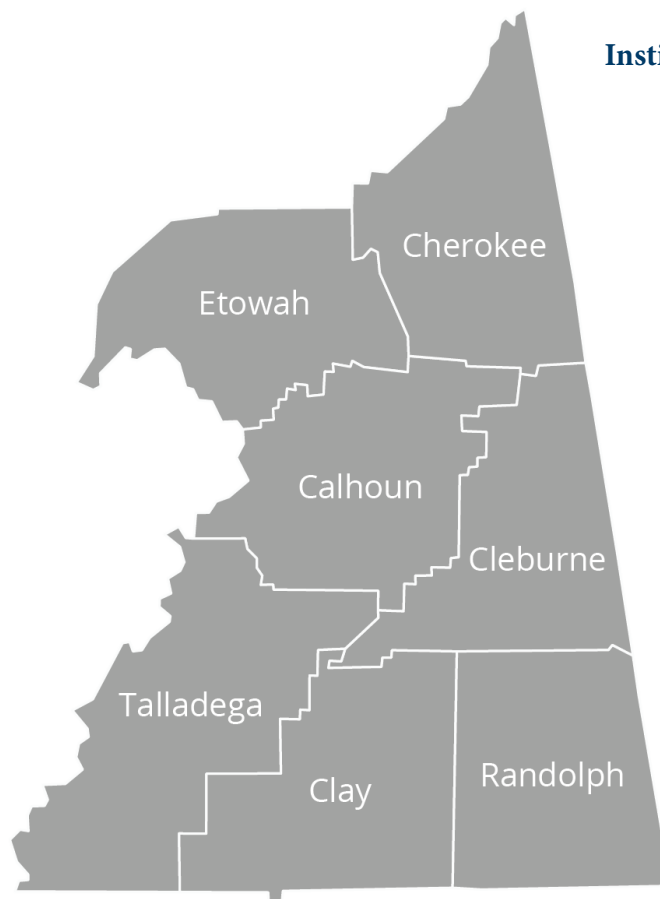


STATE OF WORKFORCE REPORT XI:

East Alabama Works

MAY 2017

Center for Business and Economic Research
Culverhouse College of Commerce
University of Alabama Center for
Economic Development
Institute for Social Science Research



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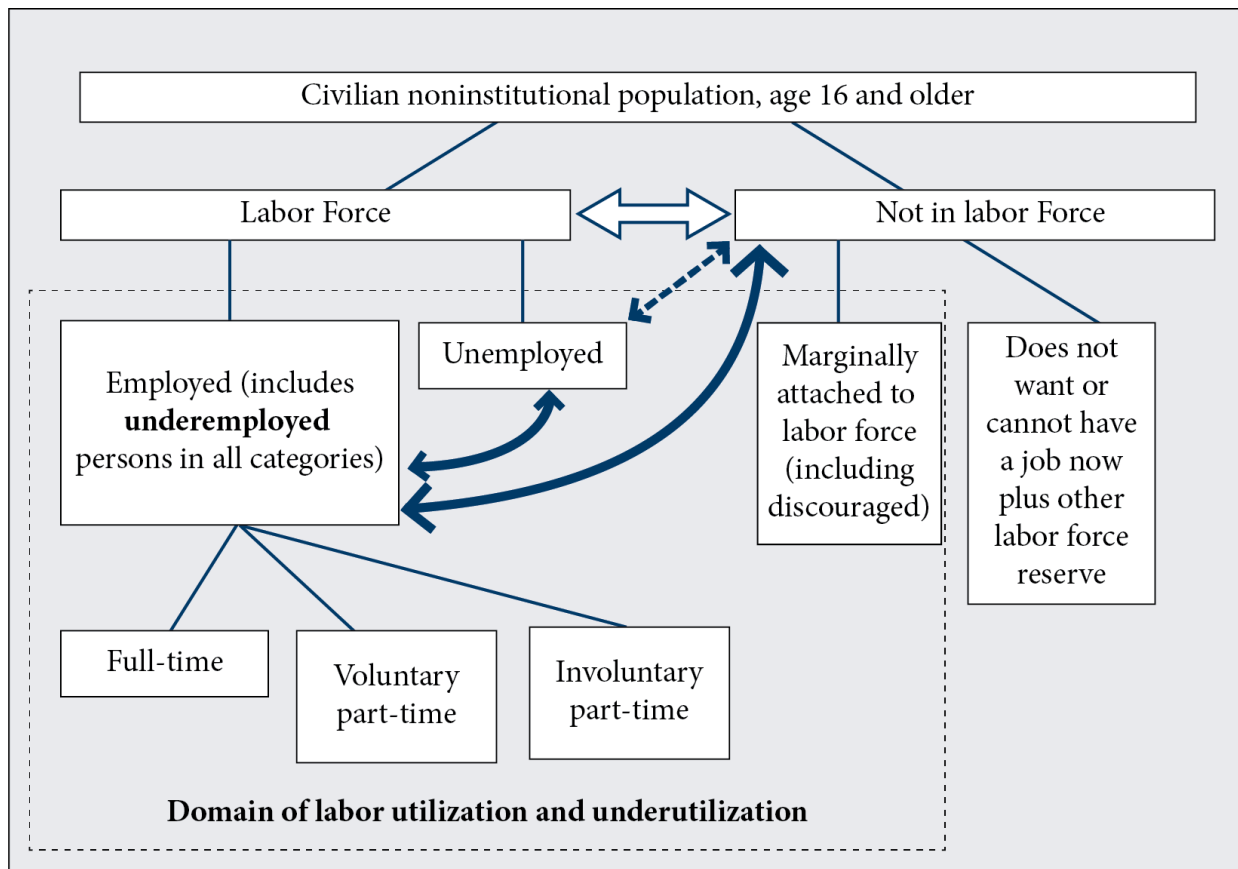
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SUMMARY

- This report analyzes workforce supply and demand issues using available metrics of workforce characteristics for East AlabamaWorks and presents some implications and recommendations.
- East AlabamaWorks had a 5.7 percent unemployment rate in March 2017, with 8,997 unemployed. With a 23.2 percent underemployment rate, the region has an available labor pool of 43,581 that includes 34,584 underemployed workers who are looking for better jobs and are willing to commute farther for such jobs.
- The number of in- and out-commuters increased from 2005 to 2014, with net out-commuting rising from 13,136 to 16,707. Commute time and distance were up in 2016 from 2015, implying that congestion worsened. Congestion is likely to remain an issue in the future as the region recovers from the last recession and the expected population decline reverses. This could slow economic development. Continuous maintenance and development of the region's transportation infrastructure and systems is essential to guarantee a smooth flow of workers and goods.
- By sector the top five employers in the region are manufacturing, health care and social assistance, retail trade, educational services, and accommodation and food services. In the first quarter of 2016 these five sectors provided 81,737 jobs, 68.0 percent of the regional total. Only one of these top employers—manufacturing—paid more than the region's average monthly wage of \$3,141. Economic developers should seek to diversify and strengthen the region's economy by retaining, expanding, and attracting more high-wage providing industries, while also preparing workers for those industries.
- On average 5,490 jobs were created per quarter from second quarter 2001 to first quarter 2016; quarterly net job flows averaged 458. Job creation is the number of new jobs that are added in the region either by new businesses or through expansion of existing firms. Net job flows reflect the difference between current and previous employment at all businesses.
- The top five high-demand occupations are Team Assemblers; Combined Food Preparation and Serving Workers, Including Fast Food; Registered Nurses; Nursing Assistants; and General and Operations Managers.
- The top five fast-growing occupations are Fiberglass Laminators and Fabricators; Physical Therapist Assistants; Occupational Therapy Assistants; Physical Therapist Aides; and Weighers, Measurers, Checkers, and Samplers, Recordkeeping.
- The top 50 high-earning occupations are mainly in management and healthcare fields and have a minimum salary of \$70,719. Eight of the top 10 are health occupations.
- Of the top 40 high-demand, the top 20 fast-growing, and 50 high-earning occupations, four belong in all three categories. Twelve occupations are both high-demand and fast-growing, and 10 are both high-earning and high-demand.
- Of the region's 684 occupations, 62 are expected to decline over the 2014 to 2024 period. Twenty occupations are expected to sharply decline by at least three percent, with each losing a minimum of 10 jobs. Education and training for these 20 occupations should slow accordingly.

- Skill and education requirements for jobs keep rising. Educational and training requirements of high-demand, fast-growing, and high-earning occupations demonstrate the importance of education in developing the region'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 scale of training needs to increase for basic and social skills, and the pace of training should be raised for technical 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 2014 base, worker shortfalls of about 20,800 for 2024 and 29,200 for 2030 are expected. By 2040, the worker shortfall will grow to 39,856. This demands a focus on worker skills and the expected shortfalls through 2040. Worker shortfalls for critical occupations will need to be addressed continuously. Strategies to address skill needs and worker shortfalls might include (1) improving education and its funding; (2) introducing economic opportunities that attract new and younger residents; (3) lowering the high school dropout rate; (4) focusing on hard-to-serve populations (e.g. out-of-school youth); (5) continuing and enhancing programs to assess, retrain, and place dislocated workers; (6) encouraging older worker participation in the labor force; and (7) facilitating 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 types 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 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.
- The 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 especially important for a region that has low population and labor force growth rates.
- Together, workforce development and economic development can build a strong, well-diversified East AlabamaWorks economy. Indeed, one cannot achieve success in one without the other.

Labor Utilization and Supply Flows



Source: Addy et al¹ and Canon et al²

The chart above presents labor utilization and supply flows that explain labor market dynamics in view of recent study findings. The civilian non-institutional population age 16 and above is comprised of participants in the labor force and nonparticipants. The labor force is made of employed and unemployed persons; the unemployed do not have a job but are actively searching for work. Employed persons include fully employed and underemployed persons in all categories of work (full-time, voluntary part-time, and involuntary part-time). Nonparticipants in the labor force include retirees (voluntary and involuntary), people who do not want to or cannot work for various reasons (e.g., disability, caring for family members, in school or training, etc.), discouraged workers, and other labor force reserves. It has been suggested that a subgroup of nonparticipants referred to as the “waiting group” is more likely than the rest of the nonparticipants to take a job if wages and conditions are satisfactory, but they do not actively search for work. New evidence has shown that between January 2003 and August 2013, the flow of nonparticipants into employment was 1.6 times that of unemployed persons transitioning into employment, which may be due to the presence of the waiting group^{1,2}. Nonparticipant flows to employment are larger in services, management, and professional occupations while unemployed flows to employment are higher in physically intensive occupations such as construction workers and miners. Industry effects should vary by the type and number of occupations they contain. This finding enhances the common understanding of labor market dynamics and influences workforce availability and skills gap analyses.

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

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

Workforce Supply

Labor Force Activity

The labor force includes all persons in the civilian noninstitutional population, age 16 and over, 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, discouraged workers, and the disabled). Table 2.1 shows labor force information for East AlabamaWorks and its seven counties for 2016 and March 2017. 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 2.1 East AlabamaWorks Labor Force Information

	2016 Annual Average			
	Labor Force	Employed	Unemployed	Rate (%)
Calhoun	45,794	42,727	3,067	6.7
Cherokee	11,163	10,581	582	5.2
Clay	5,558	5,216	342	6.2
Cleburne	5,831	5,476	355	6.1
Etowah	43,887	41,269	2,618	6.0
Randolph	9,491	8,952	539	5.7
Talladega	34,781	32,429	2,352	6.8
East	156,505	146,650	9,855	6.3
Alabama	2,168,608	2,038,775	129,833	6.0
United States	159,187,000	151,436,000	7,751,000	4.9
	March 2017			
	Labor Force	Employed	Unemployed	Rate (%)
Calhoun	45,911	43,137	2,774	6.0
Cherokee	11,325	10,785	540	4.8
Clay	5,759	5,459	300	5.2
Cleburne	6,001	5,686	315	5.2
Etowah	44,731	42,263	2,468	5.5
Randolph	9,449	8,969	480	5.1
Talladega	34,888	32,768	2,120	6.1
East	158,064	149,067	8,997	5.7
Alabama	2,186,599	2,069,412	117,187	5.4
United States	159,912,000	152,628,000	7,284,000	4.6

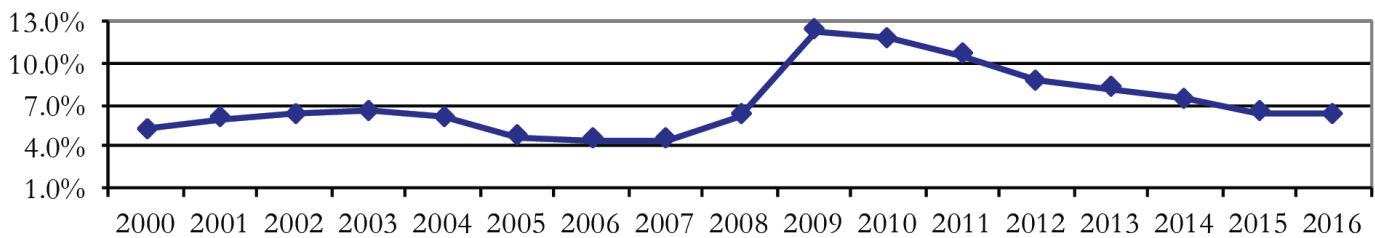
Note: Not seasonally adjusted.

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

The recession that began in 2007 increased the number of unemployed and raised county unemployment rates. A slow economic recovery coupled with outmigration lowered county unemployment from a range of 5.2 percent to 6.8 percent in 2016 (6.3 percent for the region) to a range of 4.8 percent and 6.1 percent in March 2017 (5.7 percent for the region). In March 2017 Cherokee County had the lowest unemployment rate in East AlabamaWorks, and Talladega had the highest. In March 2017, Cherokee, Clay, Cleburne, and Randolph counties lower unemployment rates than the state’s 5.4 percent.

Annual unemployment rates for 2000 to 2016 are shown in Figure 2.1. The region’s unemployment rates were low before the 2001 and the most recent recession. The 2003 high of 6.6 percent was due to the 2001 recession, which adversely affected manufacturing, the region’s largest employer. Subsequent employment gains brought unemployment to record lows in 2006 and 2007. However, the most recent recession resulted in major job losses, which raised regional unemployment rate to a record high of 12.3 percent in 2009. Economic recovery has been slow, and the regional unemployment rate declined to 6.4 percent in 2015 and 6.3 percent in 2016. Year-to-date monthly labor force data suggest a similar regional unemployment for 2017 as was seen in 2016 but slightly lower. Despite strong ongoing economic development efforts, the effect of the recession and structural changes are likely to keep unemployment high for a few more years.

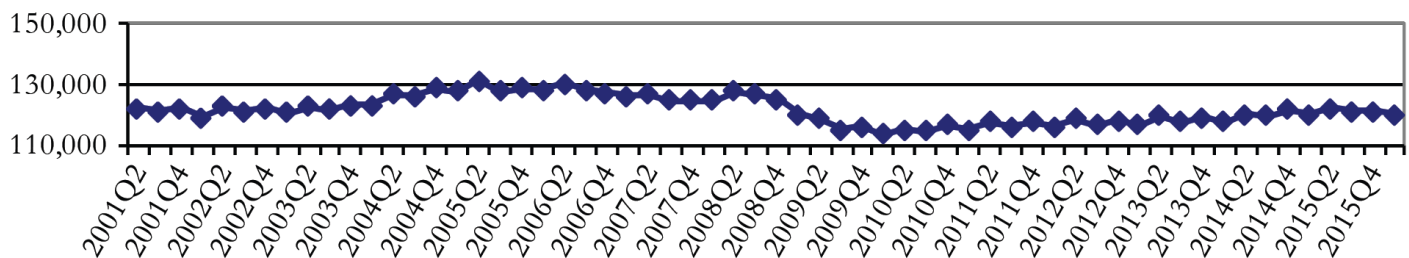
Figure 2.1 East AlabamaWorks Unemployment Rate



Source: Alabama Department of Labor.

Nonagricultural employment of the region’s residents averaged 121,902 quarterly from the second quarter of 2001 to the first quarter of 2016 (Figure 2.2). After major losses, the number of jobs has been growing at slow pace and is yet to reach pre-recession levels. Total employment reached 122,328 in the second quarter of 2015, the highest since the fourth quarter of 2008, but dropped slightly to 120,214 jobs by the first quarter of 2016.

Figure 2.2 East AlabamaWorks Nonagricultural Employment



Source: Alabama Department of Labor.

Table 2.2 shows worker distribution by age in East AlabamaWorks for the first quarter of 2016. Older workers, age 55 and over, are 21.0 percent of the region’s nonagricultural employment, just slightly below the state’s 21.3 percent. The region has the same proportion of workers who are age 65 and over as the state—5.1 percent. To meet long term occupational projections for growth and replacement, labor force participation of younger residents must increase. Otherwise older workers may have to work longer.

Table 2.2 Workers by Age Group (First Quarter 2016)

Age Group	Nonagricultural Employment	
	Number	Percent
14-18	2,415	2.0
19-24	13,950	11.6
25-34	25,532	21.2
35-44	26,479	22.0
45-54	26,577	22.1
55-64	19,167	15.9
65+	6,095	5.1
55 and over total	25,262	21.0
Total all ages	120,215	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, more residents commuted out of the region for work than nonresidents commuted in (Table 2.3) making net commuter outflow 13,136. By 2007, more people were in- and out-commuting and the net commuter outflow rose to about 19,400. The recent economic development efforts in the region have slowed the increase of commuter outflow and increased commuter inflow. However, in 2014, net commuter outflow was still about 16,700. Calhoun, Talladega, and Etowah had the largest commuter in- and outflows in the region. Table 2.3 also shows the one-way average commute time and distance for workers for 2015 and 2016. Commute distance and time went up in 2016 from the previous year implying, that congestion worsened in the region. Increasing in-commuting in the region is likely to make congestion worse in future. Impeding the mobility of workers and goods can delay or slow economic development, so East AlabamaWorks' transportation infrastructure and systems must be properly maintained and developed to ensure that the flow of goods and movement of workers are not interrupted.

Population

The East AlabamaWorks population count of 383,099 for 2010 was 3.3 percent more than in 2000 (Table 2.4), a lower growth rate than the state's 7.5 percent. The population grew in all the counties, except Clay County which lost population. Population growth was fastest in Cherokee, Cleburne, and Calhoun counties. The 2016 estimate shows a population decline of 2.4 percent from 2010 for the region, with all counties losing population. Table 2.5 shows population counts, estimates, and projections by age group up to 2040. The population aged 65 and over is expected to grow rapidly, with the first of baby boom generation having turned 65 in 2011. Unfortunately, the prime working age group (20-64), youth (0-19), and total population are expected to decline. This poses a challenge for economic development, especially workforce development. If employment grows as expected, investments in amenities and infrastructure to attract workers and new residents will be necessary.

Table 2.3 East AlabamaWorks Commuting Patterns

Year	East Inflow	East Outflow
2005	28,988	42,124
2006	27,958	44,013
2007	30,508	49,875
2008	31,385	49,684
2009	31,425	48,721
2010	31,978	49,032
2011	34,073	48,782
2012	33,083	50,473
2013	34,152	51,384
2014	34,630	51,337

East Counties	Inflow, 2014		Outflow, 2014	
	Number	Percent	Number	Percent
Calhoun	17,971	32.0	17,481	24.0
Cherokee	2,293	4.1	5,710	7.8
Clay	1,534	2.7	3,439	4.7
Cleburne	1,078	1.9	4,440	6.1
Etowah	15,222	27.1	17,065	23.4
Randolph	1,929	3.4	5,507	7.6
Talladega	16,057	28.6	19,149	26.3

Percent of Workers			
	2015	2016	
Average commute time (one-way)			
Less than 20 minutes	49.6	49.5	
20 to 40 minutes	24.8	24.3	
40 minutes to an hour	11.8	13.0	
More than an hour	4.1	4.4	
Average commute distance (one-way)			
Less than 10 miles	41.4	43.6	
10 to 25 miles	34.9	26.7	
25 to 45 miles	11.1	18.8	
More than 45 miles	11.1	8.2	

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 2.4 East AlabamaWorks Population

	1990 Census	2000 Census	2010 Census	2016 Estimate	Change 2000-2010	% change 2000-2010	Change 2010-2016	% change 2010-2016
Calhoun	116,034	112,249	118,572	114,611	6,323	5.6	-3,961	-3.3
Cherokee	19,543	23,988	25,989	25,725	2,001	8.3	-264	-1.0
Clay	13,252	14,254	13,932	13,492	-322	-2.3	-440	-3.2
Cleburne	12,730	14,123	14,972	14,924	849	6.0	-48	-0.3
Etowah	99,840	103,459	104,430	102,564	971	0.9	-1,866	-1.8
Randolph	19,881	22,380	22,913	22,652	533	2.4	-261	-1.1
Talladega	74,107	80,321	82,291	80,103	1,970	2.5	-2,188	-2.7
East	355,387	370,774	383,099	374,071	12,325	3.3	-9,028	-2.4
Alabama	4,040,587	4,447,100	4,779,736	4,863,300	332,636	7.5	83,564	1.7
United States	248,709,873	281,421,906	308,745,538	323,127,513	27,323,632	9.7	14,381,975	4.7

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

Table 2.5 East AlabamaWorks Population by Age Group and 2040 Projections

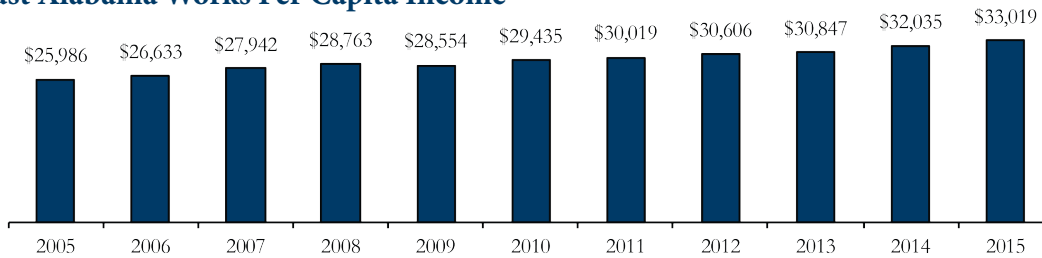
Age Group	2000	2010	2014	2024	2030	2035	2040
0-19	99,418	99,195	92,255	88,408	85,352	83,963	83,433
20-24	23,521	23,929	24,757	24,483	23,619	23,238	22,941
25-29	23,898	22,465	22,644	22,095	21,935	21,454	21,245
30-34	24,560	22,414	22,323	21,408	22,236	22,124	21,735
35-39	26,662	24,677	22,200	20,606	21,834	22,480	22,451
40-44	28,149	25,240	24,641	21,723	20,369	22,036	22,762
45-49	26,760	27,262	25,005	22,158	21,772	20,542	22,341
50-54	25,342	28,457	26,930	23,876	21,664	21,829	20,690
55-59	20,130	26,427	27,436	24,244	23,477	21,511	21,761
60-64	17,573	24,595	25,044	25,360	23,426	23,191	21,316
65+	54,761	58,438	64,742	75,933	81,910	83,610	84,299
20-64 Total	216,595	225,466	220,980	205,953	200,332	198,405	197,242
Total Population	370,774	383,099	377,977	370,294	367,594	365,978	364,974
<i>Change from 2014</i>							
0-19				-4.2%	-7.5%	-9.0%	-9.6%
20-64				-6.8%	-9.3%	-10.2%	-10.7%
Total Population				-2.0%	-2.7%	-3.2%	-3.4%

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

Per Capita Income

Per capita income (PCI) in East AlabamaWorks was at \$33,019 in 2015 (Figure 2.3), up 27.1 percent from 2005, but even with this increase, the region's PCI was \$5,011 or 13.2 percent, below the state average of \$38,030. County PCI are shown in Figure 2.4. Etowah County had the highest PCI with \$34,086 followed by Calhoun at \$33,418. Cleburne County had the lowest PCI at \$31,209 followed by Talladega with \$31,805.

Figure 2.3 East Alabama Works Per Capita Income



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

Figure 2.4 County Per Capita Income, 2015

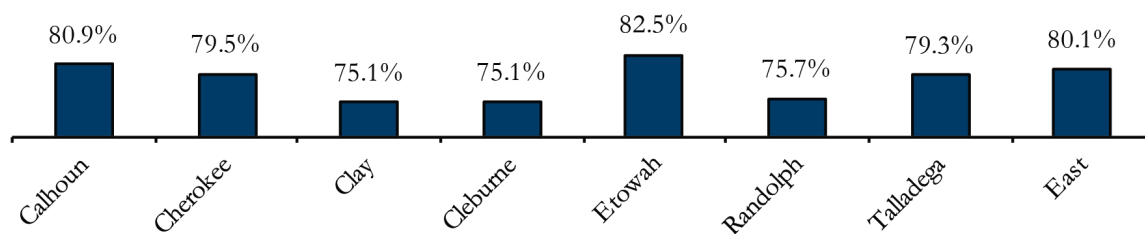


Source: U.S. Bureau of Economic Analysis and Center for Business and Economic Research, The University of Alabama.

Educational Attainment

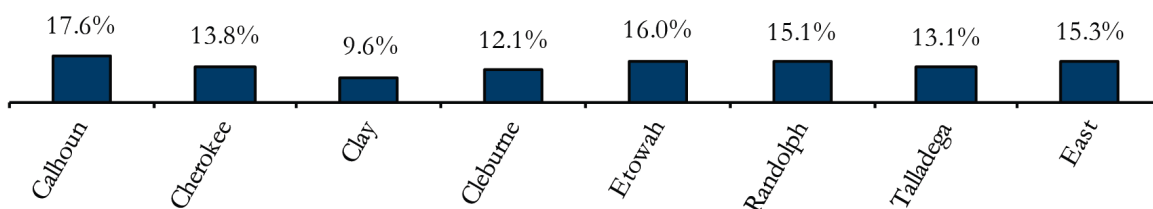
Educational attainment in East AlabamaWorks for residents who were 25 years old and over is shown in Figures 2.5 and 2.6 and Table 2.6. About 80 percent of the population graduated from high school or higher, and over 15 percent held a bachelor's or higher degree from 2011 to 2015. This is below Alabama's 84 percent for high school and 24 percent for a bachelor's degree or higher. Etowah County had the highest rate of high school diplomas while Calhoun had the highest attainment of a bachelor's degree or higher. Randolph, Clay, and Cleburne counties had the lowest proportion of high school graduates, and Clay County had the lowest educational attainment overall. Educational attainment is important since skills rise with education and high-wage jobs in the 21st century demand more skill sets.

Figure 2.5 High School Graduate or Higher, 2011-2015



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

Figure 2.6 Bachelor's Degree or Higher, 2011-2015



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

Table 2.6 Educational Attainment of Population 25 Years and Over, 2011-2015

	Calhoun	Cherokee	Clay	Cleburne	Etowah	Randolph	Talladega	East
Total	78,700	18,734	9,535	10,420	71,591	15,549	56,114	260,643
No schooling completed	1,030	320	165	101	1,330	470	784	4,200
Nursery to 4th grade	505	40	10	28	377	176	382	1,518
5th and 6th grade	743	438	215	292	998	233	526	3,445
7th and 8th grade	2,298	653	619	259	1,835	746	2,409	8,819
9th grade	2,153	507	363	508	1,664	560	1,838	7,593
10th grade	3,082	832	531	639	2,892	720	2,426	11,122
11th grade	3,448	653	299	542	2,202	586	2,072	9,802
12th grade, no diploma	1,762	397	175	221	1,256	283	1,162	5,256
High school graduate/equivalent	25,062	6,828	3,460	3,988	22,869	5,528	20,386	88,121
Some college, less than 1 year	5,894	1,181	569	792	4,867	835	3,720	17,858
Some college, 1+ years, no degree	13,371	2,955	1,435	1,313	13,703	1,929	8,466	43,172
Associate degree	5,534	1,352	780	480	6,113	1,139	4,570	19,968
Bachelor's degree	8,437	1,480	552	721	7,210	1,472	4,580	24,452
Master's degree	3,945	730	265	335	3,026	763	2,117	11,181
Professional school degree	787	257	39	151	845	44	457	2,580
Doctorate degree	649	111	58	50	404	65	219	1,556

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 productivity growth, spousal employment and income, and family constraints or personal preferences. Underemployment is unique to each area 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.

East AlabamaWorks had an underemployment rate of 23.2 percent in 2016. Applying this rate to March 2017 labor force data means that 34,584 employed residents were underemployed (Table 2.7). Adding the unemployed gives a total available labor pool of 43,581 for the region. This is 4.8 times the number of unemployed and is a more realistic measure of the available labor pool in the region. Prospective employers must be able to offer the underemployed higher wages, better benefits or terms of employment, or some other incentives to induce them to change jobs. Underemployment rates ranged from 12.5 percent for Cherokee County to 37.3 percent for Calhoun. Calhoun County had the largest available labor pool, and Clay had the smallest. The underemployed are willing to commute longer and farther for a better job. For the one-way commute, 62.0 percent are prepared to travel for 20 or more minutes longer while 47.9 percent will go 20 or more extra miles.

Table 2.7 Underemployed and Available Labor by County

	East	Calhoun	Cherokee	Clay	Cleburne	Etowah		
Labor Force	158,064	45,911	11,325	5,759	6,001	44,731		
Employed	149,067	43,137	10,785	5,459	5,686	42,263		
Underemployment rate	23.2%	37.3%	18.4%	12.5%	21.4%	25.0%		
Underemployed workers	34,584	16,094	1,981	682	1,219	10,566		
Unemployed	8,997	2,774	540	300	315	2,468		
Available labor pool	43,581	18,868	2,521	982	1,534	13,034		
							Randolph	Talladega
Labor Force							9,449	34,888
Employed							8,969	32,768
Underemployment rate							18.6%	22.2%
Underemployed workers							1,668	7,281
Unemployed							480	2,120
Available labor pool							2,148	9,401

Note: Rounding errors may be present. Based on March 2017 labor force data and 2016 underemployment rates.

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

Underemployment rates for counties, AlabamaWorks regions, and the state were determined from an extensive survey on the state's workforce. A total of 618 complete responses were obtained from East AlabamaWorks region. About 58.6 percent (362 respondents) were employed, of whom 84 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, owning a house in the area, and child care responsibilities were the primary reasons given for being underemployed. Ongoing economic development efforts help in this regard. Nonworkers cite retirement and disability as the main reasons for their status, as well as social security limitations, a lack of job opportunities in their area, and low wages at available jobs. Such workers may become part of the labor force if their problems can be addressed. Indeed a recent study found that the flow of labor force nonparticipants to employment status was 60 percent more than that of unemployed workers who gain employment.³ This implies that the region's available labor pool could be larger than estimated in this report.

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

A comparison of underemployed workers to the overall workforce in East AlabamaWorks shows that:

- Fewer work full-time and more of the part-timers prefer full-time work.
- Slightly fewer hold multiple jobs.
- They have shorter commute times and distances.
- More work in protective service; food preparation and serving related; personal care and service; sales and related; production; and transportation and material moving occupations.
- They earn less and have shorter job tenure.
- More are in manufacturing; retail trade; transportation and warehousing; information; management of companies and enterprises; arts, entertainment, and recreation; and accommodation and food services 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, even for 5 percent or less.
- More are willing to commute longer times and distances for a better job.
- Fewer are satisfied with their current jobs.
- More sought better jobs in the preceding quarter.
- More are willing to train for a better job except if they have to pay all of the training cost.
- Their median age (52) is a year higher and more have lower educational attainment.
- Fewer are married and slightly more are female.
- More are Hispanic, and slightly African-American or other nonwhite ethnic groups.

Table 2.8 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 (77.9 percent) are satisfied or completely satisfied with their jobs. Workers are most satisfied with the work they do and least satisfied with the earnings they receive. Fewer underemployed workers are satisfied with their jobs (61.9 percent). The underemployed are also much more dissatisfied with their earnings and are most satisfied with their work shift.

Workers are generally willing to train for a new or better job, with the underemployed being much more willing (71.9 percent vs. 55.4 percent). However, the willingness to train is strongly influenced by who pays for the cost of training. Workers typically do not wish to pay for the training and so their willingness is highest when the cost is fully borne by government and lowest when the trainee must pay the full costs. The underemployed are more willing to train for the new or better job except if they have to pay the full cost of training. The results strongly 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 2.8 Job Satisfaction and Willingness to Train (Percent)

Job Satisfaction						
	Completely Dissatisfied	Dissatisfied	Neutral	Satisfied	Completely Satisfied	
Employed						
Overall	3.6	3.6	14.4	29.6	48.3	
Earnings	9.9	12.2	18.0	24.0	35.1	
Retention	2.8	2.2	10.5	20.2	61.9	
Work	1.1	2.8	6.1	20.7	69.1	
Hours	2.5	5.8	12.7	21.0	57.5	
Shift	2.5	2.2	8.6	13.8	72.9	
Conditions	1.9	4.7	13.3	22.4	57.5	
Commuting Distance	3.9	3.9	12.2	14.1	65.5	
Underemployed						
Overall	10.7	8.3	19.1	32.1	29.8	
Earnings	22.6	21.4	19.1	19.1	17.9	
Retention	4.8	6.0	32.1	32.1	44.1	
Work	3.6	4.8	9.5	22.6	59.5	
Hours	6.0	11.9	19.1	20.2	42.9	
Shift	6.0	2.4	4.8	17.9	69.1	
Conditions	6.0	9.5	14.3	21.4	48.8	
Commuting Distance	6.0	2.4	13.1	14.3	63.1	
Willingness to Train						
	Completely Unwilling	Unwilling	Neutral	Willing	Completely Willing	
Employed						
For a new or better job	23.2	4.0	15.2	11.6	43.8	
If paid by trainee	48.6	13.7	22.6	5.2	6.6	
If paid by trainee and government	12.7	13.2	38.7	19.3	12.7	
If paid by government	4.7	0.9	11.3	22.6	58.0	
Underemployed						
For a new or better job	18.3	0.0	9.9	9.9	62.0	
If paid by trainee	32.8	19.0	31.0	3.5	6.9	
If paid by trainee and government	8.6	8.6	32.8	31.0	15.5	
If paid by government	3.5	0.0	6.9	15.5	72.4	

Note: Rounding errors may be present.

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

Workforce Demand

Industry Mix

Since industry data for the new AlabamaWorks regions are not yet available, county employment numbers were aggregated to obtain regional industry employment. Average wages were derived using total wage aggregates. The manufacturing sector was the leading employer with 25,700 jobs in the first quarter of 2016 (Table 2.9). 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 81,737 jobs, 68.0 percent of the regional total. The average monthly wage across all industries in the region was \$3,141; only one leading employer—manufacturing—paid more than this average. The highest average monthly wages were for mining at \$6,647; utilities at \$5,641, manufacturing at \$4,365, and information with \$4,152. Accommodation and food services paid the least at \$1,374.

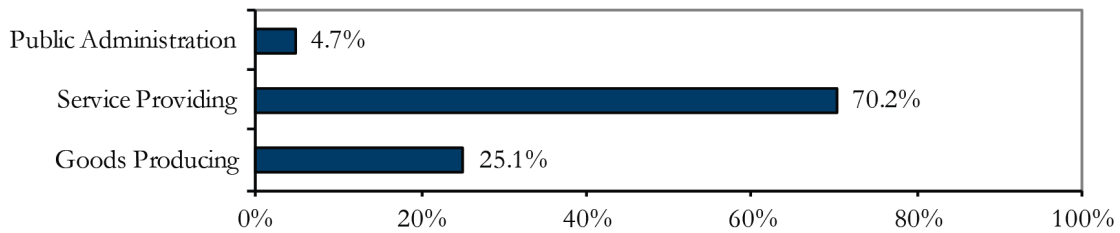
Table 2.9 Industry Mix (First Quarter 2016)

Industry by 2-digit NAICS Code	Total Employment	Share	Rank	Average Monthly Wage
11 Agriculture, Forestry, Fishing and Hunting	642	0.53%	18	\$2,647
21 Mining	438	0.36%	19	\$6,647
22 Utilities	1,069	0.89%	15	\$5,641
23 Construction	3,361	2.80%	9	\$3,450
31-33 Manufacturing	25,700	21.39%	1	\$4,365
42 Wholesale Trade	3,229	2.69%	10	\$3,810
44-45 Retail Trade	15,021	12.50%	3	\$2,253
48-49 Transportation and Warehousing	3,605	3.00%	8	\$3,211
51 Information	1,185	0.99%	14	\$4,152
52 Finance and Insurance	2,932	2.44%	11	\$4,107
53 Real Estate and Rental and Leasing	993	0.83%	16	\$2,960
54 Professional, Scientific, and Technical Services	2,458	2.05%	12	\$3,444
55 Management of Companies and Enterprises	370	0.31%	20	\$2,533
56 Administrative and Support and Waste Management and Remediation Services	9,379	7.80%	6	\$2,126
61 Educational Services	11,725	9.76%	4	\$3,034
62 Health Care and Social Assistance	18,593	15.47%	2	\$3,040
71 Arts, Entertainment, and Recreation	661	0.55%	17	\$1,401
72 Accommodation and Food Services	10,698	8.90%	5	\$1,374
81 Other Services (Except Public Administration)	2,405	2.00%	13	\$2,673
92 Public Administration	5,705	4.75%	7	\$2,680
ALL INDUSTRIES	120,214	100.00%		\$3,141

Note: Due to disclosure limitations in multiple sectors across several counties, accurate regional new hire monthly wages could not be determined.
Source: Alabama Department of Labor, U.S. Census Bureau, and Center for Business and Economic Research, The University of Alabama.

By broad industry classification, service providing industries generated 70.2 percent of jobs in first quarter 2016 (Figure 2.7). Goods producing industries were next with 25.1 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.

Figure 2.7 East AlabamaWorks Employment Distribution



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

Job Creation and Net Job Flows

On average, 5,490 jobs were created per quarter from second quarter 2001 to first quarter 2016 (Figure 2.8); quarterly net job flows averaged 458 (Figure 2.9). After a steady drop due to the most recent economic recession, job creation flattened in the second quarter of 2009 and has yet to show any significant improvement. Both job creation and net flows rose slightly in the fourth quarter of 2015 and first quarter of 2016, with net job flows rising to pre-recession levels. Quarterly net job flows fluctuated considerably, ranging from a loss of 2,272 to a gain of 3,087. 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.

Figure 2.8 Job Creation in East AlabamaWorks

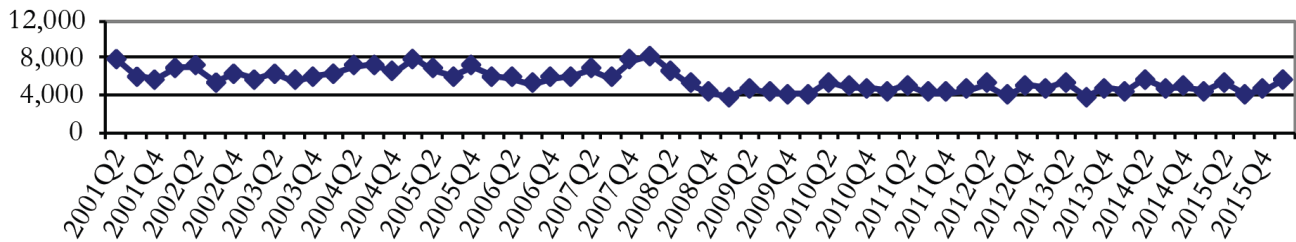
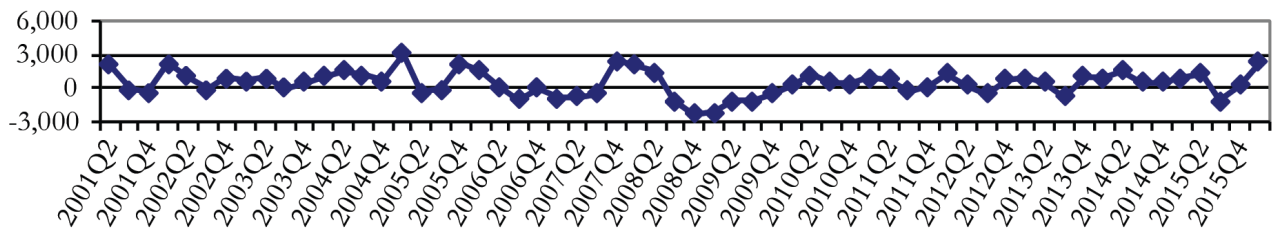


Figure 2.9 East AlabamaWorks Net Job Flows



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

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

Workforce Development East AlabamaWorks has 684 single occupations. Table 2.10 shows top 40 occupations that are expected to be in high-demand, ranked by projected average annual job openings over the 2014 to 2024 period. Many of these occupations are common health care and social assistance, to one of the largest employment sectors identified earlier (Table 2.9). Thus, this sector will likely continue to be an important employer in the region.

The top five high-demand occupations are Team Assemblers; Combined Food Preparation and Serving Workers, Including Fast Food; Registered Nurses; Nursing Assistants; and General and Operations Managers. Twelve of the high-demand occupations are also fast-growing. This means that these 12 occupations have a minimum annual growth rate of 1.84 percent, which is much faster than the regional and state occupational growth rates of 0.78 percent and 0.74 percent, respectively.

The 20 fastest growing occupations ranked by projected growth of employment are listed in Table 2.11. More than half of these occupations are related to health care and social assistance and manufacturing. The top five fast-growing occupations are Fiberglass Laminators and Fabricators; Physical Therapist Assistants; Occupational Therapy Assistants; Physical Therapist Aides; and Weighers, Measurers, Checkers, and Samplers, Recordkeeping.

Table 2.12 shows the 50 selected highest earning occupations in the region. These occupations are mainly in management and healthcare fields and have a minimum annual salary of \$70,719 and a maximum of \$294,852 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. Only four occupations are in all three categories. Ten occupations are both high-earning and in high-demand (Table 2.10).

Of the region's 684 occupations, 62 are expected to decline over the 2014 to 2024 period. Employment in the 20 sharpest-declining occupations will fall by at least three percent, with each losing a minimum of 10 jobs over the period (Table 2.13). 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 2.10 Selected High-Demand Occupations (Base Year 2014 and Projected Year 2024)

Occupation	Average Annual Job Openings		
	Total	Due to Growth	Due to Separations
Team Assemblers	285	125	160
Combined Food Preparation and Serving Workers, Including Fast Food	150	40	110
Registered Nurses	120	55	65
Nursing Assistants	75	30	45
General and Operations Managers	60	20	40
Industrial Machinery Mechanics*	60	35	25
Inspectors, Testers, Sorters, Samplers, and Weighers	60	30	30
Licensed Practical and Licensed Vocational Nurses	50	15	35
Heavy and Tractor-Trailer Truck Drivers	50	5	45
Personal Care Aides*	40	30	10
Machinists	40	15	25
Maintenance and Repair Workers, General	35	5	25
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	30	10	25
Welders, Cutters, Solderers, and Brazers	30	5	25
Industrial Truck and Tractor Operators	30	10	20
Accountants and Auditors	25	10	20
Home Health Aides	25	15	15
Medical Assistants	25	10	15
Packaging and Filling Machine Operators and Tenders*	25	15	15
Purchasing Agents, Except Wholesale, Retail, and Farm Products	20	5	15
Industrial Engineers	20	5	10
Automotive Service Technicians and Mechanics	20	5	15
Physical Therapist Assistants*	15	10	5
Insurance Sales Agents	15	5	10
Electricians	15	5	10
Bus and Truck Mechanics and Diesel Engine Specialists	15	5	5
Computer-Controlled Machine Tool Operators, Metal and Plastic*	15	5	5
Mechanical Engineers	10	5	10
Industrial Engineering Technicians	10	5	5
Pharmacists	10	0	5
Speech-Language Pathologists*	10	5	5
Nurse Practitioners*	10	5	5
Occupational Therapy Assistants*	10	5	5
Medical Secretaries	10	10	5
Computer Systems Analysts	5	0	0
Electrical and Electronics Engineering Technicians*	5	5	0
Dentists, General	5	0	0
Anesthesiologists*	5	0	0
Occupational Therapists*	5	0	0
Physical Therapists*	5	5	5

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 2.11 Selected Fast-Growing Occupations (Base Year 2014 and Projected Year 2024)

Occupation	Employment		Percent Change	Annual Growth (Percent)	Average Annual Job Openings
	2014	2024			
Fiberglass Laminators and Fabricators	NA	NA	52	4.30	15
Physical Therapist Assistants*	210	310	48	3.97	15
Occupational Therapy Assistants*	110	160	45	3.82	10
Physical Therapist Aides	50	70	40	3.42	5
Weighers, Measurers, Checkers, and Samplers, Recordkeeping	150	210	40	3.42	10
Nurse Practitioners*	130	180	38	3.31	10
Electrical and Electronics Engineering Technicians*	NA	NA	38	3.24	5
Electromechanical Equipment Assemblers	NA	NA	38	3.24	10
Computer-Controlled Machine Tool Operators, Metal and Plastic*	190	260	37	3.19	15
Anesthesiologists*	NA	NA	33	2.92	5
Physical Therapists*	120	160	33	2.92	5
Industrial Machinery Mechanics*	1,040	1,380	33	2.87	60
Packaging and Filling Machine Operators and Tenders*	400	530	33	2.85	25
Personal Care Aides*	1,070	1,390	30	2.65	40
Occupational Therapists*	70	90	29	2.54	5
Phlebotomists	140	180	29	2.54	5
Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	70	90	29	2.54	5
Woodworking Machine Setters, Operators, and Tenders, Except Sawing	230	290	26	2.35	10
Speech-Language Pathologists*	180	220	22	2.03	10
Millwrights	200	240	20	1.84	10

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

* - Qualify as both high-demand and fast-growing occupations. NA-Not Available.

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

Table 2.12 Selected High-Earning Occupations (Base Year 2014 and Projected Year 2024)

Occupation	Employment		Annual Growth (Percent)	Average Annual Job Openings	Mean Annual Salary (\$)
	2014	2024			
Family and General Practitioners	30	30	0.00	0	294,852
Internists, General	NA	NA	0.00	0	285,005
Physicians and Surgeons, All Other	340	390	1.38	15	275,285
Pediatricians, General	40	40	0.00	0	201,683
Chief Executives	NA	NA	0.00	0	163,774
Nurse Anesthetists	NA	NA	1.55	0	159,757
Dentists, General*	80	100	2.26	5	148,598
Pharmacists*	280	300	0.69	10	138,742
Optometrists	NA	NA	7.18	0	136,181
Electrical Engineers	90	100	1.06	5	112,612
Sales Managers	90	100	1.06	5	112,256

Table 2.12 (continued)

Architectural and Engineering Managers	40	40	0.00	0	111,539
Financial Managers	180	200	1.06	5	109,925
Purchasing Managers	50	50	0.00	0	109,455
Personal Financial Advisors	50	50	0.00	0	106,301
General and Operations Managers*	1,480	1,690	1.34	60	104,545
Engineers, All Other	NA	NA	0.00	0	103,865
Chiropractors	20	30	4.14	0	102,813
Physical Therapists*	120	160	2.92	5	100,387
Computer and Information Systems Managers	40	40	0.00	0	99,730
Administrative Services Managers	40	40	0.00	0	95,856
Industrial Production Managers	230	260	1.23	10	91,933
Environmental Engineers	20	20	0.00	0	89,191
Transportation, Storage, and Distribution Managers	60	60	0.00	0	87,220
Medical and Health Services Managers	240	280	1.55	10	86,194
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	NA	NA	0.00	0	85,339
Human Resources Managers	50	60	1.84	5	84,957
Occupational Therapists*	70	90	2.54	5	84,926
Veterinarians	40	40	0.00	0	84,468
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	20	20	0.00	0	83,863
Education Administrators, Postsecondary	NA	NA	0.80	5	83,401
Electrical and Electronics Engineering Technicians*	NA	NA	3.24	5	83,323
Construction Managers	90	100	1.06	0	83,248
Chemists	30	30	0.00	0	81,798
Physician Assistants	30	30	0.00	0	80,432
Mechanical Engineers*	250	290	1.50	10	80,186
Education Administrators, Elementary and Secondary School	390	410	0.50	15	80,128
Electronics Engineers, Except Computer	20	10	-6.70	0	79,893
Computer Occupations, All Other	80	70	-1.33	0	79,859
Nurse Practitioners*	130	180	3.31	10	79,580
Education Administrators, All Other	10	10	0.00	0	77,140
Postmasters and Mail Superintendents	20	20	0.00	0	76,926
Industrial Engineers*	410	480	1.59	20	76,045
Lawyers	130	140	0.74	0	75,614
Managers, All Other	200	210	0.49	5	74,569
Database Administrators	20	20	0.00	0	72,746
Instructional Coordinators	NA	NA	0.00	0	71,926
Software Developers, Systems Software	10	10	0.00	0	71,326
Logisticians	90	110	2.03	5	70,837
Computer Systems Analysts*	100	120	1.84	5	70,719

Note: Employment data are rounded to the nearest 10; openings to the nearest 5. The salary data provided are based on the May 2016 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 2.13 Selected Sharp-Declining Occupations (Base Year 2014 and Projected Year 2024)

Occupation	Employment		Net Change	Percent Change
	2014	2024		
Postal Service Mail Carriers	420	310	-110	-26
Bookkeeping, Accounting, and Auditing Clerks	1,470	1,360	-110	-7
Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders	460	360	-100	-22
Sewing Machine Operators	430	340	-90	-21
Cooks, Fast Food	620	540	-80	-13
Mobile Heavy Equipment Mechanics, Except Engines	680	620	-60	-9
Textile Knitting and Weaving Machine Setters, Operators, and Tenders	150	100	-50	-33
Order Clerks	230	190	-40	-17
Pipelayers	480	440	-40	-8
Tellers	610	570	-40	-7
Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	160	130	-30	-19
Cooks, Institution and Cafeteria	900	870	-30	-3
Switchboard Operators, Including Answering Service	NA	NA	-20	-33
Textile Bleaching and Dyeing Machine Operators and Tenders	NA	NA	-20	-33
Telecommunications Line Installers and Repairers	80	60	-20	-25
Postal Service Clerks	90	70	-20	-22
Procurement Clerks	120	100	-20	-17
Telecommunications Equipment Installers and Repairers, Except Line Installers	290	270	-20	-7
Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	600	580	-20	-3
Electrical and Electronics Repairers, Commercial and Industrial Equipment	180	170	-10	-6

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 2.14 shows skill types and definitions as provided by O*NET Online, which offers skill sets for all occupations ranked by 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 2.15 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 2.15 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.

High-earning occupations require more active learning, mathematics, reading comprehension, science, speaking, writing, complex problem solving, management of personnel resources, persuasion, negotiation, judgment and decision making, system analysis, operations analysis, and programming skills than both high-demand and fast-growing jobs. Many of these skills require long training periods and postsecondary education. However, high-earning jobs require fewer technical skills. High-demand occupations require more systems, social, resource management, and complex problem solving skills than fast-growing occupations but less technical and basic skills.

Table 2.14 Skill Types and Definitions

Basic Skills: Developed capacities that facilitate learning or the more rapid acquisition of knowledge.

Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.

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.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.

Learning Strategies — Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.

Mathematics — Using mathematics to solve problems.

Monitoring — Monitoring / Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Reading Comprehension — Understanding written sentences and paragraphs in work-related documents.

Science — Using scientific rules and methods to solve problems.

Speaking — Talking to others to convey information effectively.

Writing — Communicating effectively in writing as appropriate for the needs of the audience.

Complex Problem Solving Skills: Developed capacities used to solve novel, ill-defined problems in complex, real-world settings.

Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

Resource Management Skills: Developed capacities used to allocate resources efficiently.

Management of Financial Resources — Determining how money will be spent to get the work done and accounting for these expenditures.

Management of Material Resources — Obtaining and seeing to the appropriate use of equipment, facilities, and materials needed to do certain work.

Management of Personnel Resources — Motivating, developing, and directing people as they work, identifying the best people for the job.

Time Management — Managing one's own time and the time of others.

Social Skills: Developed capacities used to work with people to achieve goals.

Coordination — Adjusting actions in relation to others' actions.

Instructing — Teaching others how to do something.

Negotiation — Bringing others together and trying to reconcile differences.

Persuasion — Persuading others to change their minds or behavior.

Service Orientation — Actively looking for ways to help people.

Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.

Systems Skills: Developed capacities used to understand, monitor, and improve socio-technical systems.

Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.

Systems Analysis — Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.

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.

Technical Skills: Developed capacities used to design, set-up, operate, and correct malfunctions involving application of machines or technological systems.

Equipment Maintenance — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.

Equipment Selection — Determining the kind of tools and equipment needed to do a job.

Installation — Installing equipment, machines, wiring, or programs to meet specifications.

Operation and Control — Controlling operations of equipment or systems.

Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.

Operations Analysis — Analyzing needs and product requirements to create a design.

Programming — Writing computer programs for various purposes.

Quality Control Analysis — Conducting tests and inspections of products, services, or processes to evaluate quality or performance.

Repairing — Repairing machines or systems using the needed tools.

Technology Design — Generating or adapting equipment and technology to serve user needs.

Troubleshooting — Determining causes of operating errors and deciding what to do about it.

Source: O*NET Online (<http://online.onetcenter.org/skills/>).

Table 2.15 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	33	30	52
Active Listening	80	85	82
Critical Thinking	80	85	78
Learning Strategies	3	5	4
Mathematics	3	0	10
Monitoring	68	80	52
Reading Comprehension	70	70	78
Science	10	10	18
Speaking	70	70	80
Writing	33	35	44
Complex Problem Solving Skills			
Complex Problem Solving	33	25	60
Resource Management Skills			
Management of Financial Resources	3	0	2
Management of Material Resources	0	0	0
Management of Personnel Resources	0	0	16
Time Management	33	20	20
Social Skills			
Coordination	43	40	38
Instructing	15	20	6
Negotiation	8	0	16
Persuasion	8	5	10
Service Orientation	40	35	24
Social Perceptiveness	45	55	44
Systems Skills			
Judgment and Decision Making	53	45	66
Systems Analysis	5	0	6
Systems Evaluation	8	0	4
Technical Skills			
Equipment Maintenance	13	15	0
Equipment Selection	8	5	0
Installation	3	5	0
Operation and Control	20	30	0
Operation Monitoring	23	40	0
Operations Analysis	3	0	4
Programming	3	0	4
Quality Control Analysis	15	35	2
Repairing	10	10	0
Technology Design	0	0	0
Troubleshooting	13	20	0

Note: Rounding errors may be present.

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

Table 2.16 shows skill gap indexes for all 35 skills in Table 2.14 based on 2014 to 2024 occupational projections. Skills gap indexes range up to 100 and are standardized measures of the gap between current supply and projected demand. The index does not provide any information about current or base year skill supply. Its focus is on the projection period and identifies critical skill needs. The index essentially ranks expected training needs. The higher the index the more critical is the skill over the specified projection period.

For policy and planning purposes, skill gap indexes have to be considered together with replacement indexes, which are the expected shares of job openings due to replacement. Replacement is necessary because of turnover and people leaving the labor force. The smaller the replacement index, the larger the share of job openings due to growth, which in turn implies a need to increase the pace of skill training. Skill gap indexes point to the need to ramp up the scale of skill training while replacement indexes address the pace of training.

By skill type, the skill gap indexes show that basic skills are most critical followed by social, complex problem solving, system, resource management, 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. The scale of training needs to increase for basic and social skills; the pace of training should be raised for technical skills.

Education and Training Issues

Educational attainment in East AlabamaWorks is low compared to the state as a whole. About 80.0 percent of residents age 25 and over have graduated from high school, compared to 84.0 percent for Alabama. In the region, about 15.0 percent of people have a bachelor's or higher degree versus 24.0 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 2.17 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 three of the high-earning occupations do not require a bachelor's or higher degree. Eighteen (45.0 percent) of the top 40 high-demand occupations require an associate degree at the minimum and 14 (35.0 percent) require a bachelor's or higher degree. Eight (40.0 percent) of the top 20 fast-growing occupations require an associate degree or higher degree at the minimum and five (25.0 percent) require a bachelor's degree or higher.

Table 2.16 Skills Gap Indexes (Base Year 2014 to Projected Year 2024)

Skill	Skill Type	Total Openings (Projected Demand)	Skills Gap Index	Replacement Index
Active Listening	Basic	3,455	78	70
Speaking	Basic	3,320	75	70
Monitoring	Basic	3,050	69	68
Critical Thinking	Basic	2,865	64	67
Coordination	Social	2,840	64	67
Social Perceptiveness	Social	2,435	55	72
Service Orientation	Social	2,355	53	74
Reading Comprehension	Basic	2,335	52	69
Time Management	Resource	2,295	52	66
Judgment and Decision Making	Systems	1,915	43	66
Writing	Basic	1,425	32	68
Complex Problem Solving	Complex	1,425	32	66
Active Learning	Basic	1,365	31	66
Instructing	Social	1,335	30	64
Persuasion	Social	1,270	29	70
Quality Control Analysis	Technical	905	20	59
Learning Strategies	Basic	880	20	65
Negotiation	Social	880	20	72
Operation Monitoring	Technical	845	19	63
Mathematics	Basic	680	15	76
Operation and Control	Technical	680	15	66
Management of Personnel Resources	Resource	660	15	68
Systems Analysis	Systems	595	13	63
Systems Evaluation	Systems	580	13	62
Troubleshooting	Technical	420	9	64
Equipment Maintenance	Technical	330	7	65
Repairing	Technical	255	6	63
Equipment Selection	Technical	210	5	52
Operations Analysis	Technical	175	4	46
Management of Financial Resources	Resource	140	3	64
Management of Material Resources	Resource	140	3	64
Science	Basic	115	3	52
Installation	Technical	65	1	69
Technology Design	Technical	25	1	60
Programming	Technical	10	1	1

Note: These are annualized skills indexes for 2014 to 2024.

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

Table 2.17 Number of Selected Occupations by Education/Training Requirement

Most Common Education/Training Requirements Categories	Selected High-Demand Occupations	Selected Fast-Growing Occupations	Selected High-Earning Occupations
Doctoral Degree or First Professional Degree	4	2	11
Master's Degree	3	3	7
Bachelor's Degree Plus On-the-job Training or Work Experience	2	0	17
Bachelor's Degree	5	0	12
Associate Degree Plus On-the-job Training or Work Experience	0	2	0
Associate Degree	4	1	1
Postsecondary Non-Degree Plus On-the-job Training or Work Experience	2	0	0
Postsecondary Non-Degree	3	1	0
Some College, no Degree Plus On-the-job Training or Work Experience	0	0	0
Some College, no Degree	0	0	0
High School Diploma Plus On-the-job Training or Work Experience	13	10	2
High School Diploma	0	0	0
No Formal Education credential Plus On-the-job Training or Work Experience	4	0	0
No Formal Educational Credential	0	1	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. 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

From a 2014 base, worker shortfalls of 20,759 and 29,220 are expected for 2024 and 2030, respectively (Table 2.18). The worker shortfall is expected to rise to 39,856 in 2040. The main cause of the shortfalls is the expected decline of the region's major working age population, those of age 20-64. A focus on both worker skills and the expected shortfall must be priorities through 2040. Worker shortfalls for critical occupations will need to be continuously addressed through 2040.

Table 2.18 Expected Worker Shortfall

	2014-2024	2014-2030	2014-2035	2014-2040
Total Population Growth (percent)	-2.0	-2.7	-3.6	-3.4
Age 20-64 population growth (percent)	-6.8	-9.3	-11.4	-10.7
Nonagricultural job growth (percent)	9.1	13.0	16.1	19.7
Worker shortfall (percent)	15.9	22.3	27.4	30.5
Worker shortfall (number)	20,759	29,220	35,898	39,856

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

Employment is critical to economic development, so strategies that address potential skill needs and worker shortfalls must be adopted and implemented. Such strategies should aim at increasing labor force participation, encouraging in-migration, and raising worker productivity and must include: (1) improving education and its funding; (2) continuing and enhancing programs to assess, retrain, and place dislocated workers; (3) focusing on hard-to-serve populations (e.g. out-of-school youth); (4) lowering the high school dropout rate; (5) using economic opportunities to attract new and younger residents; (6) facilitating in-commuting; and (7) encouraging 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 scale of training needs to increase for basic and social skills; the pace of training should be raised for complex problem solving 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 2.13 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, those in 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 region's total population and the prime working age (20-64) population is declining. This may hinder the 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 higher-paying job opportunities from economic development successes. Investment in amenities and infrastructure may be needed to support such growth. In-migration is generally more beneficial than in-commuting since it grows the economy faster and adds to the tax base.

Policies that facilitate and encourage older worker participation are needed as older workers can help meet the region's workforce challenge. Such policies can be related to income taxation, job flexibility, and retirement programs. As the share of older people in the population is projected to increase (see Table 2.5), 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 would help raise personal income for the region and provide additional local (county and city) tax revenue. Raising personal income by improving educational attainment and technological skills for a region 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 East AlabamaWorks economy. Indeed, one cannot achieve success in one without the other.