

State of the Workforce Report X: Region 7

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Alabama Department of Labor



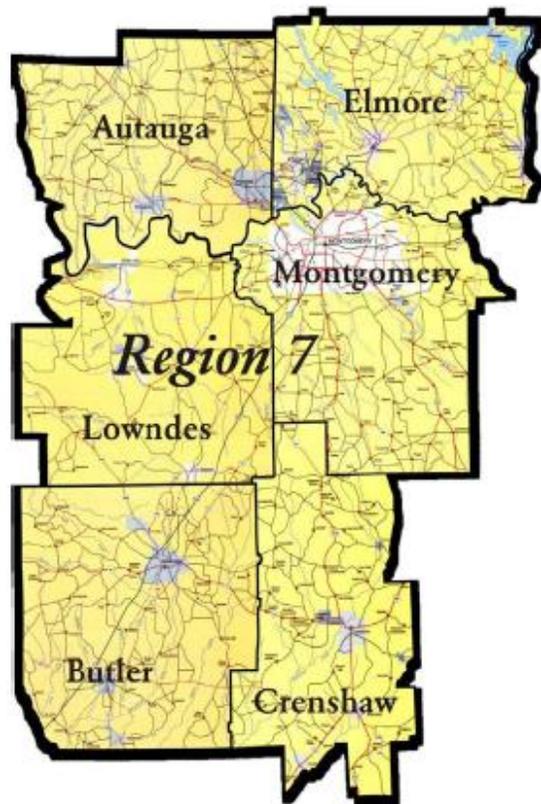
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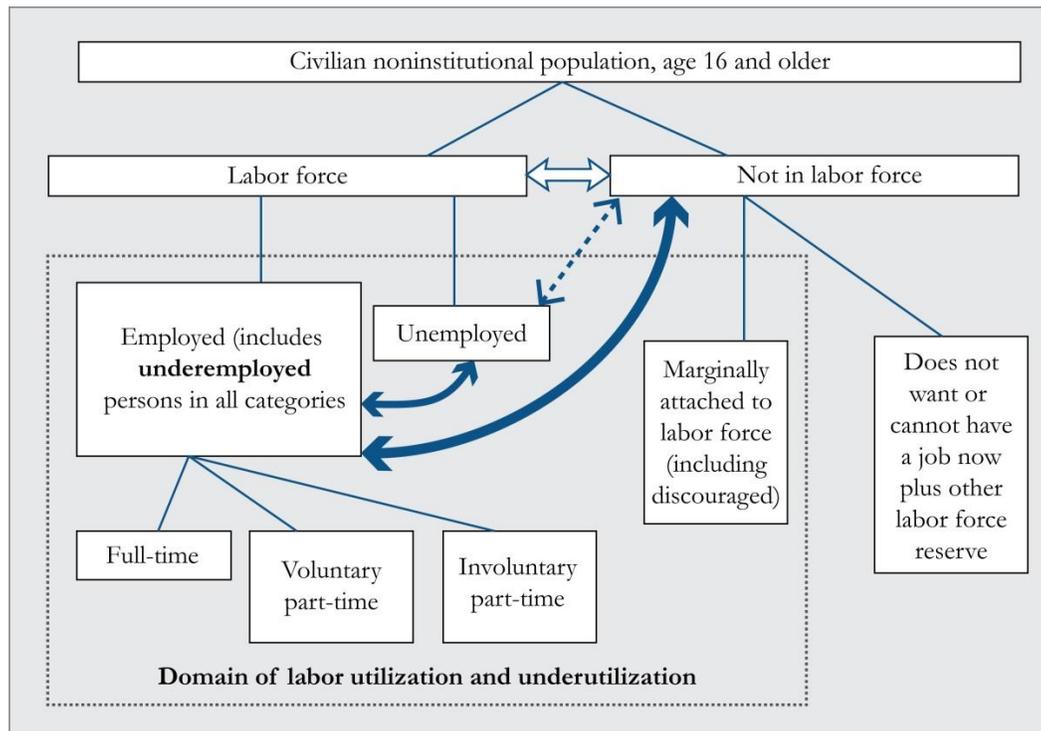
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Summary

- 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 March 2016, with 10,961 unemployed. An underemployment rate of 26.2 percent for 2015 means that the region has a 56,289-strong available labor pool that includes 45,328 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 2015 from 2014 implying that congestion eased. The number of in- and out-commuting residents has risen over recent years and congestion is likely to be an issue as the region recovers from the last 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 manufacturing; public administration; health care and social assistance; retail trade; and accommodation and food services. These five industries provided 96,451 jobs, about 58.0 percent of the regional total in the first quarter of 2015. Two leading employers—manufacturing and public administration—paid higher wages than the region's \$3,048 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 7,429 jobs were created per quarter from second quarter 2001 to first quarter 2015; quarterly net job flows averaged 602. 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; General and Operations Managers; Personal Care Aides; and Licensed Practical and Licensed Vocational Nurses.
- The top five fast-growing occupations are Personal Care Aides; Physical Therapist Assistants; Diagnostic Medical Sonographers; Home Health Aides; and Physical Therapists.
- The top 50 high-earning occupations are in health, management, architecture and engineering fields and paid a minimum average salary of \$79,572 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, only one—Nurse Practitioners—is in all three categories. Eight occupations are both high-demand and high-earning and 15 occupations are both high-demand and fast-growing.

- Of the region's 662 occupations, 46 are expected to decline over the 2012 to 2022 period. Twenty occupations are expected to sharply decline by at least seven percent over the same period with each losing a minimum of 10 jobs. 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 2012 base, worker shortfalls of about 15,000 for 2022 and 32,300 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 is comprised 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 they do not actively search for work. New evidence has shown that between January 2003 and August 2013, the flow of nonparticipants into employment was 1.6 times that of unemployed persons transitioning into employment, which may be due to the presence of the waiting group.^{1,2} 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 2015 and for March 2016. 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 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 5.1 percent to 11.6 percent for 2015 (6.0 percent for the region) and between 5.2 percent and 11.1 percent in March 2016 (6.0 percent for the region). The unemployment rate was lowest in Elmore County and highest in Lowndes. The region's unemployment rate is just below the state's 6.2 percent.

Table 7.1 Region 7 Labor Force Information

	2015 Annual Average			
	Labor Force	Employed	Unemployed	Rate (%)
Autauga	25,308	23,981	1,327	5.2
Butler	9,142	8,452	690	7.5
Crenshaw	6,352	5,970	382	6.0
Elmore	36,075	34,236	1,839	5.1
Lowndes	3,824	3,381	443	11.6
Montgomery	103,579	97,194	6,385	6.2
Region 7	184,280	173,214	11,066	6.0
Alabama	2,146,157	2,015,189	130,968	6.1
United States	157,130,000	148,833,000	8,296,000	5.3
	March 2016			
	Labor Force	Employed	Unemployed	Rate (%)
Autauga	25,345	23,958	1,387	5.5
Butler	9,111	8,420	691	7.6
Crenshaw	6,335	5,934	401	6.3
Elmore	36,071	34,206	1,865	5.2
Lowndes	3,802	3,379	423	11.1
Montgomery	103,372	97,178	6,194	6.0
Region 7	184,036	173,075	10,961	6.0
Alabama	2,156,616	2,023,744	132,872	6.2
United States	158,854,000	150,738,000	8,116,000	5.1

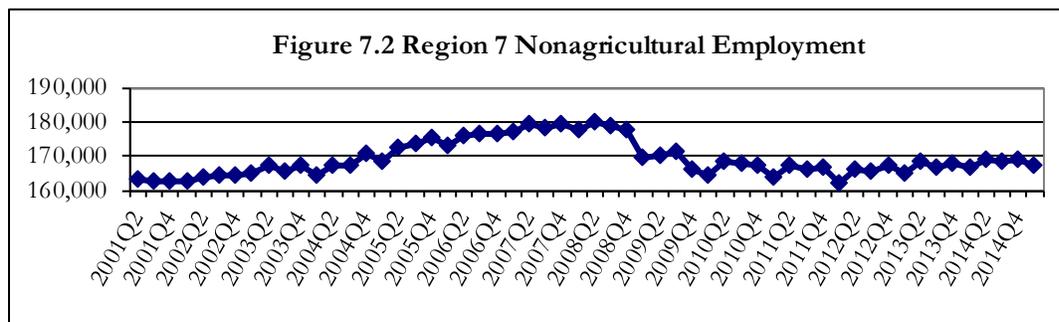
Source: Alabama Department of Labor and U.S. Bureau of Labor Statistics.

Annual unemployment rates for 2000 to 2015 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 10.0 percent in 2010. The rate dropped to 6.0 percent in 2015. Year-to-date monthly labor force data point to about the same regional unemployment rate for 2016 as seen in 2015. A slow recovery and structural changes in the economy are expected to keep unemployment high for a while.



Source: Alabama Department of Labor.

Nonagricultural employment of the Region’s residents averaged 169,183 quarterly from the second quarter of 2001 to the first quarter of 2015 (Figure 7.2). The number of jobs declined sharply from the second quarter 2008 to the first quarter 2010 after which it remained about the same. The number of jobs has been trending up gradually since the second quarter of 2012.



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

Table 7.2 shows worker distribution by age in Region 7 for the first quarter of 2015. The region’s worker distribution by age is similar to that of Alabama. Older workers, age 55 and over, are 21.1 percent of the region’s nonagricultural employment, just above Alabama’s 21.0 percent. Workers who are age 65 and over constitute 5.0 percent of nonagricultural employment, compared to 4.9 percent for the state. To meet long term occupational projections for growth and replacement, labor force participation of younger residents must increase, otherwise, older workers may have to work longer.

Table 7.2 Workers by Age Group (First Quarter 2015)

Age Group	Nonagricultural Employment	
	Number	Percent
14-18	2,473	1.5
19-24	17,778	10.6
25-34	37,164	22.2
35-44	37,499	22.4
45-54	36,920	22.1
55-64	26,937	16.1
65+	8,393	5.0
55 and over total	35,330	21.1
Total all ages	167,164	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 (Table 7.3). In 2005, regional net in-commuting was 6,471. By 2014 net-commuting had jumped to 12,484 as inflows went up. 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 dropped in 2015 from 2014 implying that congestion eased. However, with the increase of in- and out-commuters, congestion is expected to remain an issue as the region's economy recovers from the last 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		38,134			
2012	48,616		37,525			
2013	49,395		38,350			
2014	49,569		37,085			
Region 7 Counties	<u>Inflow, 2014</u>		<u>Outflow, 2014</u>			
	Number	Percent	Number	Percent		
Autauga	6,253	7.3	16,045	21.9		
Butler	3,186	3.7	4,667	6.4		
Crenshaw	1,828	2.1	3,966	5.4		
Elmore	10,370	12.1	23,102	31.6		
Lowndes	1,598	1.9	2,338	3.2		
Montgomery	62,457	72.9	23,090	31.5		
	Percent of workers					
Average commute time (one-way)	2010	2011	2012	2013	2014	2015
Less than 20 minutes	59.4	58.4	52.7	57.8	49.0	51.1
20 to 40 minutes	27.8	29.2	31.5	27.3	29.5	29.9
40 minutes to an hour	8.6	8.6	8.3	7.4	12.8	8.2
More than an hour	1.6	1.7	3.0	1.6	1.1	3.4
Average commute distance (one-way)	2010	2011	2012	2013	2014	2015
Less than 10 miles	48.4	48.4	44.6	49.6	41.6	44.9
10 to 25 miles	32.9	34.1	34.7	32.6	33.1	32.9
25 to 45 miles	11.9	10.3	14.3	11.7	19.6	13.7
More than 45 miles	5.2	4.7	5.4	3.6	4.2	6.6

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. The regional population estimate for 2015 shows a population decline of 0.4 percent from 2010 with population increasing in Elmore, Autauga, and Crenshaw counties and declining in the others. 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. 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	2015 Estimate	Change 2000-2010	% change 2000-2010	Change 2010-2015	% change 2010-2015
Autauga	34,222	43,671	54,571	55,347	10,900	25.0	776	1.4
Butler	21,892	21,399	20,947	20,154	-452	-2.1	-793	-3.8
Crenshaw	13,635	13,665	13,906	13,963	241	1.8	57	0.4
Elmore	49,210	65,874	79,303	81,468	13,429	20.4	2,165	2.7
Lowndes	12,658	13,473	11,299	10,458	-2,174	-16.1	-841	-7.4
Montgomery	209,085	223,510	229,363	226,519	5,853	2.6	-2,844	-1.2
Region 7	340,702	381,592	409,389	407,909	27,797	7.3	-1,480	-0.4
Alabama	4,040,587	4,447,100	4,779,736	4,849,377	332,636	7.5	69,641	1.5
United States	248,709,873	281,421,906	308,745,538	318,857,056	27,323,632	9.7	10,111,518	3.3

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

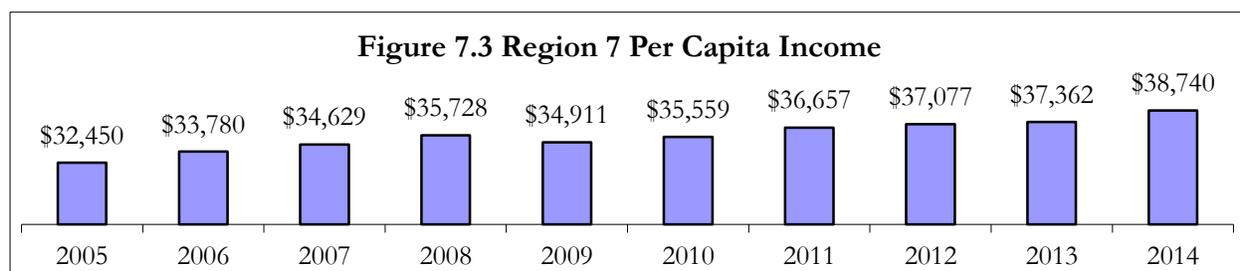
Table 7.5 Population by Age Group and Projections

Age Group	2000	2010	2012	2022	2030
0-19	112,193	112,856	112,337	112,538	112,361
20-24	27,750	29,663	31,025	30,328	30,978
25-29	27,394	28,055	27,803	27,614	28,920
30-34	26,264	26,872	27,563	27,951	28,813
35-39	30,494	27,915	26,110	28,188	28,532
40-44	29,596	26,964	27,211	27,866	28,563
45-49	26,554	29,877	27,649	27,730	28,954
50-54	23,467	29,115	28,713	27,067	27,207
55-59	17,794	25,429	26,576	27,655	27,744
60-64	14,767	21,886	22,646	27,640	25,423
65+	45,319	50,757	53,906	72,534	89,300
20-64 Total	224,080	245,776	245,296	252,039	255,134
Total Population	381,592	409,389	411,539	437,111	456,795
Change from 2012					
0-19				0.2%	0.0%
20-64				2.7%	4.0%
Total Population				6.2%	11.0%

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 \$38,740 in 2014 (Figure 7.3), up 19.4 percent from 2005, and \$1,228 or 3.3 percent more than the state average of \$37,512. Montgomery County had the highest PCI with \$41,008 followed by Elmore at \$36,528 and Autauga with \$36,419. Butler County had the lowest PCI with \$32,954.



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

Educational Attainment

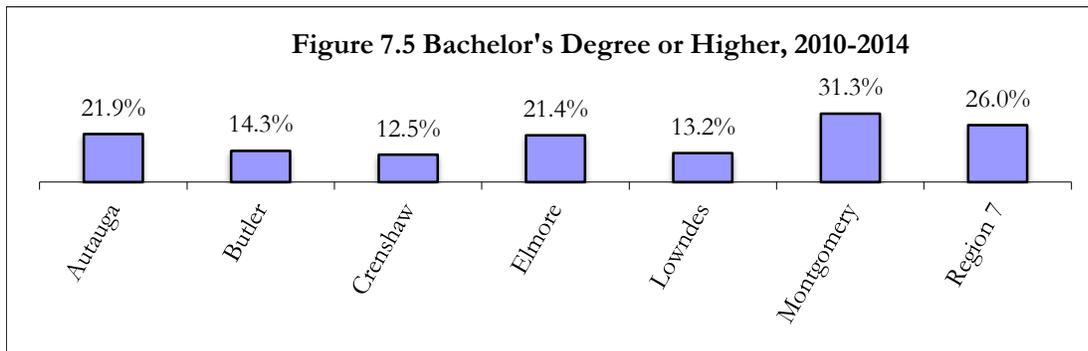
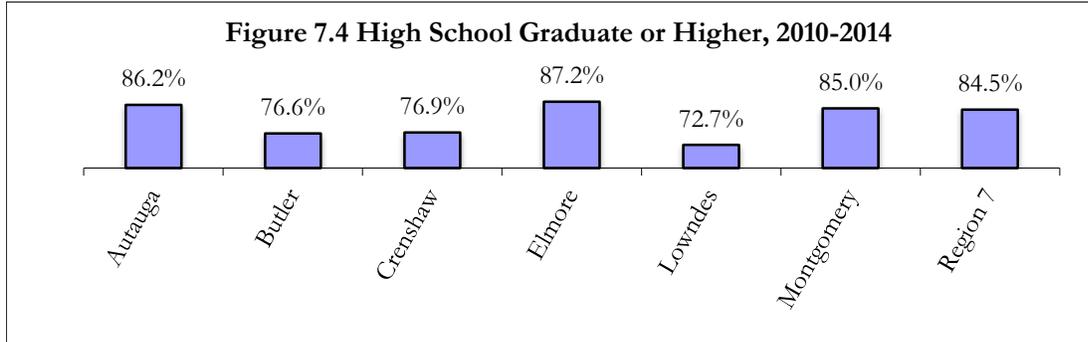
Region 7's educational attainment for residents age 25 years old and over is shown in Table 7.6 and Figures 7.4 and 7.5 based on American Community Survey's five year estimates (2010-2014).

Region 7's educational attainment is higher than that of the state. About 85.0 percent graduated from high school and 26.0 percent held a bachelor's or higher degree. Elmore, Montgomery, and Autauga counties had the highest educational attainment in the region. Lowndes County had the lowest percentage of high school graduates while Crenshaw had the lowest for bachelor's or higher degree attainment. 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, 2010-2014

	Autauga	Butler	Crenshaw	Elmore	Lowndes	Montgomery	Region 7
Total	36,233	14,041	9,527	53,964	7,277	147,168	268,210
No schooling completed	602	221	259	256	63	2,216	3,617
Nursery to 4th grade	92	83	65	80	75	703	1,098
5th and 6th grade	278	241	162	299	206	1,608	2,794
7th and 8th grade	628	565	429	1,012	251	2,887	5,772
9th grade	812	431	295	1,029	201	3,394	6,162
10th grade	957	526	390	1,425	473	4,527	8,298
11th grade	956	796	355	1,519	460	4,115	8,201
12th grade, no diploma	687	425	250	1,304	259	2,685	5,610
High school graduate/equivalent	12,139	5,214	3,678	19,002	2,468	38,650	81,151
Some college, less than 1 year	2,794	638	545	3,125	401	7,724	15,227
Some college, 1+ years, no degree	5,501	1,801	1,207	8,675	998	23,789	41,971
Associate degree	2,837	1,089	704	4,689	461	8,844	18,624
Bachelor's degree	4,930	1,162	779	7,253	667	27,946	42,737
Master's degree	2,354	635	355	3,445	233	13,090	20,112
Professional school degree	495	108	25	563	58	2,953	4,202
Doctorate degree	171	106	29	288	3	2,037	2,634

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 26.2 percent in 2015. Applying this rate to March 2016 labor force data means that 45,328 employed residents were underemployed (Table 7.7). Adding the unemployed gives a total available labor pool of 56,289 for the region. This is 5.1 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 21.7 percent for Elmore County to 40.0 percent for Lowndes. Lowndes County had the smallest available labor pool and Montgomery had the largest. The underemployed are more willing to commute longer times and distances for a better job. For the one-way commute, 48.9 percent are prepared to travel 20 or more minutes longer and 37.2 percent will go 20 or more extra miles.

Table 7.7 Underemployed and Available Labor by County

	Region 7	Autauga	Butler	Crenshaw	Elmore	Lowndes	Montgomery
Labor Force	184,036	25,345	9,111	6,335	36,071	3,802	103,372
Employed	173,075	23,958	8,420	5,934	34,206	3,379	97,178
Underemployment rate	26.2%	22.2%	31.0%	24.4%	21.7%	40.0%	23.9%
Underemployed workers	45,328	5,323	2,606	1,447	7,436	1,352	23,226
Unemployed	10,961	1387	691	401	1,865	423	6,194
Available labor pool	56,289	6,710	3,297	1,848	9,301	1,775	29,420

Note: Rounding errors may be present. Based on March 2016 labor force data and 2015 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 714 complete responses were obtained from Region 7 in 2015. About 53.0 percent (378 respondents) were employed, of whom 99 respondents stated that they were underemployed. Low wages at the available jobs, a lack of job opportunities in their area, living too far from jobs, other family or personal obligations, taking care of someone other than a child, and owning a house in their area 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. 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 60.0 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.
- More hold multiple jobs.
- They have shorter commute time and distance.
- More work in computer and mathematical; life, physical, and social science; arts, design, entertainment, sports, and media; food preparation and serving related; building and grounds cleaning and maintenance; personal care and service; farming, fishing, and forestry; production; and transportation and material moving occupations.
- More work in agriculture, forestry, fishing, and hunting; retail trade; transportation and warehousing; information; administrative and support and waste management and remediation services; educational services; accommodation and food services; and other services 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, even for as little as five percent more.
- More are willing to commute longer and farther a better job.
- Fewer are satisfied with their current jobs.
- More are willing to train for a better job if the government pays part or all the cost.
- More have sought better jobs in the preceding quarter.
- They have the same median age as all employees but have lower education.
- Fewer are married and more are female.
- More are African-Americans or other nonwhite ethnicities.

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 (75.7 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 (53.5 percent) are satisfied with their jobs. The underemployed are also more dissatisfied with their earnings and most satisfied with their commuting distance.

Workers are generally willing to train for a new or better job, with the underemployed being much more willing (74.5 percent vs. 59.0 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 all 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 Job Satisfaction and Willingness to Train (Percent)

		Job Satisfaction				
		Completely Dissatisfied	Dissatisfied	Neutral	Satisfied	Completely Satisfied
Employed						
Overall		2.9	4.2	16.9	27.0	48.7
	Earnings	10.9	9.0	25.7	23.8	30.7
	Retention	5.0	4.0	11.6	18.3	60.6
	Work	1.1	3.4	9.3	21.4	64.3
	Hours	3.7	5.8	10.6	20.9	59.0
	Shift	4.5	2.9	8.2	17.7	65.9
	Conditions	2.7	5.0	13.2	27.0	52.1
	Commuting Distance	5.6	3.7	11.6	14.0	65.1
Underemployed						
Overall		8.1	10.1	28.3	29.3	24.2
	Earnings	28.3	14.1	33.3	13.1	11.1
	Retention	13.1	7.1	15.2	15.2	42.4
	Work	2.0	8.1	16.2	25.3	48.5
	Hours	12.1	11.1	12.1	24.2	40.4
	Shift	11.1	6.1	12.1	16.2	53.5
	Conditions	6.1	11.1	21.2	25.3	36.4
	Commuting Distance	11.1	0.0	12.1	14.1	62.6
		Willingness to Train				
		Completely Unwilling	Unwilling	Neutral	Willing	Completely Willing
Employed						
For a new or better job		22.4	5.1	11.9	10.3	48.7
	If paid by trainee	39.7	19.4	19.8	5.0	11.2
	If paid by trainee and government	11.2	10.3	34.3	20.3	19.4
	If paid by government	2.5	0.8	9.9	15.3	69.4
Underemployed						
For a new or better job		12.8	2.1	9.6	10.6	63.8
	If paid by trainee	37.8	18.3	24.4	4.9	11.0
	If paid by trainee and government	9.8	8.5	35.4	15.9	26.8
	If paid by government	1.2	0.0	4.9	9.8	84.2

Note: Rounding errors may be present.

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

Workforce Demand

Industry Mix

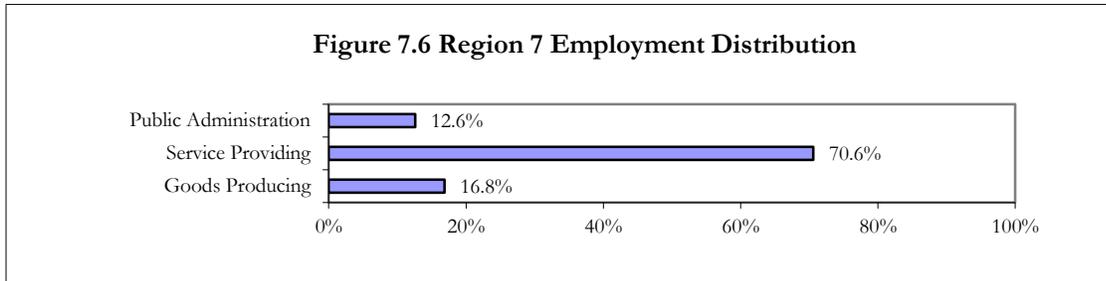
The manufacturing sector was the leading employer in Region 7 with 21,464 jobs in the first quarter of 2015 (Table 7.9). Rounding out the top five industries by employment are public administration; health care and social assistance; retail trade; and accommodation and food services. These five industries provided 96,451 jobs, 57.7 percent of the regional total. The average monthly wage across all industries in the region was \$3,048. Two of the leading employers—manufacturing and public administration—paid more than this average. New hire monthly earnings averaged \$1,865, about 61.0 percent of the region’s average monthly wage. The highest average monthly wages were for utilities at \$6,629; finance and insurance \$4,906; professional, scientific, and technical services \$4,771, wholesale trade with \$4,406; and management of companies and enterprises with \$4,359. Accommodation and food services paid the least at \$1,228. Professional, scientific, and technical services had the highest average monthly new hire wages at \$3,477, followed utilities \$3,240 and finance and insurance at \$3,224. Accommodation and food service paid newly hired workers the least, \$981.

Table 7.9 Industry Mix (First Quarter 2015)

Industry by 2-digit NAICS Code	Total Employment	Share	Rank	Average Monthly Wage	Average Monthly New Hire Earnings
11 Agriculture, Forestry, Fishing and Hunting	731	0.44%	19	\$3,180	\$2,475
21 Mining	179	0.11%	20	\$3,354	\$2,210
22 Utilities	1,205	0.72%	17	\$6,629	\$3,240
23 Construction	5,783	3.46%	10	\$3,447	\$2,579
31-33 Manufacturing	21,464	12.84%	1	\$4,134	\$2,773
42 Wholesale Trade	6,086	3.64%	9	\$4,406	\$3,191
44-45 Retail Trade	18,967	11.35%	4	\$2,090	\$1,244
48-49 Transportation and Warehousing	5,765	3.45%	11	\$2,955	\$2,235
51 Information	2,263	1.35%	15	\$3,875	\$2,513
52 Finance and Insurance	5,464	3.27%	12	\$4,906	\$3,224
53 Real Estate and Rental and Leasing	1,980	1.18%	16	\$3,034	\$2,401
54 Professional, Scientific, and Technical Services	7,843	4.69%	8	\$4,771	\$3,477
55 Management of Companies and Enterprises	1,005	0.60%	18	\$4,359	\$2,057
56 Administrative and Support and Waste Management and Remediation Services	11,431	6.84%	7	\$1,602	\$1,467
61 Educational Services	13,256	7.93%	6	\$2,978	\$1,555
62 Health Care and Social Assistance	19,901	11.90%	3	\$2,965	\$2,005
71 Arts, Entertainment, and Recreation	3,011	1.80%	14	\$1,909	\$1,396
72 Accommodation and Food Services	15,074	9.02%	5	\$1,228	\$981
81 Other Services (Except Public Administration)	4,713	2.82%	13	\$2,864	\$1,805
92 Public Administration	21,045	12.59%	2	\$3,276	\$2,184
ALL INDUSTRIES	167,163	100.00%		\$3,048	\$1,865

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

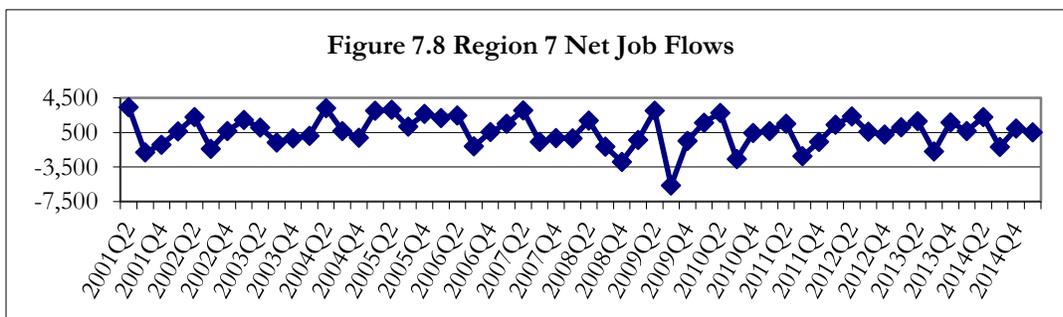
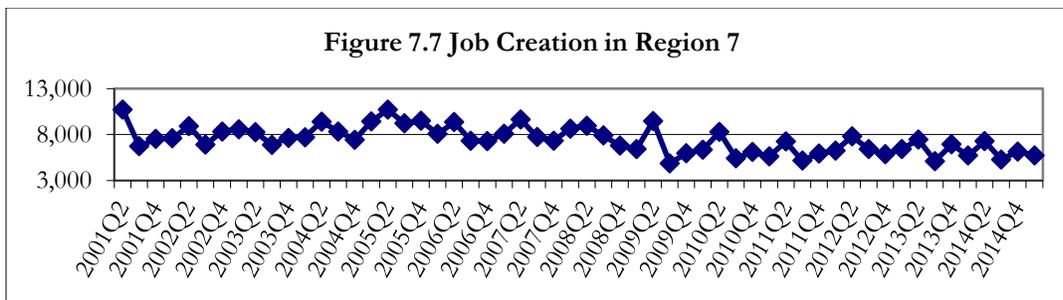
By broad industry classification, service providing industries provided 70.6 percent of jobs in first quarter 2015 (Figure 7.6). Goods producing industries were next with 16.8 percent and public administration accounted for 12.6 percent. The distribution is for all nonagricultural jobs in the region, 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 7,429 jobs were created per quarter from second quarter 2001 to first quarter 2015 (Figure 7.7); quarterly net job flows averaged 602 (Figure 7.8). Over the period, quarterly net job flows have ranged from a loss of 5,631 to a gain of 3,418. Both job creation and net job flows fluctuate significantly but were stable in the first quarter 2015. 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 662 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 2012 to 2022 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; General and Operations Managers; Personal Care Aides; and Licensed Practical and Licensed Vocational Nurses. Fifteen of the high-demand occupations are also fast-growing. This means that these 15 occupations have an annual growth rate of at least 1.55 percent, much faster than the regional and state occupational growth rates of 1.06 percent and 0.99 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 industry, implying that this sector will continue to be an important employer in the region. The top five fast-growing occupations are Personal Care Aides; Physical Therapist Assistants; Diagnostic Medical Sonographers; Home Health Aides; and Physical Therapists.

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 \$79,572 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. Eight occupations are both high-earning and in high-demand (Table 7.10). Only one occupation—Nurse Practitioners—is in all the three categories.

Of the region's 662 occupations, 46 are expected to decline over the 2012 to 2022 period. Employment in the 20 sharpest-declining occupations will fall by at least seven percent over the period, with each losing a minimum of 10 jobs (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 2012 and Projected Year 2022)

Occupation	Average Annual Job Openings		
	Total	Due to Growth	Due to Separations
Team Assemblers	255	165	90
Registered Nurses	145	75	70
General and Operations Managers	85	40	50
Personal Care Aides*	60	55	5
Licensed Practical and Licensed Vocational Nurses	55	30	25
Home Health Aides*	45	30	15
Carpenters	35	25	10
Medical Assistants	30	20	15
First-Line Supervisors of Construction Trades and Extraction Workers	30	20	10
Industrial Machinery Mechanics	30	15	15
Computer User Support Specialists	25	15	10
Management Analysts	20	15	10
Network and Computer Systems Administrators	20	10	10
Healthcare Social Workers*	20	10	10
Medical Secretaries*	20	15	5
Construction Managers	15	10	5
Cost Estimators	15	5	5
Computer Systems Analysts	15	10	5
Dental Hygienists*	15	10	5
Radiologic Technologists	15	10	5
Emergency Medical Technicians and Paramedics*	15	10	5
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	15	5	10
Training and Development Specialists	10	5	5
Market Research Analysts and Marketing Specialists	10	5	5
Software Developers, Applications	10	5	5
Software Developers, Systems Software	10	5	5
Computer Network Support Specialists*	10	5	5
Architects, Except Landscape and Naval	10	5	5
Physical Therapists*	10	5	5
Nurse Anesthetists	10	5	5
Nurse Practitioners*	10	5	5
Physical Therapist Assistants*	10	5	5
Logisticians	5	5	0
Personal Financial Advisors	5	0	0
Health Specialties Teachers, Postsecondary*	5	5	0
Nursing Instructors and Teachers, Postsecondary*	5	0	0
Occupational Therapists*	5	5	0
Respiratory Therapists	5	5	0
Diagnostic Medical Sonographers*	5	5	0
Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic*	5	0	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 2012 and Projected Year 2022)

Occupation	Employment		Percent Change	Annual Growth (Percent)	Average Annual Job Openings
	2012	2022			
Personal Care Aides*	1,020	1,570	54	4.41	60
Physical Therapist Assistants*	130	190	46	3.87	10
Diagnostic Medical Sonographers*	90	130	50	3.75	5
Home Health Aides*	720	1040	44	3.75	45
Physical Therapists*	140	200	36	3.63	10
Magnetic Resonance Imaging Technologists	70	100	34	3.63	5
Veterinary Technologists and Technicians	70	100	42	3.63	5
Occupational Therapists*	100	140	38	3.42	5
Medical Secretaries*	440	610	39	3.32	20
Health Specialties Teachers, Postsecondary*	80	110	37	3.24	5
Emergency Medical Technicians and Paramedics*	NA	NA	37	3.15	15
Helpers--Electricians	230	310	36	3.03	10
Nurse Practitioners*	180	240	36	2.92	10
Dental Hygienists*	250	330	35	2.82	15
Healthcare Social Workers*	390	510	29	2.72	20
Social and Human Service Assistants	100	130	34	2.66	5
Computer Network Support Specialists*	210	270	29	2.54	10
Nursing Instructors and Teachers, Postsecondary*	70	90	33	2.54	5
Physical Therapist Aides	70	90	31	2.54	5
Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic*	60	70	33	1.55	5

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

* - Qualify as both high-demand and fast-growing occupations. 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 2012 and Projected Year 2022)

Occupation	Employment		Annual Growth (Percent)	Average Annual Job Openings	Mean Annual Salary (\$)
	2012	2022			
Anesthesiologists	NA	NA	1.55	0	252,443
Psychiatrists	30	30	0.00	0	228,137
Physicians and Surgeons, All Other	200	230	1.41	10	205,100
Family and General Practitioners	90	90	0.00	0	199,346
Chiropractors	50	60	1.84	0	187,458
Chief Executives	140	140	0.00	5	183,781
Dentists, General	100	110	0.96	5	173,421
Pediatricians, General	30	30	0.00	0	173,153
Nurse Anesthetists*	NA	NA	2.61	10	135,387
Pharmacists	430	480	1.11	15	117,544
General and Operations Managers*	2,570	2,950	1.39	85	115,577
Commercial Pilots	60	70	1.55	5	115,390
Marketing Managers	50	50	0.00	0	112,824
Securities, Commodities, and Financial Services Sales Agents	170	190	1.12	5	109,813
Financial Managers	530	580	0.91	15	109,019
Computer and Information Systems Managers	370	420	1.28	10	107,815
Sales Managers	210	220	0.47	5	106,026
Podiatrists	20	30	4.14	0	105,895
Electrical Engineers	170	200	1.64	5	103,992
Architectural and Engineering Managers	110	120	0.87	5	103,569
Law Teachers, Postsecondary	NA	NA	1.34	0	101,891
Political Science Teachers, Postsecondary	NA	NA	0.00	0	101,611
Personal Financial Advisors*	100	120	1.84	5	97,898
Administrative Law Judges, Adjudicators, and Hearing Officers	80	80	0.00	0	96,859
Education Administrators, Postsecondary	180	200	1.06	5	96,730
Industrial Production Managers	210	210	0.00	5	96,552
Lawyers	1,250	1,350	0.77	30	96,486
Physician Assistants	30	50	5.24	0	96,177
Education Administrators, All Other	330	320	-0.31	10	95,708
Electronics Engineers, Except Computer	50	50	0.00	0	94,330
Financial Analysts	80	90	1.18	5	93,498
Computer Hardware Engineers	80	80	0.00	0	93,423
Managers, All Other	720	780	0.80	20	92,120
Medical and Health Services Managers	230	260	1.23	10	91,913
Purchasing Managers	70	70	0.00	0	91,732
Business Teachers, Postsecondary	110	120	0.87	5	91,126
Construction Managers*	450	540	1.84	15	90,796
Architects, Except Landscape and Naval*	180	220	2.03	10	90,424
Software Developers, Applications*	240	290	1.91	10	88,793
Human Resources Managers	120	130	0.80	5	88,101
Nurse Practitioners*	180	240	2.92	10	87,967
Software Developers, Systems Software*	250	310	2.17	10	87,250
Computer Occupations, All Other	650	610	-0.63	10	83,561
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	20	20	0.00	0	82,930
Advertising and Promotions Managers	NA	NA	0.00	0	82,423
Transportation, Storage, and Distribution Managers	90	90	0.00	0	81,962
Computer Network Architects	60	70	1.55	0	81,373
Veterinarians	90	100	1.06	5	80,563
Administrative Services Managers	80	80	0.00	0	80,121
Public Relations and Fundraising Managers	110	120	0.87	5	79,572

Note: Employment data are rounded to the nearest 10; job openings to the nearest 5. The salary data provided are based on the May 2014 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 2012 and Projected Year 2022)

Occupation	Employment		Net Change	Percent Change
	2012	2022		
Farmers, Ranchers, and Other Agricultural Managers	2,790	2,300	-490	-18
Postal Service Mail Carriers	410	320	-90	-24
Postal Service Mail Sorters, Processors, and Processing Machine Operators	250	180	-70	-27
Data Entry Keyers	200	150	-50	-26
Computer Operators	190	150	-40	-20
Word Processors and Typists	160	120	-40	-23
Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic	140	110	-30	-19
Postal Service Clerks	100	70	-30	-29
Packaging and Filling Machine Operators and Tenders	360	340	-20	-7
Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	210	190	-20	-9
Switchboard Operators, Including Answering Service	180	160	-20	-12
Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders	NA	NA	-20	-28
Graders and Sorters, Agricultural Products	130	120	-10	-10
Office Machine Operators, Except Computer	110	100	-10	-9
Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	110	100	-10	-10
Power Plant Operators	100	90	-10	-14
Meter Readers, Utilities	NA	NA	-10	-16
Postmasters and Mail Superintendents	30	20	-10	-21
Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	NA	NA	-10	-22
Locomotive Firers	NA	NA	-10	-33

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

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	43	55	48
Active Listening	93	95	84
Critical Thinking	95	100	84
Learning Strategies	10	15	6
Mathematics	10	5	10
Monitoring	73	80	52
Reading Comprehension	83	85	76
Science	5	10	16
Speaking	88	95	84
Writing	45	45	48
Complex Problem Solving Skills			
Complex Problem Solving	55	40	68
Resource Management Skills			
Management of Financial Resources	3	0	2
Management of Material Resources	0	0	0
Management of Personnel Resources	5	0	16
Time Management	30	25	16
Social Skills			
Coordination	55	55	32
Instructing	18	30	10
Negotiation	3	0	10
Persuasion	8	15	12
Service Orientation	43	65	18
Social Perceptiveness	58	70	44
Systems Skills			
Judgment and Decision Making	58	50	78
Systems Analysis	18	10	6
Systems Evaluation	8	0	4
Technical Skills			
Equipment Maintenance	3	0	0
Equipment Selection	3	0	0
Installation	0	0	0
Operation and Control	3	0	2
Operation Monitoring	8	10	2
Operations Analysis	5	0	10
Programming	10	5	2
Quality Control Analysis	5	5	0
Repairing	3	5	0
Technology Design	0	0	0
Troubleshooting	5	10	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 science, writing, complex problem solving, personnel resource management, negotiation, judgment and decision making, and operation analysis 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 resource management, complex problem solving, systems, and technical skills than fast-growing occupations but less basic and social 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 it 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. About 85 percent of residents age 25 and over graduated from high school in 2010 to 2014, compared to about 84 percent for Alabama. Twenty-six percent had a bachelor's or higher degree versus 23 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 three of the 50 high-earning occupations do not require a bachelor's or higher degree. Twenty-seven (68.0 percent) of the 40 high-demand occupations require an associate degree at the minimum and 20 (50.0 percent) require a bachelor's or higher degree. Twelve (60.0 percent) of the 20 fast-growing occupations require an associate degree at the minimum, with six (30.0 percent) requiring a master's or higher degree.

The 2012 to 2022 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 662 occupations, 46 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 2012 to 2022.

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	2	2	14
Master's Degree	5	4	4
Bachelor's or Higher Degree Plus Work Experience	5	0	20
Bachelor's Degree	8	0	9
Associate Degree	7	6	0
Postsecondary Non-Degree Plus On-the-job Training	1	0	0
Postsecondary Non-Degree	3	1	0
Some College, no Degree Plus On-the-job Training	1	0	0
Some College, no Degree	0	0	0
High School Diploma Plus On-the-job Training	6	5	3
High School Diploma	0	0	0
Less than High School Plus On-the-job Training	2	2	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 2012 base, worker shortfalls of 15,001 for 2022 and 32,268 for 2030 are expected (Table 7.18). The region must make worker skills and the expected shortfalls a priority through 2030. Worker shortfalls for critical occupations will also need to be addressed continuously.

Table 7.18 Expected Worker Shortfall

	2012-2022	2012-2030
Total population growth (percent)	6.2	11.0
Age 20-64 population growth (percent)	2.7	4.0
Job growth (percent)	11.1	21.9
Worker shortfall (percent)	8.3	17.9
Worker shortfall (number)	15,001	32,268

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.