to dominate employment in the region.

The top five high-demand occupations are Combined Food Preparation and Serving Workers; Team Assemblers; Registered Nurses; Computer Systems Analysts; and Customer Service Representatives. Twenty-seven of the high-demand occupations are also fast-growing. This means that these 27 occupations have a minimum annual growth rate of 2.81 percent, much faster than the regional and state occupational growth rates of 1.5 percent and 1.4 percent, respectively.

The 40 fastest growing occupations ranked by projected growth of employment are listed in Table 2.11. Most of these occupations are related to health and professional, scientific, and technical services industries. The top five fast-growing occupations are Network Systems and Data Communications Analysts; Helpers, Construction Trades, All Other; Home Health Aides; Medical Assistants; and Veterinary Technologists and Technicians.

Table 2.12 shows the 50 selected highest earning occupations in the region. These occupations are mainly in health, management, engineering, computer, science, and legal 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. Seven occupations are both high-earning and in high-demand (Table 2.10). The following three occupations are in high-demand, fast-growing, and high-earning:

1. Personal Financial Advisors
2. Management Analysts
3. Computer Software Engineers, Applications

Of the region's 843 occupations and occupational categories, 71 are expected to decline over the 2006 to 2016 period. Employment in the 24 sharpest-declining occupations will fall by at least 8 percent, with each losing a minimum of 30 jobs over the period (Table 2.13). 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 2.10 Selected High-Demand Occupations (Base Year 2006 and Projected Year 2016)

Occupation	Average Annual Job Openings		
	Total	Due to Growth	Due to Separations
Combined Food Preparation and Serving Workers *	505	330	175
Team Assemblers	345	195	150
Registered Nurses *	330	220	110
Computer Systems Analysts *	195	110	85
Customer Service Representatives	180	95	85
Elementary School Teachers, Except Special Education	165	85	80
Aerospace Engineers	120	65	55
Management Analysts *	120	80	40
Computer Software Engineers, Applications *	110	85	25
Licensed Practical and Licensed Vocational Nurses	105	50	55
Computer Software Engineers, Systems Software	90	60	30
Home Health Aides *	90	75	15
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	85	45	40
Executive Secretaries and Administrative Assistants	80	50	30
Network and Computer Systems Administrators *	70	45	25
Medical Assistants *	70	55	15
Network Systems and Data Communications Analysts *	60	45	15
Clergy *	55	40	15
Computer Hardware Engineers	45	20	25
Logisticians *	45	30	15
Bill and Account Collectors *	45	30	15
Dental Assistants *	40	30	10
Industrial Engineers *	35	20	15
Dental Hygienists *	35	25	10
Fitness Trainers and Aerobics Instructors *	35	25	10
Training and Development Specialists *	30	20	10
Surgical Technologists	30	15	15
Emergency Medical Technicians and Paramedics *	25	20	5
Physical Therapists *	20	15	5
Technical Writers *	20	10	10
Telecommunications Line Installers and Repairers *	20	10	10
Family and General Practitioners	15	10	5
Personal Financial Advisors *	15	10	5
Veterinarians *	15	10	5
Architects, Except Landscape and Naval	15	10	5
Medical and Health Services Managers	15	10	5
Database Administrators *	15	10	5
Medical and Public Health Social Workers *	15	10	5
Paralegals and Legal Assistants *	15	10	5
Occupational Therapists *	10	5	5

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 2.11 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 *	640	1,090	70	5.47	60
Helpers, Construction Trades, All Other	90	140	56	4.52	5
Home Health Aides *	1,410	2,170	54	4.41	90
Medical Assistants *	1,040	1,600	54	4.40	70
Veterinary Technologists and Technicians	140	210	50	4.14	10
Pourers and Casters, Metal	NA	NA	50	4.14	5
Fitness Trainers and Aerobics Instructors *	510	750	47	3.93	35
Computer Software Engineers, Applications *	1,790	2,630	47	3.92	110
Dental Hygienists *	590	860	46	3.84	35
Physical Therapists *	330	480	45	3.82	20
Personal Financial Advisors *	290	420	45	3.77	15
Physical Therapist Assistants	160	230	44	3.70	5
Dental Assistants *	620	890	44	3.68	40
Emergency Medical Technicians and Paramedics *	510	730	43	3.65	25
Network and Computer Systems Administrators *	1,030	1,470	43	3.62	70
Medical and Public Health Social Workers *	260	370	42	3.59	15
Veterinarians *	240	340	42	3.54	15
Physical Therapist Aides	120	170	42	3.54	5
Database Administrators *	290	410	41	3.52	15
Paralegals and Legal Assistants *	300	420	40	3.42	15
Electro-Mechanical Technicians	50	70	40	3.42	5
Training and Development Specialists *	480	660	38	3.24	30
Directors, Religious Activities and Education	280	380	36	3.10	15
Mental Health Counselors	140	190	36	3.10	10
Clergy *	1,180	1,600	36	3.09	55
Cardiovascular Technologists and Technicians	170	230	35	3.07	5
Combined Food Preparation and Serving Workers *	9,300	12,580	35	3.07	505
Computer Systems Analysts *	3,190	4,290	34	3.01	195
Bill and Account Collectors *	930	1,250	34	3.00	45
Telecommunications Line Installers and Repairers *	320	430	34	3.00	20
Technical Writers *	350	470	34	2.99	20
Management Analysts *	2,400	3,220	34	2.98	120
Tire Repairers and Changers	470	630	34	2.97	25
Registered Nurses *	6,510	8,690	33	2.93	330
Occupational Therapists *	210	280	33	2.92	10
Social and Community Service Managers	150	200	33	2.92	10
Substance Abuse and Behavioral Disorder Counselors	120	160	33	2.92	5
Manicurists and Pedicurists	NA	NA	33	2.92	5
Logisticians *	850	1,130	33	2.89	45
Industrial Engineers *	690	910	32	2.81	35

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 2.12 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			
Obstetricians and Gynecologists	90	110	2.03	0	222,675
Anesthesiologists	110	140	2.44	5	218,868
Psychiatrists	30	30	0.00	0	211,558
Physicians and Surgeons, All Other	490	630	2.54	25	205,192
Orthodontists	10	10	0.00	0	195,185
Atmospheric and Space Scientists	60	80	2.92	0	176,153
Surgeons	160	190	1.73	10	174,723
Chief Executives	810	880	0.83	25	151,672
Family and General Practitioners *	300	380	2.39	15	148,626
Dentists, General	330	370	1.15	10	147,214
Environmental Engineers	250	300	1.84	10	136,718
Podiatrists	30	30	0.00	0	122,190
Internists, General	140	160	1.34	5	122,182
Personal Financial Advisors *	290	420	3.77	15	116,251
Chiropractors	200	230	1.41	5	113,334
Engineering Managers	1,170	1,370	1.59	45	112,484
Pharmacists	750	920	2.06	30	111,519
Marketing Managers	350	400	1.34	15	108,128
Natural Sciences Managers	90	100	1.06	0	107,434
Lawyers	1,150	1,370	1.77	40	102,218
Purchasing Managers	350	380	0.83	15	101,728
Engineers, All Other	2,900	3,470	1.81	90	100,663
Physicists	150	180	1.84	10	100,004
Computer and Information Scientists, Research	390	440	1.21	15	99,307
Computer and Information Systems Managers	680	840	2.14	25	99,219
Financial Managers	900	1,040	1.46	30	99,052
Aerospace Engineers *	2,850	3,490	2.05	120	97,501
Psychologists, All Other	NA	NA	0.00	0	96,262
Materials Engineers	300	370	2.12	15	95,845
Mathematicians	NA	NA	0.00	0	95,666
Managers, All Other	2,230	2,480	1.07	70	94,264
Optometrists	120	140	1.55	0	93,162
General and Operations Managers	5,460	5,910	0.80	175	93,026
Sales Managers	460	550	1.80	20	92,753
Securities, Commodities, and Financial Services Sales Agents	170	200	1.64	10	92,275
Electronics Engineers, Except Computer	990	1,160	1.60	40	91,198
Computer Hardware Engineers *	810	1,010	2.23	45	90,528
Civil Engineers	540	630	1.55	25	90,514
Management Analysts *	2,400	3,220	2.98	120	90,390
Computer Software Engineers, Systems Software *	1,950	2,550	2.72	90	89,380
Computer Specialists, All Other	1,080	1,340	2.18	55	88,028
Education Administrators, Postsecondary	340	420	2.14	20	87,637
Human Resources Managers, All Other	160	180	1.18	5	87,631
Computer Software Engineers, Applications *	1,790	2,630	3.92	110	85,884
Operations Research Analysts	470	540	1.40	20	85,329
Compensation and Benefits Managers	80	80	0.00	0	84,470
Chemical Engineers	380	460	1.93	20	84,107
Electrical Engineers	1,290	1,480	1.38	50	83,316
Mechanical Engineers	2,030	2,330	1.39	75	83,099
Audiologists	30	30	0.00	0	82,915

Note: Employment and salaries 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 2.13 Selected Sharp-Declining Occupations (Base Year 2006 and Projected Year 2016)

Occupation	Employment		Net Change	Percent Change
	2006	2016		
Textile Knitting and Weaving Machine Setters, Operators, and Tenders	1,870	1,160	-710	-38
Sewing Machine Operators	2,280	1,660	-620	-27
Electrical and Electronic Equipment Assemblers	2,290	1,850	-440	-19
Farmers and Ranchers	4,640	4,260	-380	-8
Packers and Packagers, Hand	2,190	1,890	-300	-14
Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	490	250	-240	-49
Textile Winding and Drawing Out Machine Setters, Operators, and Tenders	1,030	790	-240	-23
Agricultural Workers, All Other	1,150	1,000	-150	-13
File Clerks	440	300	-140	-32
Order Clerks	560	420	-140	-25
Textile, Apparel, and Furnishings Workers, All Other	450	320	-130	-29
Reservation and Transportation Ticket Agents and Travel Clerks	260	150	-110	-42
Textile Bleaching and Dyeing Machine Operators and Tenders	330	230	-100	-30
Photographic Processing Machine Operators	160	80	-80	-50
Machine Feeders and Offbearers	500	420	-80	-16
Computer Operators	300	240	-60	-20
Pressers, Textile, Garment, and Related Materials	450	390	-60	-13
Textile Cutting Machine Setters, Operators, and Tenders	360	300	-60	-17
Metal Workers and Plastic Workers, All Other	450	400	-50	-11
Chemical Plant and System Operators	330	290	-40	-12
Agricultural Equipment Operators	240	210	-30	-13
Maintenance Workers, Machinery	360	330	-30	-8
Extruding and Forming Machine Setters, Operators, Synthetic and Glass	NA	NA	-40	-14
Coil Winders, Tapers, and Finishers	NA	NA	-30	-38

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 2.14 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 2.15 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 2.15 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 2.14 Skill Types and Definitions

<p>Basic Skills: 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>Complex Problem Solving Skills: 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>Resource Management Skills: 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>Social Skills: 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>Systems Skills: 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>Technical Skills: 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 2.15 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	75	65	66
Active Listening	83	83	70
Critical Thinking	78	68	82
Learning Strategies	20	23	6
Mathematics	20	20	36
Monitoring	38	28	26
Reading Comprehension	83	80	80
Science	10	8	36
Speaking	73	70	52
Writing	53	43	36
Complex Problem Solving Skills			
Complex Problem Solving	25	20	38
Resource Management Skills			
Management of Financial Resources	3	3	14
Management of Material Resources	0	0	2
Management of Personnel Resources	5	0	12
Time Management	60	63	38
Social Skills			
Coordination	38	33	24
Instructing	40	50	12
Negotiation	0	0	10
Persuasion	0	3	14
Service Orientation	40	50	10
Social Perceptiveness	28	45	12
Systems Skills			
Judgment and Decision Making	38	28	68
Systems Analysis	5	3	12
Systems Evaluation	5	0	20
Technical Skills			
Equipment Maintenance	8	13	0
Equipment Selection	15	25	10
Installation	8	13	0
Operation and Control	5	13	6
Operation Monitoring	0	5	2
Operations Analysis	13	5	18
Programming	8	3	6
Quality Control Analysis	8	13	2
Repairing	3	10	0
Technology Design	8	5	12
Troubleshooting	20	18	12

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 critical thinking, mathematics, science, complex problem solving, resource management, and systems 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 (except persuasion and negotiation) and significantly less technical skills (except operations analysis). High-demand occupations require somewhat more complex problem solving and systems skills than fast-growing occupations; but less technical skills.

Table 2.16 shows skill gap indexes for all 35 skills in Table 2.14. 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 2.16 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, systems, and complex problem solving skills; the scale of training should be raised for basic and social skills.

Education and Training Issues

Educational attainment in Region 2 is above that of the state as a whole. Nearly 76 percent of residents age 25 and over had graduated from high school in 2000, compared to 75 percent for Alabama. Of that population, almost 21 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 as rates vary considerably across the region.

Table 2.17 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; all but two of the high-earning occupations require a bachelor's or higher degree. Twenty-six (65 percent) of the 40 high-demand occupations require an associate degree at the minimum and twenty-three (58 percent) require a bachelor's or higher degree. Twenty-seven (68 percent) of the 40 fast-growing occupations require an associate degree at the minimum, with twenty (50 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 843 occupations and occupational categories, 71 are expected to decline over the period and education and training for these should slow accordingly.

Table 2.16 Skills Gap Indexes (Base Year 2006 and Projected Year 2016)

Skill	Total Openings (Projected Demand)	Replacement Index	Skills Gap Index
Reading Comprehension	8,560	50	100
Active Listening	8,400	51	97
Critical Thinking	7,565	51	94
Speaking	6,860	50	91
Active Learning	6,970	51	88
Coordination	6,610	51	85
Writing	6,235	49	82
Time Management	6,055	49	79
Monitoring	6,175	50	76
Instructing	6,115	51	73
Learning Strategies	5,835	50	70
Social Perceptiveness	4,805	49	67
Identification of Key Causes	4,525	50	64
Persuasion	4,375	50	61
Service Orientation	4,240	48	58
Complex Problem Solving	4,240	49	55
Mathematics	3,775	52	52
Equipment Selection	3,195	52	50
Troubleshooting	2,515	49	47
Negotiation	2,180	53	44
Operations Analysis	1,895	47	41
Management of Personnel Resources	2,015	56	38
Installation	1,730	49	35
Equipment Maintenance	1,675	50	32
Judgment and Decision Making	1,315	43	29
Systems Evaluation	1,365	46	26
Management of Financial Resources	1,360	51	23
Quality Control	1,570	53	20
Technology Design	1,070	46	17
Science	1,075	49	14
Repairing	945	54	11
Management of Material Resources	775	55	8
Operation and Control	1,070	57	5
Operation Monitoring	1,015	63	2
Programming	315	41	0

Source: Alabama Department of Industrial Relations.

Table 2.17 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	2	1	15
Doctoral Degree	0	0	3
Master's Degree	3	5	2
Work Experience Plus a Bachelor's or Higher Degree	2	1	13
Bachelor's Degree	16	13	15
Associate Degree	3	7	1
Postsecondary Vocational Training	4	3	0
Work Experience in a Related Occupation	0	0	1
Long-term On-the-job Training	1	1	0
Moderate-term On-the-job Training	6	3	0
Short-term On-the-job Training	3	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 about 22,600 for 2016 and a worker shortfall of roughly 19,500 for 2025 are expected (Table 2.18). A focus on worker skills must be a priority 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 through 2025.

Table 2.18 Expected Worker Shortfall

	2006-2016	2006-2025
Total population growth (percent)	13.1	21.9
Age 20-64 population growth (percent)	12.4	16.2
Job growth (percent)	6.9	20.9
Worker shortfall (percent)	-5.4	4.7
Worker shortfall (number)	-22,618	19,457

Note: Rounding errors may be present.

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 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, systems, and complex problem solving 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 to identify future skill needs and any existing gaps. Education and training for the 24 sharp-declining occupations in Table 2.13 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 to fill the critical, specialized skill needs seen in some areas of Region 2. While the region's population growth rate is above average, there is a strong need for workers with higher education and experience in science and engineering to meet the expected job demand. Higher employment demand could be partially served by in-commuting. However, new residents can be attracted using 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 2.5), 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 is an effective economic development strategy even for a region that has relatively high 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.