

State of the Workforce Report VIII: Region 7

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The University of Alabama



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Center for Business and Economic Research
Culverhouse College of Commerce

University of Alabama Center for Economic Development

Institute for Social Science Research

THE UNIVERSITY OF ALABAMA

State of the Workforce Report VIII: Region 7



March 2014

by

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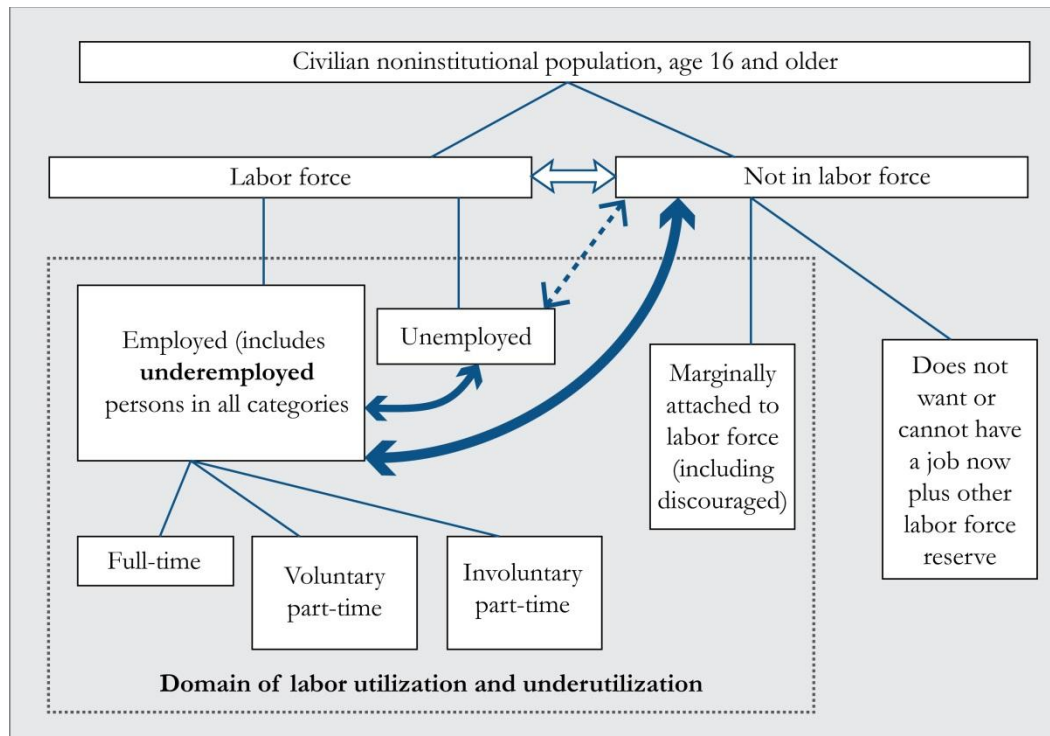
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Summary

- This report analyzes workforce supply and demand issues using available metrics of workforce characteristics for Workforce Development Region 7 and presents some implications and recommendations.
- Region 7 had a 6.0 percent unemployment rate in December 2013, with 10,938 unemployed. An underemployment rate of 24.7 percent for 2013 means that the region has a 52,980-strong available labor pool that includes 42,042 underemployed workers who are looking for better jobs and are willing to commute farther and longer for such jobs.
- The region's commute time and distance were down in 2013 from 2012 implying that congestion may have eased. The number of in- and out-commuting residents has risen over recent years and congestion is likely to worsen as the region recovers from the recent recession. Continuous maintenance and development of transportation infrastructure and systems is important for a smooth flow of goods and workers.
- By sector the top five employers in the region are public administration; manufacturing; health care and social assistance; retail trade; and accommodation and food services. These five industries provided 95,574 jobs, about 57 percent of the regional total in the fourth quarter of 2012. Two leading employers—manufacturing and public administration—paid higher wages than the region's \$3,504 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 7,727 jobs were created per quarter from second quarter 2001 to fourth quarter 2012; quarterly net job flows averaged 513. Job creation is the number of new jobs that are created either by new businesses or through expansion of existing firms. Net job flows reflect the difference between current and previous employment at all businesses.
- The top five high-demand occupations are Team Assemblers; Registered Nurses; Home Health Aides; Licensed Practical and Licensed Vocational Nurses; and Computer Systems Analysts.
- The top five fast-growing occupations are Coil Winders, Tapers, and Finishers; Personal and Home Care Aides; Helpers—Carpenters; Home Health Aides; and Aerospace Engineers.
- The top 50 high-earning occupations are in health, management, architecture, engineering, and science fields and paid a minimum salary average of \$78,518 per annum. Nine of the top 10 are health occupations.
- Of the top 40 high-demand, the top 20 fast-growing, and 50 high-earning occupations, three—Architects, Except Landscape and Naval; Aerospace Engineers; and Software Developers, Applications—are in all three categories. Eleven occupations are both high-demand and high-earning and twelve occupations are both high-demand and fast-growing.

- Of the region's 691 occupations, 32 are expected to decline over the 2010 to 2020 period. Twenty occupations are expected to sharply decline by at least seven percent over the same period. Education and training for these 20 occupations should slow accordingly.
- Skill and education requirements for jobs keep rising. Educational and training requirements for 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. The pace of training needs to increase for systems, technical, and social skills while the scale of training is 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 2010 base, worker shortfalls of about 8,500 for 2020 and 17,600 for 2030 are expected. This demands that both worker skills and the expected shortfalls must be priorities through 2030. Worker shortfalls for critical occupations will also need to be addressed continuously. Strategies to address skill needs and worker shortfalls might include: (1) improvements in education and its funding; (2) continuation and enhancement of programs to assess, retrain, and place dislocated workers; (3) focus on hard-to-serve populations (e.g. out-of-school youth); (4) lowering the high school dropout rate; (5) use of economic opportunities to attract new residents; (6) encouragement of older worker participation in the labor force; and (7) facilitation of in-commuting.
- Improving education is important because (i) a highly educated and productive workforce is a critical economic development asset, (ii) productivity rises with education, (iii) educated people are more likely to work, and (iv) it yields high private and social rates of return on investment. Workforce development must view all of education and other programs (e.g. adult education, career technical training, worker retraining, career readiness, etc.) as one system. Funding for 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 about average population and labor force growth rates.
- Combining both workforce development and economic development can build a strong, well-diversified economy in the region.

Labor Utilization and Supply Flows



Source: Addy et al¹ and Canon et al²

The chart above presents labor utilization and supply flows that explain labor market dynamics in view of recent study findings. The civilian noninstitutional population age 16 and above comprises of participants in the labor force and nonparticipants. The labor force is made of employed and unemployed persons; the unemployed do not have a job but are actively searching for work. Employed persons include fully employed and underemployed persons in all categories of work (full-time, voluntary part-time, and involuntary part-time). Nonparticipants in the labor force include retirees (voluntary and involuntary), people who do not want to or cannot work for various reasons (e.g., disability, caring for family members, in school or training, etc.), discouraged workers, and other labor force reserves. It has been suggested that a subgroup of nonparticipants referred to as the “waiting group” is more likely than the rest of the nonparticipants to take a job if wages and conditions are satisfactory, but do not actively search for work. New evidence has shown that between January 2003 and August 2013, the flow of nonparticipants into employment is 1.6 times that of unemployed persons transitioning into employment, which may be due to the presence of the waiting group. Nonparticipant flows to employment are larger in services, management, and professional occupations while unemployed flows to employment are higher in physically intensive occupations such as construction workers and miners. Industry effects should vary by the type and number of occupations they contain. This finding enhances the common understanding of labor market dynamics and influences workforce availability and skills gap analyses.

¹ Addy, S.N., Bonnal, M., and Lira, C. (2012). Towards a More Comprehensive Measure of Labor Underutilization: The Alabama Case, *Business Economics*, vol. 47(3) .

² Canon, M.E., Kudlyak, M., and Reed, M. (2014). Not Everyone Who Joins the Ranks of the Employed was “Unemployed”, *The Regional Economist*, January.

Workforce Supply

Labor Force Activity

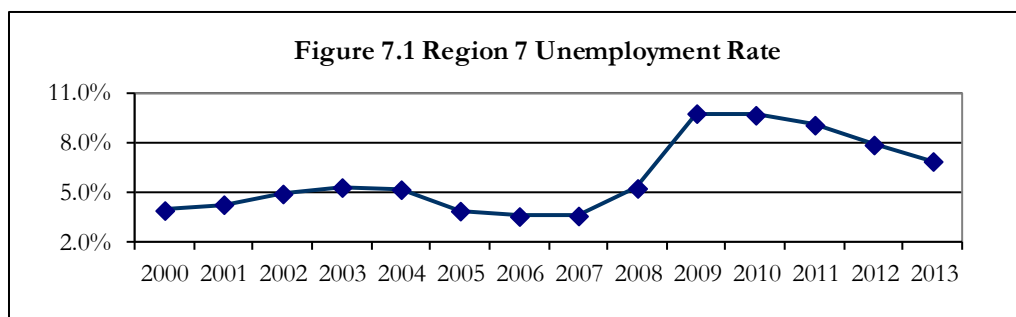
The labor force includes all persons in the civilian noninstitutional population who are age 16 and over and who have a job or are actively looking for one. Typically, those who have no job and are not looking for one are not included (e.g. students, retirees, the disabled and discouraged workers). Table 7.1 shows labor force information for Region 7 and its six counties for 2013 and for December 2013. Alabama labor force information is available from the Labor Market Information (LMI) Division of the Alabama Department of Labor. LMI compiles data in cooperation with the U.S. Bureau of Labor Statistics. The recession that began in late 2007 increased the number of unemployed and sharply raised county unemployment rates. Economic recovery has been slow and county unemployment remains relatively high ranging from 5.7 percent to 11.9 percent for 2013 (6.9 percent for the region) and between 5.0 percent and 9.6 percent in December 2013 (6.0 percent for the region). The unemployment rate was lowest in Autauga County and highest in Lowndes. The region's unemployment rate for December 2013 is slightly above Alabama's 5.7 percent.

Table 7.1 Region 7 Labor Force Information

	2013 Annual Average			
	Labor Force	Employed	Unemployed	Rate (%)
Autauga	25,520	24,053	1,467	5.7
Butler	8,953	8,098	855	9.5
Crenshaw	6,672	6,176	496	7.4
Elmore	35,140	33,015	2,125	6.0
Lowndes	4,048	3,566	482	11.9
Montgomery	103,763	96,477	7,286	7.0
Region 7	184,096	171,385	12,711	6.9
Alabama	2,150,224	2,008,995	141,229	6.6
United States	155,389,000	43,929,000	11,460,000	7.4
	December 2013			
	Labor Force	Employed	Unemployed	Rate (%)
Autauga	25,169	23,908	1,261	5.0
Butler	8,627	7,936	691	8.0
Crenshaw	6,535	6,116	419	6.4
Elmore	34,684	32,815	1,869	5.4
Lowndes	3,919	3,544	375	9.6
Montgomery	102,216	95,893	6,323	6.2
Region 7	181,150	170,212	10,938	6.0
Alabama	2,110,725	1,990,418	120,307	5.7
United States	154,408,000	144,423,000	9,984,000	6.5

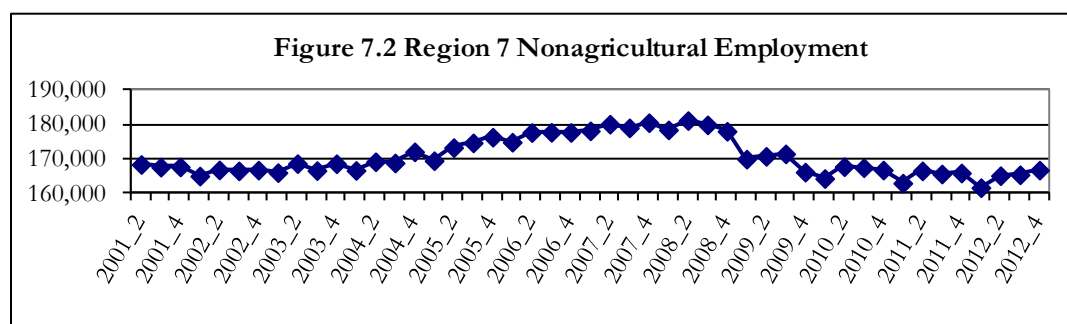
Source: Alabama Department of Labor and U.S. Bureau of Labor Statistics.

Annual unemployment rates for 2000 to 2013 are shown in Figure 7.1. The region's unemployment rates were low before the 2001 and the most recent recession. The 2001 recession raised unemployment to 5.3 percent in 2003. Successful state and local economic development efforts brought unemployment to record lows in 2006 and 2007. However, the 2007 recession raised the unemployment rate to a record high of 9.8 percent in 2009. The rate dropped to 6.9 percent in 2013. Year-to-date monthly labor force data point to a lower regional unemployment rate for 2014 than seen in 2013. The recession is expected to keep unemployment high for a little longer as recovery will take a long time.



Source: Alabama Department of Labor.

Nonagricultural employment of the Region's residents averaged 170,846 quarterly from the second quarter of 2001 to the fourth quarter of 2012 (Figure 7.2). After declining sharply since the second quarter 2008, the number of jobs showed signs of recovery in the second quarters of 2010, 2011 and 2012. The number of jobs went up from the second of 2012 to fourth quarter.



Source: Alabama Department of Labor and U.S. Census Bureau.

Table 7.2 shows worker distribution by age in Region 7 for the fourth quarter of 2012. The region's worker distribution by age is similar to that of Alabama. Older workers, age 55 and over, are 20.1 percent of the region's nonagricultural employment, just above the state's 20.0 percent. Workers who are age 65 and over constitute 4.6 percent of nonagricultural employment, just above Alabama's 4.5 percent. To meet long term occupational projections for growth and replacement, labor force participation of younger residents must increase otherwise older workers may have to work longer.

Table 7.2 Workers by Age Group (Fourth Quarter 2012)

Age Group	Nonagricultural Employment	
	Number	Percent
14-18	2,807	1.7
19-24	18,747	11.2
25-34	36,862	22.1
35-44	37,457	22.4
45-54	37,643	22.5
55-64	25,867	15.5
65+	7,637	4.6
55 and over total	33,504	20.1
Total all ages	167,020	100.0

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

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

Commuting Patterns

The number of in- and out-commuters has been growing in Region 7. In 2005, 70,889 people commuted in and out of the region (Table 7.3); net in-commuting was at 6,471. By 2011 the number of in-and out-commuters jumped to 87,095, with 10,831 net in-commuters. There was significant commuting inside the region as well. Montgomery County had the largest commuting population. Table 7.3 also shows that commute time and distance were down in 2013 from 2012. This implies that congestion may have eased. With the increase in the in- and out-commuters, congestion is expected to be an issue as the region's economy recovers from the recent recession. Transportation infrastructure and systems must be maintained and developed properly to ensure that the flow of goods and movement of workers are not interrupted. Impeding the mobility of workers and goods can delay or slow economic development.

Table 7.3 Commuting Patterns

Year	Region 7 Inflow		Region 7 Outflow						
	Number		Number						
2005	38,680		32,209						
2006	47,447		26,977						
2007	45,706		37,129						
2008	45,932		38,641						
2009	48,389		37,061						
2010	48,698		37,605						
2011	48,963		38,132						
Region 7 Counties	Inflow, 2011		Outflow, 2011						
	Number	Percent	Number	Percent					
Autauga	6,326	7.5	14,069	19.2					
Butler	3,075	3.7	5,181	7.1					
Crenshaw	2,001	2.4	5,238	7.1					
Elmore	9,849	11.7	23,034	31.4					
Lowndes	1,767	2.1	1,692	2.3					
Montgomery	61,166	72.7	24,139	32.9					
			Percent of workers						
Average commute time (one-way)			2005/2006	2008	2009	2010	2011	2012	2013
Less than 20 minutes			49.0	54.3	56.3	59.4	58.4	52.7	57.8
20 to 40 minutes			33.6	31.3	28.7	27.8	29.2	31.5	27.3
40 minutes to an hour			10.5	8.0	9.2	8.6	8.6	8.3	7.4
More than an hour			2.8	2.0	1	1.6	1.7	3.0	1.6
Average commute distance (one-way)			2005/2006	2008	2009	2010	2011	2012	2013
Less than 10 miles			41.9	46.7	49.1	48.4	48.4	44.6	49.6
10 to 25 miles			33.6	33.8	33	32.9	34.1	34.7	32.6
25 to 45 miles			15.2	11.0	12.7	11.9	10.3	14.3	11.7
More than 45 miles			4.1	5.7	3.6	5.2	4.7	5.4	3.6

Note: Rounding errors may be present.

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

Population

The Region 7 population count of 409,389 for 2010 is 7.3 percent more than was recorded for 2000 (Table 7.4). The region's population growth was slightly less than Alabama's 7.5 percent. Population grew in four counties and shrank in two. Population increased fastest in Autauga County followed by Elmore. Population declined in Butler and Lowndes counties. Table 7.5 shows the region's population counts, estimates, and projections by age group. The population aged 65 and over will grow rapidly, with the first of the baby boom generation having turned 65 in 2011. Consequently, the growth of the prime working age group (20-64) and youth (0-19) will lag that of the total population. By 2030, the youth (0-19) population is expected to decline. This poses a challenge for workforce development for the region. If employment 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 7.4 Region 7 Population

	1990 Census	2000 Census	2010 Census	Change 2000-2010	% Change 2000-2010
Autauga	34,222	43,671	54,571	10,900	25.0
Butler	21,892	21,399	20,947	-452	-2.1
Crenshaw	13,635	13,665	13,906	241	1.8
Elmore	49,210	65,874	79,303	13,429	20.4
Lowndes	12,658	13,473	11,299	-2,174	-16.1
Montgomery	209,085	223,510	229,363	5,853	2.6
Region 7	340,702	381,592	409,389	27,797	7.3
Alabama	4,040,587	4,447,100	4,779,736	332,636	7.5
United States	248,709,873	281,421,906	308,745,538	27,323,632	9.7

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

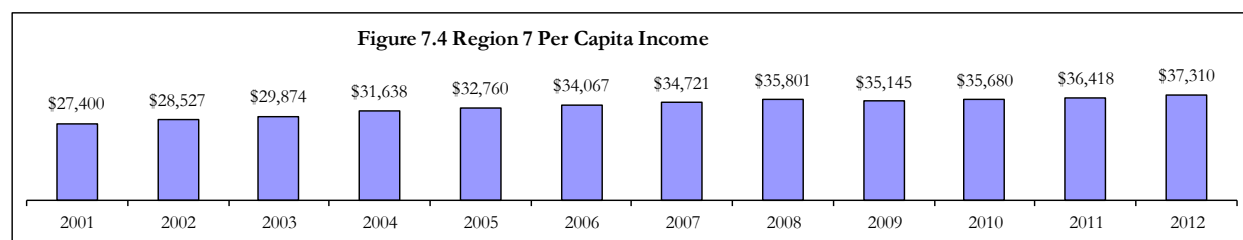
Table 7.5 Population by Age Group and Projections

Age Group	2000	2010	2020	2030
0-19	112,193	112,856	113,669	112,716
20-24	27,750	29,663	30,164	31,106
25-29	27,394	28,055	27,549	28,963
30-34	26,264	26,872	28,087	28,930
35-39	30,494	27,915	28,695	28,756
40-44	29,596	26,964	27,551	28,878
45-49	26,554	29,877	28,515	29,371
50-54	23,467	29,115	26,765	27,626
55-59	17,794	25,429	29,212	28,192
60-64	14,767	21,886	27,714	25,836
65+	45,319	50,757	68,929	90,566
20-64 Total	224,080	245,776	254,252	257,658
Total Population	381,592	409,389	436,850	460,940
<i>Change from 2010</i>				
0-19			0.7%	-0.1%
20-64			3.4%	4.8%
Total Population			6.7%	12.6%

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 7 was at \$37,310 in 2012 (Figure 7.3), up 47.4 percent from 2000, and \$1,384 or 3.9 percent more than the state average of \$35,926. Montgomery County had the highest PCI with \$39,559 followed by Elmore at \$35,656. Butler County had the lowest PCI with \$29,988.



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

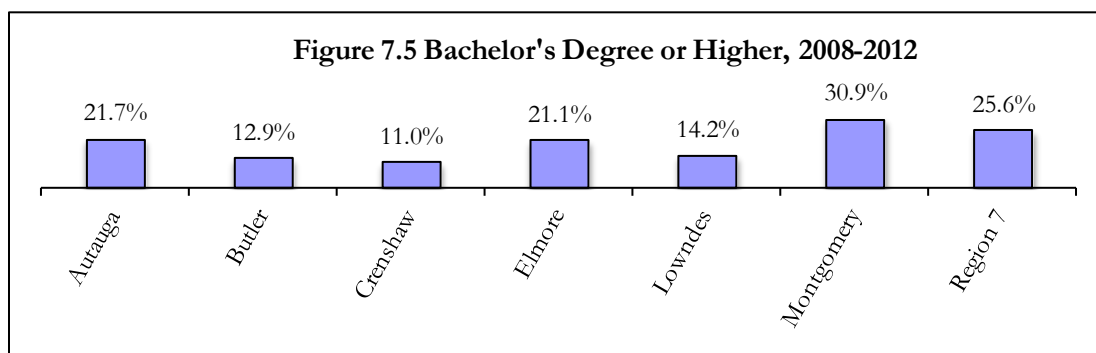
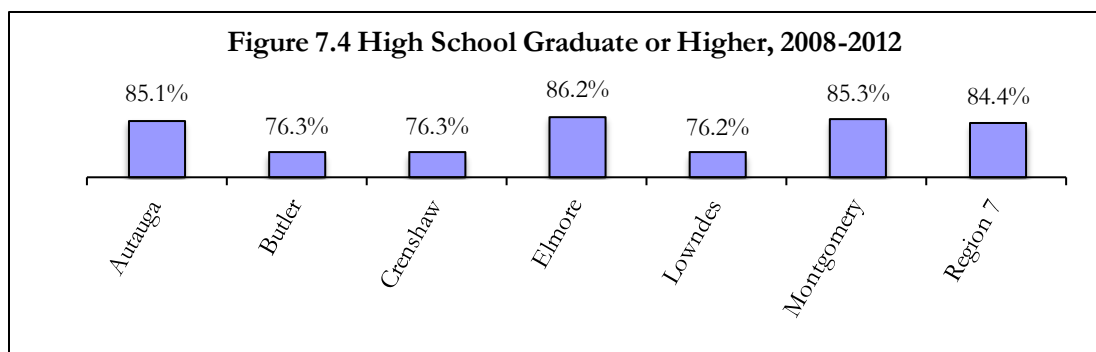
Educational Attainment

Region 7's educational attainment for residents age 25 years old and over is shown in Table 7.6 and Figures 7.4 and 7.5 based on American Community Survey's five year estimates (2008-2012). Region 8's educational attainment is higher than that of the state. Over 84 percent graduated from high school and about 26 percent held a bachelor's or higher degree. Elmore, Montgomery, and Autauga counties had the highest higher educational attainment in the region. Educational attainment is important as skills rise with education and high-wage jobs for the 21st century demand more skill sets.

Table 7.6 Educational Attainment of Population 25 Years and Over, 2008-2012

	Autauga	Butler	Crenshaw	Elmore	Lowndes	Montgomery	Region 7
Total	35,144	14,081	9,477	53,090	7,429	146,368	265,589
No schooling completed	636	177	200	415	190	2,038	3,656
Nursery to 4th grade	127	75	31	65	112	681	1,091
5th and 6th grade	308	276	240	311	132	1,644	2,911
7th and 8th grade	815	623	480	1,132	263	2,979	6,292
9th grade	628	496	309	1,136	178	3,347	6,094
10th grade	1,214	463	447	1,572	324	4,190	8,210
11th grade	867	834	311	1,625	373	4,368	8,378
12th grade, no diploma	637	397	227	1,073	197	2,295	4,826
High school graduate/equivalent	11,874	5,463	3,691	18,197	2,891	38,755	80,871
Some college, less than 1 year	2,410	690	551	3,190	365	7,732	14,938
Some college, 1+ years, no degree	5,332	1,872	1,339	9,347	949	24,826	43,665
Associate degree	2,667	903	606	3,821	403	8,255	16,655
Bachelor's degree	5,085	1,229	607	7,340	736	28,033	43,030
Master's degree	1,878	471	365	3,163	282	12,600	18,759
Professional school degree	415	48	40	486	31	2,756	3,776
Doctorate degree	251	64	33	217	3	1,869	2,437

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



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 labor pool 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 7 had an underemployment rate of 24.7 percent in 2013. Applying this rate to December 2013 labor force data means that 42,042 employed residents were underemployed (Table 7.7). Adding the unemployed gives a total available labor pool of 52,980 for the region. This is 4.8 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 18.6 percent for Crenshaw County to 33.3 percent for Autauga. Lowndes County had the smallest available labor pool and Montgomery had the largest. The underemployed are willing to commute farther and longer for a better job. For the one-way commute, 46.1 percent are prepared for 20 or more minutes longer and 32.4 percent will go 20 or more extra miles.

Table 7.7 Underemployed and Available Labor by Workforce Development Region

	Region 7	Autauga	Butler	Crenshaw	Elmore	Lowndes	Montgomery
Labor Force	181,150	25,169	8,627	6,535	34,684	3,919	102,216
Employed	170,212	23,908	7,936	6,116	32,815	3,544	95,893
Underemployment rate	24.7%	33.3%	20.6%	18.6%	21.6%	22.4%	26.1%
Underemployed workers	42,042	7,969	1,637	1,138	7,078	794	25,018
Unemployed	10,938	1261	691	419	1,869	375	6,323
Available labor pool	52,980	9,230	2,328	1,557	8,947	1,169	31,341

Note: Rounding errors may be present. Based on December 2013 labor force data and 2013 underemployment rates.

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

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 1,062 complete responses were obtained from Region 7 in 2013. About 47.3 percent (502 respondents) were employed, of whom 124 stated that they were underemployed. A lack of job opportunities in their area, low wages at the available jobs, other family or personal obligations, living too far from jobs, owning a house in their area, and child care responsibilities are the primary reasons given for being underemployed. Ongoing economic development efforts can help address some of these factors. Nonworkers cite retirement and disability or other health concerns as the main reason for their status, but some also cite a lack of job opportunities in their area and social security limitations as additional major reasons. Such workers may become part of the labor force if their problems can be addressed. Indeed a recent study found that the flow of labor force nonparticipants to employment

status was 60 percent more than that of unemployed workers who gain employment.³ This implies that the region's available labor pool could be larger than estimated in this report.

A comparison of underemployed workers to the overall workforce in Region 7 shows that:

- Fewer work full-time and more of the part-timers would like to work full-time.
- Slightly more hold multiple jobs.
- They have longer commute time and distance.
- More are computer and mathematical workers; business and financial operations staff; architecture and engineering; art, design, entertainment, sports, and media workers; building and ground cleaning and maintenance workers; salespersons; construction and extraction workers; installation, maintenance, and repair workers; and transportation and material moving workers.
- More work in construction; manufacturing; accommodation and food services; retail trade; transportation and warehousing; professional, scientific, and technical services; educational services; management of companies and enterprises; and arts, entertainment, and recreation; industries.
- 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 if the government pays part of the cost.
- More have sought better jobs in the preceding quarter.
- They have the same median age as all employees but have higher proportion of population with associate degree and bachelor's degree.
- Fewer are married and more are female.
- More are African-Americans or Hispanic.

Table 7.8 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 (76.5 percent) are satisfied or completely satisfied with their jobs. Workers are most satisfied with the work they do and least satisfied with the earnings they receive. Clearly, fewer underemployed workers (60.5 percent) are satisfied with their jobs. The underemployed are also more dissatisfied with their earnings and most satisfied with the work they do.

Workers are generally willing to train for a new or better job, with the underemployed being much more willing (68.6 percent vs. 58.1 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. The underemployed are more willing to train for the new or better job if the government pays for full or part of the cost. The results show that workers expect the government

³ Canon, M.E., Kudlyak, M., and Reed, M. (2014). Not Everyone Who Joins the Ranks of the Employed was "Unemployed", *The Regional Economist*, January.

to bear at least a part of the training cost. This may be due to workers' awareness of government workforce programs that provide such assistance.

Table 7.8 2013 Job Satisfaction and Willingness to Train (Percent)

Job Satisfaction						
		Completely Dissatisfied	Dissatisfied	Neutral	Satisfied	Completely Satisfied
Employed						
Overall		4.8	3.6	14.7	26.7	49.8
	Earnings	11.4	12.2	20.3	24.1	31.5
	Retention	5.8	6.8	12.8	15.7	58.4
	Work	1.4	2.0	9.2	22.9	64.3
	Hours	4.2	3.8	11.6	19.5	61.0
	Shift	3.6	3.2	8.4	18.9	65.7
	Conditions	3.4	4.2	10.8	30.9	50.8
	Commuting Distance	2.4	5.2	11.4	12.4	68.5
Underemployed						
Overall		11.3	6.5	21.0	26.6	33.9
	Earnings	23.4	20.2	21.8	16.1	17.7
	Retention	10.5	10.5	14.5	14.5	46.0
	Work	2.4	6.5	9.7	29.8	51.6
	Hours	8.1	7.3	19.4	18.6	46.8
	Shift	7.3	4.0	12.1	27.4	49.2
	Conditions	10.5	6.5	8.9	34.7	39.5
	Commuting Distance	3.2	8.1	15.3	10.5	62.9
Willingness to Train						
		Completely Unwilling	Unwilling	Neutral	Willing	Completely Willing
Employed						
For a new or better job		21.7	4.1	15.3	10.9	47.3
	If paid by trainee	46.5	18.8	16.5	6.3	8.9
	If paid by trainee and government	16.2	11.9	34.7	14.2	20.8
	If paid by government	5.9	3.3	8.9	11.9	68.0
Underemployed						
For a new or better job		18.6	1.0	10.8	7.8	60.8
	If paid by trainee	47.0	21.7	14.5	8.4	6.0
	If paid by trainee and government	10.8	8.4	37.4	15.7	22.9
	If paid by government	0.0	2.4	7.2	8.4	80.7

Note: Rounding errors may be present.

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

Workforce Demand

Industry Mix

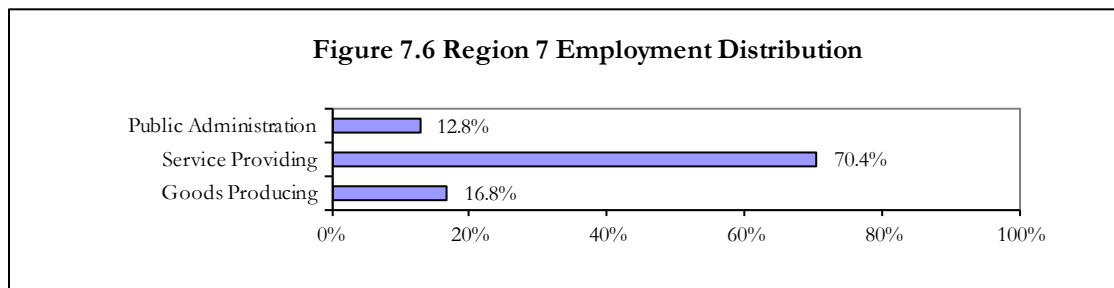
The public administration sector was the leading employer in Region 7 with 21,326 jobs in the fourth quarter of 2012 (Table 7.9). Rounding out the top five industries by employment are manufacturing; health care and social assistance; retail trade; and accommodation and food services. These five industries provided 95,574 jobs, 57.2 percent of the regional total. The average monthly wage across all industries in the region was \$3,504; two of the leading employers paid more than this average. New hire monthly earnings averaged \$2,210, about 63 percent of the region's average monthly wage. The highest average monthly wages were for utilities at \$5,715, professional, scientific, and technical services \$5,414, and finance and insurance \$5,026. Accommodation and food services paid the least at \$1,407. Utilities also had the highest average monthly new hire wages at \$3,855, followed professional, scientific, and technical services at \$3,724, and manufacturing at \$3,617. Accommodation and food service paid newly hired workers the least, \$990.

Table 7.9 Industry Mix (Fourth Quarter 2012)

Industry by 2-digit NAICS Code	Total Employment	Share	Rank	Average Monthly Wage	Average Monthly New Hire Earnings
11 Agriculture, Forestry, Fishing and Hunting	695	0.42%	19	\$3,612	\$2,273
21 Mining	161	0.10%	20	\$3,826	\$2,949
22 Utilities	1,157	0.69%	17	\$5,715	\$3,855
23 Construction	6,333	3.79%	9	\$4,028	\$3,495
31-33 Manufacturing	20,874	12.50%	2	\$4,529	\$3,617
42 Wholesale Trade	5,753	3.44%	10	\$4,635	\$3,222
44-45 Retail Trade	19,219	11.51%	4	\$2,357	\$1,452
48-49 Transportation and Warehousing	5,314	3.18%	12	\$3,265	\$2,350
51 Information	2,316	1.39%	15	\$3,895	\$2,528
52 Finance and Insurance	5,390	3.23%	11	\$5,026	\$2,981
53 Real Estate and Rental and Leasing	1,989	1.19%	16	\$3,567	\$2,768
54 Professional, Scientific, and Technical Services	7,511	4.50%	8	\$5,414	\$3,724
55 Management of Companies and Enterprises	1,099	0.66%	18	\$4,547	\$2,574
56 Administrative and Support and Waste Management and Remediation Services	12,812	7.67%	7	\$2,151	\$1,781
61 Educational Services	13,446	8.05%	6	\$3,170	\$2,402
62 Health Care and Social Assistance	19,582	11.72%	3	\$3,282	\$2,314
71 Arts, Entertainment, and Recreation	2,610	1.56%	14	\$1,846	\$1,091
72 Accommodation and Food Services	14,573	8.73%	5	\$1,407	\$990
81 Other Services (Except Public Administration)	4,859	2.91%	13	\$2,982	\$1,876
92 Public Administration	21,326	12.77%	1	\$4,380	\$2,703
ALL INDUSTRIES	167,020	100.00%		\$3,504	\$2,210

Source: Alabama Department of Labor and U.S. Census Bureau.

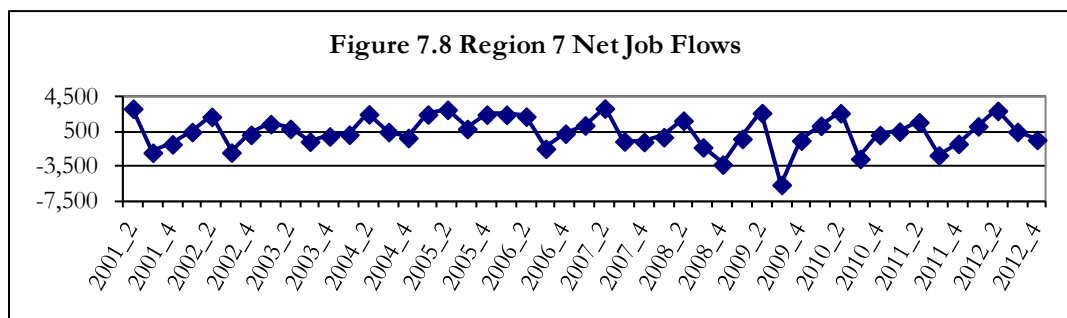
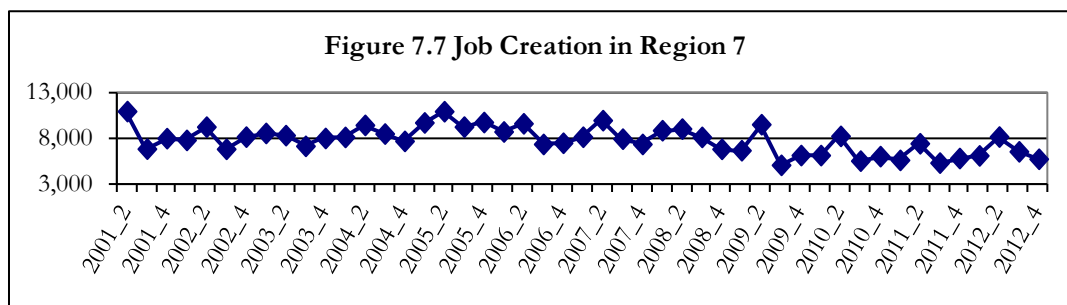
By broad industry classification, service providing industries provided 70.4 percent of jobs in fourth quarter 2012 (Figure 7.6). Goods producing industries were next with 16.8 percent and public administration accounted for 12.8 percent. The distribution is for all nonagricultural jobs in the region, but there is significant variation by county.



Source: Alabama Department of Labor and U.S. Census Bureau.

Job Creation and Net Job Flows

On average 7,727 jobs were created per quarter from second quarter 2001 to fourth quarter 2012 (Figure 7.7); quarterly net job flows averaged 513 (Figure 7.8). Over the period, quarterly net job flows have ranged from a loss of 5,738 to a gain of 3,309. Both job creation and net job flows sharply dropped in the third and fourth quarters of 2012 after going up for three consecutive quarters. 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 Labor and U.S. Census Bureau.

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

Workforce Development Region 7 has 691 single occupations. Table 7.10 shows the 40 occupations that are expected to be in high-demand, ranked by projected average annual job openings over the 2010 to 2020 period. Many of these occupations are in one of the five largest employment sectors identified earlier (Table 7.9): health care and social assistance. Thus, this sector will continue to be a major employer in the region.

The top five high-demand occupations are Team Assemblers; Registered Nurses; Home Health Aides; Licensed Practical and Licensed Vocational Nurses; Computer Systems Analysts. Twelve of the high-demand occupations are also fast-growing. This means that these 12 occupations have an annual growth rate of at least 3.68 percent, much faster than the regional and state occupational growth rates of 1.45 percent and 1.30 percent, respectively.

The 20 fastest growing occupations ranked by projected growth of employment are listed in Table 7.11. Many of these occupations are related to health care and social assistance and manufacturing industries, implying that these sectors will continue to be important employers in the region. The top five fast-growing occupations are Coil Winders, Tapers, and Finishers; Personal and Home Care Aides; Helpers—Carpenters; Home Health Aides; and Aerospace Engineers.

Table 7.12 shows the 50 highest earning occupations in the region. They are mainly in health, management, engineering, architecture, and science fields and have a minimum mean salary of \$78,518 per year. Nine 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. Eleven occupations are both high-earning and in high-demand (Table 7.10). The following three occupations are in high-demand, fast-growing, and high-earning:

1. Architects, Except Landscape and Naval
2. Aerospace Engineers
3. Software Developers, Applications

Of the region's 691 occupations, 32 are expected to decline over the 2010 to 2020 period. Employment in the 20 sharpest-declining occupations will fall by at least seven percent over the period (Table 7.13). No efforts should be made to sustain these occupations because they are declining because of structural changes in the economy of the region.

Table 7.10 Selected High-Demand Occupations (Base Year 2010 and Projected Year 2020)

Occupation	Average Annual Job Openings		
	Total	Due to Growth	Due to Separations
Team Assemblers	230	135	95
Registered Nurses	165	100	65
Home Health Aides*	95	80	15
Licensed Practical and Licensed Vocational Nurses	70	35	35
Computer Systems Analysts	55	35	20
Computer Support Specialists	45	25	15
First-Line Supervisors/Managers of Construction Trades and Extraction Workers	45	20	25
Hotel, Motel, and Resort Desk Clerks*	40	20	15
Management Analysts*	40	30	10
Medical Assistants	35	25	10
Personal and Home Care Aides*	30	25	5
Machinists	25	15	10
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	20	10	10
Network and computer systems architects and administrators	20	15	5
Pharmacists	20	10	10
Cement Masons and Concrete Finishers	15	10	5
Dental Hygienists*	15	10	5
Electrical and Electronic Equipment Assemblers*	15	10	5
First-Line Supervisors/Managers of Helpers, Laborers, and Material Movers, Hand	15	10	5
Industrial Machinery Mechanics	15	10	5
Medical and Public Health Social Workers*	15	10	5
Medical Secretaries*	15	15	5
Radiologic Technologists and Technicians	15	10	5
Software Developers, Applications*	15	15	5
Computer and Information Systems Managers	10	5	5
Dentists, General	10	5	5
Personal Financial Advisors	10	5	0
Physical Therapist Assistants	10	5	0
Physical Therapists	10	5	0
Rehabilitation Counselors	10	5	5
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	10	5	5
Social and Community Service Managers	10	5	5
Software Developers, Systems Software*	10	10	0
Aerospace Engineers*	5	5	0
Architects, Except Landscape and Naval*	5	5	0
Commercial Pilots	5	0	0
Cost Estimators	5	5	0
Physician Assistants	5	5	0
Technical Writers	5	5	0
Veterinarians	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 Labor and Center for Business and Economic Research, The University of Alabama.

Table 7.11 Selected Fast-Growing Occupations (Base Year 2010 and Projected Year 2020)

Occupation	Employment		Percent Change	Annual Growth (Percent)	Average Annual Job Openings
	2010	2020			
Coil Winders, Tapers, and Finishers	NA	NA	450	18.59	10
Personal and Home Care Aides*	360	630	75	5.76	30
Helpers--Carpenters	70	120	71	5.54	5
Home Health Aides*	1170	1960	68	5.29	95
Aerospace Engineers*	NA	NA	60	4.81	5
Diagnostic Medical Sonographers	50	80	60	4.81	5
Veterinary Technologists and Technicians	100	160	60	4.81	10
Physical Therapist Aides	70	110	57	4.62	5
Management Analysts*	630	950	51	4.19	40
Architects, Except Landscape and Naval*	100	150	50	4.14	5
Software Developers, Systems Software*	180	270	50	4.14	10
Reinforcing Iron and Rebar Workers	NA	NA	50	4.14	5
Medical Secretaries*	260	390	50	4.14	15
Electrical and Electronic Equipment Assemblers*	230	340	48	3.99	15
Hotel, Motel, and Resort Desk Clerks*	440	650	48	3.98	40
Emergency Medical Technicians and Paramedics	NA	NA	46	3.87	10
Computer-Controlled Machine Tool Operators, Metal and Plastic	110	160	45	3.82	5
Software Developers, Applications*	290	420	45	3.77	15
Dental Hygienists*	230	330	43	3.68	15
Medical and Public Health Social Workers*	230	330	43	3.68	15

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

Table 7.12 Selected High-Earning Occupations (Base Year 2010 and Projected Year 2020)

Occupation	Employment		Annual Growth (Percent)	Average Annual Job Openings	Mean Annual Salary (\$)
	2010	2020			
Surgeons	40	60	4.14	0	254,274
Dentists, General*	180	220	2.03	10	239,919
Physicians and Surgeons, All Other	290	360	2.19	15	237,791
Dentists, All Other Specialists	20	20	0.00	0	232,877
Family and General Practitioners	50	60	1.84	0	219,996
Chief Executives	400	420	0.49	10	188,616
Internists, General	70	90	2.54	5	173,289
Pediatricians, General	NA	NA	1.84	5	155,997
Podiatrists	50	60	1.84	0	136,781
Anesthesiologists	40	50	2.26	0	121,375
Pharmacists*	390	490	2.31	20	119,512
Personal Financial Advisors*	180	240	2.92	10	112,482
General and Operations Managers	3,020	3,290	0.86	85	110,732
Computer and Information Research Scientists	30	30	0.00	0	110,564
Computer and Information Systems Managers*	290	360	2.19	10	109,222
Architects, Except Landscape and Naval*	100	150	4.14	5	106,636
Clinical, Counseling, and School Psychologists	140	160	1.34	5	106,008
Securities, Commodities, and Financial Services Sales Agents	130	150	1.44	5	104,580
Engineering Managers	120	140	1.55	5	104,276
Electronics Engineers, Except Computer	30	40	2.92	0	102,993
Aerospace Engineers*	NA	NA	4.81	5	102,909
Natural Sciences Managers	20	20	0.00	0	101,079
Marketing Managers	80	90	1.18	5	100,916
Financial Managers	570	620	0.84	15	99,360
Sales Managers	190	210	1.01	10	98,477
Education Administrators, Postsecondary	190	230	1.93	10	98,279
Education Administrators, All Other	250	250	0.00	5	97,576
Purchasing Managers	90	100	1.06	5	96,546
Lawyers	1,140	1,290	1.24	35	95,389
Law Teachers, Postsecondary	NA	NA	2.26	0	94,859
Human Resources Managers	70	80	1.34	5	92,314
Computer Hardware Engineers	50	60	1.84	0	92,135
Physician Assistants*	80	100	2.26	5	91,551
Commercial Pilots*	60	80	2.92	5	91,523
Industrial Production Managers	160	190	1.73	5	89,397
Veterinarians*	110	150	3.15	5	88,945
Chiropractors	60	80	2.92	5	88,857
Construction Managers	590	680	1.43	15	88,072
Managers, All Other	1,050	1,110	0.56	30	86,586
Physicists	20	30	4.14	0	85,544
Business Teachers, Postsecondary	160	190	1.73	5	85,234
Property, Real Estate, and Community Association Managers	260	270	0.38	5	85,167
Conservation Scientists	10	10	0.00	0	84,824
Financial Analysts	120	140	1.55	5	84,093
Electrical Engineers	130	150	1.44	5	82,958
Medical and Health Services Managers	230	280	1.99	10	82,751
Computer Occupations, All Other	680	670	-0.15	15	82,280
Software Developers, Applications*	290	420	3.77	15	81,258
Physical Therapists*	170	240	3.51	10	80,271
Transportation, Storage, and Distribution Managers	100	110	0.96	5	78,518

Note: Employment data are rounded to the nearest 10; openings to the nearest 5. The salary data provided are based on the May 2012 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 Labor.

Table 7.13 Selected Sharp-Declining Occupations (Base Year 2010 and Projected Year 2020)

Occupation	Employment		Net Change	Percent Change
	2010	2020		
Postal Service Mail Sorters, Processors, and Processing Machine Operators	290	150	-140	-48
Sewing Machine Operators	280	140	-140	-50
Switchboard Operators, Including Answering Service	300	220	-80	-27
Postal Service Mail Carriers	400	360	-40	-10
Postal Service Clerks	70	30	-40	-57
Word Processors and Typists	NA	NA	*	-11
Data Entry Keyers	290	270	-20	-7
Pressers, Textile, Garment, and Related Materials	260	240	-20	-8
Textile, Apparel, and Furnishings Workers, All Other	NA	NA	*	-33
Floral Designers	130	120	-10	-8
Mixing and Blending Machine Setters, Operators, and Tenders	120	110	-10	-8
Fallers	110	100	-10	-9
Machine Feeders and Offbearers	90	80	-10	-11
Conveyor Operators and Tenders	NA	NA	*	-13
Photographic Process Workers and Processing Machine Operators	60	50	-10	-17
Electromechanical Equipment Assemblers	NA	NA	*	-20
Office Machine Operators, Except Computer	40	30	-10	-25
Textile Knitting and Weaving Machine Setters, Operators, and Tenders	40	30	-10	-25
Postmasters and Mail Superintendents	30	20	-10	-33
Forging Machine Setters, Operators, and Tenders, Metal and Plastic	NA	NA	*	-50

Note: Employment data are rounded to the nearest 10. NA – Not available. * - Not available due to disclosure restrictions.

Source: Alabama Department of Labor 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 7.14 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 7.15 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 7.15 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 7.14 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>
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Source: O*NET Online (<http://online.onetcenter.org/skills/>).

Table 7.15 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	25	30	42
Active Listening	95	90	80
Critical Thinking	90	90	80
Learning Strategies	0	5	6
Mathematics	10	15	10
Monitoring	70	65	46
Reading Comprehension	75	65	70
Science	10	10	26
Speaking	85	80	76
Writing	43	30	44
Complex Problem Solving Skills			
Complex Problem Solving	53	60	62
Resource Management Skills			
Management of Financial Resources	3	0	2
Management of Material Resources	0	0	0
Management of Personnel Resources	8	0	14
Time Management	28	20	22
Social Skills			
Coordination	60	75	30
Instructing	13	10	8
Negotiation	3	0	8
Persuasion	8	5	12
Service Orientation	45	45	18
Social Perceptiveness	53	60	36
Systems Skills			
Judgment and Decision Making	65	55	76
Systems Analysis	13	10	6
Systems Evaluation	8	5	4
Technical Skills			
Equipment Maintenance	3	0	0
Equipment Selection	3	0	0
Installation	0	0	0
Operation and Control	8	15	2
Operation Monitoring	13	15	4
Operations Analysis	8	15	12
Programming	8	5	4
Quality Control Analysis	8	5	0
Repairing	3	0	0
Technology Design	0	0	0
Troubleshooting	3	0	0

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 active learning, learning strategies, science, writing, complex problem solving, personnel resource management, negotiation, persuasion, and judgment and decision making skills than both high-demand and fast-growing jobs. Some of these skills require long training periods and postsecondary education. However, high-earning occupations require less technical and social skills. High-demand occupations require more basic, resource management, complex problem solving, and systems skills than fast-growing occupations but less technical skills.

Table 7.16 shows skill gap indexes for all 35 skills in Table 7.14 based on a previous projection period (2008 to 2018). Although the skills gap indexes are for a previous projection period, they are applicable to current projections. 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 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. In Region 7 the pace of training needs to increase for technical, systems, and social skills; the scale of training should be raised for basic and social skills.

Education and Training Issues

Educational attainment in Region 7 is above that of the state as a whole. Over 84 percent of residents age 25 and over had graduated from high school in 2008 to 2012, compared to about 83 percent for Alabama. About 26 percent had a bachelor's or higher degree versus 22 percent for the state. However, skill and education requirements for jobs keep rising. This highlights a strong need to further raise educational attainment in the region.

Table 7.17 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. Just six of the 50 high-earning occupations do not require a bachelor's or higher degree; only four do not require an associate degree or higher. Twenty-five (63 percent) of the 40 high-demand occupations require an associate degree at the minimum and 21 (53 percent) require a bachelor's or higher degree. Nine (45 percent) of the 20 fast-growing occupations require an associate degree at the minimum, with six (30 percent) requiring a bachelor's or higher degree.

The 2010 to 2020 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 691 occupations, 32 are expected to decline over the period and education and training for these should slow accordingly.

Table 7.16 Skills Gap Indexes (Base Year 2008 and Projected Year 2018)

Skill	Total Openings (Projected Demand)	Replacement Index	Skills Gap Index
Reading Comprehension	3,335	62	100
Active Listening	3,375	63	97
Critical Thinking	2,955	61	94
Speaking	2,640	61	91
Active Learning	2,560	62	89
Monitoring	2,400	60	86
Coordination	2,425	62	83
Writing	2,325	63	80
Instructing	2,265	62	77
Time Management	2,110	62	74
Learning Strategies	2,060	62	71
Social Perceptiveness	2,000	61	69
Service Orientation	1,785	61	66
Judgment and Decision Making	1,555	63	63
Persuasion	1,570	64	60
Complex Problem Identification	1,355	62	57
Mathematics	1,200	62	54
Equipment Selection	985	62	51
Troubleshooting	690	60	49
Negotiation	795	69	46
Management of Personnel Resources	770	67	43
Equipment Maintenance	560	59	40
Installation	525	56	37
Management of Financial Resources	490	70	34
Operations Analysis	365	62	31
Quality control	330	59	29
Repairing	335	61	26
Operation and Control	290	57	23
Operation Monitoring	360	65	20
Systems Evaluation	310	56	17
Systems Analysis	225	51	14
Technology Design	220	61	11
Management of Material Resources	265	72	9
Science	160	69	6
Programming	40	63	3

Source: Alabama Department of Labor.

Note: The skills gap indexes are from 2008 to 2018 projection period and not 2010 to 2020.

Table 7.17 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
Doctoral Degree or First Professional Degree	4	0	19
Master's Degree	3	1	2
Work Experience Plus a Bachelor's or Higher Degree	5	1	11
Bachelor's Degree	9	4	12
Associate Degree	4	3	2
Postsecondary Non-Degree Plus On-the-job Training	2	0	0
Postsecondary Non-Degree	2	1	1
Some College, no Degree Plus On-the-job Training	0	0	0
Some College, no Degree	0	0	0
High School Diploma Plus On-the-job Training	7	7	0
High School Diploma	1	0	3
Less than High School Plus On-the-job Training	3	3	0
Less than High School	0	0	0

Note: The on-the-job training refers to the typical on-the-job training needed to attain competency in the occupation in addition to the typical education needed for entry to the occupation. This could be long-term, moderate-term, or short-term on-the-job training. **Long-term** requires more than 12 months on-the-job training. **Moderate-term** requires one to 12 months of on-the-job training. **Short-term** requires up to one month of on-the-job training. These types of training are more common in occupations that require postsecondary non-degree or less educational attainment. Other types of on-the-job training requirements that may be needed but are not shown on the table are apprenticeship and internship/residency that are typical in certain professions many of which require higher educational attainment.

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

Implications and Recommendations

Job growth is likely to exceed labor force and population growth in the long term. From a 2010 base, worker shortfalls of 8,513 for 2020 and 17,641 for 2030 are expected (Table 7.18). The region must make worker skills and the expected shortfalls a priority through 2025. Worker shortfalls for critical occupations will also need to be addressed continuously.

Table 7.18 Expected Worker Shortfall

	2010-2020	2010-2030
Total population growth (percent)	6.7	12.6
Age 20-64 population growth (percent)	3.4	4.8
Job growth (percent)	8.6	15.4
Worker shortfall (percent)	5.1	10.6
Worker shortfall (number)	8,513	17,641

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

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

Improving education is vital because a highly educated and productive workforce is a critical economic development asset. The educational and training requirements of high-demand, fast-growing, and high-earning occupations show the significance of education in developing the workforce of the future. The importance of basic skills generally and for high-demand, high-growth, and high-earning jobs demonstrates a strong need for training in these skills. In Region 7 the pace of training needs to increase for technical, systems, and social skills while the scale of training is 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 20 sharp-declining occupations in Table 7.13 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 educational 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 out-of-school youth, persons in poverty, those receiving welfare, residents of sparsely populated areas, and those on active parole. These populations are often outside of the mainstream economy and are poor. 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. Although relatively strong, the region's population growth rate is not adequate to meet its expected job demand barring future economic slowdowns. Higher employment demand could be alleviated somewhat with 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 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 7.5), 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 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 about average population and labor force growth rates. Together, workforce development and economic development can build a strong, well-diversified Region 7 economy. Indeed, one cannot achieve success without the other.