

Oklahoma  
**STATE** of the  
**WORKFORCE**  
Report 2008

a publication from

**Oklahoma Employment Security Commission**  
*Economic Research & Analysis Division*  
P.O. Box 52003  
Oklahoma City, OK 73152-2003

**Jon Brock**, OESC Executive Director  
**Lynn Gray**, Director of Economic Research & Analysis

*Prepared by*  
**John Carpenter**, Public Information Officer

**September 2008**

Equal Opportunity Employer/Program  
Auxiliary aids and services are available upon request to individuals with disabilities.

This publication is issued by the Oklahoma Employment Security Commission as authorized by provisions of the Oklahoma Employment Security Act.



# TABLE OF CONTENTS

<b>INTRODUCTION</b>	<b>1</b>
<b>WORKFORCE DEMAND: TODAY</b>	<b>2</b>
Oklahoma's economy: a snapshot .....	2
Unemployment in Oklahoma .....	4
Oklahoma employment by industry .....	5
Growing industries .....	6
Oklahoma employment by location .....	10
Oklahoma wages by occupation .....	11
Education & training required for Oklahoma jobs .....	12
<b>WORKFORCE SUPPLY: TODAY</b>	<b>13</b>
Oklahoma's population: density and location .....	13
Oklahoma's population: age demographics .....	15
Oklahoma's population: race and ethnicity .....	16
Oklahoma's population: educational attainment .....	17
Oklahoma wages by occupation .....	18
<b>WORKFORCE DEMAND: TOMORROW</b>	<b>20</b>
Predictions for Oklahoma's economy .....	20
Oklahoma's future employment by industry .....	21
Oklahoma industries adding the most jobs .....	23
Oklahoma's fastest growing industries .....	24
Oklahoma's future employment by occupation .....	25
Oklahoma occupations adding the most jobs .....	26
Oklahoma's fastest growing occupations .....	27
Education & training requirements for future employment in Oklahoma .....	28

# INTRODUCTION

## Oklahoma State of the Workforce Report 2008

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. This report is an attempt to help provide that understanding.

The *Oklahoma 2008 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 analyses contained in the report is the Economic Research & Analysis division of the Oklahoma Employment Security Commission. This report was produced with funds from the U.S. Department of Labor Employment and Training Administration. Other data sources include the U.S. Census Bureau and Oklahoma Department of Labor.

This publication addresses data for the 2007 calendar year where possible. Because the data contained in this publication comes from a variety of sources, this was not always an option. When data for the 2007 calendar year was not available, data for the most recent one-year period was substituted. Please be aware of this fact when comparing data from different sections.

# WORKFORCE DEMAND: TODAY

## Oklahoma's economy: a snapshot

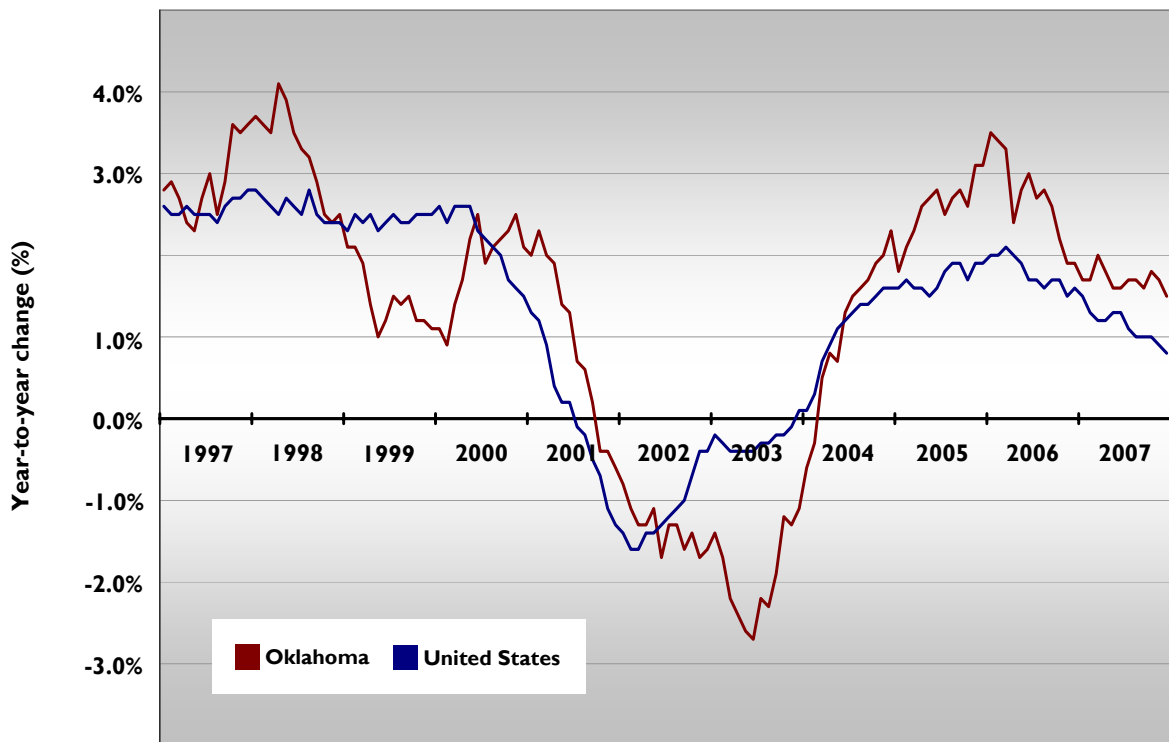
Oklahoma's economy has seen considerable change since the state was founded in 1907. Primarily driven by agriculture through the first half of the 20th century, the state economy has transformed into a service-driven economy, following the overall trend for the United States as a whole. This change was 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. The state had recovered by 1994, 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 2007.

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. For 2007, Oklahoma reported a maximum year-to-year growth rate of 2.0 percent in March.

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



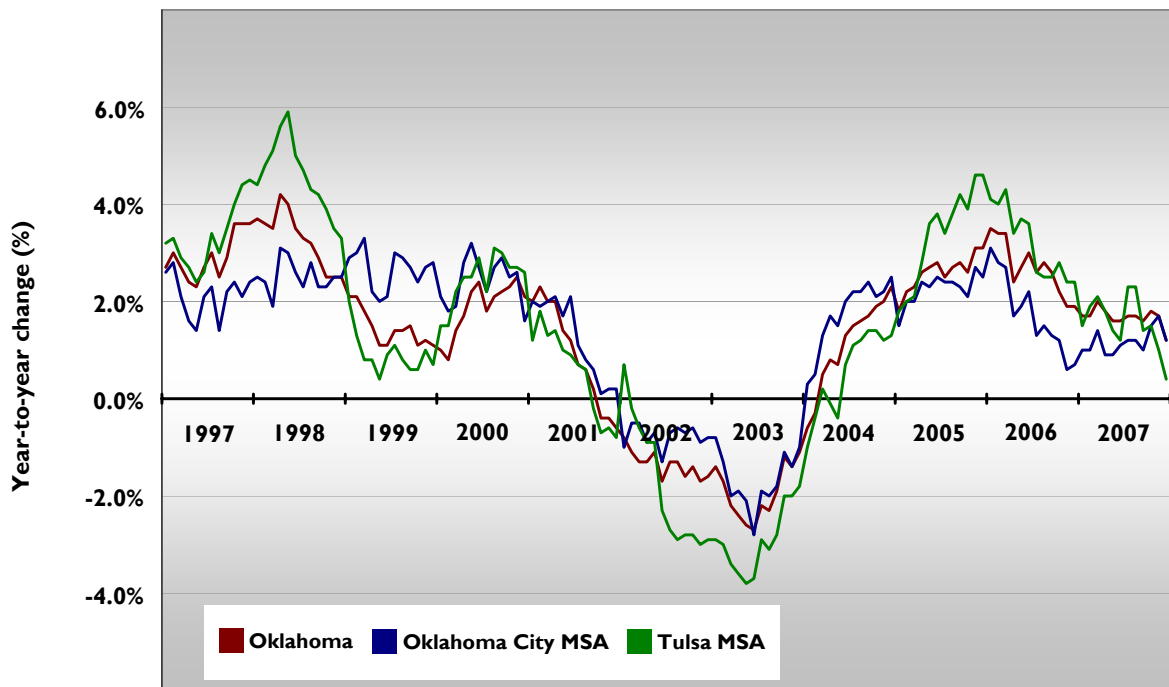
Source: Current Employment Statistics (CES) program

To focus in a little more closely, let's compare employment growth for the state with that for Oklahoma's two metropolitan statistical areas (MSAs), Oklahoma City and Tulsa. 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 worked in 2007, 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. The Oklahoma City MSA held more closely to the state pattern, reporting a high of 3.3 percent in March 1999 and a low of -2.8 percent in June 2003. The low points for all three coincide with the recession of 2003.

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



Source: Current Employment Statistics (CES) program

# Unemployment in Oklahoma

Between 1998 and 2007, the Oklahoma unemployment rate was consistently lower than that for the United States as a whole.

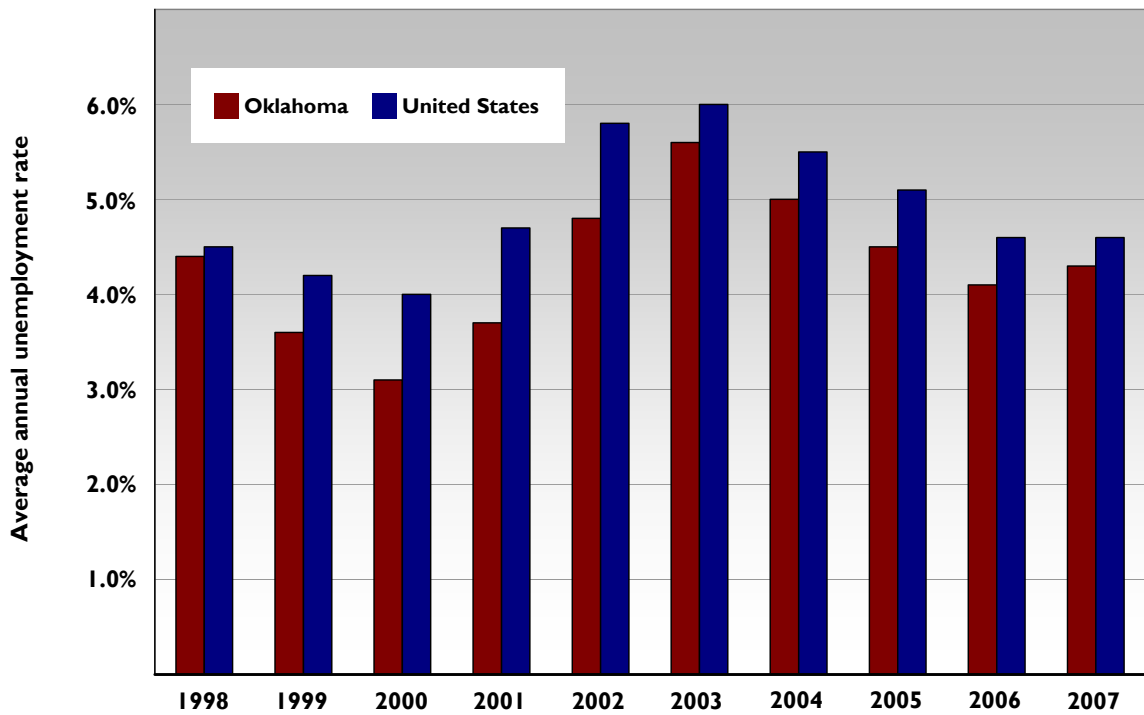
During this 10-year period, unemployment rate lows were reported in 2000, while highs came only a few years later in 2003. For the state, the average annual unemployment rates ranged between a low of 3.1 percent and a high of 5.6 percent. The U.S. unemployment rate bottomed out at 4.0 percent and hit 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.

**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.

For more information on unemployment rates, visit <http://www.bls.gov/lau/>.

**CHART 3: Unemployment rates, Oklahoma & United States (1998-2007)**



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.

In 2007, the service providing industries accounted for more than four out of every five jobs in Oklahoma. **Government** provided more than one-fifth of Oklahoma's non-farm employment. This super-sector includes local, state and federal government employment. Establishments such as public schools and hospitals also fall under **government**.

**Trade, transportation & utilities**, the next largest group, was the source of more than 18 percent of Oklahoma jobs in 2007. This supersector is made up of **wholesale trade, retail trade, and transportation, warehouse & utilities**. Out of these three, **retail trade** is the largest and provided more than one of every 10 jobs in the state for the year. **Wholesale trade** and **transportation, warehouse & utilities** each contributed around one-third of what **retail trade** did.

Oklahoma's third largest supersector in 2007 was **education & health services**. This supersector only includes privately-owned establishments; publicly-owned establishments that provide these same services are included in **government**.

Following right behind **education & health services** is **professional & business services**. This supersector contributed more than 11 percent of Oklahoma's non-farm employment in 2007. The other service providing industries, in order of 2007 employment share, are **leisure & hospitality, other services (except government), financial activities, and information**.

## Employment by industry

When classified by industry, employment is broken into 11 supersectors.

### Goods producing industries

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

### Service providing industries

- **Trade, transportation & utilities**
  - Wholesale trade
  - Retail trade
  - Transportation, warehouse & utilities
- **Information**
- **Financial activities**
- **Professional & business services**
- **Educational & health services**
- **Leisure & hospitality**
- **Other services (except government)**
- **Government**

For more information on employment by industry, visit <http://www.bls.gov/sae/>.

For the goods producing industries, **manufacturing** provided the largest share of employment in 2007, close to 10 percent of all Oklahoma jobs for the year. 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 jobs came from **construction** in 2007. Work in this supersector can include new construction, additions, or maintenance and repairs.

Despite the small share of jobs provided by **natural resources & mining** in 2007, this supersector is and will continue to be a major factor in Oklahoma's economy due to oil and gas production.



## Growing industries

When considering Oklahoma employment, it is helpful to look at how employment is changing. Between January 1 and December 31, 2007, Oklahoma total non-farm employment grew by nearly 1.8 percent. Table 1 lists the industries with the highest average annual employment in 2007.

The top two industries, **food services & drinking places** and **administrative & support services**, each averaged employment in excess of 100,000 jobs for 2007. 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)** and **financial activities** each provided one entry on the list. There were two good producing industries on the list, **specialty trade contractors** (an industry included in the **construction** supersector) and **machinery manufacturing**.

**TABLE 1: 10 industries with largest employment (2007)**

Industry	2007 annual average employment
<b>ALL INDUSTRIES</b>	1,533,985
<b>1. Food services &amp; drinking places</b>	107,609
<b>2. Administrative &amp; support services</b>	100,415
<b>3. Professional, scientific &amp; technical services</b>	62,297
<b>4. Ambulatory health care services</b>	61,705
<b>5. Hospitals</b>	51,112
<b>6. General merchandise stores</b>	41,736
<b>7. Specialty trade contractors</b>	39,483
<b>8. Nursing &amp; residential care facilities</b>	34,957
<b>9. Credit intermediation &amp; related activities</b>	32,209
<b>10. Machinery manufacturing</b>	28,757

*Source: Quarterly Census of Employment & Wages (QCEW) program*

The 10 industries that reported the largest employment growth, or most jobs added, from 2006 to 2007 included both good producing and service providing industries.

The industry at the top of the list, **administrative & support services**, added more than 3,000 jobs over the year. The next two industries, **machinery manufacturing** and **support activities for mining**, each gained more than 2,700 jobs for the period. Both fall under the goods producing industries.

Four supersectors were represented with two entries each on the list: **education & health services, leisure & hospitality, natural resources & mining, and professional & business services**.

Two entries on the list of industries with the largest employment growth, **support activities for mining** and **oil & gas extraction**, are directly related to the oilfield, reflecting Oklahoma's economic ties to this field.

**TABLE 2: 10 industries with largest employment growth (2006–2007)**

Industry	Employment growth (#)
<b>ALL INDUSTRIES</b>	26,789
<b>1. Administrative &amp; support services</b>	3,066
<b>2. Machinery manufacturing</b>	2,773
<b>3. Support activities for mining</b>	2,724
<b>4. Hospitals</b>	1,940
<b>5. Professional, scientific &amp; technical services</b>	1,817
<b>6. Oil &amp; gas extraction</b>	1,763
<b>7. Ambulatory health care services</b>	1,755
<b>8. Merchant wholesalers, durable goods</b>	1,685
<b>9. Amusement, gambling &amp; recreation industries</b>	1,502
<b>10. Food services &amp; drinking places</b>	1,278

Source: Quarterly Census of Employment & Wages (QCEW) program

When measuring job growth, it is also useful to consider percentage growth in an industry. From 2006 to 2007, the industry with the fastest growth was **other information services**. Although this industry’s growth rate was over 70 percent, it amounted to fewer than 290 jobs added. Six of the 10 entries on this list grew by fewer than 500 jobs.

Manufacturing-related jobs made up four of the 10 fastest growing industries. All but **machinery manufacturing** (+2,700 jobs) reported job gains

that were less than 500 jobs.

Four industries with the fastest growth rates were also on the list of industries with largest employment growth. These industries were **machinery manufacturing, support activities for mining, oil & gas extraction, and amusement, gambling & recreation industries**. In addition, **natural resources & mining** and **trade, transportation & utilities** each claimed two entries of the list.

**TABLE 3: 10 industries with fastest growth (2006–2007)**

Industry	Employment growth (%)
<b>ALL INDUSTRIES</b>	1.8%
<b>1. Other information services</b>	70.3%
<b>2. Pipeline transportation</b>	29.5%
<b>3. Amusement, gambling &amp; recreation industries</b>	12.0%
<b>4. Support activities for mining</b>	11.6%
<b>5. Oil &amp; gas extraction</b>	10.9%
<b>6. Machinery manufacturing</b>	10.3%
<b>7. Leather &amp; allied product manufacturing</b>	8.4%
<b>8. Support activities for transportation</b>	8.3%
<b>9. Personal &amp; laundry services</b>	8.1%
<b>10. Computer &amp; electronic product manufacturing</b>	7.9%

Source: Quarterly Census of Employment & Wages (QCEW) program

Another useful measure of employment is new hires in a particular industry. This represents how an industry compares to itself rather than other industries over time. Between third quarter 2006 and second quarter 2007, the two industries with the highest average new hire employment, **administrative & support services** and **food & beverage stores**, provided more than one-fourth of the average new hires across all industries.

Three of the industries on the list, **ambulatory health care services, nursing & residential care facilities**, and **hospitals**, fall under **education & health services**. There were also two industries from **leisure & hospitality** and two from **professional & business services**. **Specialty trade contractors** and **support activities for mining**, two good producing industries, also made the list.

**TABLE 4: 10 industries with highest average quarterly new hire employment (3Q06–2Q07)**

Industry	Avg. quarterly new hire employment
<b>ALL INDUSTRIES</b>	131,884
<b>1. Administrative &amp; support services</b>	17,880
<b>2. Food services &amp; drinking places</b>	16,876
<b>3. Ambulatory health care services</b>	5,787
<b>4. Professional, scientific &amp; technical services</b>	5,733
<b>5. General merchandise stores</b>	5,013
<b>6. Nursing &amp; residential care facilities</b>	4,333
<b>7. Hospitals</b>	4,175
<b>8. Specialty trade contractors</b>	3,915
<b>9. Support activities for mining</b>	3,899
<b>10. Amusement, gambling &amp; recreation industries</b>	2,657

*Source: Local Employment Dynamics (LED) program*

The 10 industries that reported the highest average monthly earnings during the period between third quarter 2006 and second quarter 2007 included both good producing and service providing industries.

The top industry, **oil & gas extraction**, is one of three industries on the list that belong to the **natural resources & mining** supersector. The second and third entries, **pipeline transportation** and **utilities**, are classified in the **trade, transportation & utilities (TTU)** supersector. **Air transportation** was the other **TTU** industry among the top 10. The **financial activities** supersector was represented by two industries, **securities, commodity contracts & other financial**

**investments & related activities** and **funds, trusts & other financial vehicles**.

The other good producing industry in the top 10 industries with the highest monthly earnings for 2007 was **computer & electronic product manufacturing**. Workers in this industry averaged earnings that were more than 45 percent above the average monthly earnings across all industries for 2007.

The two industries with the highest average monthly earnings, **oil & gas extraction** and **pipeline transportation**, more than doubled the average monthly earnings in all industries for the period.

**TABLE 5: 10 industries with highest average monthly earnings (3Q06–2Q07)**

Industry	Avg. monthly earnings
ALL INDUSTRIES	\$3,050.00
1. Oil & gas extraction	\$7,993.00
2. Pipeline transportation	\$7,537.00
3. Utilities	\$6,049.00
4. Securities, commodity contracts & other financial investments & related activities	\$5,935.00
5. Petroleum & coal products manufacturing	\$5,552.00
6. Support activities for mining	\$5,520.00
7. Management of companies & enterprises	\$5,124.00
8. Funds, trusts & other financial vehicles	\$4,788.00
9. Computer & electronic product manufacturing	\$4,435.00
10. Air transportation	\$4,347.00

Source: Local Employment Dynamics (LED) program

Earnings growth is another useful measure. Between third quarter 2006 and second quarter 2007, each of the 10 industries with the most earnings growth posted growth that was double that for all industries. The top industry, **pipeline transportation**, posted growth that was more than 10 times the growth across all industries. The top three entries saw growth that was at least five times that for all industries.

The good producing industries were represented by **leather & allied product manufacturing**; **electrical equipment, appliance & component manufacturing**; and **support activities for mining**. For the service providing industries, **information** had three entries that mostly centered on publishing, while **trade, transportation & utilities** had two, both related to utilities.

**TABLE 6: 10 industries with most earnings growth (3Q06–2Q07)**

Industry	Earnings growth
ALL INDUSTRIES	\$140.00
1. Pipeline transportation	\$1,423.00
2. Leather & allied product manufacturing	\$1,351.00
3. Other information services	\$925.00
4. Performing arts, spectator sports & related	\$591.00
5. Internet publishing & broadcasting	\$590.00
6. Utilities	\$504.00
7. Electrical equipment, appliance & component manufacturing	\$340.00
8. Publishing industries (except internet)	\$329.00
9. Support activities for mining	\$314.00
10. Hospitals	\$282.00

Source: Local Employment Dynamics (LED) program

# Oklahoma employment by location

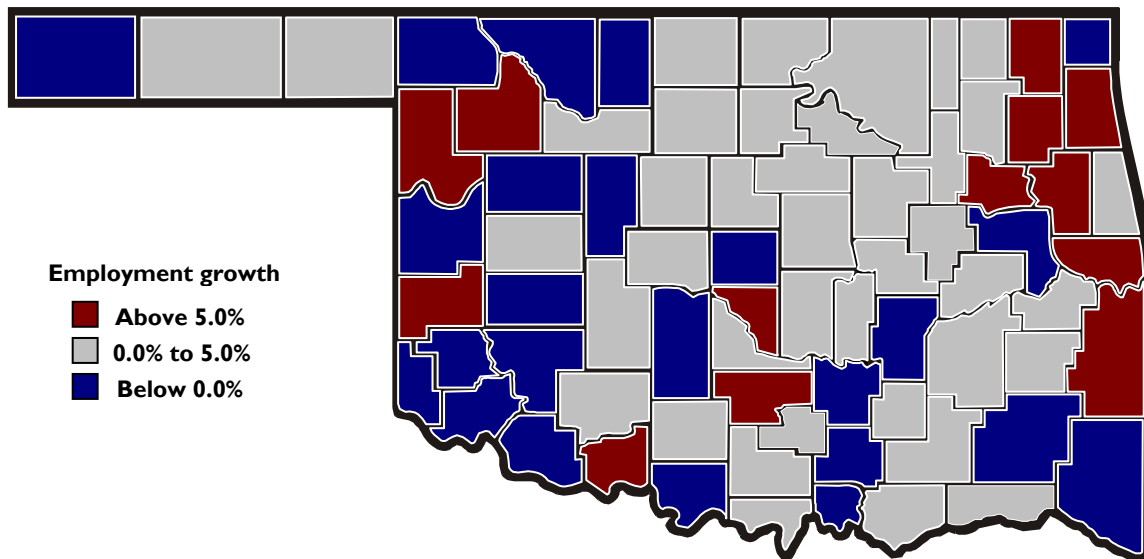
More than two-thirds of Oklahoma’s 77 counties experienced job growth in 2007. In terms of the number of jobs added, **Tulsa County** reported the most growth with an addition of 4,598 jobs.

**Cleveland County** was right behind with an addition of 4,316 jobs for the period, and **Payne County** was third on the list with a gain of 1,682 jobs. Many of the counties that reported the most jobs added for the period were located in the northeastern and north central parts of the state.

**Pontotoc County** claimed the largest employment loss of 556. Of the 24 counties that shed jobs over the period, one-quarter were in southeastern Oklahoma. More than half were in the northwestern and southwestern parts of the state.

**Cotton County**, in southwestern Oklahoma, reported the state’s highest growth rate of 29.3 percent for 2007. **Beckham County**, another county in the western part of the state, reported the second highest rate of 10.2 percent. Six of the 13 counties that reported growth rates above 5.0 percent were located in the northeastern part of the state, including **Wagoner County**, the county with the third highest job growth rate. The counties that experienced no change or a negative growth rate for the period were spread throughout the northwestern, southeastern and southwestern parts of the state. **Hughes County**, in southeastern Oklahoma, reported the lowest growth rate of -9.6 percent in 2007.

**CHART 4: Employment growth rate by county (2007)**



Source: Quarterly Census of Employment & Wages (QCEW) 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.

When looking at the data, 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.

Only one major group, **farming, fishing & forestry occupations**, managed to outpace the U.S. average median wage, topping it by more than 8 percent.

Other major groups to average at least 90 percent of U.S. median wages were **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; computer & mathematical occupations; legal occupations; arts, design, entertainment, sports & media occupations; and healthcare practitioner & technical occupations.**

**TABLE 7: Median wage by occupational group, Oklahoma & United States (2007)**

Major occupational group	Median Wage		Okla. as % of U.S.
	Okla.	U.S.	
Management occupations	\$28.98	\$40.60	71.4%
Business & financial operations occupations	\$21.85	\$26.87	81.3%
Computer & mathematical occupations	\$23.67	\$33.21	71.3%
Architecture & engineering occupations	\$28.76	\$31.14	92.4%
Life, physical & social science occupations	\$21.85	\$26.59	82.2%
Community & social services occupations	\$15.19	\$17.87	85.0%
Legal occupations	\$24.27	\$33.54	72.4%
Education, training & library occupations	\$16.44	\$20.47	80.3%
Arts, design, entertainment, sports & media occupations	\$14.07	\$19.28	73.0%
Healthcare practitioners & technical occupations	\$20.50	\$26.17	78.3%
Healthcare support occupations	\$9.67	\$11.45	84.5%
Protective service occupations	\$13.56	\$16.11	84.2%
Food preparation & serving related occupations	\$7.10	\$8.24	86.2%
Building & grounds cleaning & maintenance occupations	\$8.66	\$10.18	85.1%
Personal care & service occupations	\$8.04	\$9.50	84.6%
Sales & related occupations	\$9.49	\$11.41	83.2%
Office & administrative support occupations	\$11.82	\$13.91	85.0%
Farming, fishing & forestry occupations	\$9.68	\$8.94	108.3%
Construction & extraction occupations	\$14.46	\$17.57	82.3%
Installation, maintenance & repair occupations	\$16.46	\$18.04	91.2%
Production occupations	\$12.57	\$13.53	92.9%
Transportation & material moving occupations	\$11.83	\$12.65	93.5%

Source: Bureau of Labor Statistics, Occupational Employment Statistics (OES) program

# 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 2006, more than seven out of every 10 job openings did not require postsecondary education or training. 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.

More than one-third of Oklahoma job openings required **short-term on-the-job training** in 2006, while more than one out of every five job openings needed **moderate-term on-the-job training**. When combined, these two categories accounted for more than half of all jobs in 2006.

Just over 10 percent of job openings asked for a **bachelor's degree**, and only 0.6 percent required a **doctoral degree**.

## Education & training requirements

Education and training requirements can be divided into 11 categories.

### Postsecondary awards

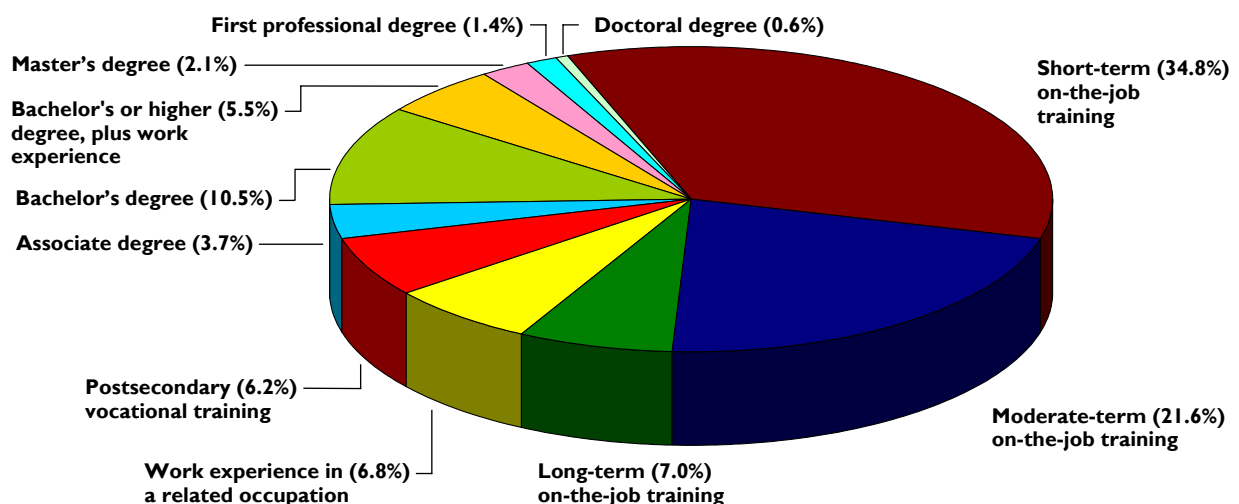
- **First professional degree**
- **Doctoral degree**
- **Master's degree**
- **Bachelor's or higher degree, plus work experience**
- **Bachelor's degree**
- **Associate degree**
- **Postsecondary vocational award**

### 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**

For more information on education and training requirements, visit <http://www.bls.gov/emp/>.

**CHART 5: Minimum education & training requirements for Oklahoma jobs, 2006**



Source: OESC Economic Research & Analysis, Oklahoma Employment Outlook 2016

# WORKFORCE SUPPLY: TODAY

## Oklahoma’s population: density and location

Out of the seven states in the region, Oklahoma ranked right in the middle of the group in terms of population at 3,617,316 residents in 2007. Texas was the largest regional state by far, and New Mexico ranked last for population.

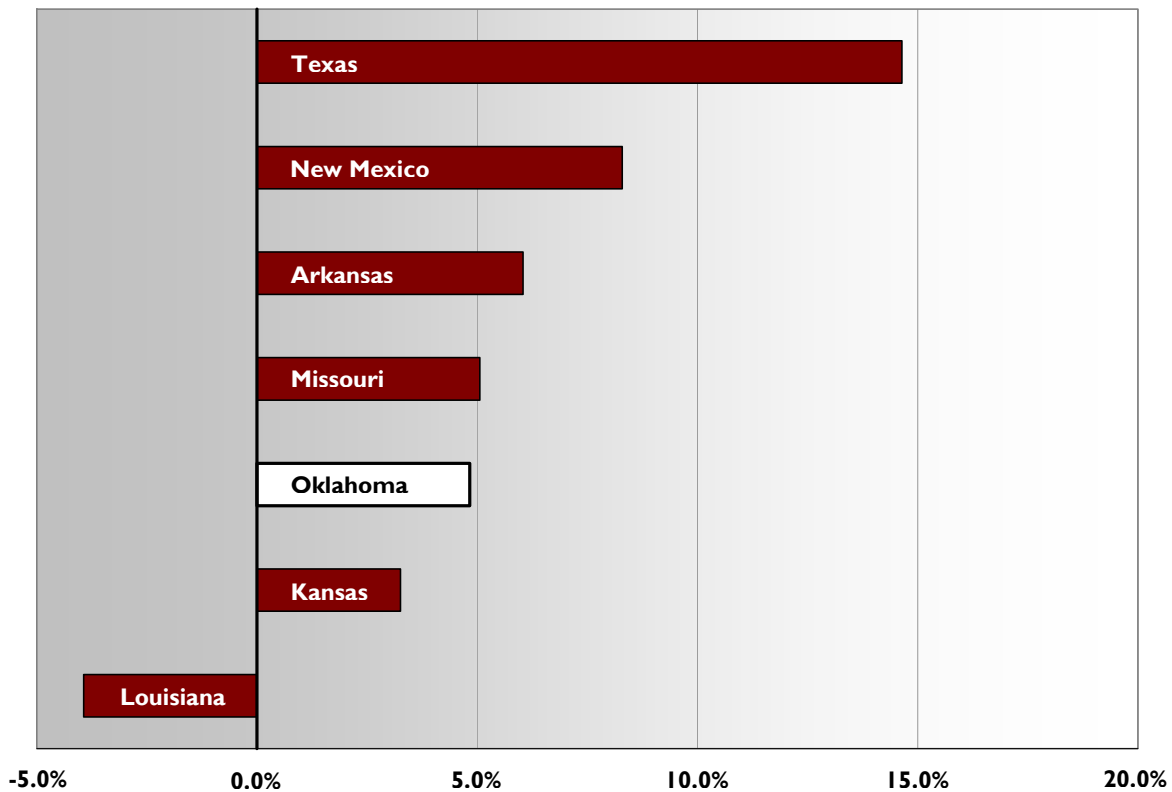
From 2000 to 2007, Oklahoma’s population grew by 4.8 percent, or 166,662 persons. This means the state posted the fifth highest population growth rate in the region between 2000 and 2007. Again, Texas led the region. Louisiana was the only regional state to report a drop in population. Over the same period, the U.S. population growth rate was 7.2 percent.

### Comparisons to regional states

When looking at Oklahoma’s workforce supply, it is useful to compare the state 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.

Workforce data for each of these states can be found at <http://www.bls.gov>.

**CHART 6: Population change, Oklahoma & regional states (2000-2007)**



Source: United States Census Bureau

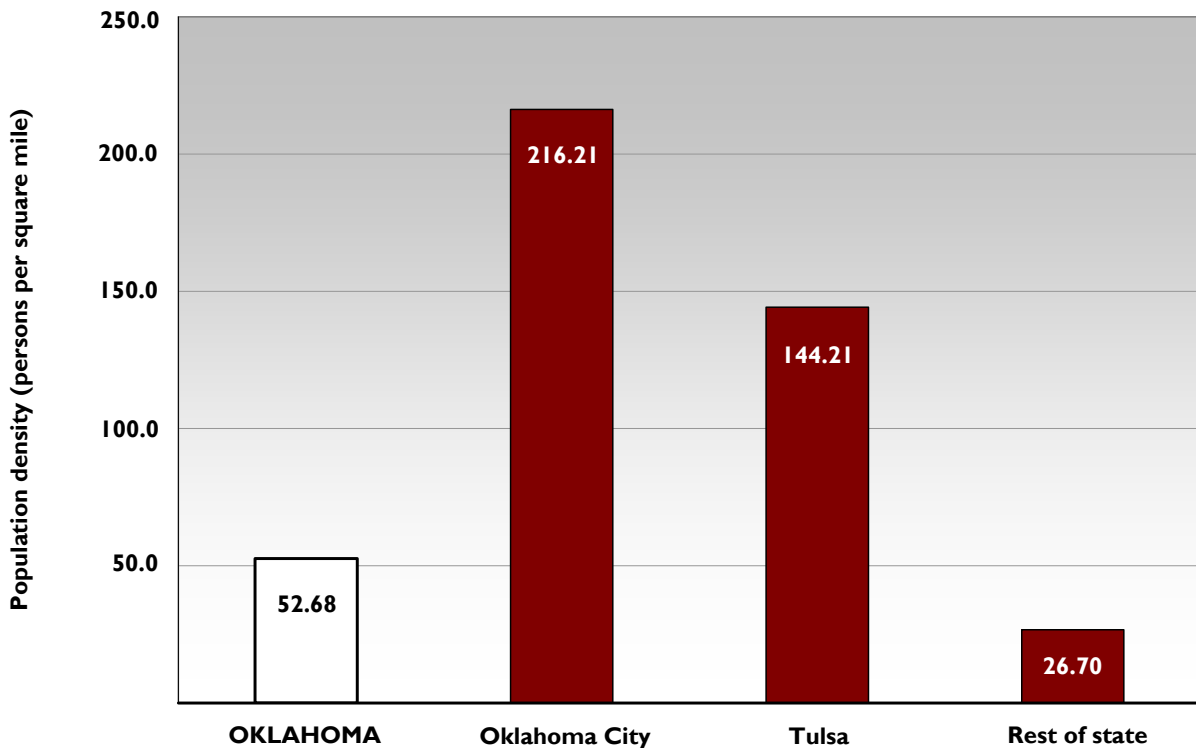


One measure that can be used to assess an area is population density. Population density is the population per unit area. Commonly represented as persons per square mile, population density can be an important factor for business and marketing planning by helping determine how many consumers and workers 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 of seven states in the region at 52.68 persons per square mile. Louisiana has the highest population density in the region, while New Mexico has the lowest.

**CHART 7: Population density, Oklahoma & sub-state regions (2007)**



Source: United States Census Bureau

For the state, it is apparent that much of Oklahoma’s population resides in one of the state’s two metropolitan statistical areas (MSAs). In fact, when combined, the Oklahoma City and Tulsa MSAs are home to more than 58 percent of Oklahomans. In 2007, the Oklahoma City MSA

reported a population density of 216.21 persons per square mile. The population density for the Tulsa MSA was 144.21 persons per square mile in 2007. The rest of the state averaged 26.70 persons per square mile for the year.

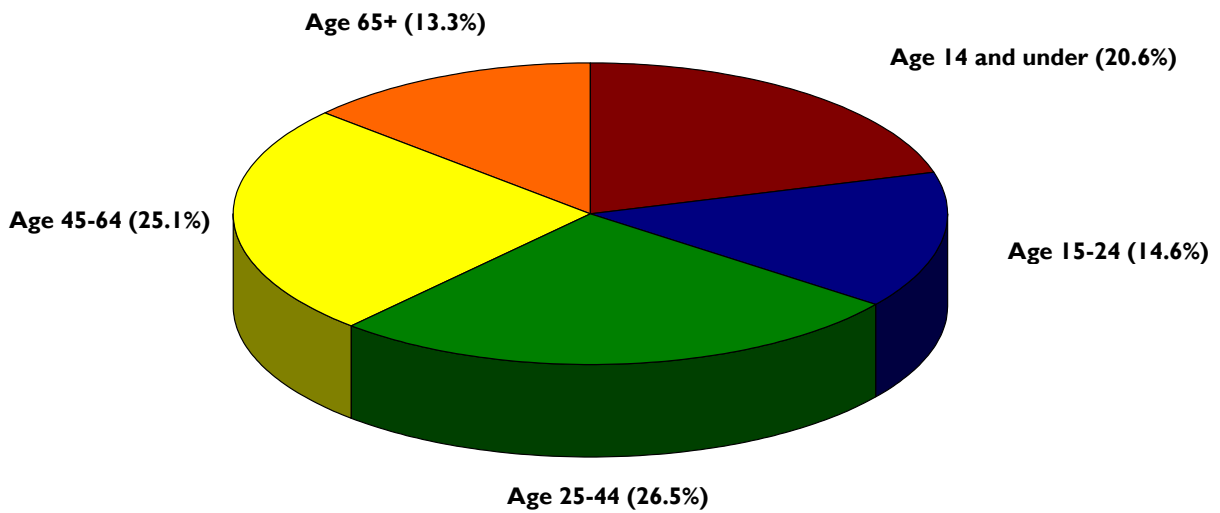
# Oklahoma's population: age demographics

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 the data for Oklahoma, populations have been divided into five age groups in Chart 8: **age 14 and under**, **age**

**15-24**, **age 25-44**, **age 45-64**, and **age 65+**.

In 2007, more than half of Oklahoma's population fell 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**.

**CHART 8: Oklahomans by age group (2007)**



Source: United States Census Bureau, American Fact Finder

## 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. For 2007, nearly 3.5 million Oklahomans, almost 96 percent of the population, were classified as **One race (not Hispanic or Latino)**. Just over 4 percent of Oklahoma's population fell 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 claimed the highest number of individuals described as **American Indian or Alaska Native alone** in 2007, the state is second in the region to New Mexico for percentage of population that falls into this group. The percentage of Oklahomans classified in the **White alone, Black or African American alone, Asian alone, and Hispanic or Latino (of any race)** categories were all below the percentages recorded for the U.S. as a whole in 2007.

**TABLE 8: Population by race & ethnicity, Oklahoma & U.S. (2007)**

Population group	Oklahoma		United States	
	Population	Pct.	Population	Pct.
<b>TOTAL POPULATION</b>	3,617,316	100.0%	301,621,157	100.0%
<b>One race (not Hispanic or Latino)</b>	3,472,291	96.0%	296,765,021	98.4%
White alone	2,833,428	78.3%	241,166,890	80.0%
Black or African American alone	286,849	7.9%	38,756,452	12.9%
American Indian & Alaska Native alone	285,764	7.9%	2,938,436	1.0%
Asian alone	62,597	1.7%	13,366,154	4.4%
Native Hawaiian & other Pacific Islander alone	3,653	0.1%	537,089	0.2%
<b>Two or more races (not Hispanic or Latino)</b>	145,025	4.0%	4,856,136	1.6%
<b>Hispanic or Latino (of any race)</b>	261,635	7.2%	45,504,311	15.1%

Source: United States Census Bureau, 2006 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 9 compares the educational attainment of Oklahomans age 25 and over with that for regional states and the U.S using data for 2006.

Oklahoma was third in the region, and above the national average, for percent of **population age 25 and over with a high school diploma** in 2006 at 84.3 percent. This includes those who have passed equivalency exams.

When looking at percent of **population age 25 and over with a bachelor degree**, Oklahoma ranked fourth in the region at 14.9 percent despite having more residents fall into this group (344,470) than the top state of the list, Kansas (331,537).

Oklahoma ranked fifth among the regional states for percent of **population age 25 and over with a graduate or professional degree**.

**TABLE 9: Population age 25 & over by educational attainment, Oklahoma, U.S. & regional states (2006)**

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.
United States	195,932,824	164,686,729	84.1%	33,496,187	17.1%	19,394,708	9.9%
Oklahoma	2,312,121	1,948,913	84.3%	344,470	14.9%	167,513	7.2%
Arkansas	1,847,325	1,487,276	80.5%	221,233	12.0%	115,390	6.3%
Kansas	1,771,185	1,567,107	88.5%	331,537	18.7%	174,324	9.8%
Louisiana	2,734,518	2,170,679	79.4%	367,069	13.4%	186,994	6.8%
Missouri	3,849,275	3,264,470	84.8%	599,937	15.6%	333,573	8.7%
New Mexico	1,239,433	1,009,923	81.5%	179,016	14.4%	134,810	10.9%
Texas	14,551,694	11,434,599	78.6%	2,424,828	16.7%	1,170,693	8.1%

Source: United States Census Bureau, 2006 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 10 compares median occupational wages for the major occupational groups between regional states. Oklahoma ranked highest in **installation, maintenance & repair occupations**, placing third in the region. The state reported the lowest median wages in the region for seven occupational groups, including **management occupations, computer & mathematical occupations, and healthcare practitioner & technical occupations**.

### What is a mean hourly wage?

The mean hourly wage of an occupational group is the estimated total hourly wages of an occupation divided by its estimated employment, i.e. the average hourly wage.

For more information on wages, visit <http://www.bls.gov/OES/>.

**TABLE 10: Mean hourly wages by occupational group, Oklahoma & regional states (2007)**

Major occupational group	Okla.	Ark.	Kan.	La.	Mo.	NM	Texas
Management	\$34.01	\$36.05	\$39.77	\$36.54	\$43.94	\$37.68	\$44.87
Business & financial operations	\$24.02	\$23.46	\$26.82	\$23.22	\$26.80	\$27.15	\$29.14
Computer & mathematical	\$25.48	\$26.14	\$29.99	\$26.15	\$30.48	\$32.67	\$34.06
Architecture & engineering	\$30.36	\$28.19	\$30.86	\$28.59	\$31.40	\$32.94	\$33.98
Life, physical & social science	\$25.08	\$24.58	\$26.21	\$26.46	\$25.65	\$35.53	\$29.57
Community & social services	\$16.20	\$15.58	\$16.84	\$17.98	\$17.62	\$17.24	\$19.06
Legal	\$34.42	\$30.10	\$32.28	\$34.79	\$36.62	\$29.08	\$39.99
Education, training & library	\$17.12	\$18.43	\$17.99	\$18.49	\$20.50	\$20.77	\$20.50
Art, design, entertainment, sports & media	\$17.18	\$17.07	\$16.80	\$17.79	\$20.99	\$19.67	\$20.45
Healthcare practitioners & technical	\$25.97	\$26.45	\$28.09	\$26.23	\$27.37	\$30.41	\$29.70
Healthcare support	\$10.53	\$10.17	\$11.22	\$9.54	\$11.07	\$11.30	\$10.97
Protective service	\$15.62	\$14.45	\$16.89	\$14.23	\$16.08	\$15.63	\$16.94
Food preparation & serving related	\$7.82	\$8.10	\$8.24	\$8.08	\$8.82	\$8.07	\$8.30
Building, grounds cleaning, maintenance	\$9.44	\$9.61	\$10.48	\$9.05	\$10.78	\$9.61	\$9.36
Personal care & service	\$8.84	\$8.77	\$9.75	\$9.44	\$10.19	\$9.37	\$9.17
Sales & related	\$13.49	\$13.33	\$15.88	\$13.56	\$15.78	\$13.14	\$15.92
Office & administrative support	\$12.93	\$12.66	\$13.59	\$12.65	\$14.28	\$13.09	\$14.13
Farming, fishing & forestry	\$10.87	\$13.13	\$13.98	\$13.36	\$11.64	\$7.94	\$9.70
Construction & extraction	\$16.04	\$15.28	\$18.09	\$16.94	\$21.08	\$15.96	\$15.18
Installation, maintenance & repair	\$17.70	\$16.49	\$18.71	\$17.20	\$18.40	\$17.18	\$17.28
Production	\$13.94	\$13.09	\$15.03	\$16.59	\$14.66	\$15.10	\$14.11
Transportation & material moving	\$13.54	\$13.87	\$14.38	\$13.92	\$14.92	\$13.89	\$13.91

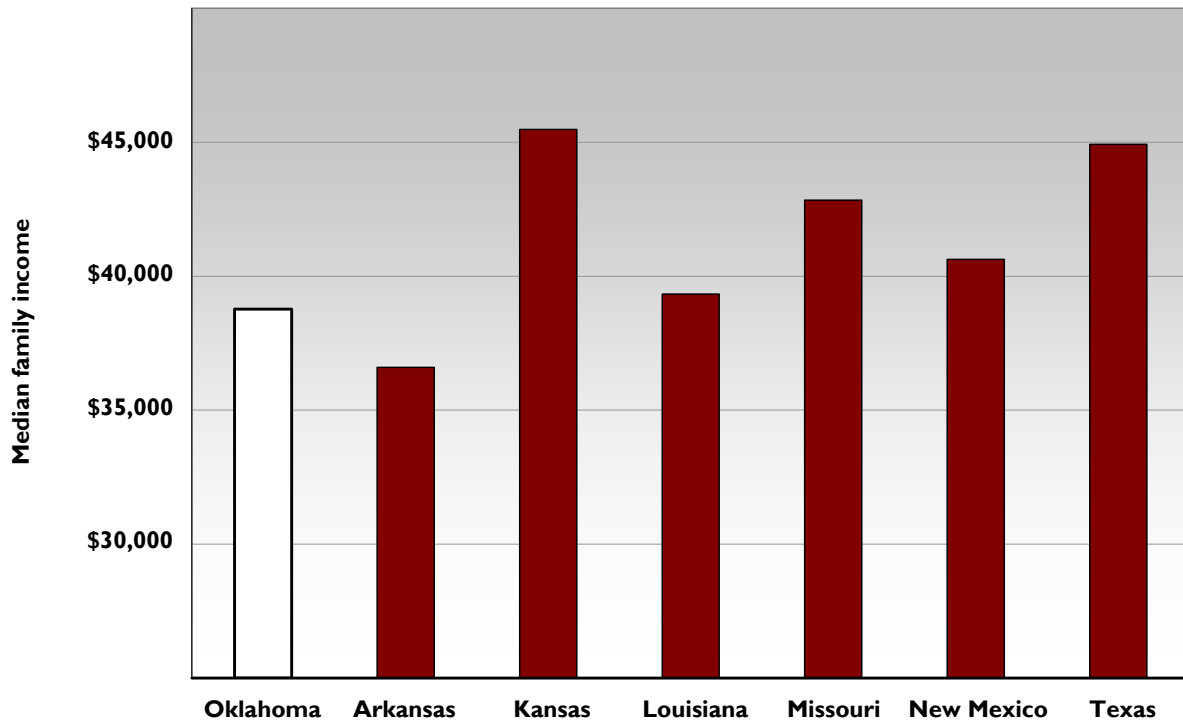
Source: Bureau of Labor Statistics, May 2007 National and State Occupational Employment and Wage Estimates

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 sixth out of seven states in the region with a median family income of \$38,770. All regional states were below the median family income for the United States as a whole.

**CHART 9: Median family income, Oklahoma & regional states (2006)**



Source: United States Census Bureau, 2006 American Community Survey

# WORKFORCE DEMAND: TOMORROW

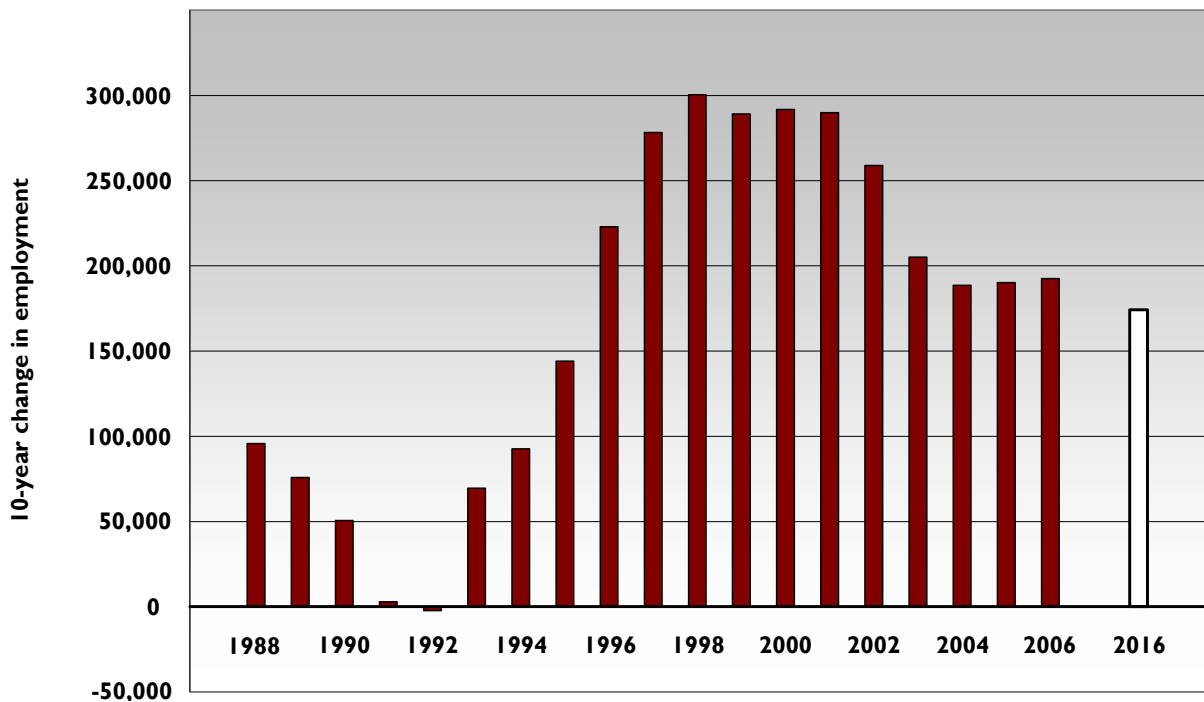
## Predictions for Oklahoma’s economy

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 10 shows Oklahoma’s non-farm employment change over a 10-year span. Starting with the period ending in 1988, it presents data through 2006 and includes the employment projection for the 2006-to-2016 period. The forecast calls for Oklahoma to add nearly 175,000 jobs between 2006 and 2016, an increase of more than 10 percent. These gains will be less than the change of the 1996-to-2006 time period, when the state added just over 192,000 jobs. It should be noted that this period covered the economic recession that began in 2001.

**CHART 10: 10-year employment growth, Oklahoma (1988-2006 and 2016 projection)**



Source: Current Employment Statistics (CES) program

## Oklahoma future employment by industry

Oklahoma is projected to add 174,240 jobs during the 2006-to-2016 period. The three supersectors expected to account for most of the state's job growth are **educational & health services**, **professional & business services**, and **leisure & hospitality**. When combined, these three supersectors will account for 59.6 percent of all job growth between 2006 and 2016.

The **educational & health services** supersector is expected to add more than 48,000 jobs during the projection period. **Educational services** will produce 18,580 new jobs, while **health services** will add 29,690 jobs. The **health services** growth was spread across all four of its

component industries (**ambulatory health care services, hospitals, nursing & residential care facilities, and social assistance**). This growth is the result of the gradually aging population and its increased future health care needs coupled with advances in new technologies that increase life expectancies.

**Professional & business services** is projected to gain more than 34,000 jobs between 2006 and 2016. This large gain will result in a growth rate of more than 19 percent, the highest among all supersectors. The **professional, scientific & technical services** and **administrative & support services** industries will provide the

**TABLE II: Oklahoma industrial employment (2006-2016)**

Major industrial group	Employment		Change		Share	
	2006	2016	Jobs	Pct.	2006	2016
<b>Total employment</b>	1,687,270	1,861,510	174,240	10.3%	100.0%	100.0%
<b>SE &amp; UFW, primary job</b>	115,600	123,160	7,560	6.5%	6.9%	6.6%
<b>Natural resources &amp; mining</b>	74,520	80,190	5,670	7.6%	4.4%	4.3%
<b>Construction</b>	70,410	81,540	11,130	15.8%	4.2%	4.4%
<b>Manufacturing</b>	149,300	148,570	-730	-0.5%	8.9%	8.0%
<b>Trade, transportation &amp; utilities</b>	284,030	299,970	15,940	5.6%	16.8%	16.1%
<b>Information</b>	29,810	31,880	2,070	6.9%	1.8%	1.7%
<b>Financial activities</b>	83,700	91,180	7,480	8.9%	5.0%	4.9%
<b>Professional &amp; business services</b>	175,930	209,940	34,010	19.3%	10.4%	11.3%
<b>Educational &amp; health services</b>	340,430	388,700	48,270	14.2%	20.2%	20.9%
<b>Leisure &amp; hospitality</b>	137,110	158,660	21,550	15.7%	8.1%	8.5%
<b>Other services (except government)</b>	62,590	68,170	5,580	8.9%	3.7%	3.7%
<b>Government</b>	163,840	179,550	15,710	9.6%	9.7%	9.7%

Source: OESC Economic Research & Analysis, Oklahoma Employment Outlook 2016

growth during the period, as **management of companies & enterprises** sheds jobs. The catalyst for this growth will be business demand for computer networks, technological solutions to business challenges and a variety of employment services to address complex business issues.

**Leisure & hospitality** is expected to grow by more than 21,000 jobs during the 2006-to-2016 period. 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. Amusement, gambling & recreation industries** will contribute much of the rest of the expansion in **leisure & hospitality**. The continued growth of tribal casinos and resorts is expected to be a driving force for this sector.

Although **trade, transportation & utilities** is expected to add the fourth largest total of new jobs, the supersector's growth rate is below the state's projected overall job growth rate of 10.3 percent. Movement in **retail trade** will provide more than half of the growth, driven mostly by job gains in **general merchandise stores**. **Wholesale trade** industries will contribute 3,900 jobs of the growth, with **transportation & warehousing** making up the remaining 3,800 jobs. The factor that will most affect this sector is technological innovation, such as electronic data exchange to help track product information, radio frequency identification that streamlines distribution, and electronic commerce options.

**Government** employment is expected to grow by more than 15,000 jobs between 2006 and 2016. **Local government, excluding education & hospitals** will account for 12,550 new jobs during the period. Growth in state government and local government will be driven by public education demands and the increasing need to augment community, health and protective services once provided to a greater degree by the federal government.

**Construction** will expand at a faster rate than the overall job market, growing by 11,130 jobs, or 15.8 percent, between 2006 and 2016. Although all of its industries will expand over the period, **specialty trade contractors** is expected to provide a majority of the job growth. Projects that will help drive growth include building nursing homes, medical treatment facilities and schools.

**Financial activities** is expected to expand by nearly 9 percent for the period. Although all industries will add jobs, **credit intermediation & related activities** and **rental & leasing services** will be the leaders.

**Natural resources & mining** will grow by more than 5,600 jobs, or 7.6 percent, during the projection period. Employment gains will be due almost entirely to **support activities for mining**, an industry that will add more than 4,500 jobs between 2006 and 2016. This growth will be due to Oklahoma's strong oil and natural gas industry.

**Other services (except government)** will add more than 5,500 jobs during the forecast period, a gain of nearly 9 percent. More than 40 percent of the growth will come from the **repair & maintenance** industry. The only industry losing jobs for the forecast period will be **private households**.

**Information** is expected to expand the least between 2006 and 2016. This supersector will grow by just over 2,000 jobs. **Information's** dominant industry, **telecommunications**, is expected to contribute more than 1,800 jobs.

The only supersector expected to lose jobs over the forecast period is **manufacturing**, which will contract by 730 jobs between 2006 and 2016, a loss of less than 0.5 percent. This small loss, however, is not representative of the changes taking place within **manufacturing**. While a large number of jobs will be lost from industries such as **printing & related support activities**, other industries, like **food manufacturing**, will post solid growth between 2006 and 2016. The overall outlook for **manufacturing** is continuing demand-driven growth coupled with productivity-led employment declines.

## Oklahoma industries adding the most jobs

Between 2006 and 2016, the 10 industries reporting the largest number of jobs gained will account for nearly 70 percent of all jobs added. The industry expected to add the most jobs is **administrative & support services**. This industry will expand by more than 19,000 jobs during the period.

**Administrative & support services** includes areas such as **employment services, business support services** and **services to buildings**.

Next on the list is **educational services**, an industry expected to expand by more than 18,500 jobs during the period. Factors affecting this industry

will be an increased number of jobs at post-secondary and professional schools, added emphasis on structured activities for children, and educational reforms. Following closely behind with an addition of 16,160 jobs will be the **food services & drinking places** industry.

**Professional, scientific & technical services** will expand by 14,470 jobs, and **local government, excluding education & hospitals** will add more than 12,500 jobs. **Specialty trade contractors** is the only goods-producing industry in the 10 industries adding the most jobs for 2006-to-2016.

**TABLE 12: 10 industries adding the most jobs, Oklahoma (2006-2016)**

Industry	Employment		Change	
	2006	2016	Jobs	Pct.
Administrative & support services	98,740	117,760	19,010	19.3%
Educational services	157,250	175,830	18,580	11.8%
Food services & drinking places	110,340	126,500	16,160	14.6%
Professional, scientific & technical services	61,450	75,910	14,470	23.5%
Local government, excluding education & hospitals	79,840	92,390	12,550	15.7%
Specialty trade contractors	43,820	52,410	8,590	19.6%
Hospitals	63,490	71,890	8,400	13.2%
Self-employed workers, primary job	113,700	121,580	7,880	6.9%
Ambulatory health care services	61,200	68,900	7,700	12.6%
Nursing & residential care facilities	34,370	41,880	7,510	21.8%

Source: OESC Economic Research & Analysis, Oklahoma Employment Outlook 2016

Of the top 10 industries to add the most jobs, three are classified as **health services** industries: **hospitals, ambulatory health care, and nursing & residential care facilities**. These industries will account for 23,610 new jobs between 2006 and

2016. When combined with **educational services**, the other component of the **educational & health services** supersector, these industries will provide nearly one-quarter of the jobs gained over the projection period.

# Oklahoma’s fastest growing industries

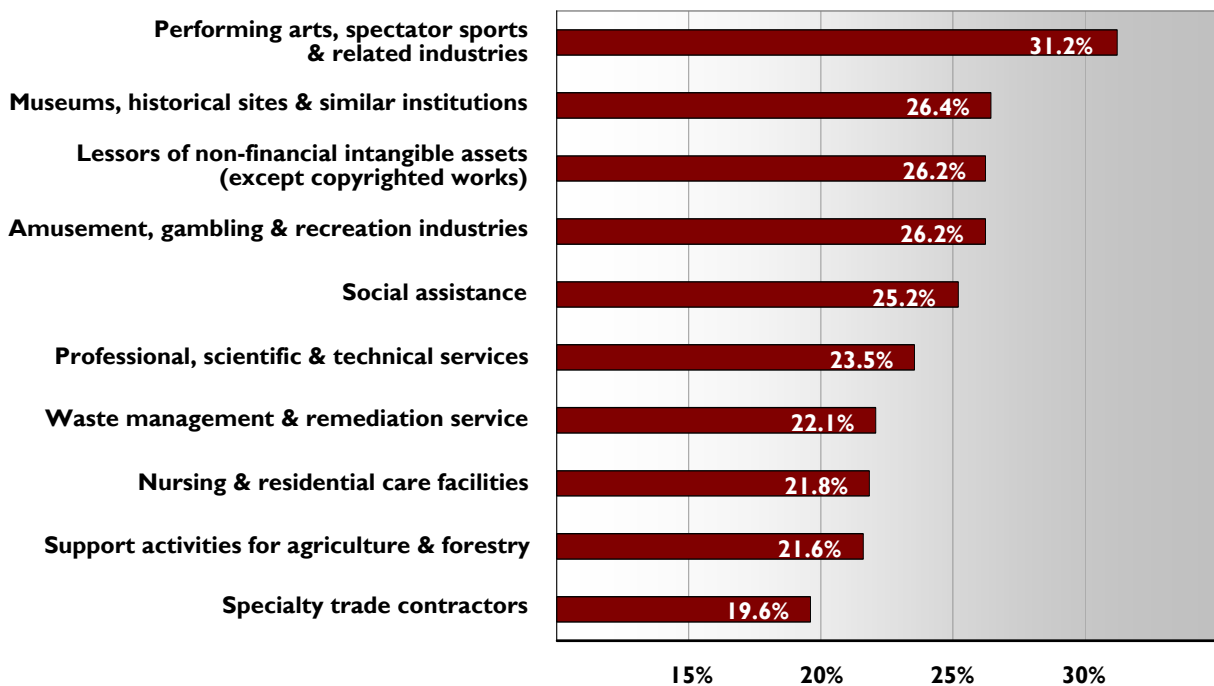
When looking at industrial growth rates, it is important to remember that they fall into one of two general categories. The first contains industries with a small number of jobs. Any growth in this type of industry will appear significant. The other category is composed of larger industries. Because 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.

Three of the four industries with the highest

growth rates are recreation-related industries: **performing arts, spectator sports & related industries; museums, historical sites & similar institutions; and amusement, gambling & recreational industries.**

Other smaller industries in the 10 industries with the fastest growth rates include **lessors of nonfinancial intangible assets (except copyrighted works), waste management & remediation services, and support activities for agriculture & forestry.**

**CHART 11: 10 industries with the fastest growth rates, Oklahoma (2006-2016)**



Source: OESC Economic Research & Analysis, Oklahoma Employment Outlook 2016

Three of the industries with the fastest growth also made the list of 10 industries adding the most jobs: **professional, scientific & technical services, nursing & residential care facilities, and specialty trade contractors.** All three of these industries fall into the large industry category and,

when combined, are the source of more than 70 percent of the new jobs provided by the 10 fastest growing industries. The fourth large industry on the list, **social assistance**, is expected to grow the fastest among the larger industries.

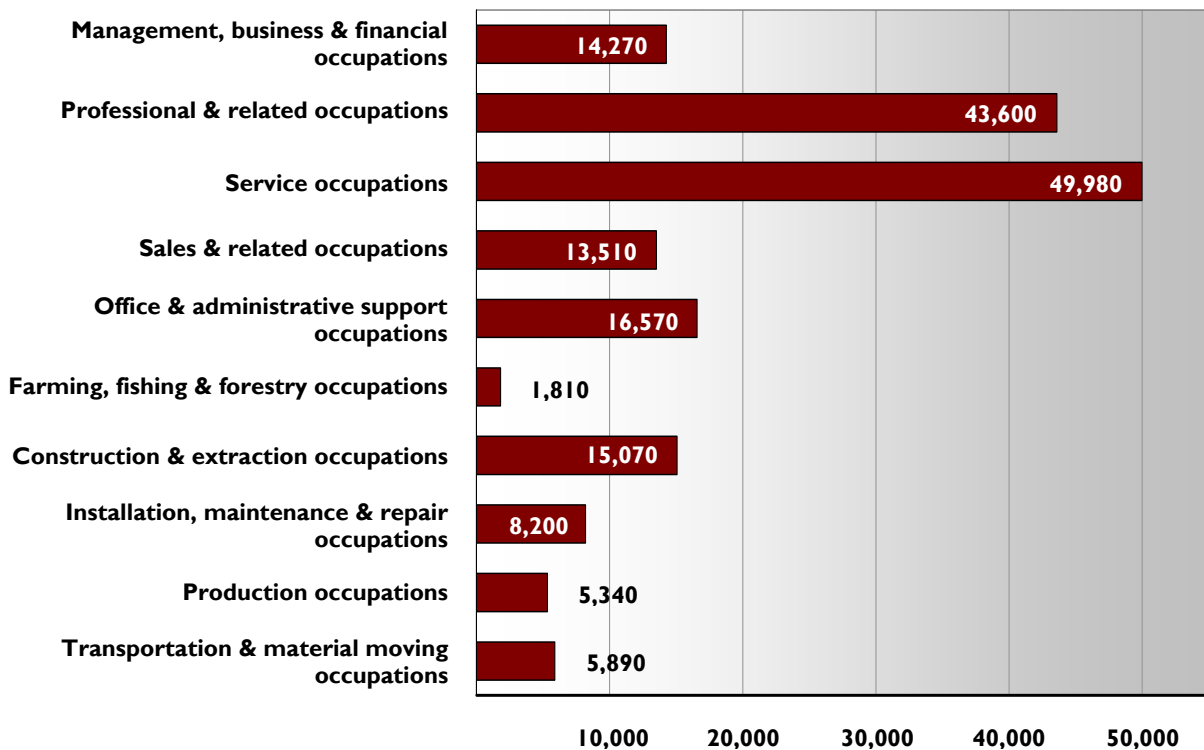
# Oklahoma’s future employment by occupation

Turning to occupational employment, Oklahoma is expected to continue growing during the projection period. Two major occupational divisions, **service occupations** and **professional & related occupations**, are expected to provide more than half of all jobs gained over the forecast period. These two divisions will also be the source of more than two out of every five jobs added each year between 2006 and 2016.

The **service occupations** group is expected to add nearly 50,000 new jobs during the projection period, the most of any major occupational division. The division is also expected to post the highest growth rate and add the most jobs each year among the major occupational divisions.

Following right behind will be **professional & related occupations**. This major division is

**CHART 12: Change in employment by occupational group, Oklahoma (2006-2016)**



Source: OESC Economic Research & Analysis, Oklahoma Employment Outlook 2016

expected to post a similar job gain and growth rate as **service occupations**, but will provide nearly 1,900 fewer jobs per year on average. Growth in these two groups will be driven by factors associated with an aging population in Oklahoma.

Three other occupational groups are expected to report moderate growth: **sales & related occupations**, **office & administrative support occupations**, and **construction & extraction occupations**.

## Oklahoma occupations adding the most jobs

From 2006 to 2016, the 30 occupations adding the most jobs per year will represent nearly 40 percent of total employment and provide an average of more than two out of every five job openings each year. **Retail Salespersons** and **Cashiers**, two **sales & related occupations**, will provide the most job openings per year between 2006 and 2016,

averaging 2,160 jobs per year and 2,020 jobs per year, respectively. Although **sales & related occupations** claimed the top two spots on the list, **service occupations** contributed eight of the top 30 demand occupations, followed by **office & administrative support occupations** (7) and **professional & related occupations** (6).

**TABLE 13: Occupations adding the most jobs per year, Oklahoma (2006-2016)**

Occupation	Employment			Avg. annual openings
	2006	2016	Growth	
Retail salespersons	49,560	55,900	12.8%	2,160
Cashiers	41,960	42,170	0.5%	2,020
Waiters & waitresses	27,610	31,470	14.0%	1,890
Customer service representatives	23,590	29,370	24.5%	1,240
Combined food preparation & serving, including fast food	27,120	32,970	21.6%	1,100
Office clerks, general	37,370	41,130	10.1%	1,070
Registered nurses	25,680	30,890	20.3%	950
Laborers & freight, stock & material movers, hand	25,320	25,610	1.2%	840
Postsecondary teachers	19,540	23,810	21.9%	760
Janitors & cleaners, except maids & housekeeping cleaners	24,950	27,630	10.7%	750
Truck drivers, heavy & tractor-trailer	24,740	27,660	11.8%	740
Bookkeeping, accounting & auditing clerks	27,030	29,890	10.6%	710
General & operations managers	28,510	28,710	0.7%	710
Elementary school teachers, except special education	16,710	19,480	16.6%	650
Personal & home care aides	11,070	15,320	38.4%	620
Cooks, fast food	14,950	16,750	12.0%	590
Child care workers	13,180	15,090	14.5%	570
Nursing aides, orderlies & attendants	20,440	24,010	17.5%	540
Accountants & auditors	16,410	18,760	14.3%	530
Executive secretaries & administrative assistants	19,480	21,480	10.3%	510
Farmworkers & laborers, crop, nursery & greenhouse	16,050	17,080	6.4%	510
First-line supervisors/managers of retail sales workers	17,500	18,850	7.7%	510
Team assemblers	18,340	19,440	6.0%	500
Licensed practical & licensed vocational nurses	13,600	14,710	8.2%	490
Tellers	8,340	9,500	13.9%	480

Source: OESC Economic Research & Analysis, Oklahoma Employment Outlook 2016

## Oklahoma's fastest growing occupations

Oklahoma employment is expected to grow by more than 10 percent between 2006 and 2016. The 30 occupations predicted to grow at the fastest rates during the period all more than double this growth rate. **Professional & related occupations** are expected to make up nearly half of the 30 occupations with the fastest growth rates between

2006 and 2016. **Service occupations** will provide 10 of the remaining occupations on the list. Two of the top three fastest growing occupations are related to veterinary medicine. Three more are concerned with the information technology field, while four others work in the gaming industry.

**TABLE 14: Occupations with fastest growth rates, Oklahoma (2006-2016)**

Occupation	Employment			Avg. annual openings
	2006	2016	Growth	
Veterinary technologists & technicians	620	940	51.6%	60
Network systems & data communications analysts	2,090	3,090	47.9%	150
Veterinarians	800	1,140	42.5%	50
Computer software engineers, applications	2,180	3,030	39.0%	120
Personal & home care aides	11,070	15,320	38.4%	620
Gaming surveillance officers & gaming investigators	330	450	36.4%	20
Gaming & sports book writers & runners	510	680	33.3%	30
Home health aides	7,510	10,000	33.2%	320
Pharmacy technicians	3,690	4,890	32.5%	240
Forensic science technicians	130	170	30.8%	10
Gaming supervisors	390	510	30.8%	20
Gaming dealers	750	980	30.7%	40
Slaughterers & meat packers	2,160	2,810	30.1%	140
Criminal justice & law enforcement teachers, postsecondary	100	130	30.0%	10
Surveyors	470	610	29.8%	30
Library science teachers, postsecondary	70	90	28.6%	10
Industrial engineers	1,440	1,840	27.8%	80
Security & fire alarm systems installers	1,030	1,310	27.2%	50
Manicurists & pedicurists	150	190	26.7%	10
Correctional officers & jailers	5,510	6,970	26.5%	280
Sales representatives, services, all other	3,610	4,560	26.3%	180
Biochemists & biophysicists	230	290	26.1%	20
Computer systems analysts	3,650	4,570	25.2%	190
Political science teachers, postsecondary	160	200	25.0%	10
Animal trainers	520	650	25.0%	30

Source: OESC Economic Research & Analysis, Oklahoma Employment Outlook 2016

## Education & training requirements for future employment in Oklahoma

In 2006, more than 70 percent of job openings did not require postsecondary education. These openings required only **work experience in a related field** or **on-the-job training**. By 2016, this number is expected to drop slightly to just below 70 percent. All activities necessary to do the jobs that require on-the-job training can be learned while working in the occupation.

This movement means that the share of job openings requiring some level of postsecondary education or training will increase from just below to just above 30 percent of all job openings. Of the 30 occupations requiring some level of postsecondary education or training with the fastest growth rates, 26 are classified as **professional & related** occupations.

**TABLE 15: Employment by education & training requirements, Oklahoma (2006-2016)**

Education & training requirement	Employment		Distribution		Change	
	2006	2016	2006	2016	Number	Pct.
<b>TOTAL, all occupations</b>	1,687,270	1,861,510	100.0%	100.0%	174,240	10.3%
<b>Short-term on-the-job training</b>	587,520	640,550	34.8%	34.4%	53,030	9.0%
<b>Moderate-term on-the-job training</b>	363,800	398,090	21.6%	21.4%	34,290	9.4%
<b>Long-term on-the-job training</b>	117,780	132,590	7.0%	7.1%	14,810	12.6%
<b>Work experience in a related occupation</b>	114,180	123,870	6.8%	6.7%	9,690	8.5%
<b>Postsecondary vocational training</b>	105,320	117,840	6.2%	6.3%	12,520	11.9%
<b>Associate degree</b>	62,090	72,630	3.7%	3.9%	10,540	17.0%
<b>Bachelor's degree</b>	176,320	200,450	10.5%	10.8%	24,130	13.7%
<b>Bachelor's degree or higher, plus work experience</b>	92,190	97,600	5.5%	5.2%	5,410	5.9%
<b>Master's degree</b>	35,080	40,310	2.1%	2.2%	5,230	14.9%
<b>First professional degree</b>	22,940	25,450	1.4%	1.4%	2,510	10.9%
<b>Doctoral degree</b>	10,100	12,180	0.6%	0.7%	2,080	20.6%

Source: OESC Economic Research & Analysis, Oklahoma Employment Outlook 2016

