

# State of the Workforce Report X: Region 9

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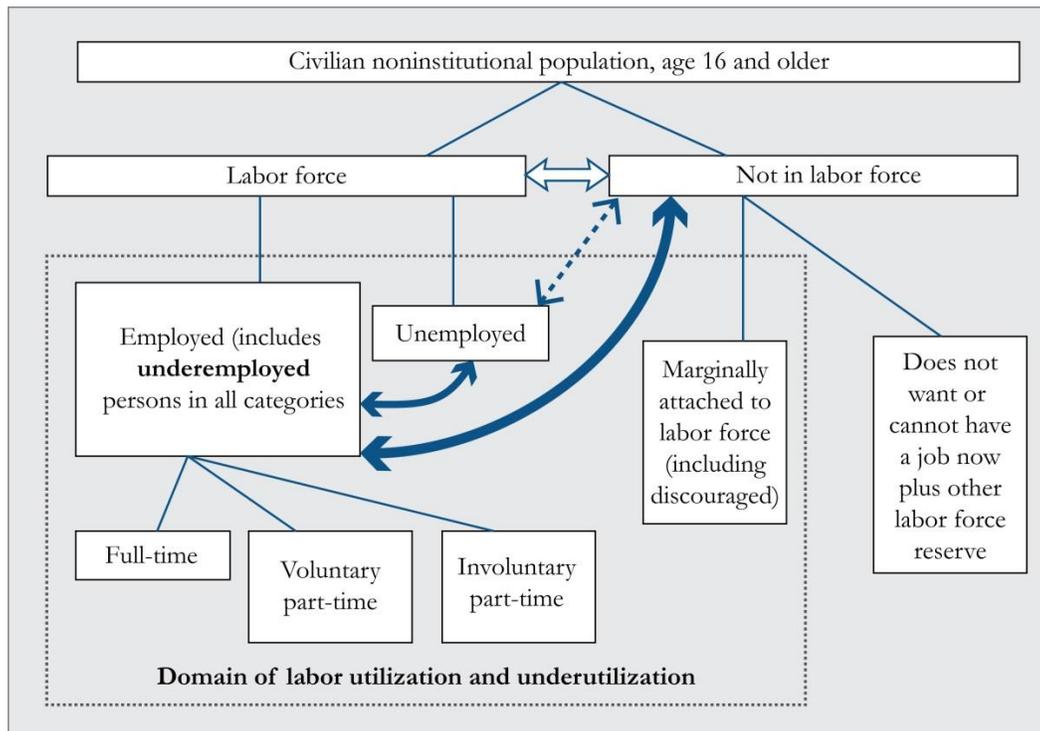
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## Summary

- This report analyzes workforce supply and demand issues using available metrics of workforce characteristics for Workforce Development Region 9 and presents some implications and recommendations.
- Region 9 had a 6.8 percent unemployment rate in March 2016, with 21,752 unemployed workers. An underemployment rate of 28.1 percent for 2015 implies that the region has a 105,167-strong available labor pool that includes 83,415 underemployed workers who are looking for better jobs and are willing to commute longer times and distances 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 17,385 residents in 2014. In 2015 commute time dropped while distance remained about the same as in 2014 implying that congestion eased somewhat. However, congestion is likely to worsen as the economy recovers from the last recession. 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 2015, these five industries provided 154,927 jobs, 58.6 percent of the regional total. Two of these leading employers paid more than the region's \$3,154 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 14,458 jobs were created per quarter from second quarter 2001 to first quarter 2015 and quarterly net job flows averaged 1,346. 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; Licensed Practical and Licensed Vocational Nurses; Personal Care Aides; Computer User Support Specialists; and Medical Assistants.
- The top five fast-growing occupations are Athletic Trainers; Occupational Therapists; Personal Care Aides; Occupational Therapy Assistants; and Physical Therapist Assistants.
- The top 50 high-earning occupations are in management, health, postsecondary education, and engineering fields and pay a minimum salary of \$77,721. Eight of the top 10 occupations are health jobs.
- Of the top 40 high-demand, the top 20 fast-growing, and 50 high-earning occupations, only one—Physician Assistants—belongs to all three categories. Twelve occupations are both high-demand and fast-growing. Nine occupations are both high-earning and in high-demand.

- Of the region's 711 occupations, 65 are expected to decline over the 2012 to 2022 period, with 20 occupations expected to sharply decline by at least 10.0 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 2012 base, worker shortfalls of about 29,800 for 2022 and 54,400 for 2030 are expected. This will demand a focus on worker skills and shortfalls through 2030. 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.

## Labor Utilization and Supply Flows



Source: Addy et al<sup>1</sup> and Canon et al<sup>2</sup>

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<sup>1,2</sup>. 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.

<sup>1</sup> 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).

<sup>2</sup> 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 9.1 shows labor force information for Region 9 and its eight counties for 2015 and 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.

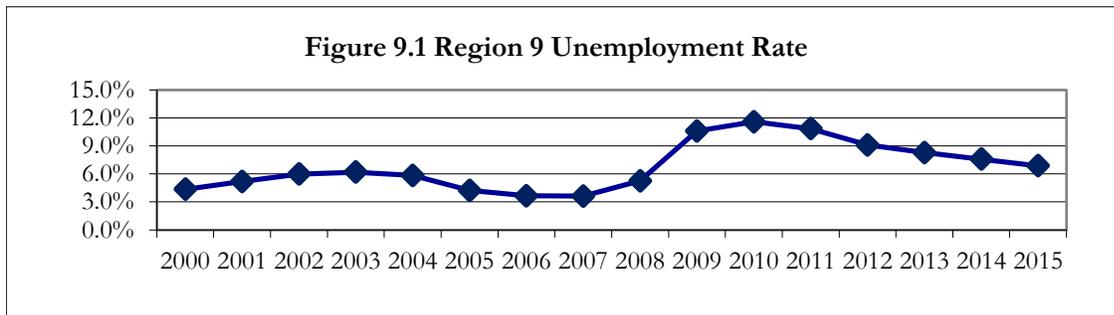
**Table 9.1 Region 9 Labor Force Information**

	<b>2015 Annual Average</b>			
	Labor Force	Employed	Unemployed	Rate (%)
Baldwin	87,316	82,525	4,791	5.5
Choctaw	4,378	3,979	399	9.1
Clarke	7,994	7,054	940	11.8
Conecuh	4,674	4,245	429	9.2
Escambia	14,575	13,555	1,020	7.0
Mobile	183,097	170,286	12,811	7.0
Monroe	7,301	6,565	736	10.1
Washington	6,702	6,108	594	8.9
Region 9	316,037	294,317	21,720	6.9
Alabama	2,146,157	2,015,189	130,968	6.1
U.S.	157,130,000	148,833,000	8,296,000	5.3
	<b>March 2016</b>			
	Labor Force	Employed	Unemployed	Rate (%)
Baldwin	88,967	84,008	4,959	5.6
Choctaw	4,343	3,946	397	9.1
Clarke	7,958	7,096	862	10.8
Conecuh	4,659	4,248	411	8.8
Escambia	14,576	13,595	981	6.7
Mobile	184,539	171,686	12,853	7.0
Monroe	7,197	6,467	730	10.1
Washington	6,682	6,123	559	8.4
Region 9	318,921	297,169	21,752	6.8
Alabama	2,156,616	2,023,744	132,872	6.2
U.S.	158,854,000	150,738,000	8,116,000	5.1

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

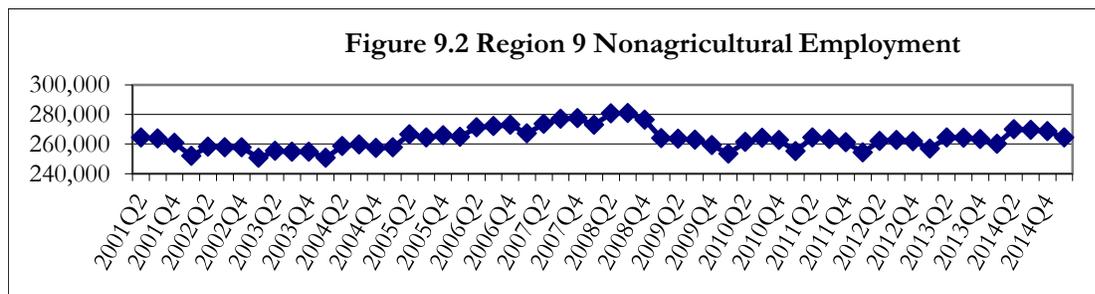
The recession that began in 2007 increased the number of unemployed and sharply raised county unemployment rates. The unemployment rates have trended downwards since 2010 and ranged between 5.5 percent to 11.8 percent for 2015, with 6.9 percent for the region. In March 2016, the unemployment rates ranged between 5.6 percent and 10.8 percent with 6.8 percent for the region. The unemployment rate was lowest in Baldwin County and highest in Clarke. Only Baldwin County had an unemployment rate below Alabama's 6.2 percent.

Annual unemployment rates for 2000 to 2015 are shown in Figure 9.1. The region’s unemployment rate was low before the 2001 and the last recessions. The 2003 high of 6.2 percent was due to the effects of the national economic recession of 2001. Employment gains resulting from successful state and local economic development efforts brought unemployment down significantly in 2006 and 2007. However, the 2007 recession raised unemployment to double digit rates in 2009 through 2011 before declining to 6.9 in 2015. Year-to-date monthly labor force data point to a slightly lower regional unemployment rates for 2016, but the slow pace of recovery and structural changes in the economy will keep unemployment relatively high for a few more years.



Source: Alabama Department of Labor.

Nonagricultural employment of the region’s residents averaged 263,438 quarterly from the second quarter of 2001 to the first quarter of 2015 (Figure 9.2). The number of jobs declined steadily since its peak in third quarter 2008 to pre-2005 levels in first quarter 2010. Since then number of jobs fluctuated without any significant improvements, but in the second, third, and quarter of 2014, it rose to the highest level since the fourth quarter of 2008. The level of employment slightly dropped in the first quarter of 2015.



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 2015. The region’s workforce is slightly older than that of Alabama. Older workers, age 55 and over, are 21.7 percent of the region’s nonagricultural employment versus the state’s 21.0 percent. Those who are age 65 and over constitute 5.2 percent compared to 4.9 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 2015)**

Age Group	Nonagricultural Employment	
	Number	Percent
14-18	4,697	1.8
19-24	28,989	11.0
25-34	56,754	21.5
35-44	58,156	22.0
45-54	58,315	22.1
55-64	43,792	16.6
65+	13,690	5.2
55 and over total	57,482	21.7
Total all ages	264,393	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 2014 net out-commuting were 17,385. Mobile County had the largest number of commuters in the region. Table 9.3 also shows that average commute times were down for workers in 2015 from 2014 while distances remained about the same. This implies that congestion eased somewhat although it is likely to increase as the regional economy recovers from the last recession particularly in the Mobile and Daphne-Fairhope-Foley metropolitan areas. 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

From 2000 to 2010, population in Region 9 grew by 7.1 percent to 727,145 as shown in Table 9.4. This growth was somewhat less than the state's 7.5 percent. The 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. The 2015 population estimate comparison with 2010 census data portrays the Region's population growing at 2.6 percent, faster than the state's growth of 1.7 percent. However, most of the growth is in Baldwin County as Mobile gained less than one percent and the other counties had population decline.

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			
2011	33,453		50,883			
2012	32,508		50,153			
2013	34,001		52,749			
2014	36,049		53,434			
<b>Region 9 Counties</b>	<b>Inflow, 2014</b>		<b>Outflow, 2014</b>			
	Number	Percent	Number	Percent		
Baldwin	21,667	25.7	33,950	33.4		
Choctaw	1,519	1.8	2,409	2.4		
Clarke	3,704	4.4	6,133	6.0		
Conecuh	1,801	2.1	3,327	3.3		
Escambia	5,489	6.5	6,923	6.8		
Mobile	45,475	53.9	37,574	36.9		
Monroe	3,146	3.7	4,676	4.6		
Washington	1,603	1.9	6,797	6.7		
	Percent of workers					
<b>Average commute time (one-way)</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
Less than 20 minutes	53.0	56.8	49.9	52.0	49.6	47.5
20 to 40 minutes	29.1	27.7	32.6	27.7	27.7	28.1
40 minutes to an hour	11.2	8.8	10.0	8.6	11.7	10.0
More than an hour	2.6	3.3	4.1	4.9	4.0	4.1
<b>Average commute distance (one-way)</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
Less than 10 miles	44.4	47.9	42.0	47.3	40.2	40.9
10 to 25 miles	31.8	33.3	34.9	31.2	35.8	33.1
25 to 45 miles	16.1	11.4	13.6	11.2	14.4	13.9
More than 45 miles	6.1	6.2	7.7	8.1	7.5	7.1

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	2015 Estimate	Change 2000-2010	% change 2000-2010	Change 2010-2015	% change 2010-2015
Baldwin	98,280	140,415	182,265	203,709	41,850	29.8	21,444	11.8
Choctaw	16,018	15,922	13,859	13,170	-2,063	-13.0	-689	-5.0
Clarke	27,240	27,867	25,833	24,675	-2,034	-7.3	-1,158	-4.5
Conecuh	14,054	14,089	13,228	12,672	-861	-6.1	-556	-4.2
Escambia	35,518	38,440	38,319	37,789	-121	-0.3	-530	-1.4
Mobile	378,643	399,843	412,992	415,395	13,149	3.3	2,403	0.6
Monroe	23,968	24,324	23,068	21,673	-1,256	-5.2	-1,395	-6.0
Washington	16,694	18,097	17,581	16,804	-516	-2.9	-777	-4.4
Region 9	610,415	678,997	727,145	745,887	48,148	7.1	18,742	2.6
Alabama	4,040,587	4,447,100	4,779,736	4,858,979	332,636	7.5	79,243	1.7
United States	248,709,873	281,421,906	308,745,538	321,418,820	27,323,632	9.7	12,673,282	4.1

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

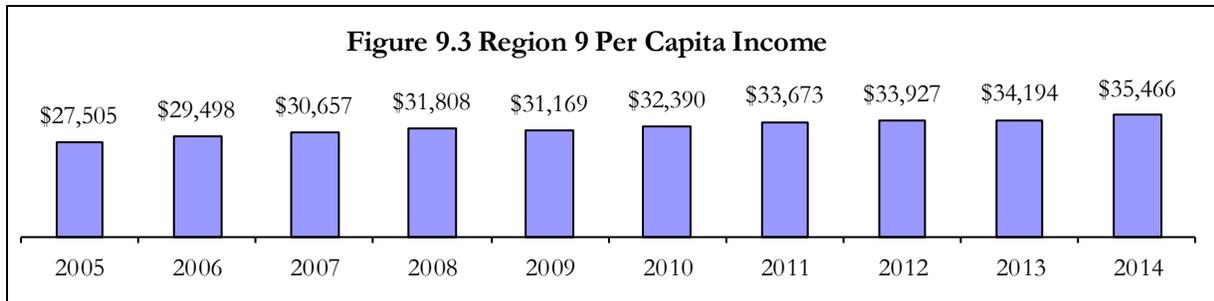
**Table 9.5 Population by Age Group and Projections**

Age Group	2000	2010	2012	2022	2030
0-19	200,584	197,211	193,336	199,214	201,392
20-24	43,197	45,480	48,571	48,277	48,724
25-29	43,786	45,232	45,305	46,937	47,371
30-34	44,111	44,306	45,620	45,668	48,109
35-39	50,795	45,463	43,487	46,185	49,009
40-44	52,894	46,360	46,620	47,112	46,215
45-49	47,515	52,630	49,342	47,445	49,313
50-54	43,013	53,882	53,578	47,955	48,054
55-59	34,984	48,324	50,980	51,565	48,747
60-64	29,332	43,293	44,913	54,240	48,703
65+	88,786	104,964	112,454	153,194	185,312
20-64 Total	389,627	424,970	428,416	435,384	434,245
Total Population	678,997	727,145	734,206	787,792	820,949
<b>Change from 2012</b>					
0-19				3.0%	4.2%
20-64				1.6%	1.4%
Total Population				7.3%	11.8%

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 \$35,466 in 2014 (Figure 9.3), up 29.0 percent from 2005, but \$2,046 or 5.5 percent below the state average of \$37,512. Baldwin County had the highest PCI with \$39,040. Conecuh County had the lowest PCI with \$30,009.



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

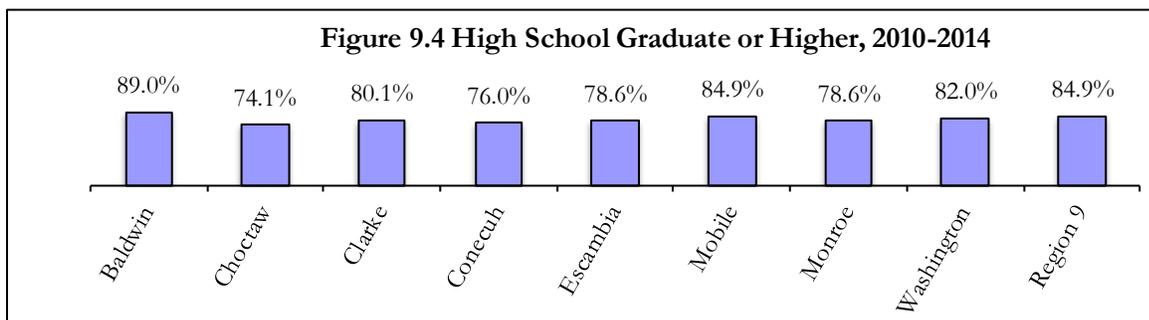
## Educational Attainment

Educational attainment in 2010 to 2014 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 85.0 percent graduated from high school and 22.0 percent held a bachelor's or higher degree. Baldwin County had higher educational attainment than the other seven counties and the state. Educational attainment is important as skills rise with education and high-wage jobs for the 21st century demand more skill sets.

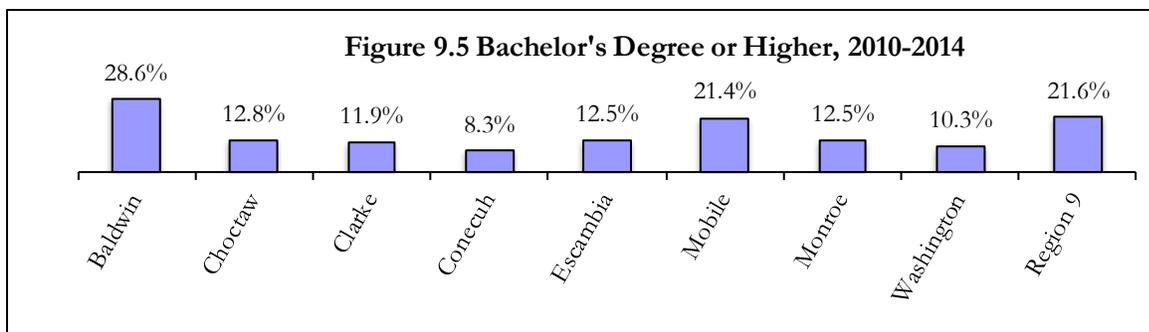
**Table 9.6 Educational Attainment of Population 25 Years and Over, 2010-2014**

	Baldwin	Choctaw	Clarke	Conecuh	Escambia	Mobile	Monroe	Washington	Region 9
Total	133,267	9,564	17,220	8,930	25,894	271,571	15,093	11,490	493,029
No schooling completed	860	187	240	152	353	4,122	311	65	6,290
Nursery to 4th grade	456	124	115	29	180	798	71	91	1,864
5th and 6th grade	1,010	162	306	151	318	1,670	141	138	3,896
7th and 8th grade	2,537	410	290	393	1,169	5,143	485	370	10,797
9th grade	2,178	184	417	298	929	5,970	477	170	10,623
10th grade	2,774	407	518	364	969	7,856	732	450	14,070
11th grade	2,845	754	979	494	1,187	10,036	481	550	17,326
12th grade, no diploma	1,955	253	559	261	449	5,526	531	236	9,770
High school graduate/equivalent	38,401	3,368	7,566	3,826	10,431	89,075	6,178	5,569	164,414
Some college, less than 1 year	7,980	528	911	499	1,374	16,314	694	629	28,929
Some college, 1+ years, no degree	22,477	1,234	1,932	1,108	3,729	46,186	1,973	1,240	79,879
Associate degree	11,647	731	1,332	612	1,564	20,736	1,134	803	38,559
Bachelor's degree	25,444	771	1,389	394	2,218	37,981	1,245	823	70,265
Master's degree	9,188	344	508	289	755	13,742	426	300	25,552
Professional school degree	2,258	95	104	50	209	3,832	81	54	6,683
Doctorate degree	1,257	12	54	10	60	2,584	133	2	4,112

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 28.1 percent in 2015. Applying this rate to March 2016 labor force data means that 83,415 employed residents were underemployed (Table 9.7). Adding the unemployed gives a total available labor pool of 105,167 for the region. This is almost 4.8 times the number of unemployed and is a more realistic measure of the available labor pool in the region. Prospective employers must be able to offer the underemployed higher wages, better benefits or terms of employment, or some other incentives to induce them to change jobs. County underemployment rates ranged from 22.9 percent for Clarke County to 33.3 percent for Mobile. Choctaw County had the smallest available labor pool while Mobile had the largest. The underemployed are more willing to commute longer times and distances for a better job. For the one-way commute, 47.5 percent are prepared to travel for 20 or more minutes longer and 44.3 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	318,921	88,967	4,343	7,958	4,659	14,576	184,539	7,197	6,682
Employed	297,169	84,008	3,946	7,096	4,248	13,595	171,686	6,467	6,123
Underemployment rate	28.1%	24.3%	26.2%	22.9%	31.7%	23.9%	33.3%	24.4%	26.8%
Underemployed workers	83,415	20,406	1,033	1,626	1,347	3,251	57,223	1,577	1,643
Unemployed	21,752	4,959	397	862	411	981	12,853	730	559
<b>Available labor pool</b>	<b>105,167</b>	<b>25,365</b>	<b>1,430</b>	<b>2,488</b>	<b>1,758</b>	<b>4,232</b>	<b>70,076</b>	<b>2,307</b>	<b>2,202</b>

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. In 2015 a total of 900 complete responses were obtained from Region 9. About 54 percent (488 respondents) were employed, of whom 137 respondents stated that they were underemployed. A lack of job opportunities in their area, low wages at available jobs, living too far from jobs, other family or personal obligations, child care responsibilities, other undisclosed reasons, spouse having a really good job, and taking care of someone other than a child 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 many also cite social security limitations and a lack of job opportunities in their area as additional major reasons. Such workers may become part of the labor force if their problems can be addressed. Indeed, a recent study found that the flow of labor force nonparticipants to employment status was 60 percent more than that of unemployed workers who gain employment.<sup>3</sup> This implies that Region 9's available labor pool could be larger than estimated in this report.

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 about the same commute times and distances.
- They have shorter job tenure than other employees and they earn less.

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

- More work in arts, design, entertainment, sports, and media; healthcare support; protective service; food preparation and service; building and grounds cleaning and maintenance; office and administrative support; construction and extraction; installation, maintenance, and repair; and production occupations.
- More are in mining; utilities; wholesale trade; retail trade; finance and insurance; administrative and support and waste management and remediation services; accommodation and food services; public administration; and arts, entertainment, and recreation industries.
- 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 time and distance.
- 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 except if they have to pay all the training cost.
- Fewer are married and more are females.
- They are about the same age as all workers but have lower educational attainment.
- More are Hispanic and African-American or other nonwhite ethnic groups.

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 (74.8 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 (60.6 percent). The underemployed are most satisfied with their shift, 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 (68.9 percent vs. 59.1 percent). However, the willingness to train is strongly influenced by who pays for the cost of training. Workers typically do not wish to pay for the training and so their willingness is highest when the cost is fully borne by government and lowest when the trainee must pay the full costs. Underemployed workers are more willing to train for the new or better job except if they have to bear the full cost of 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 Job Satisfaction and Willingness to Train (Percent)**

<b>Job Satisfaction</b>						
	Completely Dissatisfied	Dissatisfied	Neutral	Satisfied	Completely Satisfied	
<b>Employed</b>						
Overall	4.5	3.5	17.2	30.1	44.7	
Earnings	10.0	9.6	22.3	26.6	30.7	
Retention	4.7	2.1	10.0	21.1	61.5	
Work	1.6	0.6	8.8	25.6	63.3	
Hours	2.9	4.5	11.9	19.9	60.5	
Shift	2.7	3.1	8.6	16.6	68.4	
Conditions	2.7	5.1	16.4	21.9	53.9	
Commuting Distance	5.5	4.7	12.1	15.6	61.3	
<b>Underemployed</b>						
Overall	13.1	2.2	24.1	29.9	30.7	
Earnings	23.4	19.7	21.2	24.8	9.5	
Retention	11.7	2.9	28.5	28.5	44.5	
Work	5.1	2.2	12.4	23.4	56.9	
Hours	5.1	10.2	9.5	19.0	54.7	
Shift	2.9	5.1	7.3	21.9	61.3	
Conditions	4.4	8.8	24.8	20.4	41.6	
Commuting Distance	7.3	3.7	12.4	17.5	59.1	
<b>Willingness to Train</b>						
	Completely Unwilling	Unwilling	Neutral	Willing	Completely Willing	
<b>Employed</b>						
For a new or better job	22.4	3.0	14.3	13.3	45.7	
If paid by trainee	44.3	20.1	17.8	6.2	9.4	
If paid by trainee and government	12.6	13.9	34.6	15.2	20.7	
If paid by government	5.8	2.6	7.1	13.9	69.6	
<b>Underemployed</b>						
For a new or better job	14.8	3.3	11.5	16.4	52.5	
If paid by trainee	46.2	17.3	18.3	4.8	10.6	
If paid by trainee and government	9.6	17.3	30.8	16.4	22.1	
If paid by government	2.9	1.9	4.8	12.5	77.9	

Note: Rounding errors may be present.

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

## Workforce Demand

### Industry Mix

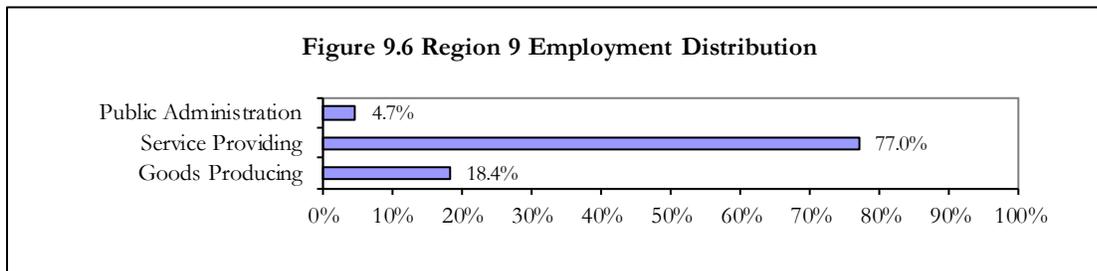
The retail trade sector was the leading Region 9 employer with 37,401 jobs in the first quarter of 2015 (Table 9.9). Rounding out the top five industries by employment are health care and social assistance, manufacturing, accommodation and food services, and educational services. These five industries provided 154,927 jobs, 58.6 percent of the region’s total. The average monthly wage across all industries in the region was \$3,154; two leading employers paid more than this average. New hire monthly earnings averaged \$2,057, about 65.2 percent of the average monthly wage. The highest average monthly wages were for mining at \$6,260; utilities \$5,476; manufacturing \$5,038; professional, scientific, and technical services \$4,585; and wholesale trade at \$4,483. Accommodation and food services paid the least at \$1,290. Mining also had the highest average monthly new hire wages with \$3,871 followed by finance and insurance \$3,438, manufacturing \$3,380, and utilities with \$3,278. Accommodation and food services paid new hires the least, \$1,043.

**Table 9.9 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	2,552	0.97%	18	\$2,806	\$2,292
21 Mining	769	0.29%	20	\$6,260	\$3,871
22 Utilities	2,713	1.03%	17	\$5,476	\$3,278
23 Construction	14,674	5.55%	7	\$3,391	\$2,937
31-33 Manufacturing	30,547	11.55%	3	\$5,038	\$3,380
42 Wholesale Trade	10,913	4.13%	11	\$4,483	\$3,006
44-45 Retail Trade	37,401	14.15%	1	\$2,045	\$1,318
48-49 Transportation and Warehousing	11,615	4.39%	9	\$3,635	\$2,597
51 Information	2,739	1.04%	16	\$4,213	\$3,065
52 Finance and Insurance	7,827	2.96%	12	\$4,309	\$3,438
53 Real Estate and Rental and Leasing	4,737	1.79%	14	\$3,032	\$2,451
54 Professional, Scientific, and Technical Services	11,134	4.21%	10	\$4,585	\$3,228
55 Management of Companies and Enterprises	1,505	0.57%	19	\$3,179	\$1,819
56 Administrative and Support and Waste Management and Remediation Services	15,232	5.76%	6	\$2,115	\$1,854
61 Educational Services	24,167	9.14%	5	\$3,328	\$1,441
62 Health Care and Social Assistance	35,171	13.30%	2	\$3,134	\$2,430
71 Arts, Entertainment, and Recreation	3,054	1.16%	15	\$1,945	\$1,482
72 Accommodation and Food Services	27,641	10.45%	4	\$1,290	\$1,043
81 Other Services (Except Public Administration)	7,685	2.91%	13	\$2,473	\$1,864
92 Public Administration	12,315	4.66%	8	\$2,959	\$2,098
<b>ALL INDUSTRIES</b>	<b>264,393</b>	<b>100.00%</b>		<b>\$3,154</b>	<b>\$2,057</b>

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

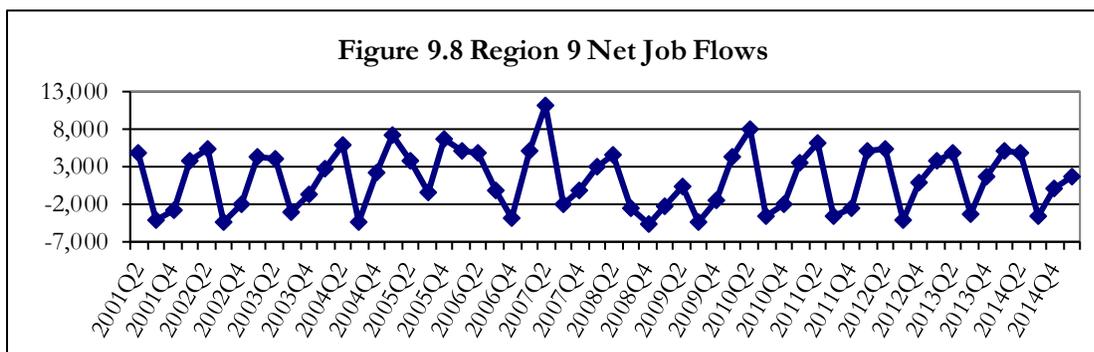
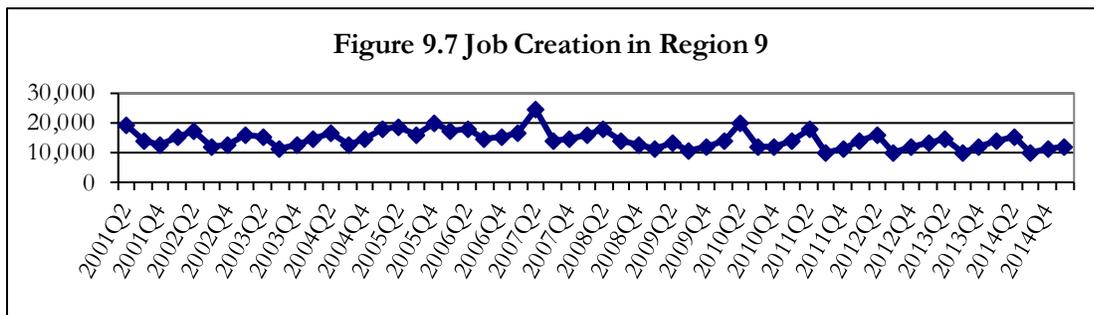
By broad industry classification, service providing industries generated 77.0 percent of jobs in the first quarter of 2015 (Figure 9.6). Goods producing industries were next with 18.4 percent and public administration accounted for 4.7 percent. The distribution is for all nonagricultural jobs in the 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, 14,458 jobs were created per quarter from second quarter 2001 to first quarter 2015 (Figure 9.7); quarterly net job flows averaged 1,346 (Figure 9.8). Seasonal employment due to tourism is reflected in generally stronger second quarter job creation. After dropping sharply in the third quarter of 2014, job creation and net job flows both went up in two consecutive quarters and are expected to be higher in the second quarter of 2015 due to tourism. Quarterly net job flows fluctuate considerably and have ranged from a loss of 4,733 to a gain of 11,320. 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 711 single occupations based on 2012 to 2022 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 one of the five largest employment sectors identified earlier (Table 9.9): health care and social assistance. Thus, these sectors will continue to dominate employment in the region.

The top five high-demand occupations are Registered Nurses; Licensed Practical and Licensed Vocational Nurses; Personal Care Aides; Computer User Support Specialists; and Medical Assistants. Twelve of the high-demand occupations are also fast-growing. This means that these 12 occupations have a minimum annual growth rate of 2.66 percent, much faster than the regional and state occupational growth rates of 1.08 percent and 0.99 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 health care and social assistance sector. The top five fast-growing occupations are Athletic Trainers; Occupational Therapists; Personal Care Aides; Occupational Therapy Assistants; and Physical Therapist Assistants.

Table 9.12 shows the 50 selected highest earning occupations in the region. These occupations are mainly in management, health, postsecondary education, and engineering fields and pay a minimum average salary of \$77,721 per year. Eight of the top 10 listed are health occupations. Any discussion of earnings must consider that wages vary with experience. Occupations with the highest entry wages may not necessarily have the highest average or experienced wages.

The selected high-earning occupations are generally not fast-growing or in high-demand. Nine of the occupations are both high-earning and in high-demand (Table 9.10). Only one occupation—Physician Assistants—is in high-demand, fast-growing, and high-earning categories.

Of the region's 711 occupations, 65 are expected to decline over the 2012 to 2022 period. Employment in the 20 sharpest-declining occupations will fall by at least 10.0 percent, with each losing at least 10 jobs 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 2012 and Projected Year 2022)**

Occupation	Average Annual Job Openings		
	Total	Due to Growth	Due to Separations
Registered Nurses	255	130	125
Licensed Practical and Licensed Vocational Nurses	100	50	50
Personal Care Aides*	85	75	10
Computer User Support Specialists	70	50	20
Medical Assistants	60	35	25
First-Line Supervisors of Construction Trades and Extraction Workers	60	40	20
Home Health Aides	50	30	20
Carpenters	50	35	15
Industrial Machinery Mechanics	50	20	30
Aircraft Mechanics and Service Technicians*	35	25	15
<b>Construction Managers</b>	<b>25</b>	<b>15</b>	<b>10</b>
Claims Adjusters, Examiners, and Investigators	25	10	10
<b>Management Analysts</b>	<b>25</b>	<b>15</b>	<b>10</b>
Physical Therapists*	25	15	10
Medical Secretaries*	25	20	5
Machinists	25	10	10
Cost Estimators	20	10	10
Nursing Instructors and Teachers, Postsecondary	20	10	5
Dental Hygienists	20	10	10
Physical Therapist Assistants*	20	15	5
Avionics Technicians*	20	15	5
<b>Medical and Health Services Managers</b>	<b>15</b>	<b>10</b>	<b>10</b>
Market Research Analysts and Marketing Specialists	15	10	5
Computer Systems Analysts*	15	10	5
Database Administrators	15	10	5
<b>Anesthesiologists</b>	<b>15</b>	<b>5</b>	<b>5</b>
Occupational Therapists*	15	10	5
Diagnostic Medical Sonographers*	15	10	5
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	15	10	5
<b>Computer and Information Systems Managers</b>	<b>10</b>	<b>5</b>	<b>5</b>
<b>Personal Financial Advisors</b>	<b>10</b>	<b>5</b>	<b>5</b>
Software Developers, Applications	10	5	5
Software Developers, Systems Software	10	5	0
Healthcare Social Workers	10	5	5
<b>Nurse Practitioners</b>	<b>10</b>	<b>5</b>	<b>5</b>
Logisticians	5	5	0
Operations Research Analysts*	5	5	0
Aerospace Engineers*	5	5	0
<b>Surgeons</b>	<b>5</b>	<b>0</b>	<b>0</b>
<b>Physician Assistants*</b>	<b>5</b>	<b>5</b>	<b>0</b>

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 2012 and Projected Year 2022)**

Occupation	Employment		Percent Change	Annual Growth (Percent)	Average Annual Job Openings
	2012	2022			
Athletic Trainers	50	80	44	4.81	5
Occupational Therapists*	190	290	50	4.32	15
Personal Care Aides*	1,480	2,240	51	4.23	85
Occupational Therapy Assistants	40	60	56	4.14	5
Physical Therapist Assistants*	320	470	47	3.92	20
Avionics Technicians*	300	440	48	3.90	20
Diagnostic Medical Sonographers*	240	350	45	3.85	15
Physical Therapists*	360	520	44	3.75	25
Veterinary Technologists and Technicians	90	130	40	3.75	5
Aerospace Engineers*	70	100	38	3.63	5
Physical Therapist Aides	70	100	39	3.63	5
Skincare Specialists	70	100	48	3.63	5
Aircraft Mechanics and Service Technicians*	540	770	44	3.61	35
Computer User Support Specialists*	1,230	1,730	41	3.47	70
Operations Research Analysts*	NA	NA	59	3.42	5
Insulation Workers, Mechanical	50	70	45	3.42	5
<b>Physician Assistants*</b>	<b>80</b>	<b>110</b>	<b>39</b>	<b>3.24</b>	<b>5</b>
Fence Erectors	*	*	38	3.15	5
Medical Secretaries*	510	690	36	3.07	25
Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	100	130	41	2.66	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 9.12 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			
Surgeons*	70	90	2.54	5	253,203
Anesthesiologists*	240	310	2.59	15	237,927
Pediatricians, General	60	70	1.55	5	208,790
Chief Executives	210	220	0.47	5	189,725
Internists, General	110	120	0.87	5	174,660
Dentists, General	250	290	1.50	10	172,337
Physicians and Surgeons, All Other	680	830	2.01	30	157,925
Nurse Anesthetists	30	40	2.92	0	149,295
Sales Engineers	10	20	7.18	0	147,145
Family and General Practitioners	NA	NA	0.74	5	142,207
Pharmacists	800	910	1.30	30	120,553
Architectural and Engineering Managers	310	330	0.63	10	118,606
General and Operations Managers	4,220	4,790	1.28	135	115,192
Personal Financial Advisors*	210	250	1.76	10	114,824
Sales Managers	250	280	1.14	10	111,261
Financial Managers	550	600	0.87	15	109,173
Lawyers	1,020	1,140	1.12	25	108,525
Computer and Information Systems Managers*	260	320	2.10	10	102,254
Purchasing Managers	80	80	0.00	0	96,690
Industrial Production Managers	490	520	0.60	10	96,410
Podiatrists	30	40	2.92	0	95,951
Chemical Engineers	180	200	1.06	5	95,087
Medical and Health Services Managers*	310	400	2.58	15	92,613
Business Teachers, Postsecondary	80	90	1.18	0	90,303
Natural Sciences Managers	30	30	0.00	0	90,166
Education Administrators, Postsecondary	340	390	1.38	15	89,887
Electronics Engineers, Except Computer	140	160	1.34	5	89,293
Optometrists	50	70	3.42	5	88,974
Computer Occupations, All Other	70	80	1.34	0	88,739
Marketing Managers	NA	NA	0.00	5	88,671
Compensation and Benefits Managers	30	30	0.00	0	88,414
Administrative Services Managers	110	120	0.87	5	88,132
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	70	70	0.00	5	88,029
Transportation, Storage, and Distribution Managers	130	140	0.74	5	87,973
Biological Science Teachers, Postsecondary	240	290	1.91	10	87,876
<b>Physician Assistants*</b>	<b>80</b>	<b>110</b>	<b>3.24</b>	<b>5</b>	<b>86,130</b>
Public Relations and Fundraising Managers	60	70	1.55	0	85,969
Materials Engineers	20	20	0.00	0	85,814
Human Resources Managers	130	150	1.44	5	84,525
Industrial Engineers	540	580	0.72	20	84,263
Construction Managers*	700	830	1.72	25	84,185
Engineers, All Other	220	250	1.29	5	83,794
Architects, Except Landscape and Naval	170	190	1.12	5	83,720
Chemists	140	140	0.00	5	83,161
Managers, All Other	860	940	0.89	25	83,148
Mechanical Engineers	300	320	0.65	10	83,020
Criminal Justice and Law Enforcement Teachers, Postsecondary	NA	NA	0.00	0	82,855
Nurse Practitioners*	190	260	3.19	10	78,407
Management Analysts*	500	670	2.97	25	77,821
Computer Network Architects	30	40	2.92	0	77,721

Note: Employment data are rounded to the nearest 10; 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 9.13 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	4,200	3,460	-740	-18
Postal Service Mail Carriers	620	450	-170	-28
Fallers	250	150	-100	-41
Data Entry Keyers	410	340	-70	-18
Paper Goods Machine Setters, Operators, and Tenders	570	510	-60	-11
Postal Service Mail Sorters, Processors, and Processing Machine Operators	190	130	-60	-30
Postal Service Clerks	170	110	-60	-33
Switchboard Operators, Including Answering Service	300	260	-40	-11
Floral Designers	180	150	-30	-14
Printing Press Operators	210	190	-20	-10
Meter Readers, Utilities	130	110	-20	-16
Editors	110	90	-20	-20
Reporters and Correspondents	90	70	-20	-25
Postmasters and Mail Superintendents	70	50	-20	-25
Locomotive Firers	NA	NA	-20	-41
Cutting and Slicing Machine Setters, Operators, and Tenders	100	90	-10	-11
Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders	100	90	-10	-12
Word Processors and Typists	90	80	-10	-16
Mail Clerks and Mail Machine Operators, Except Postal Service	80	70	-10	-10
Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders	NA	NA	-10	-13

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 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	33	40	52
Active Listening	93	90	84
Critical Thinking	95	95	86
Learning Strategies	3	0	6
Mathematics	13	10	10
Monitoring	65	70	48
Reading Comprehension	80	70	80
Science	13	<b>10</b>	30
Speaking	85	85	82
Writing	48	40	52
<b>Complex Problem Solving Skills</b>			
Complex Problem Solving	60	40	64
<b>Resource Management Skills</b>			
Management of Financial Resources	3	0	2
Management of Material Resources	0	0	0
Management of Personnel Resources	8	0	20
Time Management	28	<b>45</b>	16
<b>Social Skills</b>			
Coordination	45	55	30
Instructing	13	25	10
Negotiation	0	0	12
Persuasion	8	5	14
Service Orientation	35	55	14
Social Perceptiveness	55	60	46
<b>Systems Skills</b>			
Judgment and Decision Making	65	60	78
Systems Analysis	15	5	8
Systems Evaluation	8	5	6
<b>Technical Skills</b>			
Equipment Maintenance	8	10	0
Equipment Selection	3	0	0
Installation	0	0	0
Operation and Control	10	15	0
Operation Monitoring	13	15	0
Operations Analysis	10	10	8
Programming	<b>5</b>	0	0
Quality Control Analysis	8	10	2
Repairing	8	10	0
Technology Design	0	0	0
Troubleshooting	8	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 in Region 9 require more active learning, learning strategies, science, writing, complex problem solving, management of personnel resources, judgment and decision making, negotiation, and persuasion skills than both high-demand and fast-growing jobs. Some of these skills require long training periods and postsecondary education. However, high-earning jobs require significantly less technical skills. High-demand occupations require somewhat more basic, resource management, complex problem solving, and systems skills than fast-growing occupations. Fast-growing occupations in general require more social and technical skills than high-demand and high-earning 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 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 9 the pace of training needs to increase for systems 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 85 percent of residents age 25 and over had graduated from high school in 2010 to 2014, compared to 84 percent for Alabama. About 22 percent of the population had a bachelor's or higher degree versus 23 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; only one high-earning occupation does not require a bachelor's or higher degree. Twenty-five (63.0 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. Eleven (55.0 percent) of the 20 fast-growing occupations require an associate degree at the minimum, with six (30.0 percent) requiring a bachelor'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 711 occupations and occupational categories, 65 are expected to decline over the period. Employment in the 20 sharpest-declining occupations will fall by at least 10.0 percent over the period, with each occupation losing a minimum of 10 jobs. 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

Note: The skills gap indexes are from 2008 to 2018 projection period and not 2012 to 2022.

Source: Alabama Department of Labor.

**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	1	14
Master's Degree	5	2	5
Bachelor's or Higher Degree Plus Work Experience	2	0	20
Bachelor's Degree	10	3	10
Associate Degree	5	5	0
Postsecondary Non-Degree Plus On-the-job Training	0	0	0
Postsecondary Non-Degree	3	2	0
Some College, no Degree Plus On-the-job Training	1	1	0
Some College, no Degree	0	0	0
High School Diploma Plus On-the-job Training	9	4	1
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

Economic growth in Region 9 is expected to be greater than labor force growth leading to worker shortfalls. From a 2012 base, worker shortfalls of 29,831 and 54,437 for 2022 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.

**Table 9.18 Expected Worker Shortfall**

	<b>2012-2022</b>	<b>2012-2030</b>
Total population growth (percent)	7.3	11.8
Age 20-64 population growth (percent)	1.6	1.4
Job growth (percent)	12.3	20.8
Worker shortfall (percent)	10.6	19.4
Worker shortfall (number)	29,831	54,437

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.