

# State of the Workforce Report VII: Region 9

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## Summary

- This report analyzes workforce supply and demand issues using available metrics of workforce characteristics for Workforce Development Region 9 and presents some implications and recommendations.
- Region 9 had a 7.3 percent unemployment rate in December 2012, with 23,573 unemployed. An underemployment rate of 22.6 percent for 2012 implies that the region has a 91,061-strong available labor pool that includes 67,488 underemployed workers who are looking for better jobs and are willing to commute farther and longer for such jobs.
- The regional commuting patterns reversed from a net in-commuting of about 500 people in 2005 to a net out-commuting of 16,100 residents in 2010. Commute time and distance also went up in 2012 implying that as the economy recovered from the recession, congestion worsened. This means that continuous maintenance and development of transportation infrastructure and systems is necessary to avoid slowing economic development.
- By sector the top five employers in the region are retail trade; health care and social assistance; manufacturing; accommodation and food services; and educational services. In the first quarter of 2012 these five industries provided 146,929 jobs, 58.2 percent of the regional total. Two of these leading employers paid more than the region's \$3,294 monthly average wage. 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 15,298 jobs were created per quarter from second quarter 2001 to first quarter 2012 and quarterly net job flows averaged 1,240. 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 Registered Nurses; Home Health Aides; Welders, Cutters, Solderers, and Brazers; Industrial Machinery Mechanics; and Structural Metal Fabricators and Fitters.
- The top five fast-growing occupations are Metal-Refining Furnace Operators and Tenders; Pourers and Casters, Metal; Materials Engineers; Rolling Machine Setters, Operators, and Tenders, Metal and Plastic; and Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic.
- The top 50 high-earning occupations are in management, health, engineering, and postsecondary education fields and pay a minimum salary of \$78,089. Nine of the top 10 are health jobs.
- Of the top 40 high-demand, the top 20 fast-growing, and 50 high-earning occupations, only two—Aerospace Engineers and Industrial Engineers—belongs to all three categories. Thirteen occupations are both high-demand and fast-growing. Seven occupations are both in high-earning and high-demand.

- Of the region's 716 occupations, 39 are expected to decline over the 2010 to 2020 period, with 20 occupations expected to sharply decline by at least 10 percent. Education and training for these 20 occupations should slow accordingly.
- Skill and education requirements for jobs keep rising. Educational and training requirements of high-demand, fast-growing, and high-earning occupations demonstrate the importance of education in developing the future workforce. In the future, more jobs will require postsecondary education and training at a minimum.
- The importance of basic skills generally and for high-demand, high-growth, and high-earning jobs indicates a strong need for training in these skills. For Region 9 the pace of training needs to increase for science, mathematics, resource management, and technical skills. The scale of training should be raised for basic and social skills. Ideally, all high school graduates should possess basic skills so that postsecondary and higher education can focus on other and more complex skills. Employers should be an integral part of planning for training as they can help identify future skill needs and any existing gaps.
- From a 2010 base, worker shortfalls of about 30,000 for 2020 and 52,100 for 2030 are expected. This will demand a focus on worker skills and shortfalls through 2025. Worker shortfalls for critical occupations will also need to be continuously addressed. Strategies to address skill needs and worker shortfalls should 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 important because (i) a highly educated and productive workforce is a critical economic development asset, (ii) productivity rises with education, (iii) educated people are more likely to work, and (iv) it yields high private and social rates of return on investment. Workforce development must view all of education and other programs (e.g. adult education, career technical training, worker retraining, career readiness, etc.) as one system. Funding to support workforce development may require tax reform at state and local levels and should provide for flexibility as workforce needs change over time and demand different priorities. Publicizing both private and public returns to education can encourage individuals to raise their own educational attainment levels, while also promoting public and legislative support for education.
- Higher incomes that come with improved educational attainment and work skills will help to increase personal income for the region as well as raise additional local (county and city) tax revenues. This is important, especially for a region that has average population and labor force growth rates and per capita income that is below the state average.
- Together, workforce development and economic development can build a strong, well-diversified Region 9 economy. Indeed, one cannot achieve success without the other.

## Workforce Supply

### Labor Force Activity

The labor force includes all persons in the civilian noninstitutional population who are age 16 and over and who have a job or are actively looking for one. Typically, those who have no job and are not looking for one are not included (e.g. students, retirees, the disabled, and discouraged workers). Table 9.1 shows labor force information for Region 9 and its eight counties for 2012 and December 2012.<sup>1</sup>

**Table 9.1 Region 9 Labor Force Information**

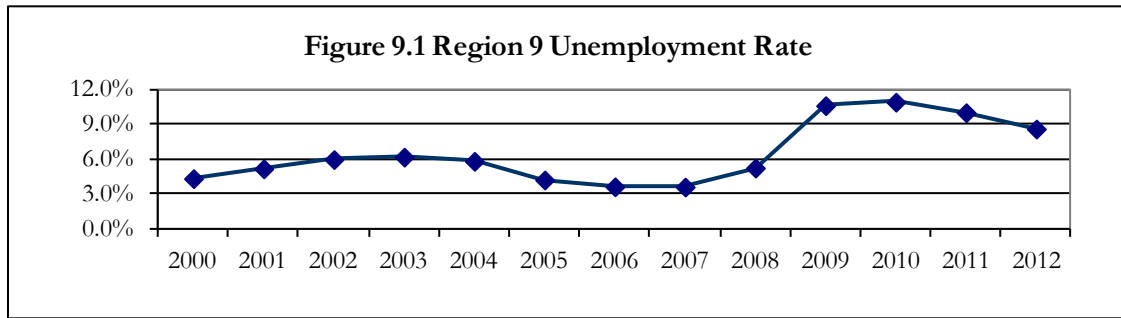
	2012 Annual Average			
	Labor Force	Employed	Unemployed	Rate (%)
Baldwin	85,038	79,118	5,920	7.0
Choctaw	5,007	4,530	477	9.5
Clarke	9,767	8,547	1,220	12.5
Conecuh	4,423	3,883	540	12.2
Escambia	14,742	13,369	1,373	9.3
Mobile	190,554	173,995	16,559	8.7
Monroe	7,614	6,640	974	12.8
Washington	6,711	5,915	796	11.9
Region 9	323,856	295,997	27,859	8.6
Alabama	2,152,933	1,987,181	165,752	7.7
U.S.	154,975,000	142,469,000	12,506,000	8.1
	December 2012			
	Labor Force	Employed	Unemployed	Rate (%)
Baldwin	84,418	79,214	5,204	6.2
Choctaw	5,029	4,634	395	7.9
Clarke	9,610	8,563	1,047	10.9
Conecuh	4,369	3,916	453	10.4
Escambia	14,509	13,340	1,169	8.1
Mobile	190,597	176,807	13,790	7.2
Monroe	7,437	6,606	831	11.2
Washington	6,619	5,935	684	10.3
Region 9	322,588	299,015	23,573	7.3
Alabama	2,154,744	2,013,847	140,897	6.5
U.S.	154,904,000	143,060,000	11,844,000	7.6

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

The recession that began in December 2007 increased the number of unemployed and sharply raised county unemployment rates. The unemployment rates have trended downwards since 2009 and ranged 7.0 percent to 12.8 percent for 2012, with 8.6 percent for the region. In December 2012, the unemployment rates ranged between 6.2 percent and 11.2 percent with 7.3 percent for the region. The unemployment rate was lowest in Baldwin County and highest in Monroe. Only Baldwin County had an unemployment rate below Alabama's 6.5 percent.

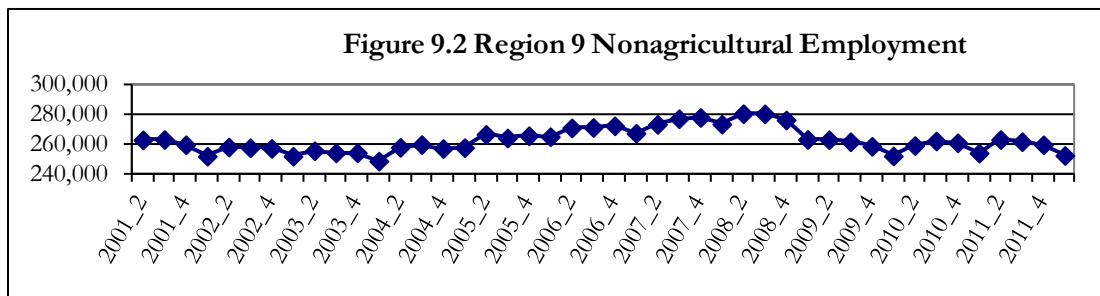
<sup>1</sup> Alabama labor force information is available from the Labor Market Information (LMI) Division of the Alabama Department of Labor. LMI compiles data in cooperation with the U.S. Bureau of Labor Statistics.

Annual unemployment rates for 2000 to 2012 are shown in Figure 9.1. The region's unemployment rate was low before the 2001 and the most recent recessions. The 2003 high of 6.2 percent was due to the effects of the national economic recession of 2001. Employment gains since 2003 resulting from successful state and local economic development efforts brought unemployment down significantly in 2006 and 2007. However, the recent recession raised unemployment to 10.9 percent in 2010 before declining to 10.0 percent and 8.6 percent in 2011 and 2012 respectively. Year-to-date monthly labor force data point to a slightly lower regional unemployment rates for 2013; the slow pace of recovery should keep unemployment high for a few more years.



Source: Alabama Department of Labor.

Nonagricultural employment of the region's residents averaged 262,670 quarterly from the second quarter of 2001 to the second quarter of 2012 (Figure 9.2). The number of jobs declined steadily since its peak in second quarter 2008 to below pre-2005 levels in first quarter 2010. The number of jobs showed signs of recovery in the second quarter of 2011, but has been dropping since then.



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

Table 9.2 shows worker distribution by age in Region 9 for the first quarter of 2012. The region's workforce is older than that of the state as a whole. Older workers, age 55 and over, are 20.6 percent of the region's nonagricultural employment versus the state's 19.7 percent. Those who are age 65 and over constitute 4.7 percent compared to 4.4 percent for Alabama. Labor force participation of younger residents must increase to meet long term occupational projections for growth and replacement or else older workers may have to work longer.

**Table 9.2 Workers by Age Group (First Quarter 2012)**

Age Group	Nonagricultural Employment	
	Number	Percent
14-18	3,983	1.6
19-24	26,806	10.6
25-34	54,196	21.5
35-44	56,360	22.3
45-54	58,905	23.3
55-64	40,305	16.0
65+	11,741	4.7
55 and over total	52,046	20.6
Total all ages	252,296	100.0

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

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

## Commuting Patterns

In 2005 the number of workers who commuted into the region exceeded those who commuted out by 501 (Table 9.3). This reversed in 2006 as the number of in-commuters declined and out-commuters jumped resulting in a net-commuter outflow of 12,954 residents. In 2010 net out-commuting residents rose to 16,104. Mobile County had the largest number of commuters in the region. Table 9.3 also shows that average commute time and distance for workers are up in 2012 from 2011 implying that congestion worsened. Congestion is likely to increase as the regional economy recovers from the recent recession. Thus, regional transportation infrastructure and systems must be maintained and developed to ensure that the flow of goods and movement of workers are not interrupted. Slowing the movement of goods and workers can slow economic development.

## Population

In the last decade, the population in Region 9 grew by 7.1 percent to 727,145 as shown in Table 9.4. This growth was less than the state's 7.5 percent. Population grew in Baldwin and Mobile counties and shrank in the other six. Population grew fastest in Baldwin County while population decline was highest in Choctaw.

Table 9.5 shows Region 9's population counts, estimates, and projections by age group. The population aged 65 and over has been growing rapidly since 2010, as the first of the baby boom generation turned 65 in 2011. Consequently, growth of the prime working age group (20-64) and youth (0-19) will lag that of the total population. This poses a challenge for workforce development. If employment growth outpaces labor force growth in the long term, communities that experience rapid job gains may need to consider investments in amenities and infrastructure to attract new residents.

**Table 9.3 Commuting Patterns**

<b>Year</b>	<b>Region 9 Inflow</b>		<b>Region 9 Outflow</b>				
	Number		Number				
2005	34,351		33,850				
2006	24,717		37,671				
2007	29,211		42,496				
2008	33,041		43,594				
2009	32,581		46,548				
2010	33,632		49,736				
<b>Region 9 Counties</b>	<b><u>Inflow, 2010</u></b>		<b><u>Outflow, 2010</u></b>				
	Number	Percent	Number	Percent			
Baldwin	17,250	22.9	29,229	32.0			
Choctaw	1,454	1.9	2,323	2.5			
Clarke	3,644	4.8	5,378	5.9			
Conecuh	1,360	1.8	3,324	3.6			
Escambia	5,025	6.7	6,543	7.2			
Mobile	40,829	54.2	36,217	39.6			
Monroe	2,837	3.8	4,367	4.8			
Washington	2,935	3.9	4,057	4.4			
			Percent of workers				
<b>Average commute time (one-way)</b>	<b>2004</b>	<b>2005/2006</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
Less than 20 minutes	59.5	61.3	56.5	56.8	53.0	56.8	49.9
20 to 40 minutes	26.5	23.2	28.2	27.1	29.1	27.7	32.6
40 minutes to an hour	7.6	8.4	8.7	9.0	11.2	8.8	10.0
More than an hour	2.3	3.6	3.4	2.6	2.6	3.3	4.1
<b>Average commute distance (one-way)</b>	<b>2004</b>	<b>2005/2006</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
Less than 10 miles	50.4	49.9	49.7	50.7	44.4	47.9	42.0
10 to 25 miles	24.2	27.5	28.3	28.4	31.8	33.3	34.9
25 to 45 miles	14.2	12.9	14.2	12.2	16.1	11.4	13.6
More than 45 miles	5.1	5.3	6.1	4.7	6.1	6.2	7.7

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.

**Table 9.4 Region 9 Population**

	1990 Census	2000 Census	2010 Census	Change 2000-2010	% Change 2000-2010
Baldwin	98,280	140,415	182,265	41,850	29.8
Choctaw	16,018	15,922	13,859	-2,063	-13.0
Clarke	27,240	27,867	25,833	-2,034	-7.3
Conecuh	14,054	14,089	13,228	-861	-6.1
Escambia	35,518	38,440	38,319	-121	-0.3
Mobile	378,643	399,843	412,992	13,149	3.3
Monroe	23,968	24,324	23,068	-1,256	-5.2
Washington	16,694	18,097	17,581	-516	-2.9
Region 9	610,415	678,997	727,145	48,148	7.1
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.

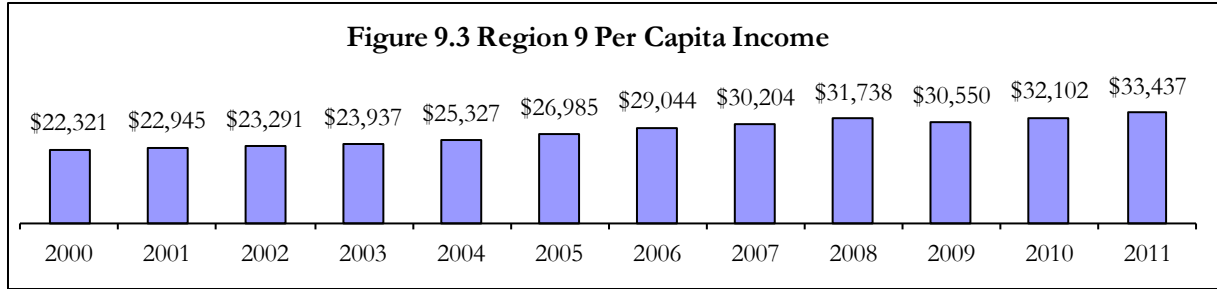
**Table 9.5 Population by Age Group and Projections**

Age Group	2000	2010	2020	2030
0-19	200,584	197,211	198,228	200,655
20-24	43,197	45,480	47,993	48,452
25-29	43,786	45,232	46,716	47,013
30-34	44,111	44,306	44,009	47,743
35-39	50,795	45,463	46,821	48,705
40-44	52,894	46,360	46,228	46,032
45-49	47,515	52,630	47,397	49,154
50-54	43,013	53,882	47,702	47,907
55-59	34,984	48,324	53,578	48,606
60-64	29,332	43,293	54,294	48,557
65+	88,786	104,964	143,462	184,674
20-64 Total	389,627	424,970	434,738	432,169
Total Population	678,997	727,145	776,428	817,498
<i>Change from 2010</i>				
0-19			0.5%	1.7%
20-64			2.3%	1.7%
Total Population			6.8%	12.4%

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

## Per Capita Income

Per capita income (PCI) in Region 9 was \$33,437 in 2011 (Figure 9.3), up 50 percent from 2000, but \$1,443 or 4.1 percent below the state average of \$34,880. Baldwin County had the highest PCI with \$38,024. Conecuh County had the lowest PCI with \$28,222.



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

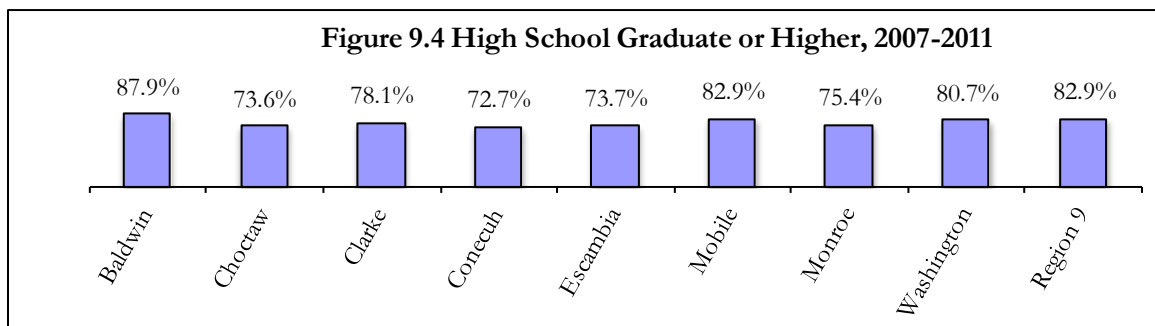
### Educational Attainment

Educational attainment in 2007 to 2011 of Region 9 residents who were 25 years old and over is shown in Table 9.6 and Figures 9.4 and 9.5. About 83 percent graduated from high school and 20 percent held a bachelor's or higher degree. Baldwin County had higher educational attainment than the other seven counties and the state as a whole. Educational attainment is important as skills rise with education and high-wage jobs for the 21st century demand more skill sets.

**Table 9.6 Educational Attainment of Population 25 Years and Over, 2007-2011**

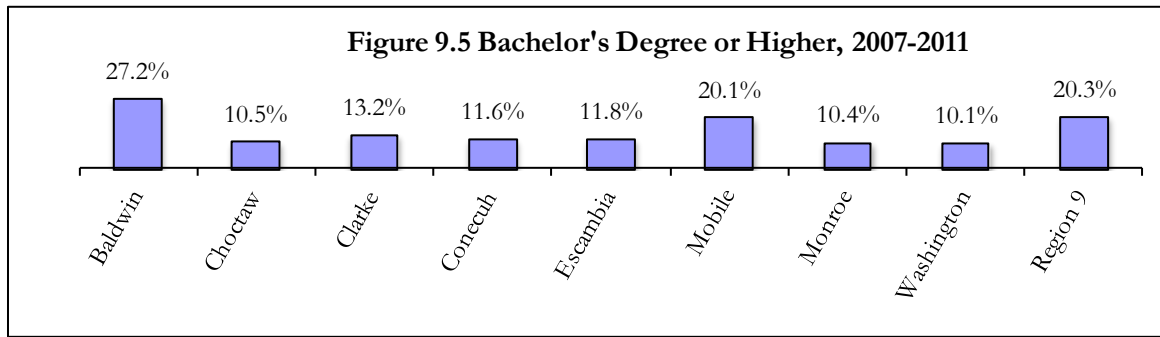
	Baldwin	Choctaw	Clarke	Conecuh	Escambia	Mobile	Monroe	Washington	Region 9
Total	124,450	9,713	17,219	8,822	26,044	265,828	15,296	11,569	478,941
No schooling completed	773	289	189	84	353	3,150	159	167	5,164
Nursery to 4th grade	508	117	287	110	202	1,153	78	58	2,513
5th and 6th grade	1,394	249	282	226	496	2,217	242	369	5,475
7th and 8th grade	2,501	348	337	364	1,456	5,955	593	297	11,851
9th grade	2,248	220	584	302	1,256	6,599	541	296	12,046
10th grade	3,048	520	715	468	1,246	9,013	964	329	16,303
11th grade	2,926	543	828	510	1,332	11,335	655	492	18,621
12th grade, no diploma	1,696	275	555	342	501	5,929	538	228	10,064
High school graduate/equivalent	36,271	3,816	6,955	3,387	9,172	89,397	6,217	5,467	160,682
Some college, less than 1 year	8,451	518	1,029	237	1,622	15,128	649	668	28,302
Some college, 1+ years, no degree	20,893	1,097	1,783	923	3,362	42,633	2,085	1,383	74,159
Associate degree	9,872	697	1,405	850	1,976	20,009	981	641	36,431
Bachelor's degree	22,946	616	1,433	557	2,079	34,983	1,174	810	64,598
Master's degree	7,973	339	712	313	837	12,652	318	321	23,465
Professional school degree	1,828	60	84	112	100	3,265	76	37	5,562
Doctorate degree	1,122	9	41	37	54	2,410	26	6	3,705

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.





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

### Underemployment and Available Labor

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

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

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

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

Region 9 had an underemployment rate of 22.6 percent in 2012. Applying this rate to December 2012 labor force data means that 67,488 employed residents were underemployed (Table 9.7). Adding the unemployed gives a total available labor pool of 91,061 for the region. This is 3.9 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 17.5 percent for Clarke County to 25.5 percent for Monroe and Choctaw. Conecuh County had the smallest available labor pool while Mobile had the largest. The underemployed are willing to commute longer distances for a better job. For the one-way commute, 37.9 percent are prepared for 20 or more minutes longer and 31.4 percent will go 20 or more extra miles.

**Table 9.7 Underemployed and Available Labor by County**

	Region 9	Baldwin	Choctaw	Clarke	Conecuh	Escambia	Mobile	Monroe	Washington
Labor Force	322,588	84,418	5,029	9,610	4,369	14,509	190,597	7,437	6,619
Employed	299,015	79,214	4,634	8,563	3,916	13,340	176,807	6,606	5,935
Underemployment rate	22.6%	18.0%	25.5%	17.5%	22.6%	23.2%	23.9%	25.5%	22.6%
Underemployed workers	67,488	14,243	1,181	1,502	884	3,096	42,292	1,681	1,344
Unemployed	23,573	5,204	395	1,047	453	1,169	13,790	831	684
<b>Available labor pool</b>	<b>91,061</b>	<b>19,447</b>	<b>1,576</b>	<b>2,549</b>	<b>1,337</b>	<b>4,265</b>	<b>56,082</b>	<b>2,512</b>	<b>2,028</b>

Note: Rounding errors may be present. Based on December 2012 labor force data and 2012 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. In 2012 a total of 1,729 complete responses were obtained from Region 9. About 39 percent (678 respondents) were employed, of whom 153 stated that they were underemployed. A lack of job opportunities in their area, low wages at available jobs, living too far from jobs, owning a house in the area, other family or personal obligations, and child care responsibilities are the primary reasons given for being underemployed. Ongoing economic development efforts can help in this regard. Nonworkers cite retirement and disability or other health concerns as the main reasons for their status, but some also cite a lack of job opportunities in their area and social security limitations as additional major reasons. Such workers may become part of the labor force if their problems can be addressed.

A comparison of underemployed workers to the overall workforce in Region 9 shows that:

- Fewer work full-time and more of the part-timers would like to work full-time.
- More hold multiple jobs.
- They have longer commute distances.
- More work in computer and mathematical; life, physical, and social science; community and social services; health care support; food preparations and service; building and grounds cleaning and maintenance; personal care service; office and administrative support; production; and installation, maintenance, and repair occupations.
- More are in manufacturing, retail trade, educational services, health care and social assistance industries.
- They have slightly less job tenure than other employees and they earn less.

- 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.
- For a better job, more are willing to extend their commute.
- Fewer are satisfied with their current jobs.
- More have sought better jobs in the preceding quarter.
- More are willing to train for a better job even if they have to pay all the training cost.
- Fewer are married or males.
- They are younger.
- More are Hispanic, African-American, or other nonwhite ethnicities
- They have about the same educational attainment as other employees.

Table 9.8 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 (75.2 percent) are satisfied or completely satisfied with their jobs. Workers are most satisfied with the work that they do and least satisfied with the earnings they receive. Fewer of the underemployed workers are satisfied with their jobs (56.9 percent). The underemployed are most satisfied with their shift and the work they do, but extremely dissatisfied with their earnings.

Workers are generally willing to train for a new or better job, with the underemployed being much more willing (67.9 percent vs. 59.5 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. Underemployed workers are more willing to train for the new or better job even if they have to bear the full cost the training. The results show that workers expect the government to bear at least a part of the training cost. This expectation may result from worker awareness of government workforce programs that provide such assistance.

**Table 9.8 2012 Job Satisfaction and Willingness to Train (Percent)**

<b>Job Satisfaction</b>						
		Completely Dissatisfied	Dissatisfied	Neutral	Satisfied	Completely Satisfied
<b>Employed</b>						
Overall		3.7	5.0	16.1	24.5	50.7
	Earnings	11.7	11.4	20.4	26.4	29.7
	Retention	3.8	3.8	12.5	18.6	59.9
	Work	1.8	3.2	8.4	22.1	64.3
	Hours	5.6	4.1	9.1	20.2	60.6
	Shift	3.4	3.1	9.3	14.3	69.5
	Conditions	2.8	3.7	12.0	25.7	55.8
	Commuting Distance	4.6	5.8	12.7	13.9	62.4
<b>Underemployed</b>						
Overall		7.8	10.5	24.8	23.5	33.3
	Earnings	30.1	18.3	19.6	17.7	13.7
	Retention	11.8	7.8	19.6	19.6	42.5
	Work	4.6	7.8	12.4	25.5	49.7
	Hours	14.4	7.2	12.4	18.3	47.7
	Shift	6.5	4.6	13.1	12.4	62.8
	Conditions	6.5	6.5	17.0	23.5	46.4
	Commuting Distance	6.5	7.2	12.4	12.4	60.1
<b>Willingness to Train</b>						
		Completely Unwilling	Unwilling	Neutral	Willing	Completely Willing
<b>Employed</b>						
For a new or better job		20.1	4.3	14.5	14.0	45.5
	If paid by trainee	42.8	18.6	19.7	5.6	9.0
	If paid by trainee and government	14.1	11.4	33.9	18.6	20.0
	If paid by government	6.3	2.0	10.3	14.6	64.8
<b>Underemployed</b>						
For a new or better job		14.3	2.9	12.1	12.9	55.0
	If paid by trainee	39.2	17.5	24.2	4.2	11.7
	If paid by trainee and government	10.8	10.8	25.0	25.8	25.0
	If paid by government	4.2	0.0	7.5	12.5	72.5

Note: Rounding errors may be present.

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

## Workforce Demand

### Industry Mix

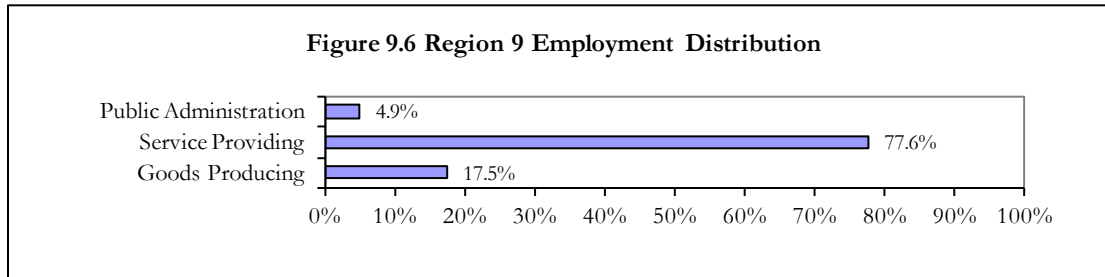
The retail trade sector was the leading Region 9 employer with 35,592 jobs in the first quarter of 2012 (Table 9.9). Rounding out the top five industries by employment are health care and social assistance; manufacturing; accommodation and food services; and educational services. These five industries provided 146,929 jobs, 58.2 percent of the region's total. The average monthly wage across all industries in the region was \$3,294; two leading employers paid more than this average. New hire monthly earnings averaged \$2,256, about 68.5 percent of the average monthly wage. The highest average monthly wages were for mining at \$7,087; utilities \$5,002; manufacturing \$4,970; and professional, scientific, and technical services \$4,511. Accommodation and food services paid the least at \$1,488. Manufacturing had the highest average monthly new hire wages with \$4,001 followed by professional, scientific, and technical services \$3,598, and utilities at \$3,439. Accommodation and food services paid newly hired workers the least, \$1,071.

**Table 9.9 Industry Mix (First 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	2,393	0.95%	17	\$2,976	\$2,405
21 Mining	891	0.35%	20	\$7,087	\$3,040
22 Utilities	2,737	1.08%	16	\$5,002	\$3,421
23 Construction	13,039	5.17%	7	\$3,574	\$2,879
31-33 Manufacturing	27,797	11.02%	3	\$4,970	\$4,001
42 Wholesale Trade	10,639	4.22%	11	\$4,480	\$2,913
44-45 Retail Trade	35,592	14.11%	1	\$2,266	\$1,326
48-49 Transportation and Warehousing	11,305	4.48%	9	\$3,846	\$3,086
51 Information	2,874	1.14%	15	\$3,755	\$2,494
52 Finance and Insurance	8,071	3.20%	12	\$4,107	\$2,794
53 Real Estate and Rental and Leasing	4,825	1.91%	14	\$3,023	\$2,038
54 Professional, Scientific, and Technical Services	10,942	4.34%	10	\$4,511	\$3,598
55 Management of Companies and Enterprises	1,337	0.53%	19	\$3,643	\$1,767
56 Administrative and Support and Waste Management and Remediation Services	14,407	5.71%	6	\$2,481	\$1,980
61 Educational Services	24,451	9.69%	5	\$3,394	\$1,397
62 Health Care and Social Assistance	34,162	13.54%	2	\$3,180	\$2,416
71 Arts, Entertainment, and Recreation	2,145	0.85%	18	\$1,965	\$1,439
72 Accommodation and Food Services	24,927	9.88%	4	\$1,488	\$1,071
81 Other Services (Except Public Administration)	7,490	2.97%	13	\$2,491	\$1,952
92 Public Administration	12,272	4.86%	8	\$3,063	\$2,262
<b>ALL INDUSTRIES</b>	<b>252,296</b>	<b>100.00%</b>		<b>\$3,294</b>	<b>\$2,256</b>

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

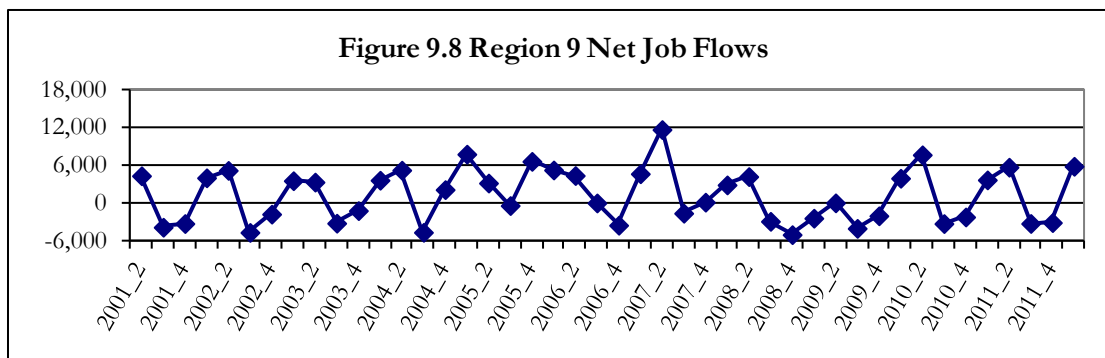
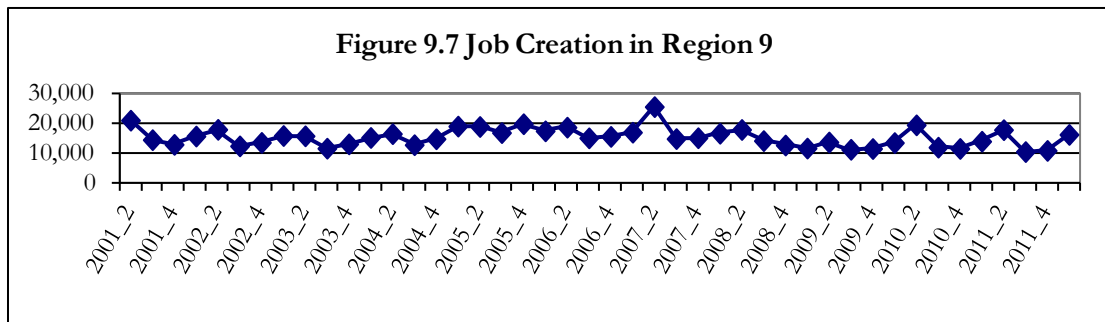
By broad industry classification, service providing industries generated about 78 percent of jobs in the first quarter of 2012 (Figure 9.6). Goods producing industries were next with 17.5 percent and public administration accounted for 4.9 percent. The distribution is for all nonagricultural jobs in 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, 15,298 jobs were created per quarter from second quarter 2001 to first quarter 2012 (Figure 9.7); quarterly net job flows averaged 1,240 (Figure 9.8). Seasonal employment due to tourism is reflected in generally stronger second quarter job creation. After dropping drastically in the third quarter of 2011, job creation and net job flows both went up in the first quarter of 2012 and are expected to be higher in the second quarter. Quarterly net job flows fluctuate considerably and have ranged from a loss of 5,004 to a gain of 11,761. 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 9 has 716 single occupations based on 2010 to 2020 occupational projections. Table 9.10 shows the 40 occupations that are expected to be in high-demand, ranked by projected average annual job openings over the projection period. Many of these occupations are common to two of the five largest employment sectors identified earlier (Table 9.9): health care and social assistance and manufacturing. Thus, these sectors will continue to dominate employment in the region.

The top five high-demand occupations are Registered Nurses; Home Health Aides; Welders, Cutters, Solderers, and Brazers; Industrial Machinery Mechanics; and Structural Metal Fabricators and Fitters. Thirteen of the high-demand occupations are also fast-growing. This means that these 13 occupations have a minimum annual growth rate of 4.37 percent, much faster than the regional and state occupational growth rates of 1.60 percent and 1.30 percent, respectively.

The 20 fastest growing occupations ranked by projected growth of employment are listed in Table 9.11. Many of these occupations are related to the manufacturing industry. The top five fast-growing occupations are Metal-Refining Furnace Operators and Tenders; Pourers and Casters, Metal; Materials Engineers; Rolling Machine Setters, Operators, and Tenders, Metal and Plastic; and Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic.

Table 9.12 shows the 50 selected highest earning occupations in the region. These occupations are mainly in management, health, and engineering fields and pay a minimum average salary of \$78,089 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. Seven of the occupations are both high-earning and in high-demand (Table 9.10). Only two occupations—Aerospace Engineers and Industrial Engineers—are in high-demand, fast-growing, and high-earning categories.

Of the region's 716 occupations, 39 are expected to decline over the 2010 to 2020 period. Employment in the 20 sharpest-declining occupations will fall by at least 10 percent over the period (Table 9.13). No efforts should be made to sustain these occupations because they are declining as a result of structural changes in the economy of the region.

**Table 9.10 Selected High-Demand Occupations (Base Year 2010 and Projected Year 2020)**

Occupation	Average Annual Job Openings		
	Total	Due to Growth	Due to Separations
Registered Nurses	305	195	110
Home Health Aides*	175	150	20
Welders, Cutters, Solderers, and Brazers	110	60	45
Industrial Machinery Mechanics	55	40	20
Structural Metal Fabricators and Fitters*	55	40	15
Team Assemblers	50	35	15
Sailors and Marine Oilers	40	20	20
Aircraft Structure, Surfaces, Rigging, and Systems Assemblers*	35	35	5
Emergency Medical Technicians and Paramedics	35	25	10
Machinists	35	20	10
Captains, Mates, and Pilots of Water Vessels	30	10	15
Computer Systems Analysts	30	20	10
Management Analysts	30	20	10
Metal-Refining Furnace Operators and Tenders*	30	30	0
<b>Pharmacists</b>	<b>30</b>	<b>15</b>	<b>15</b>
Public Relations Specialists	30	15	15
Dental Hygienists	25	20	10
Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic*	25	15	10
Medical and Public Health Social Workers*	25	15	5
Network and computer systems architects and administrators	25	20	10
Software Developers, Applications*	25	20	5
Cost Estimators	20	15	5
First-Line Supervisors/Managers of Helpers, Laborers, and Material Movers, Hand	20	10	5
<b>Industrial Engineers*</b>	<b>20</b>	<b>15</b>	<b>5</b>
Rehabilitation Counselors	20	10	5
<b>Industrial Production Managers</b>	<b>15</b>	<b>10</b>	<b>5</b>
Mental Health Counselors	15	10	5
Physical Therapist Assistants*	15	10	5
Physical Therapists	15	15	5
Rolling Machine Setters, Operators, and Tenders, Metal and Plastic*	15	15	0
Software Developers, Systems Software*	15	15	0
Training and Development Specialists	15	10	5
<b>Aerospace Engineers*</b>	<b>10</b>	<b>10</b>	<b>5</b>
<b>Computer and Information Systems Managers</b>	<b>10</b>	<b>5</b>	<b>5</b>
<b>Engineering Managers</b>	<b>10</b>	<b>5</b>	<b>5</b>
<b>Family and General Practitioners</b>	<b>10</b>	<b>5</b>	<b>5</b>
Occupational Therapists	10	5	5
Ship Engineers	10	5	5
Database Administrators	5	5	0
Logisticians*	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 9.11 Selected Fast-Growing Occupations (Base Year 2010 and Projected Year 2020)**

Occupation	Employment		Percent Change	Annual Growth (Percent)	Average Annual Job Openings
	2010	2020			
Metal-Refining Furnace Operators and Tenders*	120	400	233	12.79	30
Pourers and Casters, Metal	NA	NA	171	10.50	15
<b>Materials Engineers</b>	<b>20</b>	<b>50</b>	<b>150</b>	<b>9.60</b>	<b>5</b>
Rolling Machine Setters, Operators, and Tenders, Metal and Plastic*	100	250	150	9.60	15
Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic*	100	250	150	9.60	25
Aircraft Structure, Surfaces, Rigging, and Systems Assemblers*	NA	NA	143	9.31	35
Lay-Out Workers, Metal and Plastic	NA	NA	133	8.84	5
Home Health Aides*	1,730	3,250	88	6.51	175
Personal and Home Care Aides	530	980	85	6.34	50
<b>Aerospace Engineers*</b>	<b>120</b>	<b>200</b>	<b>67</b>	<b>5.24</b>	<b>10</b>
Software Developers, Systems Software*	230	380	65	5.15	15
<b>Industrial Engineers*</b>	<b>250</b>	<b>410</b>	<b>64</b>	<b>5.07</b>	<b>20</b>
Logisticians*	80	130	63	4.97	5
<b>Computer Hardware Engineers</b>	NA	NA	<b>60</b>	<b>4.81</b>	<b>5</b>
Environmental Science and Protection Technicians, Including Health	50	80	60	4.81	5
Physical Therapist Assistants*	170	270	59	4.73	15
Medical and Public Health Social Workers*	310	480	55	4.47	25
Software Developers, Applications*	350	540	54	4.43	25
Structural Metal Fabricators and Fitters*	780	1200	54	4.40	55
Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	150	230	53	4.37	10

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 9.12 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			
Anesthesiologists	150	190	2.39	5	261,823
Surgeons	120	150	2.26	5	248,003
Obstetricians and Gynecologists	110	140	2.44	5	241,720
Internists, General	130	170	2.72	5	207,977
Dentists, General	290	350	1.90	15	207,078
Chief Executives	650	680	0.45	20	195,343
Family and General Practitioners*	180	230	2.48	10	186,315
Psychiatrists	20	20	0.00	0	177,294
Physicians and Surgeons, All Other	450	570	2.39	20	176,795
Pediatricians, General	70	90	2.54	5	172,582
Administrative Law Judges, Adjudicators, and Hearing Officers	20	20	0.00	0	149,143
Marketing Managers	90	110	2.03	5	134,064
Pharmacists*	610	770	2.36	30	124,366
Lawyers	990	1110	1.15	30	119,084
Education Administrators, Postsecondary	270	320	1.71	15	108,780
Engineering Managers*	220	290	2.80	10	107,855
Sales Managers	350	400	1.34	15	107,076
General and Operations Managers	4960	5360	0.78	130	105,144
Computer and Information Systems Managers*	240	320	2.92	10	102,711
Financial Managers	630	710	1.20	20	101,191
Natural Sciences Managers	20	20	0.00	0	99,458
Medical and Health Services Managers	340	420	2.14	15	95,219
Chemical Engineers	160	170	0.61	5	95,155
Operations Research Analysts	NA	NA	4.14	0	94,608
<b>Computer Hardware Engineers</b>	<b>NA</b>	<b>NA</b>	<b>4.81</b>	<b>5</b>	<b>93,752</b>
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	NA	NA	0.93	10	93,359
Human Resources Managers	70	80	1.34	5	92,986
Public Relations Managers	130	150	1.44	5	92,146
Purchasing Managers	120	160	2.92	5	92,071
Industrial Production Managers*	230	310	3.03	15	91,825
Transportation, Storage, and Distribution Managers	260	310	1.77	10	88,812
Personal Financial Advisors	260	330	2.41	10	88,146
Compensation and Benefits Managers	30	30	0.00	0	86,995
Securities, Commodities, and Financial Services Sales Agents	160	180	1.18	5	86,508
Administrative Services Managers	210	240	1.34	10	86,347
Electrical Engineers	290	330	1.30	10	83,485
Landscape Architects	NA	NA	4.14	0	83,068
<b>Materials Engineers</b>	<b>20</b>	<b>50</b>	<b>9.60</b>	<b>5</b>	<b>82,948</b>
Veterinarians	140	180	2.54	5	82,901
<b>Aerospace Engineers*</b>	<b>120</b>	<b>200</b>	<b>5.24</b>	<b>10</b>	<b>82,847</b>
Chiropractors	130	180	3.31	5	82,625
Business Teachers, Postsecondary	90	110	2.03	5	82,566
Property, Real Estate, and Community Association Managers	420	420	0.00	10	81,976
Construction Managers	1120	1260	1.18	20	81,927
Engineers, All Other	270	350	2.63	15	81,895
Managers, All Other	1390	1450	0.42	40	80,696
<b>Industrial Engineers*</b>	<b>250</b>	<b>410</b>	<b>5.07</b>	<b>20</b>	<b>79,979</b>
Chemists	110	120	0.87	5	79,604
Mechanical Engineers	360	440	2.03	20	79,413
Economists	30	30	0.00	0	78,089

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 9.13 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	230	120	-110	-48
Switchboard Operators, Including Answering Service	470	370	-100	-21
Sewing Machine Operators	NA	NA	*	-14
Postal Service Clerks	160	80	-80	-50
Postal Service Mail Carriers	630	560	-70	-11
Floral Designers	230	200	-30	-13
Crossing Guards	170	150	-20	-12
Door-To-Door Sales Workers, News and Street Vendors, and Related Workers	130	110	-20	-15
Photographic Process Workers and Processing Machine Operators	120	100	-20	-17
Postmasters and Mail Superintendents	70	50	-20	-29
Desktop Publishers	100	90	-10	-10
Elevator Installers and Repairers	100	90	-10	-10
Home Appliance Repairers	NA	NA	*	-10
Petroleum Pump System Operators, Refinery Operators, and Gaugers	90	80	-10	-11
Textile Bleaching and Dyeing Machine Operators and Tenders	NA	NA	*	-13
Parking Lot Attendants	NA	NA	*	-13
Prepress Technicians and Workers	70	60	-10	-14
Floor Layers, Except Carpet, Wood, and Hard Tiles	60	50	-10	-17
Fabric Menders, Except Garment	NA	NA	*	-17
Textile Cutting Machine Setters, Operators, and Tenders	NA	NA	*	-25

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 9.14 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 9.15 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 9.15 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 9.14 Skill Types and Definitions**

<p><b>Basic Skills:</b> Developed capacities that facilitate learning or the more rapid acquisition of knowledge.</p> <p>Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.</p> <p>Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.</p> <p>Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.</p> <p>Learning Strategies — Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.</p> <p>Mathematics — Using mathematics to solve problems.</p> <p>Monitoring — Monitoring /Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.</p> <p>Reading Comprehension — Understanding written sentences and paragraphs in work-related documents.</p> <p>Science — Using scientific rules and methods to solve problems.</p> <p>Speaking — Talking to others to convey information effectively.</p> <p>Writing — Communicating effectively in writing as appropriate for the needs of the audience.</p> <p><b>Complex Problem Solving Skills:</b> Developed capacities used to solve novel, ill-defined problems in complex, real-world settings.</p> <p>Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.</p> <p><b>Resource Management Skills:</b> Developed capacities used to allocate resources efficiently.</p> <p>Management of Financial Resources — Determining how money will be spent to get the work done and accounting for these expenditures.</p> <p>Management of Material Resources — Obtaining and seeing to the appropriate use of equipment, facilities, and materials needed to do certain work.</p> <p>Management of Personnel Resources — Motivating, developing, and directing people as they work, identifying the best people for the job.</p> <p>Time Management — Managing one's own time and the time of others.</p> <p><b>Social Skills:</b> Developed capacities used to work with people to achieve goals.</p> <p>Coordination — Adjusting actions in relation to others' actions.</p> <p>Instructing — Teaching others how to do something.</p> <p>Negotiation — Bringing others together and trying to reconcile differences.</p> <p>Persuasion — Persuading others to change their minds or behavior.</p> <p>Service Orientation — Actively looking for ways to help people.</p> <p>Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.</p> <p><b>Systems Skills:</b> Developed capacities used to understand, monitor, and improve socio-technical systems.</p> <p>Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.</p> <p>Systems Analysis — Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.</p> <p>Systems Evaluation — Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.</p> <p><b>Technical Skills:</b> Developed capacities used to design, set-up, operate, and correct malfunctions involving application of machines or technological systems.</p> <p>Equipment Maintenance — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.</p> <p>Equipment Selection — Determining the kind of tools and equipment needed to do a job.</p> <p>Installation — Installing equipment, machines, wiring, or programs to meet specifications.</p> <p>Operation and Control — Controlling operations of equipment or systems.</p> <p>Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.</p> <p>Operations Analysis — Analyzing needs and product requirements to create a design.</p> <p>Programming — Writing computer programs for various purposes.</p> <p>Quality Control Analysis — Conducting tests and inspections of products, services, or processes to evaluate quality or performance.</p> <p>Repairing — Repairing machines or systems using the needed tools.</p> <p>Technology Design — Generating or adapting equipment and technology to serve user needs.</p> <p>Troubleshooting — Determining causes of operating errors and deciding what to do about it.</p>
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Source: O\*NET Online (<http://online.onetcenter.org/skills/>).

**Table 9.15 Percentage of Selected Occupations for Which Skill Is Primary**

	Selected High-Demand Occupations	Selected Fast-Growing Occupations	Selected High-Earning Occupations
<b>Basic Skills</b>			
Active Learning	23	30	48
Active Listening	88	85	86
Critical Thinking	93	95	86
Learning Strategies	3	0	2
Mathematics	10	15	16
Monitoring	75	70	46
Reading Comprehension	65	50	76
Science	15	15	32
Speaking	73	60	84
Writing	40	50	56
<b>Complex Problem Solving Skills</b>			
Complex Problem Solving	53	70	68
<b>Resource Management Skills</b>			
Management of Financial Resources	3	0	2
Management of Material Resources	0	0	0
Management of Personnel Resources	5	0	18
Time Management	25	30	28
<b>Social Skills</b>			
Coordination	53	45	38
Instructing	13	10	8
Negotiation	0	0	14
Persuasion	3	0	16
Service Orientation	33	25	14
Social Perceptiveness	35	20	40
<b>Systems Skills</b>			
Judgment and Decision Making	70	70	78
Systems Analysis	15	5	4
Systems Evaluation	8	5	4
<b>Technical Skills</b>			
Equipment Maintenance	8	0	0
Equipment Selection	3	0	0
Installation	0	0	0
Operation and Control	20	30	0
Operation Monitoring	23	35	0
Operations Analysis	10	20	16
Programming	10	10	0
Quality Control Analysis	20	20	0
Repairing	8	0	0
Technology Design	0	0	0
Troubleshooting	10	5	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 in Region 9 require more active learning, mathematics, reading comprehension, science, writing, speaking, resource management, judgment and decision making, negotiation, persuasion, and social perceptiveness skills than both high-demand and fast-growing jobs. These are skills that require long training periods and postsecondary education. However, high-earning jobs require significantly less technical skills. High-demand occupations require somewhat more basic, social, systems, and technical skills than fast-growing occupations.

Table 9.16 shows skill gap indexes for all 35 skills in Table 9.14 based on a previous projections 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 9 the pace of training needs to increase for science, mathematics, resource management, and technical skills; the scale of training should be raised for basic and social skills.

## **Education and Training Issues**

Educational attainment in Region 9 is close to that of the state as a whole. About 83 percent of residents age 25 and over had graduated from high school in 2007 to 2011, compared to 82 percent for Alabama. Over 20 percent of the population had a bachelor's or higher degree versus 22 percent for the state. Skill and education requirements for jobs keep rising. This highlights a strong need to raise educational attainment in the region.

Table 9.17 shows the number of selected occupations in the region for which a particular education/training category is most common. In general, high-earning occupations require high educational attainment levels; six high-earning occupations do not require a bachelor's or higher degree. Twenty-eight (70 percent) of the 40 high-demand occupations require an associate degree at the minimum and 25 (63 percent) require a bachelor's or higher degree. Ten (50 percent) of the 20 fast-growing occupations require an associate degree at the minimum, with eight (40 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 716 occupations and occupational categories, 39 are expected to decline over the period and education and training for these should slow accordingly.

**Table 9.16 Skills Gap Indexes (Base Year 2008 to Projected Year 2018)**

<b>Skill</b>	<b>Total Openings (Projected Demand)</b>	<b>Replacement Index</b>	<b>Skills Gap Index</b>
Active Listening	5,650	57	100
Reading Comprehension	5,560	57	97
Critical Thinking	5,010	57	94
Speaking	4,355	56	91
Active Learning	4,365	57	89
Coordination	4,235	57	86
Monitoring	3,885	56	83
Time Management	3,740	56	80
Instructing	3,895	57	77
Writing	3,730	57	74
Learning Strategies	3,380	57	71
Social Perceptiveness	3,250	56	69
Service Orientation	2,780	55	66
Judgment and Decision Making	2,475	58	63
Persuasion	2,475	59	60
Mathematics	2,285	56	57
Complex Problem Identification	2,155	57	54
Equipment Selection	1,940	56	51
Troubleshooting	1,245	58	49
Management of Personnel Resources	1,365	62	46
Equipment Maintenance	1,265	57	43
Negotiation	1,330	63	40
Installation	975	55	37
Repairing	810	56	34
Management of Financial Resources	740	66	31
Operation Monitoring	790	64	29
Quality control	505	57	26
Operation and Control	635	61	23
Operations Analysis	485	63	20
Systems Evaluation	385	57	17
Science	345	62	14
Technology Design	260	60	11
Systems Analysis	255	55	9
Management of Material Resources	410	72	6
Programming	45	44	3

Source: Alabama Department of Labor.

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

**Table 9.17 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	3	0	14
Master's Degree	4	1	1
Work Experience Plus a Bachelor's or Higher Degree	6	1	14
Bachelor's Degree	12	6	15
Associate Degree	3	2	2
Postsecondary Non-Degree Plus On-the-job Training	0	0	0
Postsecondary Non-Degree	1	0	0
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	8	7	0
High School Diploma	2	0	4
Less than High School Plus On-the-job Training	1	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

Economic growth in Region 9 is expected to be greater than labor force growth leading to worker shortfalls. From a 2010 base, worker shortfalls of about 30,000 and 52,100 for 2020 and 2030 respectively are expected (Table 9.18). A focus on worker skills and shortfalls must be the region's priorities through 2030. Worker shortfalls for critical occupations will need to be continuously addressed through 2030.

**Table 9.18 Expected Worker Shortfall**

	2010-2020	2010-2030
Total population growth (percent)	6.8	12.4
Age 20-64 population growth (percent)	2.3	1.7
Job growth (percent)	10.1	15.2
Worker shortfall (percent)	7.8	13.5
Worker shortfall (number)	30,013	52,101

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 worker shortfalls must be adopted and implemented. Such strategies should aim at increasing labor force participation and raising worker productivity and 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. The pace of training in Region 9 needs to increase for science, mathematics, and technical 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 9.13 should slow accordingly.

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

Programs to assess, retrain, and place dislocated workers—especially those affected by outsourcing and structural changes in the economy—should be continued and enhanced because they can improve the labor force participation rate. Hard-to-serve populations include 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 of low levels of educational attainment, geographic or other barriers, or a lack of occupational skills. They are a potential human resource, but investment in training, transportation, child care, infrastructure, etc. may be needed to tap this resource.

In-migration is one way of growing the labor force as it helps population growth. The region's population growth rate is high but its prime working age population is low compared to expected job growth. This may hinder the ability to meet long term expected job demand barring future economic slowdowns. Higher employment demand could be partially served by in-commuting or a reduction in out-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 preferred to 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 9.5), it becomes even more important that they be active in the workforce. Older worker participation has been rising nationally since the early 1990s. This has been attributed to reasons including:

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

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