

Oklahoma  
**STATE** of the  
**WORKFORCE**  
Report 2007

a publication from

**Oklahoma Employment Security Commission**  
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# INTRODUCTION

## Oklahoma State of the Workforce Report 2007

A qualified workforce is one of the most fundamental drivers of economic growth. As such, it is imperative to understand where a state's workforce stands and where it is going. That is where this report comes in.

The *Oklahoma 2007 State of the Workforce Report* is an informational and planning tool produced by the Economic Research & Analysis division of the Oklahoma Employment Security Commission. It examines characteristics of Oklahoma's workforce such as industrial employment, occupational employment, occupational wages, education and training requirements, and employment projections.

This report is the result of an examination of demographic, economic, and labor market developments unfolding in Oklahoma and across the United States. In order to best meet future workforce challenges, these developments and their consequences must be understood by policymakers, economic developers, educators, employers, workers, and the citizens of Oklahoma.

The primary source of the data and analysis contained in the report is the Economic Research & Analysis division of the Oklahoma Employment Security Commission. This data was produced either under contract with the Bureau of Labor Statistics, U.S. Department of Labor or with the support of grant monies from the U.S. Department of Labor Employment and Training Administration (ETA). Other data sources include the U.S. Census Bureau and Oklahoma Department of Labor.

It is important to note that because the data contained in this publication is from a variety of sources, the time spans that the information covers will differ. Where possible, the most recent statistics available have been used. Please be aware of this fact when comparing data from different sections.

# WORKFORCE DEMAND: TODAY

## Oklahoma's economy: a snapshot

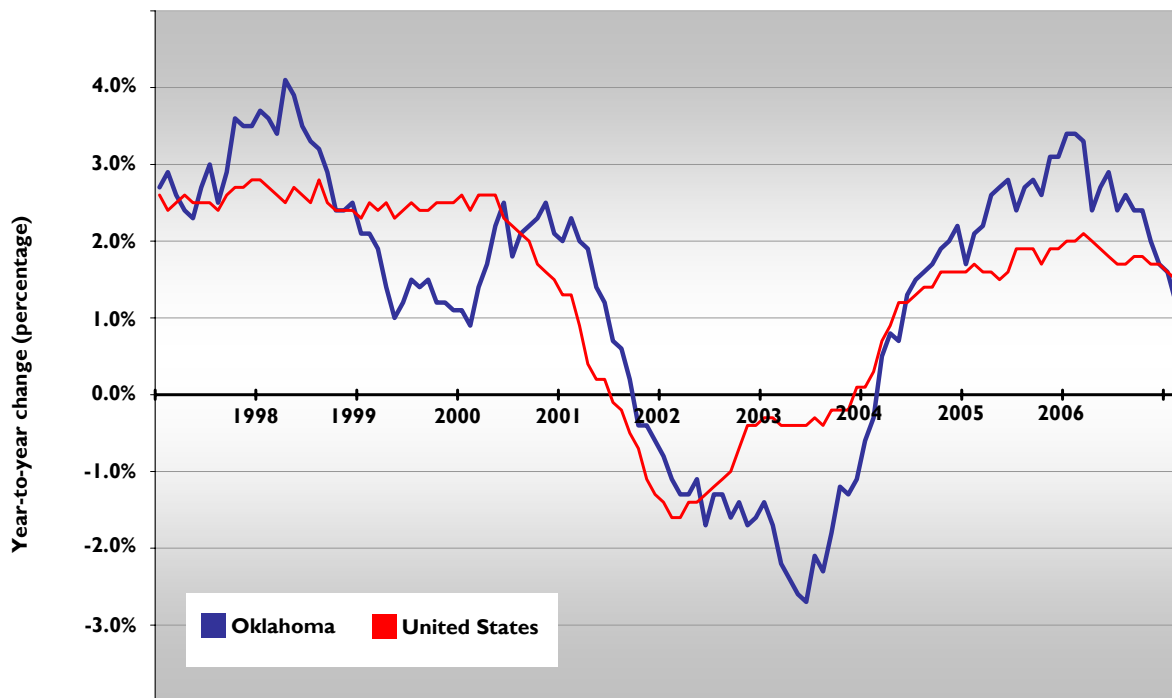
Oklahoma's economy has seen considerable change since the state was founded in 1907. Primarily driven by agriculture through the first half of the 20th century, the state economy has transformed into a service-driven economy, following the overall trend for the United States as a whole. This change was brought on by a number of factors, including technological advances and international trade. More recently, the oil and gas industry has been a driving force behind Oklahoma's economic performance.

After reporting strong growth throughout the 1970s, Oklahoma's economy experienced a setback in the 1980s in the form of the oil bust. The state lost jobs each year between 1986 and 1988 and

again in 1991. Oklahoma began gaining back jobs in the 1990s. By 1994, the state had recovered, and employment surpassed the 1.6 million mark in 2000. The 2001 recession restricted growth to a degree, but state employment began growing again in 2003 and reached an all-time high in 2004.

As can be seen in Chart 1, Oklahoma's employment continues to expand. Looking at the past 10 years, Oklahoma's employment growth has been in line with the national trend, peaking at 4.1 percent in April 1998 and bottoming out at -2.7 percent in June 2003. The economic slide shown coincides with the recent U.S. recession.

**CHART 1: Year-to-year employment growth, Oklahoma and United States (1997-2007)**



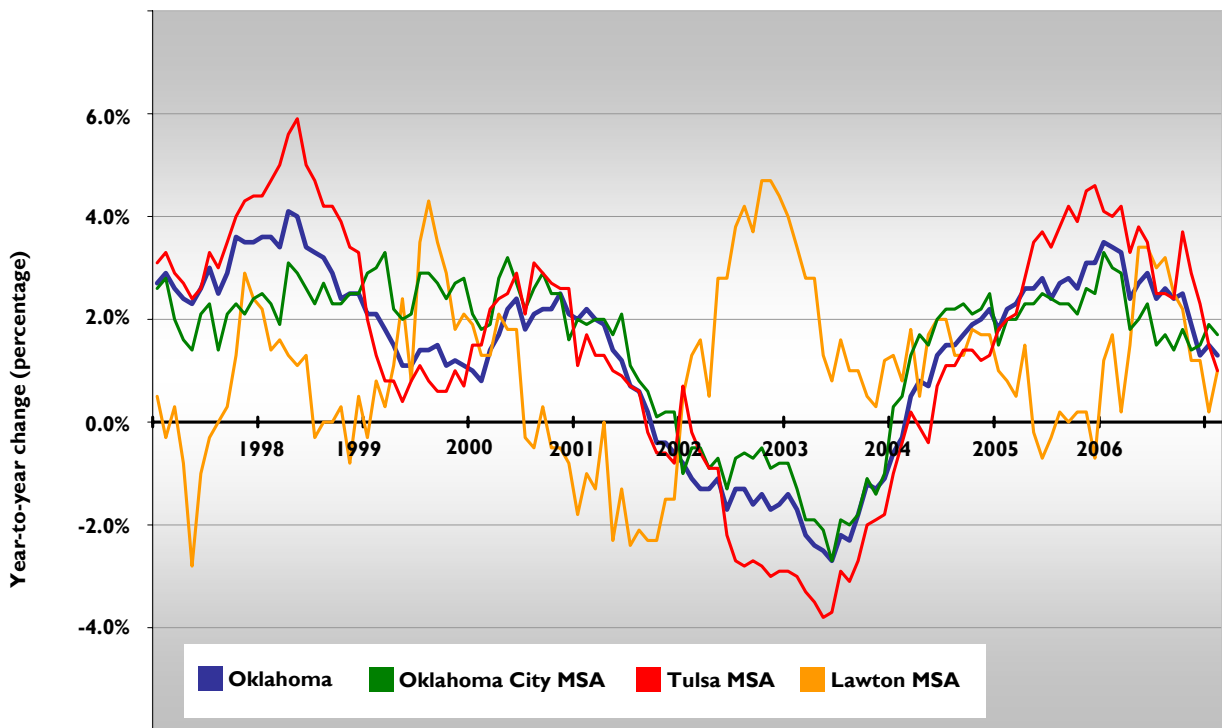
Source: Current Employment Statistics (CES) program

To focus in a little more closely, let's look at employment growth in Oklahoma's three metropolitan statistical areas (MSAs): Oklahoma City, Tulsa and Lawton. MSAs are large population centers and adjacent communities that show a high degree of economic and social integration with that center. All MSAs contain one or more whole counties.

As can be seen from Chart 2, the Oklahoma City

and Tulsa MSAs, where more than six of every 10 Oklahomans work, followed along with the state trend for the most part. The Tulsa MSA experienced the largest swing, topping out at 5.9 percent in May 1998 and hitting a low of -3.8 percent in May 2003. Oklahoma City MSA held more closely to the state pattern. Employment growth in the Lawton MSA followed the same pattern as the state, but movement tended to trail the state trend.

**CHART 2: Year-to-year employment growth, Oklahoma and state MSAs (1997-2007)**



Source: Current Employment Statistics (CES) program

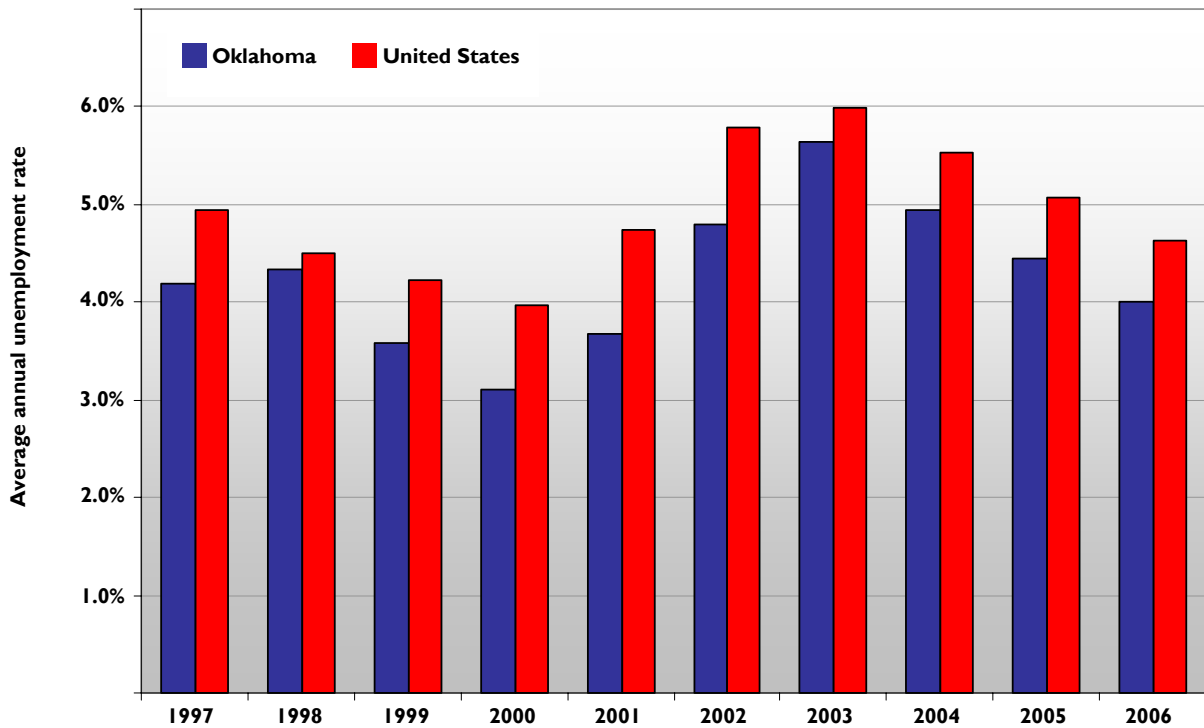
# Unemployment in Oklahoma

Between 1997 and 2006, the Oklahoma unemployment rate was consistently lower than that for the United States as a whole.

For this 10-year period, unemployment rate lows were reported in 2000, while highs came only a few years later in 2003. For the state of Oklahoma, the average annual unemployment rates ranged between a low of 3.1 percent and a high of 5.6 percent. The U.S. unemployment rate bottomed out at 4.0 percent and hit a high of 6.0 percent over the same time span. Both rates followed similar patterns of gains and losses across this 10-year span.

**What are unemployment rates?**  
 An unemployment rate for an area is calculated by dividing the number of persons in the area who are both unemployed and actively seeking work by the number of persons in the area's civilian labor force. Self-employed and military personnel are not included in this measure.

**CHART 3: Unemployment rates, Oklahoma and United States (1997-2006)**



Source: Local Area Unemployment Statistics (LAUS) program

# Oklahoma employment by industry

Non-farm employment in Oklahoma is broken into 11 distinct divisions called supersectors. These supersectors are grouped by what they provide to their customers. **Natural resources & mining, construction, and manufacturing** are collectively known as the goods producing industries. The remaining supersectors, **trade, transportation & utilities, information, financial activities, professional & business services, educational & health services, leisure & hospitality, other services (except government), and government**, are referred to as the service providing industries.

The service providing industries account for more than four out of every five jobs in Oklahoma. **Government** currently provides over one-fifth of Oklahoma's non-farm employment. This supersector includes local, state and federal government employment. Establishments such as public schools and hospitals also fall under **government**.

The next largest group, **trade, transportation & utilities**, provides more than 18 percent of employment. This supersector is made up of **wholesale trade, retail trade, and transportation & utilities**. Out of these three, **retail trade** is the largest, providing more than one of every 10 jobs in the state. **Wholesale trade and transportation & utilities** each contribute around one-third of what **retail trade** does.

Oklahoma's third largest supersector is **education & health services**. This supersector only includes privately-owned establishments; publicly-owned establishments that provide these services are included in **government**.

Right on the heels of **education & health services** is **professional & business services**. This supersector is made up of three parts, **professional, scientific & technical services, management of companies & enterprises, and administrative & support and waste management & remediation services**, and provides more than 11 percent of Oklahoma's non-farm employment.

**Leisure & hospitality** accounts for nearly 9 percent of employment, followed by **other services, financial activities, and information**.

For goods producing industries, **manufacturing** provides the largest share of employment. Jobs in this supersector are engaged in the mechanical, physical or chemical transformation of materials, substances or components into new products.

Less than 5 percent of Oklahoma's employment comes from the **construction** supersector. Work in this supersector can include new construction, additions, alterations, or maintenance and repairs.

Despite the relatively small percentage of jobs provided by **natural resources & mining**, this supersector has been and will continue to be a major factor in Oklahoma's economy due to oil and gas production.

## How is employment grouped by industry?

Employment by industry is broken into 11 supersectors.

### Goods producing industries

- **Natural resources & mining**
- **Construction**
- **Manufacturing**

### Service providing industries

- **Trade, transportation & utilities**
  - Wholesale trade
  - Retail trade
  - Transportation & warehousing
- **Information**
- **Financial activities**
- **Professional & business services**
- **Educational & health services**
- **Leisure & hospitality**
- **Other services**
- **Government**

## Growing industries

When considering Oklahoma's employment picture, it is helpful to look at how employment is changing. Between second quarter 2005 and first quarter 2006, Oklahoma total non-farm employment grew at a healthy 3.6 percent rate. Table 1 lists the 10 industries with the highest average quarterly employment during this same period.

The top two industries, **food services & drinking places** and **administrative & support services**, each averaged employment in excess of 100,000

jobs for the 12-month span. The **educational & health services** supersector was represented by three of the 10 largest employers, **ambulatory health care services, hospitals, and nursing & residential care facilities**.

**Trade, transportation & utilities (TTU)** provided two entries to the list. **Specialty trade contractors**, an industry included in the **construction** supersector, averaged nearly 35,000 jobs each quarter during the period.

**TABLE 1: 10 industries with highest average quarterly employment (2Q05–1Q06)**

Industry	Average quarterly employment
<b>ALL INDUSTRIES</b>	1,156,724
<b>1. Food services &amp; drinking places</b>	104,101
<b>2. Administrative &amp; support services</b>	100,341
<b>3. Professional, scientific &amp; technical services</b>	60,262
<b>4. Ambulatory health care services</b>	58,816
<b>5. Hospitals</b>	48,310
<b>6. General merchandise stores</b>	40,488
<b>7. Nursing &amp; residential care facilities</b>	35,525
<b>8. Specialty trade contractors</b>	34,251
<b>9. Credit intermediation &amp; related activities</b>	30,754
<b>10. Merchant wholesalers, durable goods</b>	26,814

*Source: Local Employment Dynamics (LED) program*

The 10 industries that reported the largest percent growth during the period between second quarter 2005 and first quarter 2006 belonged to one of four supersectors: **trade, transportation & utilities (TTU)**, **manufacturing, natural resources & mining**, and **leisure & hospitality**. **Couriers & messengers**, a division of **TTU**, reported the highest growth rate of 86.7 percent. This was more than three times the next highest growth rate. Also representing **TTU** on the list were **food &**

**beverage stores, warehouse & storage, and truck transportation**. The three **manufacturing** industries on the list, **beverage & tobacco product manufacturing, apparel manufacturing, and transportation equipment manufacturing**, reported growth rates between 27.1 percent and 16.3 percent for the period. Rounding out the list were **animal production, performing arts, spectator sports & related activities, and support for mining**.



**TABLE 2: 10 industries with largest percentage growth (2Q05–1Q06)**

Industry	Employment growth (%)
<b>ALL INDUSTRIES</b>	3.6 %
<b>1. Couriers &amp; messengers</b>	86.7 %
<b>2. Beverage &amp; tobacco product manufacturing</b>	27.1 %
<b>3. Food &amp; beverage stores</b>	25.4 %
<b>4. Animal production</b>	21.3 %
<b>5. Performing arts, spectator sports &amp; related industries</b>	21.0 %
<b>6. Support activities for mining</b>	20.6 %
<b>7. Apparel manufacturing</b>	17.0 %
<b>8. Transportation equipment manufacturing</b>	16.3 %
<b>9. Warehousing &amp; storage</b>	15.7 %
<b>10. Truck transportation</b>	14.3 %

Source: Local Employment Dynamics (LED) program

Another useful measure of the employment situation is the number of new hires in a particular industry. This represents how an industry compares to itself rather than other industries over time. Between second quarter 2005 and first quarter 2006, **food & beverage stores** increased new hiring by the largest amount, followed by **specialty trade contractors** and **support activities for mining**, two goods producing industries. **Insurance carriers & related activities** was the other

industry to up new hires by more than 1,000.

**Credit intermediation & related activities**, also appeared in the 10 industries with highest average quarterly employment. Although the number of new hires in **performing arts, spectator sports & related activities** was less than one-fourth of the top industry on the list, it represented a growth rate more than 130 percent for the period.

**TABLE 3: 10 industries with largest growth in new hires (2Q05–1Q06)**

Industry	Hiring growth	
	Number	Percent
<b>ALL INDUSTRIES</b>	-1,388	-1.1 %
<b>1. Food &amp; beverage stores</b>	1,884	48.4 %
<b>2. Specialty trade contractors</b>	1,456	45.8 %
<b>3. Support activities for mining</b>	1,250	45.8 %
<b>4. Insurance carriers &amp; related activities</b>	1,035	52.4 %
<b>5. Machinery manufacturing</b>	737	39.6 %
<b>6. Credit intermediation &amp; related activities</b>	463	20.2 %
<b>7. Truck transportation</b>	444	23.2 %
<b>8. Amusement, gambling &amp; recreation industries</b>	422	33.5 %
<b>9. Construction of buildings</b>	411	27.2 %
<b>10. Performing arts, spectator sports &amp; related industries</b>	387	132.7 %

Source: Local Employment Dynamics (LED) program

Many of the industries appearing on the list of highest average quarterly new hires were also included in the 10 industries with highest average quarterly employment. **Food services & drinking places** and **administrative & support services**, the industries with the highest and second highest average quarterly employment, swapped places on the list of highest average quarterly new hires.

When combined, these two industries provided more than one-quarter of the average new hires for the state as a whole. **Professional, scientific & technical services** claimed third place on both lists. Three of the remaining industries belong to **educational & health services**.

**TABLE 4: 10 industries with highest average new hires per quarter (2Q05–1Q06)**

Industry	Average new hires per quarter
<b>ALL INDUSTRIES</b>	132,269
<b>1. Administrative &amp; support services</b>	19,995
<b>2. Food services &amp; drinking places</b>	16,477
<b>3. Professional, scientific &amp; technical services</b>	5,529
<b>4. Ambulatory health care services</b>	5,463
<b>5. Nursing &amp; residential care facilities</b>	5,401
<b>6. General merchandise stores</b>	4,606
<b>7. Hospitals</b>	3,800
<b>8. Specialty trade contractors</b>	3,625
<b>9. Food &amp; beverage stores</b>	3,418
<b>10. Credit intermediation &amp; related activities</b>	2,797

*Source: Local Employment Dynamics (LED) program*

# Oklahoma wages by occupation

The Standard Occupational Classification (SOC) system divides occupations into one of 22 major occupational groups. Using this system, we can compare Oklahoma occupational wages to wages for the same occupations across the nation.

At first blush, it is apparent that for the most part national occupational wages run higher than those for Oklahoma. This can be attributed, in part, to the lower cost of living in Oklahoma.

One major group, **farming, fishing & forestry occupations**, managed to outpace the U.S. average

median wage by \$0.94, or more than 10 percent. Other major groups to average at least 90 percent of U.S. median wages included **architecture & engineering occupations, installation, maintenance & repair occupations, production occupations, and transportation & material moving occupations.**

A number of occupations fall at least 20 percent below the comparable U.S. average wage, including **management occupations, legal occupations, and healthcare practitioner & technical occupations.**

**TABLE 5: Wages by occupational group, Oklahoma and United States (1997-2006)**

Major occupational group	Median Wage		Okla. as % of U.S.
	Okla.	U.S.	
Management occupations	\$28.04	\$38.93	72.03 %
Business & financial operations occupations	\$21.47	\$25.81	83.18 %
Computer & mathematical occupations	\$23.34	\$31.80	73.40 %
Architecture & engineering occupations	\$28.15	\$30.00	93.83 %
Life, physical & social science occupations	\$21.10	\$25.49	82.78 %
Community & social services occupations	\$14.61	\$17.21	84.89 %
Legal occupations	\$25.07	\$32.56	77.00 %
Education, training & library occupations	\$15.53	\$19.76	78.59 %
Arts, design, entertainment, sports & media occupations	\$14.44	\$18.44	78.31 %
Healthcare practitioners & technical occupations	\$19.67	\$24.99	78.71 %
Healthcare support occupations	\$9.33	\$11.00	84.82 %
Protective service occupations	\$12.90	\$15.42	83.66 %
Food preparation & serving related occupations	\$6.86	\$7.90	86.84 %
Building & grounds cleaning & maintenance occupations	\$8.36	\$9.75	85.74 %
Personal care & service occupations	\$7.83	\$9.17	85.39 %
Sales & related occupations	\$9.14	\$11.14	82.05 %
Office & administrative support occupations	\$11.50	\$13.50	85.19 %
Farming, fishing & forestry occupations	\$9.57	\$8.63	110.89 %
Construction & extraction occupations	\$14.01	\$17.04	82.22 %
Installation, maintenance & repair occupations	\$16.29	\$17.65	92.29 %
Production occupations	\$12.27	\$13.16	93.24 %
Transportation & material moving occupations	\$11.13	\$12.17	91.45 %

Source: Bureau of Labor Statistics, May 2006 National and State Occupational Employment and Wage Estimates

# Education and training required for Oklahoma jobs

When looking at education and training needs for job openings in Oklahoma, we can divide these requirements into 11 different categories. These categories represent the minimum education and/or training required to perform the duties of an occupation. These categories can be classified as postsecondary awards or work-related training.

In 2004, more than seven out of every 10 job openings did not require postsecondary education. These openings required only work experience in a related field or on-the-job training. All activities necessary to do jobs that require on-the-job training can be learned while working in the occupation. Only about 30 percent of the job openings required some level of postsecondary education or training.

Over one-third of Oklahoma job openings required **short-term on-the-job training** in 2004, while more than one out of every five job openings required **moderate-term on-the-job training**. When combined, these two categories account for more than half of all jobs in 2004.

More than 10 percent of job openings ask for a **bachelor's degree**, and less than 1 percent require a **doctoral degree**.

### Education & training requirements

Education and training requirements can be divided into 11 categories.

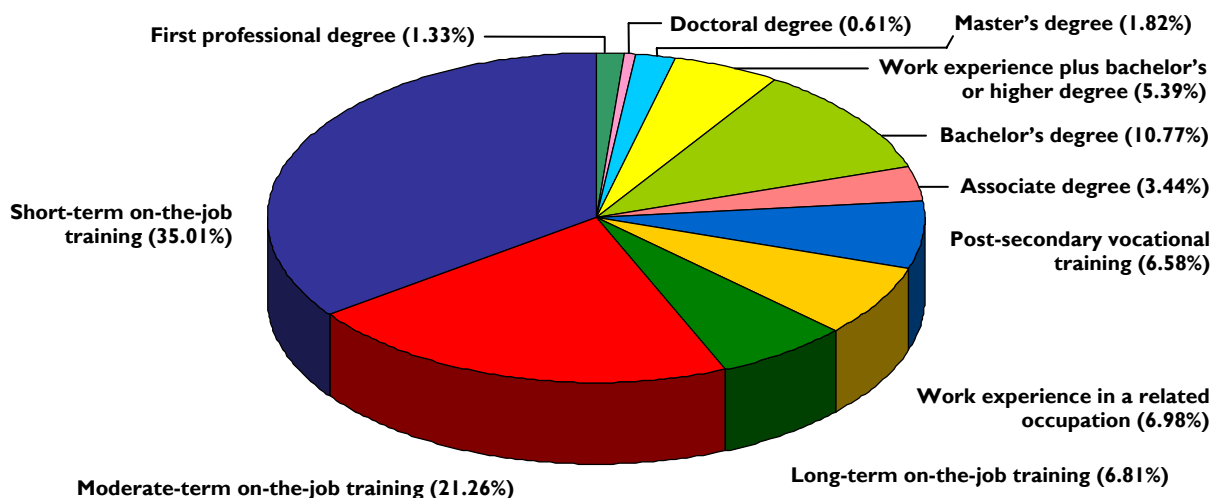
#### Postsecondary awards

- **First professional degree**
- **Doctoral degree**
- **Master's degree**
- **Bachelor's or higher degree, plus work experience**
- **Bachelor's degree**
- **Associate degree**
- **Postsecondary vocational award**

#### Work-related training

- **Work experience in a related occupation**
- **Long-term on-the-job training**
- **Moderate-term on-the-job training**
- **Short-term on-the-job training**

**CHART 4: Minimum education & training requirements for Oklahoma jobs, 2004**



Source: OESC Economic Research & Analysis, Oklahoma Employment Outlook 2014

# WORKFORCE SUPPLY: TODAY

## Oklahoma’s population: density and location

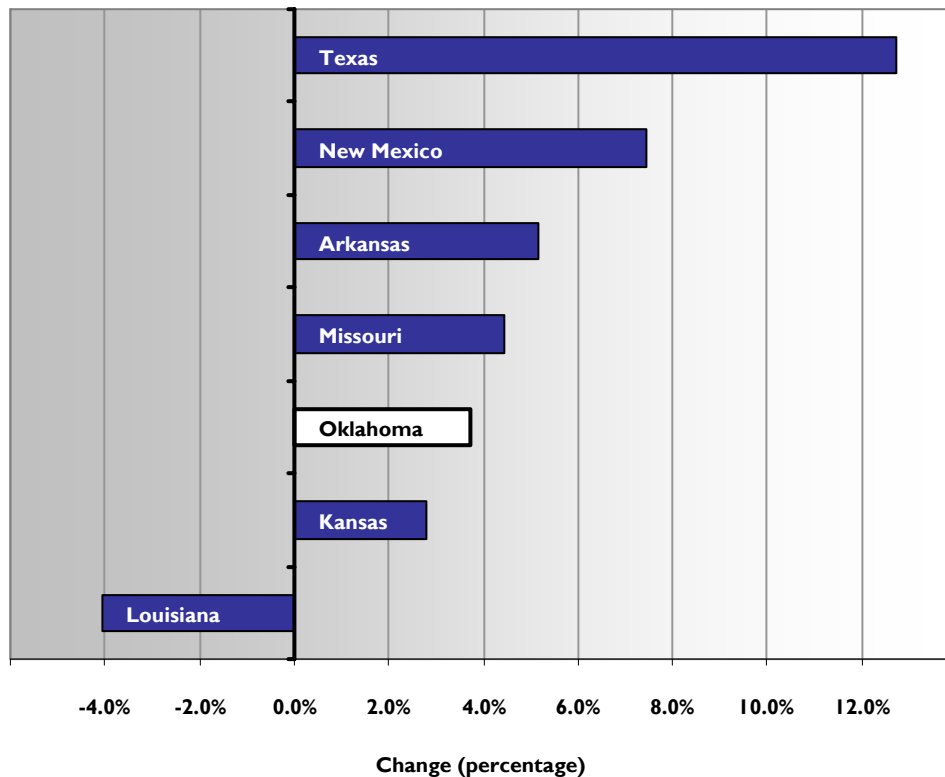
Out of the seven states in the region, Oklahoma ranks right in the middle of the group in terms of population at 3,579,212 residents. Texas is the largest regional state by far, and New Mexico ranks last for population.

Between 2000 and 2006, Oklahoma’s population grew by 3.73 percent, or 128,558 persons. This growth earned the state fifth place in the region for population change between 2000 and 2006. Again, Texas led the region. Louisiana was the only regional state to report a drop in population. Over the same period, the U.S. population growth rate was 6.40 percent.

### Comparisons to regional states

When looking at Oklahoma’s workforce supply, it is useful to compare the data to that for other states in the immediate area. Regional states used in this publication are Arkansas, Kansas, Louisiana, Missouri, New Mexico and Texas.

**CHART 5: Population change, Oklahoma and regional states (2000-2006)**



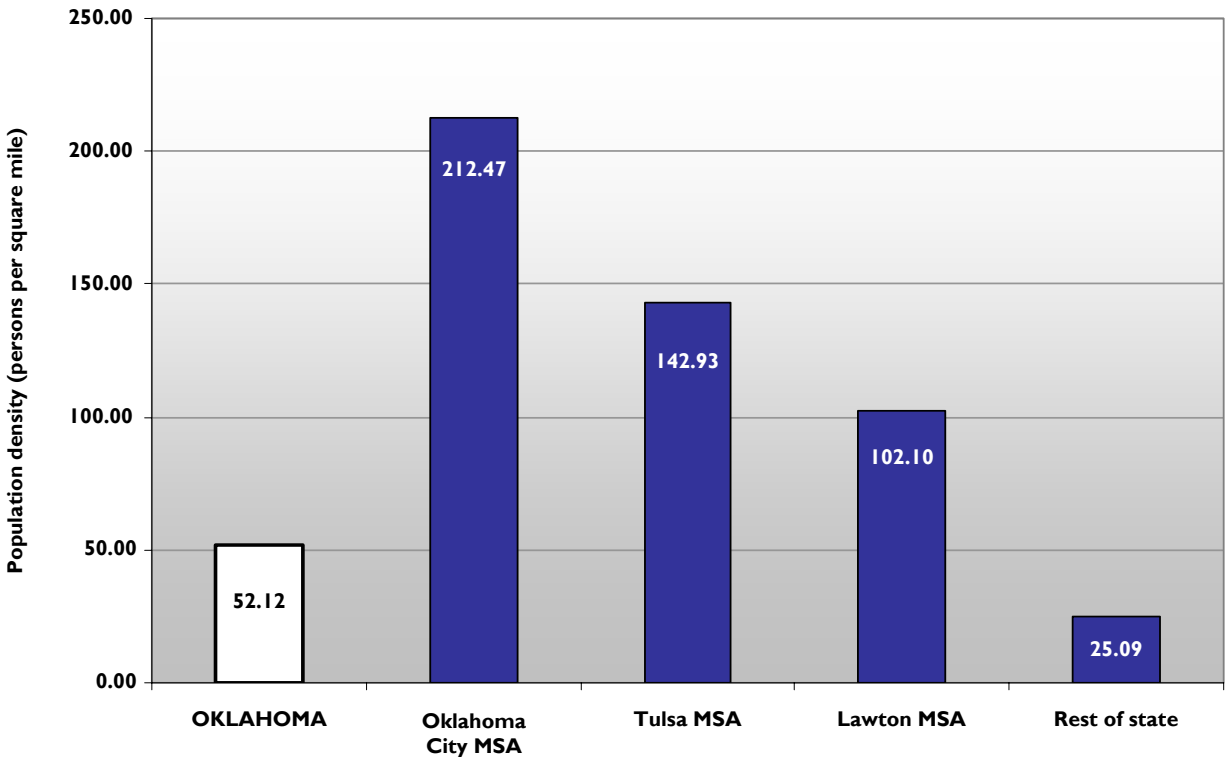
Source: U.S. Census Bureau, 2003 population estimates and 2006 population estimates

One measure that can be used to assess an area is population density. Population density is the population per unit area. Commonly represented as persons per square mile, population density can be an important factor for business and marketing planning by helping determine how many consumers and workers live in a specific area or a particular radius. It allows businesses to choose a

location that is accessible to the largest amount of people.

In terms of population density, Oklahoma ranks fifth in the region at 52.12 persons per square mile. Louisiana holds the top spot in the region, while New Mexico brings up the rear.

**CHART 6: Population density, Oklahoma and sub-state regions (2000-2006)**



Source: U.S. Census Bureau, 2006 population estimates

For the state, it is apparent that much of Oklahoma’s population resides in one of the state’s three metropolitan statistical areas (MSAs). In fact, when combined, the Oklahoma City, Tulsa and Lawton MSAs contain more than three out of every five Oklahomans. The Oklahoma City MSA

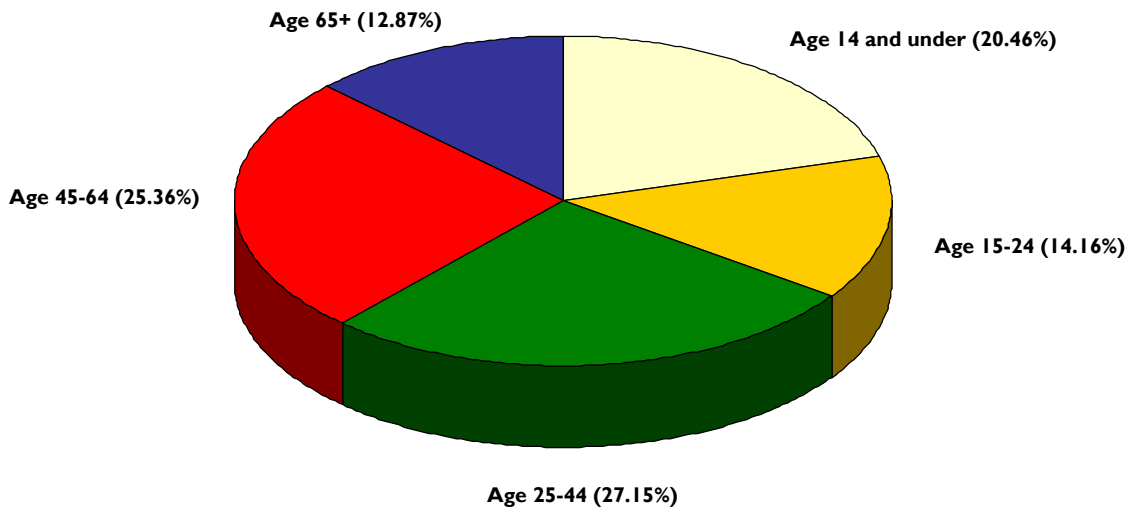
reported a population density of 212.47 persons per square mile in 2006, the highest in the state. The Tulsa MSA was next at 142.93 persons per square mile, and Lawton had a population density of 102.10 persons per square mile. The rest of the state averaged 25.09 persons per square mile.

## Oklahoma's population: age demographics

When looking at population statistics, it is often important to know more than simply how many people there are. Other factors, such as age or ethnicity, can provide very useful insights into this data. In order to get a better look at state and regional data, populations have been divided into five age groups in Chart 7: **age 14 and under**, **age 15-24**, **age 25-44**, **age 45-64**, and **age 65+**.

More than half of Oklahoma's population fall into one of two groups, **age 25-44** or **age 45-64**. The former is below the U.S. average, while the latter is slightly above. One out of every five state residents is age 14 or under. For the **age 65+** group, Oklahoma is second in the region only to Arkansas.

**CHART 7: Oklahomans by age group, 2005**



*Source: U.S. Census Bureau, General Demographic Characteristics 2005, 2005 American Community Survey*

## Oklahoma's population: race and ethnicity

Age isn't the only way to look at population statistics. Another important consideration is the racial and ethnic makeup of a population. In Oklahoma, more than 3 million people, close to 90 percent of the population, can be classified as **One race (not Hispanic or Latino)**. Nearly 5 percent fall into the **Two or more races (not Hispanic or Latino)** category, well above the national average and by far the highest percentage in the region.

Although Oklahoma claims the highest number of individuals described as **American Indian or Alaska Native alone**, it is second in the region to New Mexico for percentage of population that falls into this group. The percentage of Oklahomans classified in the **Black or African American alone, Asian alone, and Hispanic or Latino (of any race)** categories are all below the percentages recorded for the U.S. as a whole.

**TABLE 6: Population by race and ethnicity, Oklahoma and U.S. (2005)**

Population group	Oklahoma		United States	
	Population	Pct.	Population	Pct.
<b>TOTAL POPULATION</b>	<b>3,433,496</b>	<b>100.00 %</b>	<b>288,378,137</b>	<b>100.00 %</b>
<b>One race (not Hispanic or Latino)</b>	3,034,504	88.38 %	242,473,009	84.08 %
<b>White alone</b>	2,491,692	82.11 %	192,615,561	79.44 %
<b>Black or African American alone</b>	239,885	7.91 %	34,364,572	14.17 %
<b>American Indian &amp; Alaska Native alone</b>	244,723	8.06 %	2,046,735	0.84 %
<b>Asian alone</b>	53,215	1.75 %	12,312,949	5.08 %
<b>Native Hawaiian &amp; other Pacific Islander alone</b>	2,892	0.10 %	355,513	0.15 %
<b>Some other race alone</b>	2,097	0.07 %	777,679	0.32 %
<b>Two or more races (not Hispanic or Latino)</b>	171,225	4.99 %	4,034,425	1.40 %
<b>Hispanic or Latino (of any race)</b>	227,767	6.63 %	41,870,703	14.52 %
<b>Total minority population</b>	941,804	27.43 %	95,762,576	33.21 %

Source: U.S. Census Bureau, 2005 American Community Survey



## Oklahoma's population: educational attainment

When looking at a state's workforce, it is helpful to know the educational levels achieved by those in its ranks. Table 7 compares the educational attainment of Oklahomans age 25 and over with that for regional states and the U.S.

Oklahoma is third in the region, and above the national average, for percent of **population age 25 and over with a high school diploma** at 84.34 percent. The particular measure includes those

who have passed equivalency exams as well. For percent of **population age 25 and over with a bachelor degree**, Oklahoma ranked fifth in the region despite having more residents fall into this group than Arkansas, Kansas and New Mexico.

The state also ranked fifth for percent of **population age 25 and over with a graduate or professional degree** compared to the rest of the region.

**TABLE 7: Population age 25 and over by educational attainment, Oklahoma, U.S. and regional states (2005)**

Area	Population, age 25 +	High school grads, age 25+		Bachelor degree, age 25+		Graduate or professional degree, age 25+	
		Number	Pct.	Number	Pct.	Number	Pct.
<b>United States</b>	<b>188,950,759</b>	<b>159,168,430</b>	<b>84.24%</b>	<b>51,366,830</b>	<b>27.19%</b>	<b>18,830,644</b>	<b>9.97%</b>
<b>Oklahoma</b>	2,244,755	1,893,235	84.34%	502,454	22.38%	161,413	7.19%
<b>Arkansas</b>	1,777,242	1,439,708	81.01%	335,317	18.87%	112,248	6.32%
<b>Kansas</b>	1,725,825	1,531,412	88.74%	485,962	28.16%	165,606	9.60%
<b>Louisiana</b>	2,791,859	2,247,359	80.50%	574,383	20.57%	199,295	7.14%
<b>Missouri</b>	3,729,604	3,171,632	85.04%	894,485	23.98%	321,736	8.63%
<b>New Mexico</b>	1,208,938	991,153	81.99%	303,523	25.11%	131,519	10.88%
<b>Texas</b>	13,771,855	10,845,394	78.75%	3,460,812	25.13%	1,125,545	8.17%

Source: U.S. Census Bureau, 2005 American Community Survey

## Oklahoma wages by occupation

Occupational wages provide a wealth of information about an area. Job seekers, students, policy makers and businesses can use this data to make informed decisions, such as choosing a career, revising salary schedules or measuring the cost of doing business.

Table 8 compares median occupational wages for the major occupational groups between regional states. Oklahoma ranked highest in **building & grounds cleaning & maintenance** and **installation, maintenance & repair occupations**, placing third in the region for each. The state reported the lowest median wages in the region for **management occupations, life, physical & social science occupations, healthcare practitioner & technical occupations, and sales & related occupations**.

### What is a median wage?

The median wage is the wage of the absolute middle worker in an occupation. If there were 100 workers in an occupation, and we ranked wages from low to high, the median would be the wage of the 50th worker. Thus, half of workers earned wages below the median, and half earned wages above the median.

**TABLE 8: Median wages by occupational group, Oklahoma and regional states (2006)**

Major occupational group	Okla.	Ark.	Kan.	La.	Mo.	NM	Texas
Management	\$28.04	\$31.00	\$33.99	\$29.67	\$37.85	\$29.50	\$36.60
Business & financial operations	\$21.47	\$20.67	\$23.53	\$20.83	\$23.33	\$23.06	\$24.74
Computer & mathematical	\$23.34	\$23.16	\$27.86	\$23.77	\$29.19	\$27.55	\$31.24
Architecture & engineering	\$28.15	\$24.25	\$28.81	\$25.81	\$27.52	\$29.05	\$30.29
Life, physical & social science	\$21.10	\$21.88	\$22.84	\$23.22	\$21.64	\$24.04	\$23.28
Community & social services	\$14.61	\$13.69	\$15.47	\$17.26	\$15.66	\$15.17	\$16.31
Legal	\$25.07	\$21.51	\$23.67	\$24.01	\$26.70	\$25.35	\$29.56
Education, training & library	\$15.53	\$17.70	\$16.48	\$17.89	\$16.97	\$18.97	\$18.98
Art, design, entertainment, sports, media	\$14.44	\$13.88	\$14.00	\$13.34	\$16.65	\$14.55	\$16.32
Healthcare practitioners & technical	\$19.67	\$19.81	\$21.46	\$20.87	\$21.63	\$23.45	\$23.12
Healthcare support	\$9.33	\$8.98	\$10.18	\$8.29	\$9.91	\$10.08	\$9.63
Protective service	\$12.90	\$12.69	\$14.62	\$11.89	\$12.76	\$13.55	\$15.19
Food preparation & serving related	\$6.86	\$6.74	\$7.12	\$6.83	\$7.41	\$6.83	\$6.93
Building, grounds cleaning, maintenance	\$8.36	\$8.21	\$9.12	\$7.72	\$9.11	\$8.36	\$8.17
Personal care & service	\$7.83	\$7.30	\$8.44	\$7.51	\$8.45	\$8.47	\$6.92
Sales & related	\$9.14	\$9.36	\$10.40	\$9.43	\$10.45	\$9.81	\$10.47
Office & administrative support	\$11.50	\$10.99	\$12.46	\$11.11	\$12.54	\$11.84	\$12.72
Farming, fishing & forestry	\$9.57	\$11.01	\$11.72	\$12.55	\$9.88	\$6.63	\$7.22
Construction & extraction	\$14.01	\$13.79	\$15.69	\$14.84	\$19.09	\$13.96	\$13.03
Installation, maintenance & repair	\$16.29	\$14.96	\$17.09	\$15.50	\$17.14	\$15.49	\$15.68
Production	\$12.27	\$11.63	\$13.05	\$14.61	\$12.58	\$12.49	\$11.82
Transportation & material moving	\$11.13	\$11.58	\$12.08	\$11.15	\$12.20	\$11.18	\$11.10

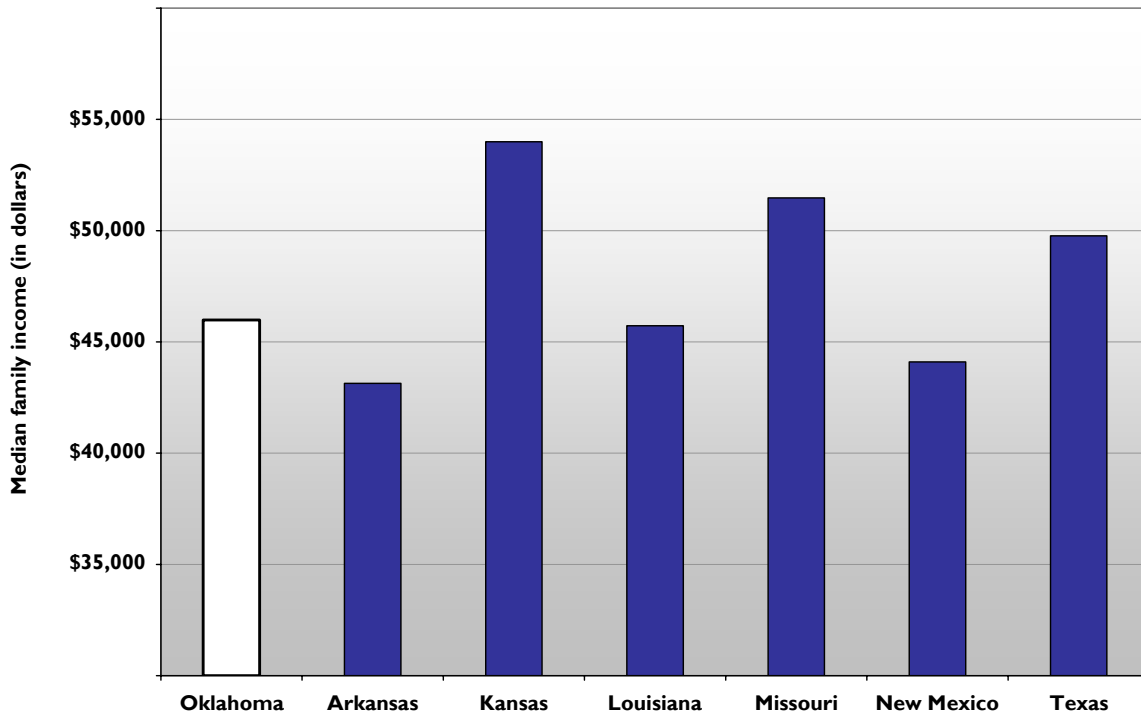
Source: Bureau of Labor Statistics, May 2006 National and State Occupational Employment and Wage Estimates

When comparing earnings from different populations, it is often helpful to look at **median family income (MFI)**. **Median family income** is an annual income figure that divides income distribution into two equal parts: one-half below the median and one-half above. **MFI**, which includes all annual income received from all sources, is a good way to compare an area's

“typical” family with the well-being of the typical American family.

In terms of median family income, Oklahoma ranks fourth out of seven states in the region with a median family income of \$45,990. All regional states were below the median family income for the United States as a whole.

**CHART 8: Median family income, Oklahoma and regional states 2005**



Source: U.S. Census Bureau, 2005 American Community Survey

# WORKFORCE DEMAND: TOMORROW

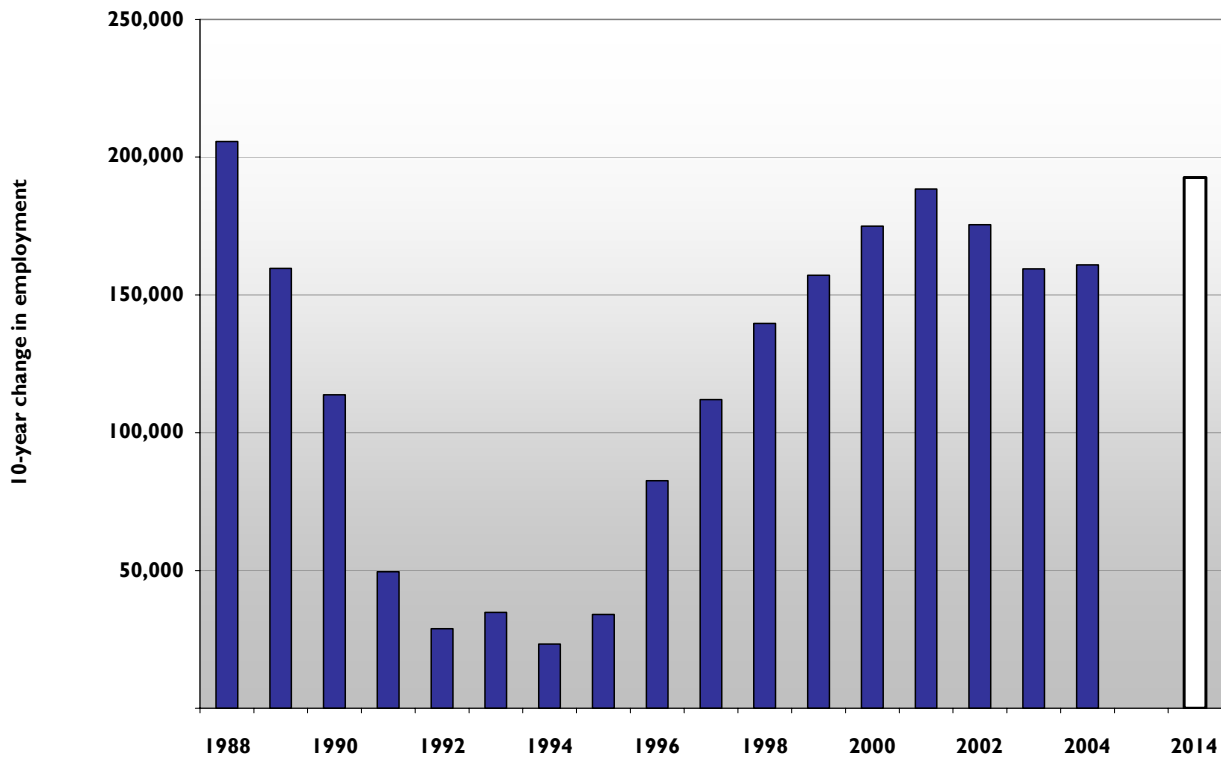
## Predictions for Oklahoma’s economy

When looking at future workforce demand, one must first know how the economy will change. A good way to do this is through employment projections. These projections take a variety of factors into consideration. Oklahoma, like all other states and the United States as a whole, is changing from a goods-producing economy to a service-providing economy, and the types of jobs available will reflect this change. The aging baby boomer generation will require a larger and better staffed health care industry. Constantly improving technology will continue to provide employers with alternatives to human workers. It is important to note that although we can identify many of the factors that will impact the state, it is difficult to

predict exactly what will happen in the future.

Chart 9 shows Oklahoma’s non-farm employment change over a 10-year span. Starting with the change for the period ending in 1984, it presents data through 2004 and includes the projection for the 2004-to-2014 period. The forecast calls for Oklahoma to add nearly 200,000 jobs between 2004 and 2014, an increase of almost 12 percent. These gains outpace the change of the 1994-to-2004 time period, when the state added just over 160,000 jobs. It should be noted that this past 10-year period covered the economic recession that began in 2001.

**CHART 9: 10-year employment growth, Oklahoma (1988-2004 and 2014 projection)**



Source: Current Employment Statistics (CES) program

## Oklahoma future employment by industry

Oklahoma is projected to add 192,600 jobs during the 2004-to-2014 period. The three supersectors expected to provide most of the state's job growth are **educational & health services**, **professional & business services**, and **trade, transportation & utilities**. These three groups will account for more than two-thirds of all job growth between 2004 and 2014.

The **educational & health services** supersector will add more than 60,000 jobs during the projection period. The **health services** industries are expected to produce twice as many jobs as the **educational services** industries. This rapid growth is due to the gradual aging of the population coupled with increased life expectancies.

**TABLE 9: Wages by occupational group, Oklahoma and United States (1997-2006)**

Major industrial group	Employment		Change		Share	
	2004	2014	Jobs	Pct.	2004	2014
<b>Total employment</b>	1,619,400	1,812,000	192,600	11.90%	100.00%	100.00%
<b>SE &amp; UFW, primary job</b>	112,730	115,820	3,090	2.70%	7.00%	6.40%
<b>Natural resources &amp; mining</b>	63,510	61,920	-1,590	-2.50%	3.90%	3.40%
<b>Construction</b>	62,700	67,110	4,400	7.00%	3.90%	3.70%
<b>Manufacturing</b>	142,290	141,740	-550	-0.40%	8.80%	7.80%
<b>Trade, transportation &amp; utilities</b>	276,940	303,630	26,690	9.60%	17.10%	16.80%
<b>Information</b>	31,750	35,430	3,680	11.60%	2.00%	2.00%
<b>Financial activities</b>	84,720	93,050	8,330	9.80%	5.20%	5.10%
<b>Professional &amp; business services</b>	162,470	204,840	42,370	26.10%	10.00%	11.30%
<b>Educational &amp; health services</b>	327,280	387,860	60,570	18.50%	20.20%	21.40%
<b>Leisure &amp; hospitality</b>	129,110	148,370	19,260	14.90%	8.00%	8.20%
<b>Other services (except government)</b>	75,490	85,450	9,950	13.20%	4.70%	4.70%
<b>Government</b>	150,420	166,810	16,390	10.90%	9.30%	9.20%

Source: OESC Economic Research & Analysis, Oklahoma Employment Outlook 2014

**Professional & business services** will grow by 42,370 jobs between 2004 and 2014. Leading the way will be the **administrative & support services** industries, which are expected to provide more than two of every three jobs gained in **professional & business services**. Many of the remaining jobs will come from **professional, scientific & technical services**.

**Trade, transportation & utilities** will be the third largest provider of jobs between 2004 and 2014, although its gain will be less than half of that for

**educational & health services**. Continued gains in **retail trade** will provide nearly two-thirds of the growth, with **wholesale trade** and **transportation & warehousing** accounting for the rest.

**Leisure & hospitality** is expected to grow by over 19,000 jobs between 2004 and 2014. The **accommodation & food services** industries will provide more than four out of every five jobs gained during the projection period, driven almost entirely by **food services & drinking places**.

Employment in **government** is expected to expand by more than 16,000 jobs, with **local government** generating nearly 90 percent of the new jobs during the period.

**Natural resources & mining** and **manufacturing** are the only two supersectors expected to lose jobs over the forecast period. While **natural resources & mining** losses are

relatively straight-forward, the change in **manufacturing** is more complicated. A large number of jobs will be lost from **machinery manufacturing, petroleum product manufacturing** and **printing**, but other industries, like **food manufacturing** and **transportation equipment manufacturing**, are expected to post solid growth between 2004 and 2014.

## Oklahoma industries adding the most jobs

For the 2004-to-2014 projection period, the industry expected to add the most jobs is **administrative & support services**. This industry will add more than 28,000 jobs, growing by nearly one-third. **Administrative & support services** includes areas such as **employment services, business support services** and **services to buildings**.

Of the top 20 industries to add the most jobs, three are classified as **health service industries**:

**ambulatory health care, hospitals and nursing & residential care facilities**. These industries will combine for more than one-sixth of the expected job gains. Recreation-related growth will provide just under 10 percent of the total job growth for the period. The **food services & drinking places** and **amusement, gambling & recreation activities** industries will account for more than 18,000 jobs over the decade.

**TABLE 10: Industries adding the most jobs, Oklahoma (2004-2014)**

Industry	Employment		Change	
	2004	2014	Jobs	Pct.
Administrative & support services	89,300	117,400	28,100	31.47%
Educational services	151,800	172,190	20,390	13.43%
Ambulatory health care services	56,130	73,890	17,760	31.65%
Food services & drinking places	105,160	120,470	15,320	14.57%
Local government, excluding education & hospitals	67,260	81,920	14,670	21.81%
Professional, scientific & technical services	57,740	70,600	12,860	22.28%
General merchandise stores	42,950	51,580	8,630	20.10%
Social assistance	22,510	30,160	7,650	33.98%
Hospitals	61,020	68,550	7,530	12.35%
Nursing & residential care facilities	35,830	43,060	7,230	20.19%
Religious, grantmaking, civic, professional & similar	48,090	54,090	5,990	12.46%
Specialty trade contractors	38,770	43,620	4,850	12.52%
Amusement, gambling & recreation industries	11,030	13,780	2,750	24.95%
Insurance carriers & related activities	26,530	29,230	2,700	10.18%
Food manufacturing	19,440	22,100	2,660	13.67%
Motor vehicle & parts dealers	23,760	26,180	2,420	10.19%
Personal & laundry services	12,550	14,700	2,150	17.10%
Real estate	11,320	13,380	2,060	18.20%
Building material & garden equipment & supplies dealers	13,740	15,780	2,040	14.87%
Miscellaneous store retailers	11,250	13,250	2,000	17.80%

Source: OESC Economic Research & Analysis, Oklahoma Employment Outlook 2014

**Educational services** is expected to add over 20,000 jobs, and **local government, excluding education & hospitals** will grow by almost 15,000 jobs for the period. **Retail trade**, in the form of **general merchandise stores, motor vehicle & parts dealers, and miscellaneous stores**, will provide almost 10 percent of all growth.

Despite a projected employment drop in **construction**, the **specialty trade contractors** industry is expected to add nearly 5,000 jobs. **Manufacturing**, the other supersector to drop jobs for the projection period, was also represented in the top 20 growth industries, with **food manufacturing** expected to gain 2,660 jobs.

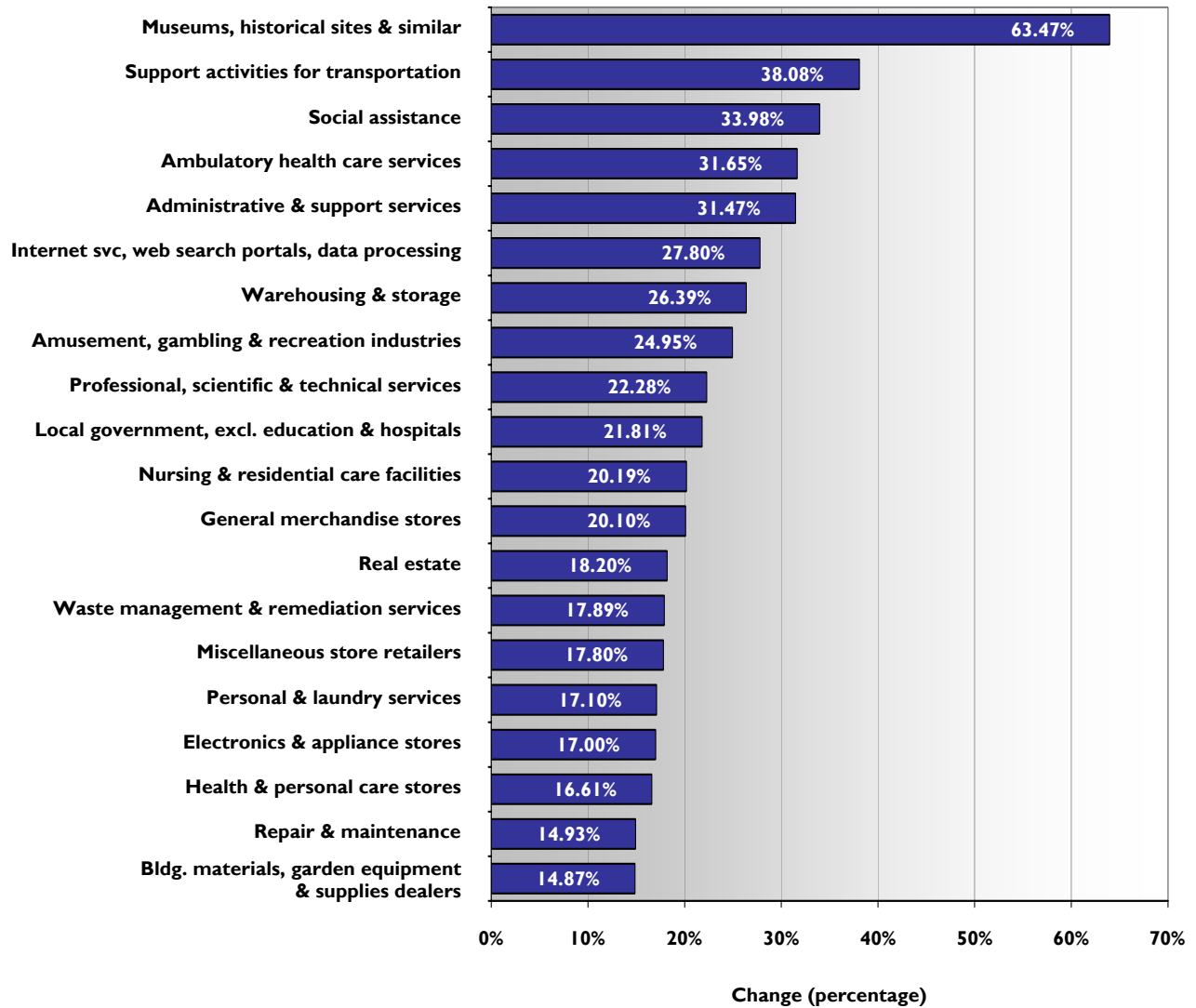


# Oklahoma’s fastest growing industries

When looking at these growth rates, it is important to remember that they fall into one of two general categories. The first is industries with a small number of jobs. Any growth in this type of industry will appear significant. The other category is comprised of larger industries. Because of the large number of jobs, growth rates will tend to be more “accurate” because the gain of a few

jobs will affect the growth rate much less than in a small industry. The two industries with the highest projected growth rates, **museums & historical sites** and **transportation support**, fall into the small industry category. **Social assistance**, which is also one of the industries adding the most jobs, will grow at the highest rate among the larger industries.

**CHART 10: Industries with the fastest growth rates, Oklahoma (2004-2014)**



Source: OESC Economic Research & Analysis, Oklahoma Employment Outlook 2014

Two health care industries, **ambulatory health care** and **nursing & residential care**, made the list of fastest growing industries, as did four industries classified under **retail trade (general merchandise stores, miscellaneous store retailers, electronics & appliance stores, and health & personal care stores)**. All of the fastest growing industries for the 2004-to-2014 period belong to the service-providing industries.

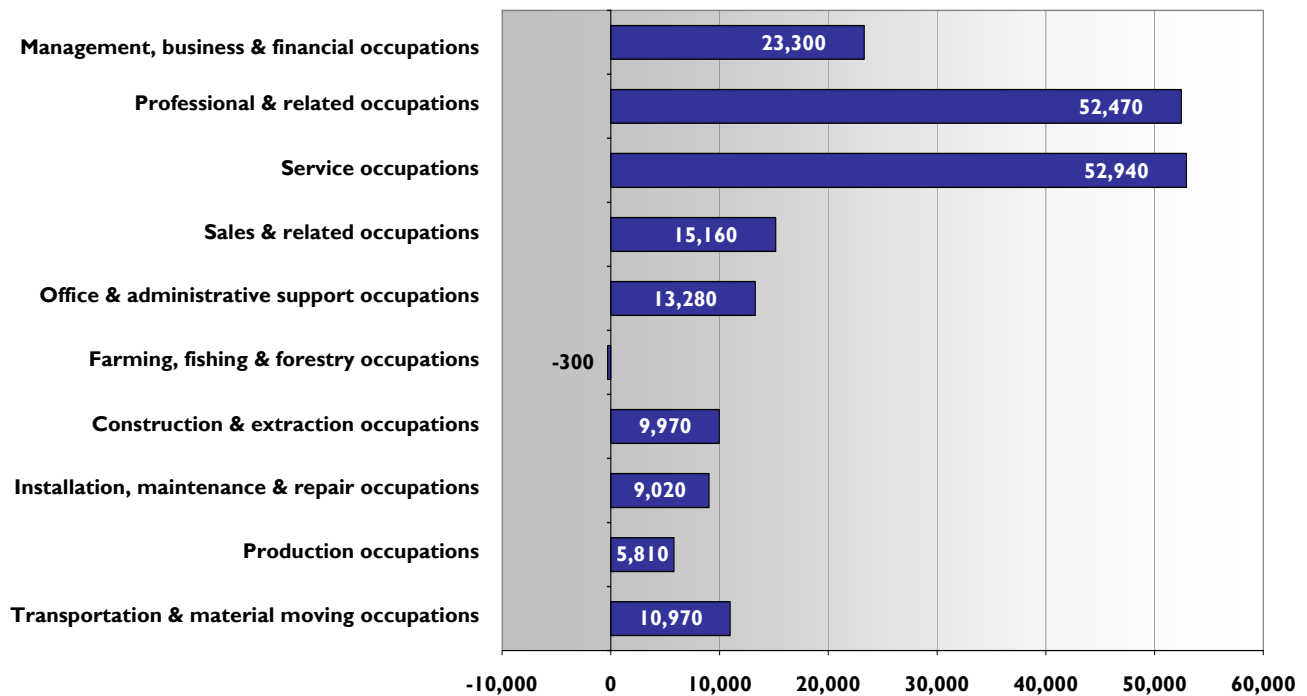
One interesting fact is that 12 of the 20 fastest growing industries are also included in the 20 industries adding the most jobs. Normally, these two lists would be almost completely different. This is the result of significant growth over the projection period in industries with large employment. Although this is unusual, it follows the projected U.S. growth patterns for the period.

# Oklahoma’s future employment by occupation

Turning to occupational employment, Oklahoma is expected to continue growing during the projection period. Between 2004 and 2014, statewide occupational employment will expand by 192,600 jobs, providing nearly 20,000 new jobs each year. Two major occupational divisions, **professional & related occupations** and **service occupations**, are expected to provide more than half of the projected

gains, as well as more than two out of every five jobs added each year between 2004 and 2014. These two join **management, business & financial occupations** as the only major occupational groups to increase employment share between 2004 and 2014. All others will see their share of total employment stay the same or drop during the period.

**CHART II: Change in employment by occupational group, Oklahoma (2004-2014)**



Source: OESC Economic Research & Analysis, Oklahoma Employment Outlook 2014

Change (number)

The **service occupations** group will add more than 52,000 jobs between 2004 and 2014, the most of any major occupational division. Food service occupations are projected to be among the leading growth occupations in this group.

Following right on the heels of **service occupations** will be **professional & related occupations**. Health care occupations, such as **registered nurses** and **licensed practical &**

**licensed vocational nurses**, will provide most of this group’s growth and are also among the fastest growing occupations for the 2004-to-2014 period.

Although the **management, business & financial occupations** group is expected to add the third highest amount of job openings for the period, growth will be less than half of either **service occupations** or **professional & related occupations**.

## Oklahoma occupations adding the most jobs

From 2004 to 2014, the 25 occupations with the most projected job openings per year, also known as **demand occupations**, will represent almost 40 percent of total employment and provide an average of more than two out of every five job openings each year. These demand occupations are based on the average annual openings projected for each occupation. Two **sales & related occupations**, **retail salespersons** and **cashiers**, will average the

most openings per year between 2004 and 2014.

Although **sales & related occupations** claimed the top two spots on the list, **office & administrative support occupations** and **service occupations** each contributed six of the top 25 demand occupations. **Professional & related occupations** will provide five of the top 30 demand occupations for the 2004-to-2014 period.

**TABLE II: Occupations adding the most jobs per year, Oklahoma (2004-2014)**

Occupation	Employment			Avg. annual openings
	2004	2014	Growth	
Retail salespersons	46,810	54,830	17.12%	2,500
Cashiers	42,850	44,350	3.48%	2,230
Waiters & waitresses	25,200	28,900	14.68%	1,670
Combined food preparation & serving, including fast food	27,130	31,220	15.07%	1,590
Registered nurses	24,480	30,800	25.80%	1,140
Office clerks, general	37,010	39,390	6.41%	1,060
Customer service representatives	26,440	32,880	24.36%	1,040
Laborers & freight, stock & material movers, hand	24,060	26,010	8.12%	980
General & operations managers	27,010	31,220	15.59%	930
Postsecondary teachers	18,910	23,710	25.37%	910
Janitors & cleaners, except maids & housekeeping cleaners	24,950	28,950	16.00%	870
Truck drivers, heavy & tractor-trailer	24,660	27,750	12.55%	710
Nursing aides, orderlies & attendants	21,740	25,410	16.87%	650
Team assemblers	16,580	18,480	11.50%	620
Stock clerks & order fillers	16,740	15,680	-6.32%	620
Elementary school teachers, except special education	17,060	19,160	12.29%	590
Cooks, fast food	12,410	14,240	14.76%	570
Receptionists & information clerks	13,080	15,340	17.26%	550
Executive secretaries & administrative assistants	18,870	20,590	9.12%	530
Maintenance & repair workers, general	15,110	17,560	16.16%	530
Personal & home care aides	9,280	13,020	40.35%	520
Bookkeeping, accounting & auditing clerks	24,360	25,030	2.73%	520
Accountants & auditors	14,890	17,130	15.03%	510
Tellers	8,560	9,270	8.34%	490
Licensed practical & licensed vocational nurses	13,560	15,240	12.45%	460

Source: OESC Economic Research & Analysis, Oklahoma Employment Outlook 2014

## Oklahoma's fastest growing occupations

Employment in Oklahoma is expected to grow by almost 12 percent between 2004 and 2014. The 25 occupations predicted to post the largest percentage growth during the period, or **growth occupations**, all more than double this rate. **Professional & related occupations** will provide 17 of the top 25 growth occupations for the period.

**Service occupations** will be the source of six growth occupations, with **management, business & financial occupations** contributing the final two. More than one-quarter of the top 25 growth occupations are related to the health care industry and one-fifth are computer-related.

**TABLE 12: Occupations with fastest growth rates, Oklahoma (2004-2014)**

Occupation	Employment			Avg. annual openings
	2004	2014	Growth	
Network systems & data communications analysts	1,240	1,880	52.14%	80
Home health aides	7,480	11,020	47.29%	450
Environmental engineers	360	510	44.51%	20
Medical assistants	5,800	8,300	43.21%	360
Dental hygienists	1,060	1,500	41.56%	50
Veterinary technologists & technicians	530	740	40.99%	30
Personal & home care aides	9,280	13,020	40.35%	520
Physician assistants	930	1,300	39.96%	50
Dental assistants	2,500	3,460	38.61%	170
Computer software engineers, applications	2,890	4,000	38.37%	140
Physical therapist assistants	1,080	1,490	37.69%	60
Computer software engineers, systems software	1,770	2,430	37.30%	80
Forensic science technicians	90	120	36.78%	10
Database administrators	1,100	1,500	35.79%	50
Gaming dealers	510	700	35.48%	30
Network & computer systems administrators	2,820	3,820	35.23%	130
Environmental engineering technicians	110	150	35.09%	10
Museum technicians & conservators	60	90	34.92%	0
Financial examiners	330	450	34.83%	20
Curators	80	110	32.91%	0
Preschool teachers, except special education	7,020	9,320	32.83%	310
Athletic trainers	280	370	31.91%	20
Gaming managers	70	90	31.43%	0
Medical scientists, except epidemiologists	1,250	1,640	30.62%	60
Veterinarians	800	1,050	30.60%	40

Source: OESC Economic Research & Analysis, Oklahoma Employment Outlook 2014

## Education & training requirements for future employment in Oklahoma

In 2004, more than seven out of every 10 job openings did not require **postsecondary education**, asking only for **work experience in a related field** or **on-the-job training**. By 2014, this number is expected to slip to just below the 70 percent mark. All activities necessary to do the jobs that require

**on-the-job training** can be learned while working in the occupation. For both 2004 and 2014, only about 30 percent of the job openings require some level of postsecondary education or training to help people compete in the labor market.

**TABLE 13: Education & training requirements, Oklahoma (2004-2014)**

Education & training requirement	Employment		Distribution		Change	
	2004	2014	2004	2014	Number	Pct.
<b>TOTAL, all occupations</b>	1,619,400	1,812,000	100.00%	100.00%	192,600	11.89%
<b>First professional degree</b>	21,570	24,660	1.33%	1.36%	3,090	14.32%
<b>Doctoral degree</b>	9,820	12,190	0.61%	0.67%	2,370	24.16%
<b>Master's degree</b>	29,490	35,150	1.82%	1.94%	5,660	19.21%
<b>Work experience plus bachelor's or higher degree</b>	87,260	100,460	5.39%	5.54%	13,200	15.12%
<b>Bachelor's degree</b>	174,420	201,010	10.77%	11.09%	26,590	15.24%
<b>Associate degree</b>	55,750	67,790	3.44%	3.74%	12,030	21.58%
<b>Postsecondary vocational training</b>	106,480	122,710	6.58%	6.77%	16,240	15.25%
<b>Work experience in a related occupation</b>	113,060	122,960	6.98%	6.79%	9,900	8.76%
<b>Long-term on-the-job training</b>	110,350	124,100	6.81%	6.85%	13,750	12.46%
<b>Moderate-term on-the-job training</b>	344,240	374,950	21.26%	20.69%	30,710	8.92%
<b>Short-term on-the-job training</b>	566,960	626,030	35.01%	34.55%	59,070	10.42%

Source: OESC Economic Research & Analysis, Oklahoma Employment Outlook 2014

