

State of the Workforce Report VII: Alabama

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THE UNIVERSITY OF ALABAMA

State of the Workforce Report VII: Alabama



March 2013

by

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Summary

- This report analyzes Alabama workforce supply and demand issues using available metrics of workforce characteristics and presents implications and recommendations.
- Alabama had an unemployment rate of 6.5 percent in December 2012, with 140,897 unemployed. An underemployment rate of 23.8 percent for 2012 means that the state has a 620,193-strong available labor pool that includes 479,296 underemployed workers who are looking for better jobs and are willing to commute farther and longer for such jobs.
- Net out-commuting jumped from 20,156 in 2005 to 32,116 in 2010, but increased commuting within the state worsened congestion. Commute time and distance rose in 2012 from 2011 pointing to worsening congestion in problematic areas. Congestion, which can slow economic development, is likely to continue worsening during the economic recovery process. This implies that continuous maintenance and development of transportation infrastructure and systems is important.
- By sector the top five employers in the state are manufacturing, health care and social assistance, retail trade, educational services, and accommodation and food services. These five industries provided 1,018,825 jobs, 58.7 percent of the state total, in the first quarter of 2012. The leading employers are not the highest paying sectors; only manufacturing had wages that were above the state average monthly wage. Economic development should therefore aim to diversify and strengthen the state'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 89,331 jobs were created per quarter from second quarter 2001 to first quarter 2012; quarterly net job flows averaged 6,529. 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; Licensed Practical and Licensed Vocational Nurses; Medical Assistants; and Personal and Home Care Aides.
- The top five fast-growing occupations are Personal and Home Care Aides; Home Health Aides; Occupational Therapist Assistants; Physical Therapist Assistants; and Metal-Refining Furnace Operators and Tenders.
- The top 50 high-earning occupations are in health, management, legal, engineering, computer, postsecondary education, and science fields and have a minimum salary of \$90,490. Nine of the top 10 are health occupations.
- Of the top 40 high-demand, the top 20 fast-growing, and 50 high-earning occupations, only one occupation—Software Developers, Systems Software—belong to all three categories. Seven occupations are both high-demand and high-earning while 11 occupations are both high-demand and fast-growing.

- Of the state's 785 occupations, 61 are expected to decline over the 2010 to 2020 period. Twenty occupations are expected to sharply decline by at least 10 percent, with each losing a minimum of 40 jobs. 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 tomorrow's workforce. In the future, more jobs will require postsecondary education and training at a minimum.
- The importance of basic skills generally and for high-demand, high-growth, and high-earning jobs indicates a strong need for training in these skills. The pace of training needs to increase for technical and systems skills, while the scale of training is raised for basic and social skills. Ideally, all high school graduates should possess basic skills so that postsecondary and higher education can focus on other and more complex skills. Employers should be an integral part of planning for training as they can help identify future skill needs and any existing gaps.
- From a 2010 base, worker shortfalls of 192,955 for 2020 and 307,272 for 2030 are expected. This will demand focusing on both skills and the expected shortfall as priorities through 2030. Worker shortfalls for critical occupations will need to be addressed continuously. Strategies to address skill needs and worker shortfalls might include: (1) improvements in education and its funding; (2) use of economic opportunities to attract new residents; (3) focusing on hard-to-serve populations (e.g. out-of-school youth); (4) lowering the high school dropout rate; (5) continuation and enhancement of programs to assess, retrain, and place dislocated workers; (6) encouragement of older worker participation in the labor force; and (7) facilitation of in-commuting.
- Improving education is important because (i) a highly educated and productive workforce is a critical economic development asset, (ii) productivity rises with education, (iii) educated people are more likely to work, and (iv) it yields high private and social rates of return on investment. Workforce development must view all of education and other programs (e.g. adult education, career technical training, worker retraining, career readiness, etc.) as one system. Funding to support workforce development may require tax reform at state and local levels and should provide for flexibility as workforce needs change over time and demand different priorities. Publicizing both private and public returns to education can encourage individuals to raise their own educational attainment levels, while also promoting public and legislative support for education.
- Higher incomes that come with improved educational attainment and work skills will help to increase personal income for the state as well as raise additional tax revenues for the state and local (county and city) tax jurisdictions. This is especially important for a state that has low population and labor force growth rates as well as low per capita income.
- Together, workforce development and economic development can build a strong, well-diversified Alabama 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 jobs and are not looking for one are not included (e.g. students, retirees, and the disabled and discouraged workers). Table A.1 shows labor force information for Alabama and each Workforce Development Region (WDR) in the state for 2012 and for December 2012. 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.

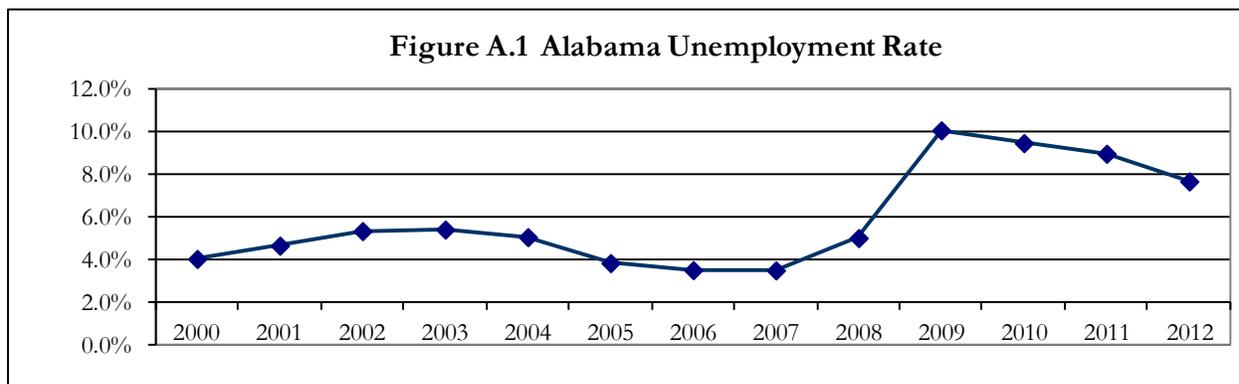
Table A.1 Alabama Labor Force Information

	2012 Annual Average			
	Labor Force	Employed	Unemployed	Rate (%)
WDR 1	119666	110049	9617	8.0
WDR 2	400,170	372,109	28,061	7.0
WDR 3	126,669	116,794	9,875	7.8
WDR 4	521,526	488,251	33,275	6.4
WDR 5	188,543	173,053	15,490	8.2
WDR 6	33,663	29,202	4,461	13.3
WDR 7	184,370	169,756	14,614	7.9
WDR 8	116,163	106,710	9,453	8.1
WDR 9	323,856	295,997	27,859	8.6
WDR 10	148,311	137,124	11,187	7.5
Jefferson County	300,855	278,943	21,912	7.3
Mobile County	190,554	173,995	16,559	8.7
Alabama	2,152,933	1,987,181	165,752	7.7
United States	154,975,000	142,469,000	12,506,000	8.1
	December 2012			
	Labor Force	Employed	Unemployed	Rate (%)
WDR 1	119704	111486	8218	6.9
WDR 2	401382	377814	23568	5.9
WDR 3	126,196	117,701	8,495	6.7
WDR 4	520,430	490,680	29,750	5.7
WDR 5	189,368	176,372	12,996	6.9
WDR 6	33,350	29,610	3,740	11.2
WDR 7	184,035	171,675	12,360	6.7
WDR 8	116,669	108,470	8,199	7.0
WDR 9	322,588	299,015	23,573	7.3
WDR 10	148,745	138,898	9,847	6.6
Jefferson County	301,369	282,700	18,669	6.2
Mobile County	190,597	176,807	13,790	7.2
Alabama	2,154,744	2,013,847	140,897	6.5
United States	154,904,000	143,060,000	11,844,000	7.6

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

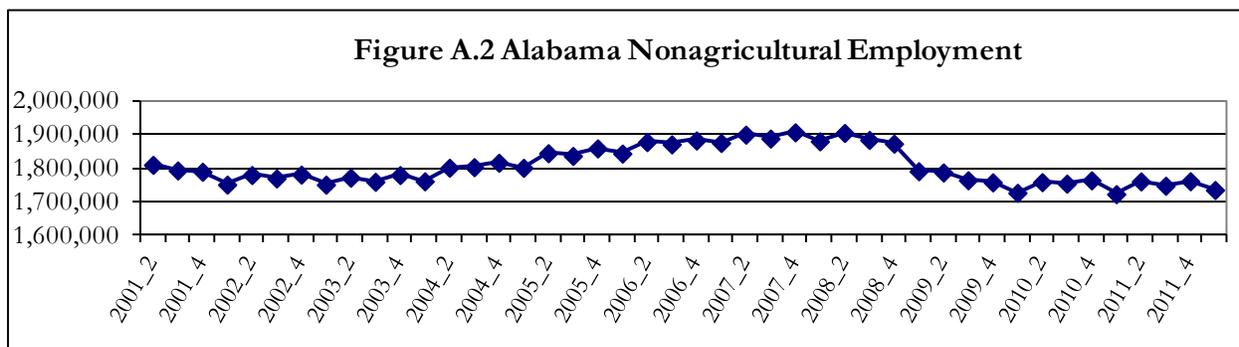
The recession that began in December 2007 raised unemployment rates for the state and all WDRs. Unemployment rates in 2012 ranged between 7.0 percent and 13.3 percent for the WDRs, with a 7.7 percent annual average for the state. In December 2012 the regional unemployment rates ranged from 5.9 percent (WDR 2) to 11.2 percent (WDR 6), with an 6.2 percent rate for the state. WDR 4 had the largest labor force and WDR 6 had the smallest.

The unemployment rate has been declining continuously since 2009 when it was highest due to the recent recession (Figure A.1). A slow economic recovery has kept unemployment rates above pre-recession levels. Year-to-date monthly labor force data point to a lower state unemployment rate for 2013 as unemployment has gone down over the past couple of months. In December 2012 the monthly state unemployment rate was at 6.5 percent, which was below the monthly national unemployment rate of 7.6 percent. However, preliminary indicators point to a slightly higher rate for January 2013 but is expected to decline. Despite ongoing economic development efforts, the effects of the latest recession is likely to keep unemployment high for the next several years.



Source: Alabama Department of Labor.

Nonagricultural employment of Alabama residents in the state averaged a little over 1.8 million quarterly from the second quarter of 2001 to the first quarter of 2012 (Figure A.2). The number of jobs in the state dropped from a high in fourth quarter 2007 to a low in the first quarter of 2011, and has yet to show significant improvements. Employment showed signs of recovery after the first quarter of 2011, but dropped again in the first of quarter of 2012. At 57.3 percent, the state's labor force participation rate was lower than then the nation's 63.7 percent.



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

Table A.2 shows worker distribution by age in Alabama for first quarter 2012. At 19.7 percent, older workers (age 55 and over), constitute a significant part of total nonagricultural employment. The share of older workers for the WDRs ranged from 17.9 percent for Region 8 to 23.5 percent for Region 6. To meet long term occupational projections for growth and replacement, labor force participation of younger residents must increase otherwise older workers may be required to work longer.

Table A.2 Workers by Age Group (First Quarter 2012)

Age Group	Nonagricultural Employment	
	Number	Percent
14-18	29,538	1.7
19-24	194,255	11.2
25-34	377,716	21.7
35-44	390,578	22.5
45-54	401,742	23.1
55-64	267,254	15.4
65+	75,706	4.4
55 and over total	342,960	19.7
Total all ages	1,736,789	100.0

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

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

Commuting Patterns

In 2005 more Alabama residents commuted out of the state to work than nonresidents who commuted in for work (Table A.3). Commuter outflow exceeded inflow by about 20,156 people. Most of the commuting involved Alabama's four neighboring states: Florida, Georgia, Mississippi, and Tennessee.

Data for 2010 show that the level of in-commuting rose by 34.5 percent to 58,413 and out-commuting increased by 42.3 to 90,529. Net out-commuting increased significantly from 20,156 to 32,116. The top destinations for the out-commuting Alabama residents in 2010 were Georgia (16,887), Tennessee (12,005), Florida (11,044), and Mississippi (9,306).

Table A.3 also shows the one-way average commute time and distance for Alabama workers in various years. More workers reported longer commute times and distances in 2012 compared to 2011. This is due to population growth and will worsen as the state economy recovers from the recession. Congestion can delay or slow economic development by impeding the flow of goods and the mobility of workers. Thus, maintenance and development of transportation infrastructure and systems must continue in order to facilitate the movement of workers and goods.

Table A.3 Commuting Patterns in Alabama

Year	State Inflow	State Outflow					
	Number	Number					
2005	43,442	63,598					
2006	49,090	60,050					
2007	50,504	83,342					
2008	58,436	81,054					
2009	52,125	85,296					
2010	58,413	90,529					
Percent of workers							
Average commute time (one-way)	2004	2005/2006	2008	2009	2010	2011	2012
Less than 20 minutes	57.3	55.2	54.9	53.5	55.1	56.3	51.7
20 to 40 minutes	27.0	29.1	29.6	28.8	29.0	27.6	31.4
40 minutes to an hour	9.3	9.3	9.4	11.1	10.3	10.2	9.9
More than an hour	1.7	2.3	2.9	2.7	2.5	2.8	3.6
Average commute distance (one-way)	2004	2005/2006	2008	2009	2010	2011	2012
Less than 10 miles	45.9	46.5	46.0	45.4	45.7	46.1	42.8
10 to 25 miles	29.5	30.6	32.4	32.1	32.8	32.5	34.4
25 to 45 miles	13.7	13.4	13.5	15.5	14.2	14.1	15.2
More than 45 miles	6.1	4.5	6.3	5.8	5.6	5.8	6.5

Note: Rounding errors may be present.

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

Population

The Alabama population count of almost 4.8 million for 2010 is 7.5 percent more than was recorded for 2000 (Table A.4). Population grew faster for three WDRs than for the state, but population also shrank in one WDR. The state's population growth of 7.5 percent was lower than the nation's 9.7 percent. Region 2 had the highest population growth at 13.4 percent followed by Region 3 with 9.6 percent, and Region 8 at 9.5 percent. Population fell in Region 6 by 7.2 percent and in Jefferson County by 0.5 percent.

Table A.5 shows Alabama's population counts, estimates, and projections by age group. The population aged 65 and over has been growing rapidly since 2010 as the baby boomer generation turns 65 and over. Consequently, growth of the prime working age group (20-64) and youth (0-19) is expected to lag that of the total population. This poses a challenge for workforce development. If employment growth outpaces labor force growth as is expected for the long term, communities that experience rapid job gains may need to consider investments in amenities and infrastructure to attract new residents.

Table A.4 Population by Workforce Development Region

	1990 Census	2000 Census	2010 Census	Change 2000-2010	% Change 2000-2010
WDR 1	211,024	230,230	234,101	3,871	1.7
WDR 2	665,495	766,335	869,183	102,848	13.4
WDR 3	247,125	268,208	293,927	25,719	9.6
WDR 4	940,268	1,031,412	1,105,132	73,720	7.1
WDR 5	405,276	424,451	436,254	11,803	2.8
WDR 6	113,715	108,746	100,871	-7,875	-7.2
WDR 7	340,702	381,592	409,389	27,797	7.3
WDR 8	206,852	237,250	259,775	22,525	9.5
WDR 9	610,415	678,997	727,145	48,148	7.1
WDR 10	299,715	319,879	343,959	24,080	7.5
Jefferson County	651,525	662,047	658,466	-3,581	-0.5
Mobile County	378,643	399,843	412,992	13,149	3.3
Alabama	4,040,587	4,447,100	4,779,736	332,636	7.5
United States	248,709,873	281,421,906	308,745,538	27,323,632	9.7

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

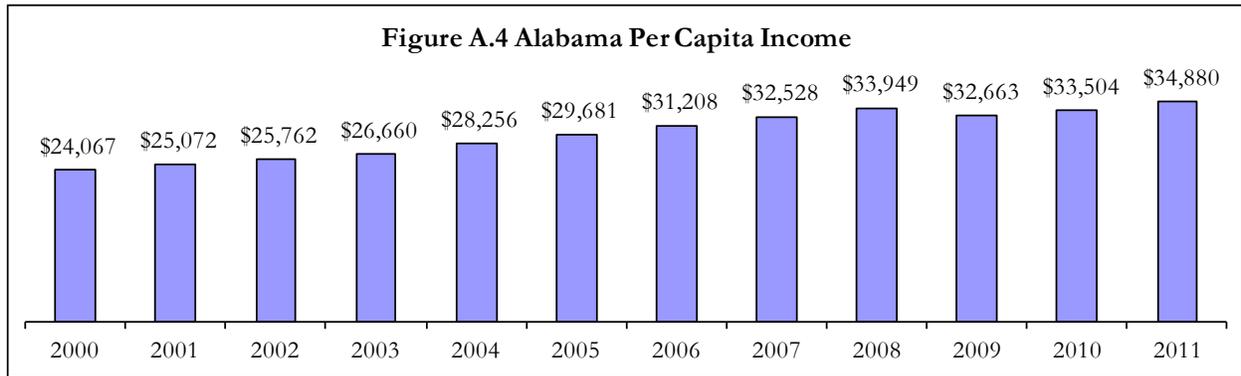
Table A.5 Alabama Population by Age Group and Projections

Age Group	2000	2010	2020	2030
0-19	1,256,169	1,276,312	1,299,829	1,309,371
20-24	306,865	335,322	354,913	364,375
25-29	301,196	311,034	313,825	325,568
30-34	301,819	297,888	306,061	330,387
35-39	340,300	308,430	323,846	327,901
40-44	345,212	311,071	306,118	314,748
45-49	315,173	346,369	316,320	333,216
50-54	285,036	347,485	315,593	311,887
55-59	225,450	311,906	346,025	317,762
60-64	190,082	276,127	339,867	311,406
65+	579,798	657,792	878,775	1,118,624
20-64 Total	2,611,133	2,845,632	2,922,568	2,937,250
Total Population	4,447,100	4,779,736	5,101,172	5,365,245
<i>Change from 2010</i>				
0-19			1.8%	2.6%
20-64			2.7%	3.2%
Total Population			6.7%	12.2%

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

Per Capita Income

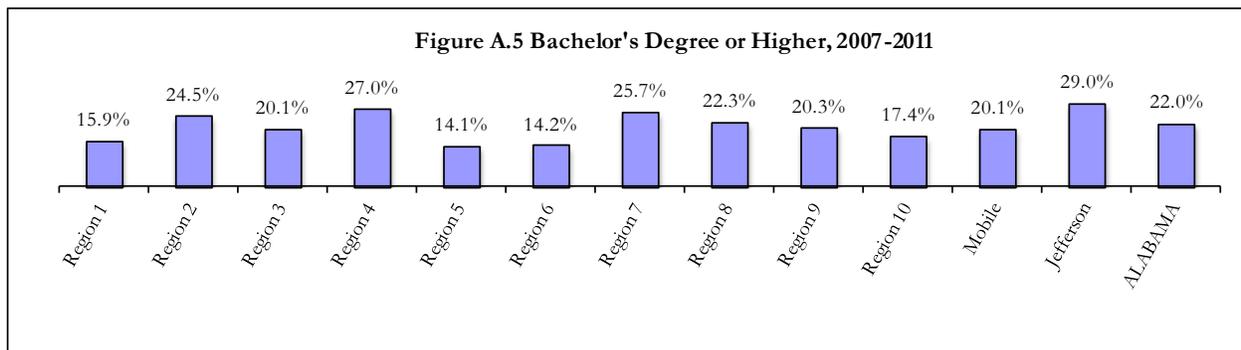
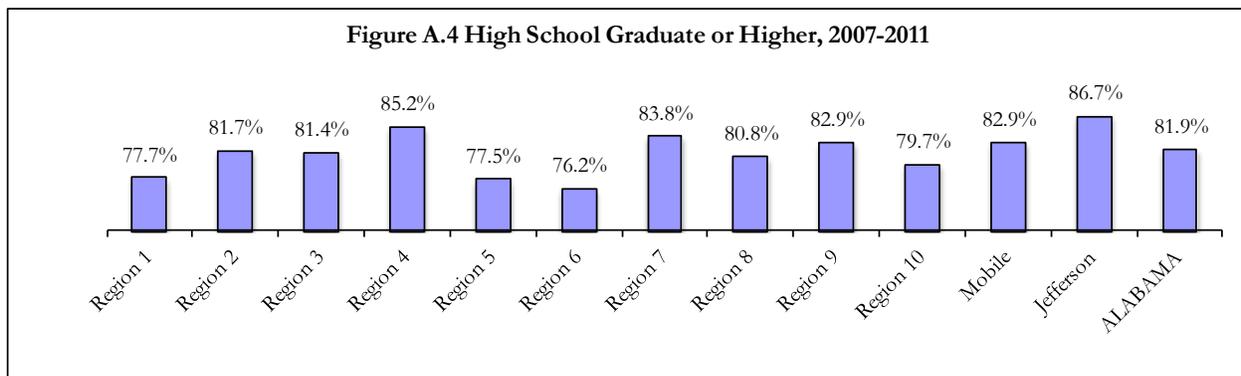
Per capita income (PCI) in Alabama was \$34,880 in 2011 (Figure A.3), up 44.9 percent from 2000. WDR 4 had the highest PCI with \$41,158 followed by Region 7 with \$35,846 and Region 2 with \$35,296. The other regions had lower PCI than the state average. At \$28,959, Region 6 had the lowest PCI followed by Region 8 with \$29,375.



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 Alabama residents who were 25 years old and over is shown in Table A.6 and Figures A.4 and A.5. These figures are based on American Community Survey's 5-year estimates for 2007 through 2011. About 82 percent of the population had graduated from high school and 22 percent held a bachelor's or higher degree. Region 4 had the highest educational attainment followed by Region 7 while Region 6 had the lowest. Educational attainment is important as skills rise with education, and high-wage jobs in the 21st century demand more skill sets.



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

Table A.6 Educational Attainment of Population 25 Years and Over, 2007-2011

	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7
Total	183,741	551,499	179,928	735,777	296,061	64,993	264,146
No schooling completed	2,134	6,844	1,626	6,467	3,710	1,399	3,101
Nursery to 4th grade	1,412	5,051	1,087	2,953	1,805	656	1,376
5th and 6th grade	3,357	8,691	2,781	8,386	4,864	1,373	2,888
7th and 8th grade	7,930	17,290	5,700	17,105	12,158	2,116	6,269
9th grade	6,878	15,860	4,582	16,412	10,463	2,092	6,937
10th grade	8,437	19,362	7,070	21,795	13,600	2,965	8,545
11th grade	7,324	18,305	6,765	23,785	14,021	3,252	8,779
12th grade, no diploma	3,422	9,658	3,862	12,309	5,942	1,618	4,923
High school graduate/equivalent	63,938	159,521	62,261	210,729	102,364	23,708	80,257
Some college, less than 1 year	11,708	34,305	9,863	41,522	19,118	3,117	14,717
Some college, 1+ years, no degree	26,109	82,576	27,871	123,516	45,610	9,001	42,315
Associate degree	11,935	39,069	10,323	52,124	20,735	4,453	16,047
Bachelor's degree	18,416	85,757	22,124	127,324	25,936	5,841	42,756
Master's degree	7,602	37,729	9,756	47,637	11,645	2,682	18,942
Professional school degree	1,747	6,845	2,296	15,859	2,586	424	3,867
Doctorate degree	1,392	4,636	1,961	7,854	1,504	296	2,427
	Region 8	Region 9	Region 10	Mobile	Jefferson	Alabama	
Total	155,745	478,941	227,247	265,828	437,995	3,138,078	
No schooling completed	2,055	5,164	3,121	3,150	3,730	35,621	
Nursery to 4th grade	1,217	2,513	1,852	1,153	1,373	19,922	
5th and 6th grade	2,365	5,475	3,718	2,217	4,427	43,898	
7th and 8th grade	4,077	11,851	7,822	5,955	8,071	92,318	
9th grade	4,197	12,046	7,422	6,599	7,552	86,889	
10th grade	6,264	16,303	9,013	9,013	10,936	113,354	
11th grade	6,551	18,621	9,232	11,335	14,196	116,635	
12th grade, no diploma	3,180	10,064	4,055	5,929	7,857	59,033	
High school graduate/equivalent	47,330	160,682	75,614	89,397	121,313	986,404	
Some college, less than 1 year	9,366	28,302	14,973	15,128	23,314	186,991	
Some college, 1+ years, no degree	23,084	74,159	33,328	42,633	77,118	487,569	
Associate degree	11,299	36,431	17,589	20,009	31,294	220,005	
Bachelor's degree	20,530	64,598	24,929	34,983	78,798	438,211	
Master's degree	9,329	23,465	10,803	12,652	30,962	179,590	
Professional school degree	1,928	5,562	2,337	3,265	11,566	43,451	
Doctorate degree	2,973	3,705	1,439	2,410	5,488	28,187	

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 WDRs with 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.

The Alabama underemployment rate was 23.8 percent in 2012. Applying this rate to December 2012 labor force data means that 479,296 employed Alabama residents were underemployed (Table A.7). Adding the unemployed gives a total available labor pool of 620,193 for the state. This is more than four times the number of unemployed and is a more realistic measure of the available labor pool in the state. 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. The underemployed are willing to commute farther and longer for a better job; 41.4 percent are prepared for 20 or more minutes longer and 31.6 percent will go 20 or more extra miles in a one-way commute.

Table A.7 Underemployed and Available Labor by WDR

	Alabama	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6
Labor force	2,154,744	119,704	401,382	126,196	520,430	189,368	33,350
Employed	2,013,847	111,486	377,814	117,701	490,680	176,372	29,610
Underemployment rate	23.8%	22.8%	23.2%	24.0%	24.0%	23.9%	26.2%
Underemployed workers	479,296	25,385	87,653	28,295	117,567	42,153	7,758
Unemployed	140,897	8,218	23,568	8,495	29,750	12,996	3,740
Available labor pool	620,193	33,603	111,221	36,790	147,317	55,149	11,498
	Region 7	Region 8	Region 9	Region 10	Jefferson	Mobile	
Labor force	184,035	116,669	322,588	148,745	301,369	190,597	
Employed	171,675	108,470	299,015	138,898	282,700	176,807	
Underemployment rate	25.5%	25.8%	22.6%	22.0%	25.8%	23.9%	
Underemployed workers	43,811	27,931	67,488	30,502	72,908	42,292	
Unemployed	12,360	8,199	23,573	9,847	18,669	13,790	
Available labor pool	56,171	36,130	91,061	40,349	91,577	56,082	

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, WDRs, and the state were determined from an extensive survey on the state’s workforce. A total of 11,272 complete responses were obtained. About 43 percent (4,798 respondents) were employed, of whom 1,142 stated that they were underemployed. Among the WDRs, underemployment ranged from 22.0 percent for Region 10 to 26.2 percent for Region 6. Region 4 has the most available labor, followed by Region 2; these two regions account for 42 percent of the state’s available labor pool. Among counties, Franklin and Walker had the highest rate of underemployment at 35.1 percent followed by Macon 34.6 and Limestone at 34.5 percent. Winston had the lowest underemployment rate at 12.0 percent followed by Colbert at 14.0 percent. Thirty-three counties had underemployment rates above the state’s 23.8 percent.

The primary reasons for being underemployed are a lack of job opportunities in their area, low wages at available jobs, living too far from jobs, living too far from jobs, other family or personal obligations, and owning a house in their area. Ongoing economic development efforts can help in this regard. Nonworkers cite retirement, disability or other health concerns, a lack of job opportunities in their area and social security limitations as the main reasons for their status. Such workers may become part of the labor force if their problems can be addressed. This implies that the state’s available labor pool could be larger than estimated in this report.

A comparison of underemployed workers to the overall state workforce shows that:

- Fewer work full-time and more of the part-timers prefer full-time work.
- More hold multiple jobs.
- They have shorter commute distances but slightly longer commute times.
- The underemployed are for the most part distributed evenly across industries and occupations. However, there are slightly more in accommodation and food services; administrative and support and waste management and remediation services; information; retail trade; construction; educational services; and health care and social services industries.
- They earn less and have less job tenure.
- Fewer believe their jobs fit well with their education and training, skills, and experience.
- More believe they are qualified for a better job.
- More would leave their current jobs for higher income.
- More are willing to commute more than 20 minutes and over 20 miles for a better job.
- Fewer are satisfied with their current jobs.
- More are willing to train for a better job even if they have to pay part or all of the cost.
- More have sought better jobs in the preceding quarter.
- They have slightly higher educational attainment.
- The median age, 50, is two years lower than all employees.
- Fewer are married, male, or white.
- More are Hispanic and African American or other nonwhite ethnicities.

Table A.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 Alabama workers (76.1 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. Clearly, fewer underemployed workers are satisfied with their jobs (54.0 percent). The underemployed are also more dissatisfied with their earnings.

Workers are generally willing to train for a new or better job, with the underemployed being much more willing (69.4 percent vs. 56.7 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. When the training cost burden is considered, the underemployed are more willing to train for the new or better job if the government bears at least part of the cost. This strongly suggests that workers expect the government to bear at least part of the training cost. This expectation may result from worker awareness of government workforce programs that provide such assistance.

Table A.8 2012 Job Satisfaction and Willingness to Train (Percent)

Job Satisfaction						
		Completely Dissatisfied	Dissatisfied	Neutral	Satisfied	Completely Satisfied
Employed						
Overall		4.1	4.8	14.8	25.4	50.7
	Earnings	10.8	10.2	22.3	24.3	32.1
	Retention	4.4	4.9	11.5	18.7	59.0
	Work	1.7	2.5	8.9	22.7	64.1
	Hours	5.0	3.9	11.3	19.2	60.4
	Shift	3.6	3.1	8.7	15.4	69.1
	Conditions	2.9	4.3	13.0	24.6	55.0
	Commuting Distance	4.7	4.9	11.7	14.4	63.9
Underemployed						
Overall		10.3	10.1	25.3	23.3	30.7
	Earnings	25.9	18.1	26.1	15.8	13.8
	Retention	11.4	8.1	19.4	19.4	43.1
	Work	4.6	5.3	15.2	25.0	49.7
	Hours	11.7	7.6	13.6	19.0	48.0
	Shift	7.1	5.0	11.0	17.6	59.1
	Conditions	6.5	7.7	18.6	27.2	39.9
	Commuting Distance	7.5	6.0	13.5	13.8	58.8
Willingness to Train						
		Completely Unwilling	Unwilling	Neutral	Willing	Completely Willing
Employed						
For a new or better job		21.0	5.1	15.6	12.4	44.4
	If paid by trainee	43.5	20.2	18.0	5.6	9.3
	If paid by trainee and government	14.5	11.6	33.4	17.7	20.1
	If paid by government	6.4	2.7	11.1	15.3	63.0
Underemployed						
For a new or better job		12.5	3.6	13.0	12.7	56.7
	If paid by trainee	40.4	21.3	18.0	6.0	10.6
	If paid by trainee and government	11.4	9.6	30.0	21.6	24.8
	If paid by government	3.6	1.7	7.9	11.7	73.7

Note: Rounding errors may be present.

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

Workforce Demand

Industry Mix

The manufacturing sector was the leading employer in Alabama with 243,643 jobs in the first quarter of 2012 (Table A.9). Rounding out the top five industries by employment are health care and social assistance, retail trade, educational services, and accommodation and food services. These five industries provided 1,018,825 jobs, 58.7 percent of the state total. The average monthly wage across all industries in the state was \$3,413. New hire monthly earnings averaged \$2,049 or 60.0 percent of the average monthly wage. The highest average monthly wages were for utilities \$7,000; mining \$6,044; and professional, scientific, and technical services at \$5,432. Accommodation and food services paid the least at \$1,371. Utilities had the highest average monthly new hire wage at \$4,685 followed by mining at \$4,189 and professional, scientific, and technical services at \$4,120. Accommodation and food services paid newly hired workers the least, \$979.

Table A.9 Industry Mix (First Quarter 2012)

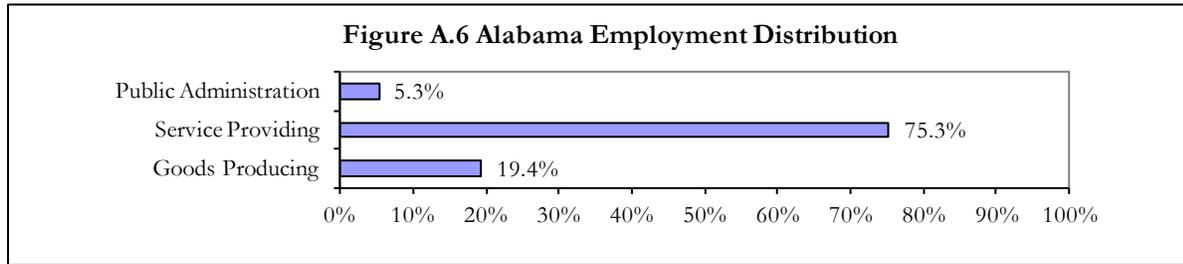
Industry by 2-digit NAICS Code	Total Employment	Share	Rank	Average Monthly Wage	Average Monthly New Hire Earnings
11 Agriculture, Forestry, Fishing and Hunting	10,888	0.63%	19	\$2,920	\$2,198
21 Mining	8,359	0.48%	20	\$6,044	\$4,189
22 Utilities	20,905	1.20%	16	\$7,000	\$4,685
23 Construction	74,804	4.31%	9	\$3,561	\$2,760
31-33 Manufacturing	243,643	14.03%	1	\$4,240	\$2,925
42 Wholesale Trade	71,794	4.13%	10	\$4,594	\$3,111
44-45 Retail Trade	225,681	12.99%	3	\$2,264	\$1,257
48-49 Transportation and Warehousing	54,549	3.14%	12	\$3,408	\$2,565
51 Information	24,166	1.39%	14	\$4,489	\$2,684
52 Finance and Insurance	68,580	3.95%	11	\$4,986	\$3,582
53 Real Estate and Rental and Leasing	22,498	1.30%	15	\$3,184	\$2,247
54 Professional, Scientific, and Technical Services	93,247	5.37%	7	\$5,432	\$4,120
55 Management of Companies and Enterprises	17,566	1.01%	17	\$4,578	\$2,764
56 Administrative and Support and Waste Management and Remediation Services	98,653	5.68%	6	\$2,412	\$1,684
61 Educational Services	163,474	9.41%	4	\$3,200	\$1,189
62 Health Care and Social Assistance	236,258	13.60%	2	\$3,276	\$2,241
71 Arts, Entertainment, and Recreation	15,627	0.90%	18	\$1,761	\$1,126
72 Accommodation and Food Services	149,769	8.62%	5	\$1,371	\$979
81 Other Services (Except Public Administration)	44,245	2.55%	13	\$2,721	\$1,920
92 Public Administration	92,085	5.30%	8	\$3,215	\$2,097
ALL INDUSTRIES	1,736,789	100.00%		\$3,413	\$2,049

Note: Rounding errors may be present.

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

The leading employers were not the highest paying sectors. Only one of the top five employers (manufacturing) paid wages above the state average. The highest wages were in small employers—utilities and mining. By broad industry classification, service providing industries generated 75.3 percent of total state jobs in first quarter 2011 (Figure A.6). Goods producing industries were next

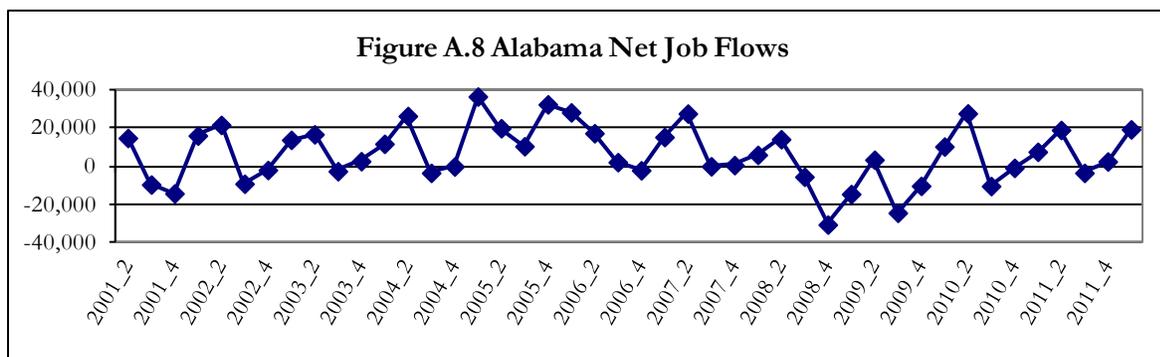
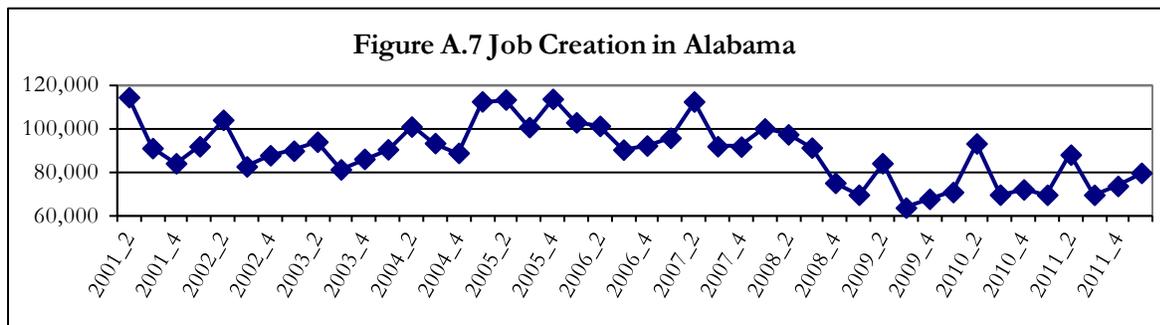
with 19.4 percent and public administration accounted for 5.3 percent. The distribution is for all nonagricultural jobs and there is significant variation by WDR.



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

Job Creation and Net Job Flows

The state’s job creation and net job flows are presented in Figure A.7 and A.8. Quarterly job creation averaged 89,331 from second quarter 2001 to first quarter 2012. Both job creation and net job flows have fluctuated significantly throughout 2010 and 2011 but rose in first quarter 2012. Quarterly net job flows averaged 6,529 and ranged from a loss of 30,396 in the fourth quarter of 2008 to a gain of 36,646 in the first quarter of 2005. Net job flows fluctuated significantly, but have remained positive since the fourth quarter of 2011. Job creation refers to the number of new jobs that are created either by new 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

Statewide there are 785 single occupations in Alabama. Table A.10 shows the 40 occupations that are expected to be in high-demand, ranked by projected average annual job openings over the 2010 to 2020 period. Many of these occupations are common to two of the five largest employment sectors identified earlier (Table A.9): health care and social assistance and manufacturing. Thus, these sectors will continue to dominate employment in the state.

All the top five high-demand occupations are in health care and social assistance sector. These are Registered Nurses; Home Health Aides; Licensed Practical and Licensed Vocational Nurses; Medical Assistants; and Personal and Home Care Aides. Eleven of the high-demand occupations are also fast-growing. This means that these 11 occupations have a minimum annual growth rate of 3.4 percent, more than twice the statewide occupational growth rate of 1.3 percent.

The 20 fastest growing occupations ranked by projected growth of employment are listed in Table A.11. More than half of these occupations are health-related. The top five fast-growing occupations are Personal and Home Care Aides, Home Health Aides, Occupational Therapist Assistants, Physical Therapist Assistants, and Metal-Refining Furnace Operators and Tenders.

Table A.12 shows the 50 highest earning occupations. In general, these occupations are in health, management, legal, engineering, computer, postsecondary education, and science fields. Nine of the top 10 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 lowest high-earning salary is \$90,490 for Managers, All Others and the highest is \$251,470 for Anesthesiologists.

The high-earning occupations are generally not fast-growing or in high-demand. Seven occupations are both high-demand and high-earning (Table A.10). Only one high-earning occupation—Software Developers, Systems Software—is in all three tables (Table A.11).

Of the state's 785 specific occupations, 61 are expected to decline over the 2010 to 2020 period. Employment in the 20 sharpest-declining occupations will fall by at least 10 percent, with each losing a minimum of 40 jobs over the period (Table A.13). No efforts should be made to sustain these occupations because they are declining as a result of structural changes in the Alabama economy.

Table A.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	1990	1215	775
Home Health Aides*	935	785	145
Licensed Practical and Licensed Vocational Nurses	805	380	420
Medical Assistants	340	235	105
Personal and Home Care Aides*	330	300	35
Industrial Machinery Mechanics	325	190	135
Computer Systems Analysts	320	190	130
Management Analysts	295	190	105
Computer Support Specialists	280	140	140
Software Developers, Systems Software*	230	185	45
Medical Secretaries*	215	165	50
Pharmacists	205	95	115
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	200	125	75
Dental Hygienists*	195	130	60
Public Relations Specialists	195	95	100
Mechanical Engineers	180	70	110
Network and computer systems architects and administrators	180	120	60
Dental Assistants	165	105	60
Medical and Public Health Social Workers*	160	100	55
Software Developers, Applications*	155	125	30
Radiologic Technologists and Technicians	150	95	55
First-Line Supervisors/Managers of Helpers, Laborers, and Material Movers, Hand	135	75	60
Medical and Health Services Managers	120	60	65
Cost Estimators	110	65	40
Physical Therapists*	110	85	25
Training and Development Specialists	105	70	35
Physical Therapist Assistants*	95	70	20
Computer and Information Systems Managers	90	55	35
Dentists, General	90	40	50
Rehabilitation Counselors	90	55	35
Personal Financial Advisors	75	55	20
Architects, Except Landscape and Naval	70	40	30
Social and Community Service Managers	70	45	25
Occupational Therapists*	65	45	20
Diagnostic Medical Sonographers*	60	45	15
Database Administrators	55	35	20
Family and General Practitioners	55	35	25
Anesthesiologists	50	30	20
Physician Assistants	40	25	15
Surgeons	40	25	15

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 A.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			
Personal and Home Care Aides*	4,200	7,190	71	5.52	330
Home Health Aides*	11,370	19,230	69	5.40	935
Occupational Therapist Assistants	400	660	65	5.14	30
Physical Therapist Assistants*	1,330	2,050	54	4.42	95
Metal-Refining Furnace Operators and Tenders	740	1,120	51	4.23	50
Physical Therapist Aides	690	1,040	51	4.19	45
Helpers—Carpenters	1,190	1,780	50	4.11	90
Health Educators	450	670	49	4.06	30
Diagnostic Medical Sonographers*	980	1,450	48	4.00	60
Marriage and Family Therapists	350	510	46	3.84	25
Physical Therapists*	1,950	2,810	44	3.72	110
Medical Secretaries*	3,710	5,340	44	3.71	215
Dental Hygienists*	3,030	4,350	44	3.68	195
Medical and Public Health Social Workers*	2,390	3,420	43	3.65	160
Coil Winders, Tapers, and Finishers	280	400	43	3.63	15
Software Developers, Systems Software*	4,410	6,250	42	3.55	230
Occupational Therapists*	1,120	1,580	41	3.50	65
Software Developers, Applications*	3,050	4,300	41	3.49	155
Veterinary Technologists and Technicians	1,170	1,640	40	3.43	65
Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	730	1,020	40	3.40	50

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 A.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*	1,010	1,330	2.79	50	251,470
Surgeons*	830	1,080	2.67	40	248,060
Obstetricians and Gynecologists	450	570	2.39	20	247,700
Internists, General	800	1,020	2.46	40	222,220
Physicians and Surgeons, All Other	3,920	4,770	1.98	165	211,470
Dentists, General*	1,720	2,100	2.02	90	205,130
Orthodontists	110	130	1.68	5	204,560
Dentists, All Other Specialists	70	80	1.34	5	193,120
Chief Executives	4,810	5,020	0.43	145	178,610
Family and General Practitioners*	1,140	1,470	2.57	55	176,950
Psychiatrists	240	300	2.26	10	162,120
Pediatricians, General	420	540	2.54	20	161,480
Industrial-Organizational Psychologists	10	10	0.00	0	155,790
Biological Science Teachers, Postsecondary	2,140	2,590	1.93	80	125,070
Pharmacists*	4,500	5,430	1.90	205	119,810
Engineering Managers	2,310	2,630	1.31	75	116,180
Aerospace Engineers	2,620	2,670	0.19	65	116,150
Lawyers	7,350	8,390	1.33	245	115,230
Natural Sciences Managers	160	170	0.61	10	114,620
Podiatrists	200	240	1.84	10	113,800
Marketing Managers	950	1,120	1.66	45	113,230
Computer and Information Systems Managers*	2,210	2,780	2.32	90	111,260
Physicists	230	270	1.62	10	111,030
General and Operations Managers	31,650	33,570	0.59	780	109,870
Administrative Law Judges, Adjudicators, and Hearing Officers	150	140	-0.69	5	109,860
Financial Managers	4,820	5,250	0.86	130	107,530
Engineers, All Other	4,160	4,400	0.56	115	106,810
Engineering Teachers, Postsecondary	720	830	1.43	25	106,500
Agricultural Sciences Teachers, Postsecondary	220	250	1.29	5	105,580
Computer and Information Research Scientists	330	380	1.42	10	104,830
Sales Managers	2,930	3,320	1.26	125	103,610
Environmental Science Teachers, Postsecondary	20	30	4.14	0	103,610
Education Administrators, Postsecondary	2,170	2,570	1.71	100	102,400
Health Specialties Teachers, Postsecondary	1,050	1,230	1.59	35	98,910
Computer Hardware Engineers	1,130	1,270	1.17	40	98,230
Purchasing Managers	920	1,060	1.43	40	97,830
Human Resources Managers	690	790	1.36	25	96,570
Electronics Engineers, Except Computer	1,560	1,680	0.74	50	95,930
Advertising and Promotions Managers	470	530	1.21	20	94,800
Economists	140	150	0.69	5	94,780
Training and Development Managers	200	230	1.41	10	93,020
Airline Pilots, Copilots, and Flight Engineers	370	360	-0.27	15	92,880
Personal Financial Advisors*	1,950	2,510	2.56	75	92,590
Economics Teachers, Postsecondary	190	230	1.93	5	92,200
Petroleum Engineers	20	20	0.00	0	91,870
Chemical Engineers	590	590	0.00	20	91,700
Software Developers, Systems Software*	4,410	6,250	3.55	230	90,950
Air Traffic Controllers	270	260	-0.38	10	90,950
Administrative Services Managers	1,270	1,440	1.26	50	90,710
Managers, All Other	9,830	10,260	0.43	260	90,490

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

* Qualify as both high-earning and high-demand occupations. NA – Not available.

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

Table A.13 Selected Sharp-Declining Occupations (Base Year 2010 and Projected Year 2020)

Occupation	Employment		Net Change	Percent Change
	2010	2020		
Sewing Machine Operators	4740	3240	-1500	-31.65
Postal Service Mail Sorters, Processors, and Processing Machine Operators	1720	870	-850	-49.42
Postal Service Mail Carriers	4830	4160	-670	-13.87
Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders	2200	1610	-590	-26.82
Switchboard Operators, Including Answering Service	2680	2100	-580	-21.64
Textile Knitting and Weaving Machine Setters, Operators, and Tenders	1930	1370	-560	-29.02
Postal Service Clerks	920	460	-460	-50.00
Pressers, Textile, Garment, and Related Materials	1790	1480	-310	-17.32
Word Processors and Typists	1620	1430	-190	-11.73
Textile Bleaching and Dyeing Machine Operators and Tenders	550	380	-170	-30.91
Textile Cutting Machine Setters, Operators, and Tenders	540	380	-160	-29.63
Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers	740	600	-140	-18.92
Textile, Apparel, and Furnishings Workers, All Other	540	400	-140	-25.93
Floral Designers	1280	1150	-130	-10.16
Postmasters and Mail Superintendents	460	330	-130	-28.26
Door-To-Door Sales Workers, News and Street Vendors, and Related Workers	900	790	-110	-12.22
Photographic Process Workers and Processing Machine Operators	810	700	-110	-13.58
Prepress Technicians and Workers	340	280	-60	-17.65
Shampooers	420	370	-50	-11.90
Petroleum Pump System Operators, Refinery Operators, and Gaugers	290	250	-40	-13.79

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 A.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 education 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 A.15 shows the percentage of selected occupations in Alabama 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 A.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 A.14 Skill Types and Definitions

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

Table A.15 Percentage of Selected Occupations for Which Skill Is Primary

	Selected High-Demand Occupations	Selected Fast-Growing Occupations	Selected High-Earning Occupations
Basic Skills			
Active Learning	25	25	54
Active Listening	93	85	88
Critical Thinking	95	85	90
Learning Strategies	3	5	16
Mathematics	8	5	14
Monitoring	65	60	52
Reading Comprehension	83	60	82
Science	23	10	32
Speaking	90	80	84
Writing	48	50	56
Complex Problem Solving Skills			
Complex Problem Solving	53	35	68
Resource Management Skills			
Management of Financial Resources	3	0	2
Management of Material Resources	0	0	0
Management of Personnel Resources	8	0	12
Time Management	28	40	18
Social Skills			
Coordination	53	70	32
Instructing	15	10	20
Negotiation	0	0	8
Persuasion	3	0	10
Service Orientation	45	60	10
Social Perceptiveness	63	65	34
Systems Skills			
Judgment and Decision Making	75	55	78
Systems Analysis	15	5	10
Systems Evaluation	8	5	6
Technical Skills			
Equipment Maintenance	3	0	0
Equipment Selection	3	0	0
Installation	0	0	0
Operation and Control	3	15	2
Operation Monitoring	8	20	6
Operations Analysis	13	10	12
Programming	10	10	4
Quality Control Analysis	3	5	0
Repairing	3	0	0
Technology Design	0	0	0
Troubleshooting	3	0	0

Note: Rounding errors may be present.

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

High-earning occupations require more active learning, learning strategies, mathematics, science, writing, complex problem solving, management of personnel resources, instructing, negotiation, judgment and decision making, and persuasions 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 less social and technical skills. High-demand occupations require more basic, resource management, and technical skills, but less social than fast-growing occupations.

Table A.16 shows skill gap indexes for all 35 skills in Table A.14 based on previous occupation projections (2008 to 2018). 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 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. Although the skills gap indexes are for a previous projection period, they are applicable to current projections. The importance of basic skills generally and for high-demand, high-growth, and high-earning jobs indicates a strong need for training in these skills. The pace of training needs to increase for technical and systems skills while the scale of training should be raised for basic and social skills.

Education and Training Issues

Educational attainment in Alabama is low compared to the nation as a whole. About 82 percent of Alabamians age 25 and over have graduated from high school, compared to over 85 percent for the United States. Of that total population over age 25, 22.0 percent in Alabama have a bachelor's or higher degree, which is lower than the nation's 28.2 percent. Skill and education requirements for jobs keep rising. This highlights a strong need to raise educational attainment in the state.

Table A.17 shows the number of selected occupations in Alabama for which a particular education/training category is most common. In general, high-earning occupations require high educational attainment levels; all but four of the high-earning occupations require a bachelor's or higher degree. Thirty (75 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. Twelve (60 percent) of the 20 fast-growing occupations require an associate degree at the minimum and seven (35 percent) require 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 state's 785 occupations, 61 are expected to decline over the period and education and training for these should slow accordingly.

Table A.16 Skills Gap Indexes (Base Year 2008 and Projected Year 2018)

Skill	Total Openings (Projected Demand)	Replacement Index	Skills Gap Index
Reading Comprehension	36,815	61	100
Active Listening	36,730	62	97
Critical Thinking	33,390	61	94
Active Learning	29,920	61	91
Speaking	29,290	61	89
Coordination	28,650	61	86
Monitoring	26,490	61	83
Instructing	26,285	61	80
Writing	25,955	61	77
Time Management	24,730	60	74
Learning Strategies	23,790	61	71
Social Perceptiveness	21,990	60	69
Service Orientation	19,375	59	66
Persuasion	18,055	62	63
Judgment and Decision Making	17,540	62	60
Complex Problem Identification	16,520	60	57
Mathematics	15,015	61	54
Equipment Selection	12,735	61	51
Troubleshooting	8,805	61	49
Negotiation	9,320	67	46
Equipment Maintenance	7,755	61	43
Management of Personnel Resources	8,835	69	40
Installation	6,285	59	37
Repairing	4,675	60	34
Operations Analysis	4,410	61	31
Quality control	4,385	62	29
Management of Financial Resources	5,230	70	26
Operation Monitoring	5,210	69	23
Systems Evaluation	3,535	58	20
Operation and Control	4,585	64	17
Science	3,245	61	14
Systems Analysis	2,620	53	11
Technology Design	2,430	58	9
Management of Material Resources	2,950	73	6
Programming	605	50	3

Source: Alabama Department of Labor.

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

Table A.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	6	1	22
Master's Degree	4	3	2
Work Experience Plus a Bachelor's or Higher Degree	4	0	13
Bachelor's Degree	11	3	9
Associate Degree	5	5	2
Postsecondary Non-Degree Plus On-the-job Training	1	0	0
Postsecondary Non-Degree	2	0	0
Some College, no Degree Plus On-the-job Training	1	0	0
Some College, no Degree	0	0	0
High School Diploma Plus On-the-job Training	3	4	0
High School Diploma	1	0	2
Less than High School Plus On-the-job Training	2	4	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

Alabama's job growth is projected to be faster than labor force growth. From a 2010 base, worker shortfalls of 192,955 and 307,272 for 2020 and 2030 respectively, are expected (Table A.18). The state must therefore focus on worker skills and the projected shortfalls as the top priorities through 2030. Worker shortfalls for critical occupations will also need to be addressed through 2030.

Table A.18 Expected Worker Shortfall

	2010-2020	2010-2030
Total population growth (percent)	6.7	12.2
Age 20-64 population growth (percent)	2.7	3.2
Job growth (percent)	10.4	15.5
Worker shortfall (percent)	7.7	12.3
Worker shortfall (number)	192,955	307,272

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

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

Improving education is vital because a highly educated and productive workforce is a critical economic development asset. The educational and training requirements of high-demand, fast-growing, and high-earning occupations show the significance of education in developing the workforce of the future. The importance of basic skills in general and for high-demand, high-growth, and high-earning jobs demonstrates a strong need for training in these skills. The pace of training needs to increase for technical and systems skills while the scale of training is also 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 A.13 should slow accordingly.

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

Programs to assess, retrain, and place dislocated workers—especially those affected by outsourcing and structural changes in the economy—should be continued and enhanced because they can improve the labor force participation rate. Hard-to-serve populations include persons in poverty, those receiving welfare, residents of sparsely populated areas, and those on active parole. These populations are often outside of the mainstream economy and are in poverty. They usually have difficulty finding work because they have low levels of educational attainment, lack occupational skills, or face geographic or other barriers. They are a potential human resource, 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 state's population growth rate is low and may hinder its ability to meet the expected job demand barring future economic slowdowns. Higher employment demand could be partially served by in-commuting. However, new residents can be attracted using the high-paying job opportunities from the state's numerous economic development successes. Investment in amenities and infrastructure may be needed to support such growth. In-migration is generally more beneficial to the state than in-commuting since it grows the economy faster and adds to the tax base.

Policies that facilitate and encourage older worker participation are needed as older workers can help meet the state's workforce challenge. Such policies could be related to income taxation, job flexibility, and retirement programs. As the share of older people in the population is projected to increase (Table A.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 full 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 state's economy will strengthen it. This demands that economic development must also focus on retaining, expanding, and attracting businesses that provide more high-earning jobs. Current workers—including the underemployed—would welcome higher-earning opportunities. An economic development focus on diversification would require that workforce development pay attention to postsecondary and higher educational systems to ensure a ready and available workforce for new and expanding businesses. The higher incomes earned by graduates of these institutions would help raise personal income for the state and provide additional tax revenue for the state and local (county and city) tax jurisdictions. Raising personal income by improving educational attainment and technological skills for a state that has low population and labor force growth rates is an effective economic development strategy. Together, workforce development and economic development can build a strong, well-diversified economy. Indeed, one cannot achieve success without the other.