U.S. and Oklahoma Economic Update

Council of Petroleum Accountants Societies
September 19, 2019

Chad Wilkerson
Vice President and Oklahoma City Branch Executive

*The views expressed herein are those of the presenter only and do not necessarily reflect the views of the Federal Reserve Bank of Kansas City or the Federal Reserve System.
The “Fed” consists of three main entities:

- Board of Governors: 7 members appointed by U.S. President
- Federal Reserve Banks: 12 total; semi-independent by design
- Federal Open Market Committee: 19 members; 12 voting

Primary responsibility areas:

- Monetary policy
- Bank regulation
- Financial services
The Oklahoma City Branch of the Federal Reserve Bank of Kansas City

• **Functions and purposes ~ 45 staff**
  - Research on U.S. and Oklahoma economies; energy sector and business survey focus
  - Examinations of Oklahoma financial institutions (~45 banks, ~175 holding cos.)
  - Community development programming for low and moderate income groups, workforce focus
  - Economic education and public outreach programming

• **2019 OKC Fed Branch Board of Directors**
  - **Clint Abernathy** (chair), Owner, Abernathy Farms, Inc., Altus
  - **Susan Chapman Plumb**, Chair & CEO, Bank of Cherokee County, Tahlequah
  - **Walt Duncan**, President, Duncan Oil Properties, Oklahoma City
  - **Tina Patel**, Co-Owner & CFO, Promise Hotels, Tulsa
  - **Chris Turner**, President & CFO, First State Bank, Oklahoma City
  - **Katrina Washington**, Owner/Broker, Stratos Realty, Oklahoma City
  - **Dana Weber**, Chair & CEO, Webco Industries, Sand Springs
The Federal Reserve’s Role in Monetary Policy

- **Dual Mandate from U.S. Congress:**
  1) Maximum employment
  2) Price stability

- **Federal Open Market Committee (FOMC):**

  **Board of Governors**
  - Jerome H. Powell, Chairman
  - Richard H. Clarida, Vice Chairman
  - Randal K. Quarles, Vice Chairman of Supervision
  - Lael Brainard
  - Michelle W. Bowman
  - Open
  - Open

  **Reserve Bank Presidents**
  - John C. Williams, New York, Vice Chairman
  - James Bullard, St. Louis
  - Charles L. Evans, Chicago
  - Esther L. George, Kansas City
  - Eric Rosengren, Boston
  - Patrick T. Harker, Philadelphia
  - Robert S. Kaplan, Dallas
  - Neel Kashkari, Minneapolis
  - Loretta J. Mester, Cleveland
  - Thomas I. Barkin, Richmond
  - Raphael W. Bostic, Atlanta
  - Mary C. Daly, San Francisco

*Permanent voters in bold; 2019 rotating voters in red; 2020 rotating voters in blue*
U.S. Economic Outlook and Monetary Policy
Sept. FOMC: “household spending has been…strong… business fixed investment and exports have weakened.”

Contributions to Percent Change in Real GDP

Percent change from the previous period, SAAR

<table>
<thead>
<tr>
<th>Component</th>
<th>Q3 2018</th>
<th>Q4 2018</th>
<th>Q1 2019</th>
<th>Q2 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total GDP</td>
<td>2.9</td>
<td>3.1</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>Consumer spending</td>
<td>1.1</td>
<td>1.4</td>
<td>1.1</td>
<td>4.3</td>
</tr>
<tr>
<td>Residential investment</td>
<td>-4.0</td>
<td>-4.7</td>
<td>-1.5</td>
<td>-1.5</td>
</tr>
<tr>
<td>Business investment</td>
<td>2.1</td>
<td>4.8</td>
<td>4.4</td>
<td>1.5</td>
</tr>
<tr>
<td>Exports</td>
<td>1.5</td>
<td>4.1</td>
<td>3.5</td>
<td>0.1</td>
</tr>
<tr>
<td>Imports</td>
<td>8.6</td>
<td>2.1</td>
<td>-1.5</td>
<td>2.9</td>
</tr>
<tr>
<td>Government spending</td>
<td>-5.2</td>
<td>-6.2</td>
<td>-0.4</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Source: U.S. Bureau of Economic Analysis
Sept. FOMC: “The labor market remains strong and...the unemployment rate has remained low.”

U.S. Unemployment Rate

- Current (Aug. 2019): 3.7%
- Sept FOMC Forecast

Sources: U.S. Bureau of Labor Statistics, FOMC
Sept. FOMC: “Overall inflation and inflation for items other than food and energy are running below 2%”

**PCE Inflation Index**

- Current Overall PCE (July 2019): 1.4%
- Current Core PCE (July 2019): 1.5%

Sources: U.S. Bureau of Labor Statistics, FOMC
Sept. FOMC: “In light of...global developments...muted inflation ...the [FOMC] decided to lower the...rate.”
From September 18, 2019 FOMC Statement

“In light of the implications of global developments for the economic outlook as well as muted inflation pressures, the Committee decided to lower the target range for the federal funds rate to 1-3/4 to 2 percent. This action supports the Committee's view that sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective are the most likely outcomes, but uncertainties about this outlook remain…

“Voting against the action were James Bullard, who preferred at this meeting to lower the target range for the federal funds rate to 1-1/2 to 1-3/4 percent; and Esther L. George and Eric S. Rosengren, who preferred to maintain the target range at 2 percent to 2-1/4 percent.”
Oklahoma Economic Outlook
The pace of Oklahoma job growth has slowed in 2019 and has now mostly lagged the nation since 2015.

Nonfarm Payroll Employment Growth

Percent change, year-over-year

Sources: U.S. Bureau of Labor Statistics, NBER recession shading
New claims for unemployment insurance in Oklahoma recently returned to 2015-2016 levels, before dipping...
State sales tax growth also eased in early 2019 but picked back up in the metros so far in Q3

Oklahoma and Metro Sales Tax Revenues

Percent change, year-over-year

Note: Q3 2019 tax data shown through August 2019.
The slower state job growth recently has been driven mainly by job losses in energy and manufacturing.
In agriculture, incomes have continued to decline, but by less than in recent years, and land values have held.
Oil and gas’s share of Oklahoma’s economy remains high in terms of GDP and income, less so in jobs.
Oklahoma’s rig count has dropped this year, and regional energy firms expect further slowing ahead.
Volatile and marginally profitable oil prices, plus low natural gas prices, have contributed to slower activity.

Sources: EIA, Federal Reserve Bank of Kansas City Energy Survey
Global supply and demand for oil appears aligned, but is being held together in part from Chinese demand.
Even with fewer Oklahoma rigs and workers this year, oil and gas production in the state continues to rise.

**Oklahoma Oil & Gas Rig Count, Employment, and Production**

Index May-90=100

- **Rig Count**
- **Employment**
- **Production (BOE/day)**

**Note:** Employment is for total mining and logging, which in Oklahoma is almost completely oil and gas related. Production is shown as a 3-month moving average.

**Sources:** Baker Hughes, U.S. Energy Information Administration.
Past industries with rapid productivity gains generally shed jobs the following decade, even as output rose.

Change in output, investment, and employment 10 years after productivity surge

Sources: U.S. Census Bureau, Bureau Economic Analysis, Bureau of Labor Statistics/Haver Analytics, Author's calculations.
Despite slower state and metro economic growth recently, unemployment remains exceptionally low.
Looking at longer-term trends, more people have been leaving Oklahoma than moving into the state.

U.S. vs. Oklahoma population growth, 1970-2018

Oklahoma population changes by component, 2003-2018*

Note: Annual BEA population data used through 2017, Census population data used for the most recent year.

Sources: Bureau of Economic Analysis, Census Bureau/Haver Analytics, Population and Housing Unit Estimates – Census Bureau and authors’ calculations
Large metro migration improved slightly in 2018, while outflows from western Oklahoma have been sizable.
Oklahomans with a bachelor’s degree or more are mostly moving to Texas, especially Dallas-Fort Worth.

States Gaining the Most Oklahomans with a Bachelor's or More on Net

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of People</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-2007</td>
<td>10,000</td>
</tr>
<tr>
<td>2013-2017</td>
<td>12,000</td>
</tr>
</tbody>
</table>

Net Migration of Oklahomans with a Bachelor's or More to Texas

- Dallas-Fort Worth MSA
- All Other Texas
- Total Oklahomans With Bachelor’s Degree or More Moving to Texas

Note: Metro area timeseries data was harmonized in IPUMS using the 2013 OMB delineations.

Sources: U.S. Census Bureau ACS 1-year sample Public Use Microdata, IPUMS-USA, authors' calculations.
Consequence: Educational attainment is growing less
Silver lining?: People keep coming, just more have left

Educational Attainment as the Share of Population Over 25 with a Bachelor’s or More

Oklahoma Domestic Migration Flows of Those with a Bachelor’s or More

Sources: U.S. Census Bureau ACS 5-year estimates, ACS 1-year sample Public Use Microdata, IPUMS-USA, authors’ calculations.
In addition, despite outmigration and slower overall growth, some industries in the state have thrived

Oklahoma Industries Adding the Most Jobs, 2013-2018

<table>
<thead>
<tr>
<th>Rank</th>
<th>Industries Adding the Most Jobs</th>
<th>OK Empl. Change</th>
<th>OK Empl. % Change</th>
<th>U.S. Empl. % Change</th>
<th>OK Empl. Share 2018</th>
<th>Location Quotient 2013</th>
<th>Location Quotient 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Restaurants</td>
<td>14,359</td>
<td>12%</td>
<td>14%</td>
<td>8.1%</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td>2</td>
<td>Warehousing and storage</td>
<td>8,148</td>
<td>153%</td>
<td>61%</td>
<td>0.8%</td>
<td>0.7</td>
<td>1.1</td>
</tr>
<tr>
<td>3</td>
<td>Aerospace product and parts manufacturing</td>
<td>6,314</td>
<td>94%</td>
<td>1%</td>
<td>0.8%</td>
<td>1.2</td>
<td>2.4</td>
</tr>
<tr>
<td>4</td>
<td>Gambling industries*</td>
<td>3,729</td>
<td>21%</td>
<td>-13%</td>
<td>1.3%</td>
<td>11.1</td>
<td>16.4</td>
</tr>
<tr>
<td>5</td>
<td>Executive, legislative and general government*</td>
<td>3,439</td>
<td>12%</td>
<td>3%</td>
<td>2.0%</td>
<td>0.9</td>
<td>1.1</td>
</tr>
<tr>
<td>6</td>
<td>Outpatient care centers</td>
<td>3,074</td>
<td>48%</td>
<td>37%</td>
<td>0.6%</td>
<td>0.8</td>
<td>0.9</td>
</tr>
<tr>
<td>7</td>
<td>Building equipment contractors</td>
<td>3,019</td>
<td>14%</td>
<td>24%</td>
<td>1.6%</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td>8</td>
<td>Management of companies and enterprises</td>
<td>2,647</td>
<td>16%</td>
<td>13%</td>
<td>1.2%</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>9</td>
<td>Other amusement and recreation industries</td>
<td>2,324</td>
<td>25%</td>
<td>18%</td>
<td>0.7%</td>
<td>0.7</td>
<td>0.8</td>
</tr>
<tr>
<td>10</td>
<td>Utility system construction</td>
<td>2,321</td>
<td>23%</td>
<td>24%</td>
<td>0.8%</td>
<td>1.9</td>
<td>2.1</td>
</tr>
<tr>
<td>11</td>
<td>Computer systems design and related services</td>
<td>2,018</td>
<td>27%</td>
<td>25%</td>
<td>0.6%</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>12</td>
<td>Accounting and bookkeeping services</td>
<td>2,011</td>
<td>15%</td>
<td>8%</td>
<td>1.0%</td>
<td>1.2</td>
<td>1.4</td>
</tr>
<tr>
<td>13</td>
<td>Offices of other health practitioners</td>
<td>2,008</td>
<td>26%</td>
<td>23%</td>
<td>0.6%</td>
<td>0.9</td>
<td>1.0</td>
</tr>
<tr>
<td>14</td>
<td>Other ambulatory health care services</td>
<td>1,908</td>
<td>50%</td>
<td>14%</td>
<td>0.4%</td>
<td>1.2</td>
<td>1.7</td>
</tr>
<tr>
<td>15</td>
<td>Gasoline stations</td>
<td>1,764</td>
<td>11%</td>
<td>8%</td>
<td>1.1%</td>
<td>1.6</td>
<td>1.7</td>
</tr>
<tr>
<td>16</td>
<td>Insurance agencies and brokerages</td>
<td>1,521</td>
<td>15%</td>
<td>24%</td>
<td>0.7%</td>
<td>0.9</td>
<td>0.9</td>
</tr>
</tbody>
</table>

* Local Government Sector
Note: Only includes industries with data disclosed for both 2013 and 2018.
Sources: Bureau of Labor Statistics QCEW data and authors' calculations.
While none of the rapidly growing industries pay as much as energy, several are well above average average.

## Average Annual Oklahoma Wage by Industry

<table>
<thead>
<tr>
<th>Rank</th>
<th>Industries Losing the Most Jobs</th>
<th>Avg. Wage 2018</th>
<th>Rank</th>
<th>Industries Adding the Most Jobs</th>
<th>Avg. Wage 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Oil and gas extraction</td>
<td>$147,766</td>
<td>1</td>
<td>Restaurants</td>
<td>$15,786</td>
</tr>
<tr>
<td>2</td>
<td>Home health care services</td>
<td>$32,481</td>
<td>2</td>
<td>Warehousing and storage</td>
<td>$34,694</td>
</tr>
<tr>
<td>3</td>
<td>Business support services</td>
<td>$39,355</td>
<td>3</td>
<td>Aerospace product and parts manufacturing</td>
<td>$88,464</td>
</tr>
<tr>
<td>4</td>
<td>Misc. nondurable goods merchant wholesalers</td>
<td>$42,324</td>
<td>4</td>
<td>Gambling industries*</td>
<td>$36,163</td>
</tr>
<tr>
<td>5</td>
<td>Elementary and secondary schools*</td>
<td>$34,945</td>
<td>5</td>
<td>Executive, legislative and general government*</td>
<td>$40,084</td>
</tr>
<tr>
<td>6</td>
<td>Other general purpose machinery manufacturing</td>
<td>$70,912</td>
<td>6</td>
<td>Outpatient care centers</td>
<td>$51,703</td>
</tr>
<tr>
<td>7</td>
<td>Administration of human resource programs**</td>
<td>$42,911</td>
<td>7</td>
<td>Building equipment contractors</td>
<td>$52,590</td>
</tr>
<tr>
<td>8</td>
<td>Ag., construction, and mining machinery mfg.</td>
<td>$63,401</td>
<td>8</td>
<td>Management of companies and enterprises</td>
<td>$83,511</td>
</tr>
<tr>
<td>9</td>
<td>General medical and surgical hospitals*</td>
<td>$53,762</td>
<td>9</td>
<td>Other amusement and recreation industries</td>
<td>$16,771</td>
</tr>
<tr>
<td>10</td>
<td>Electronic markets and agents and brokers</td>
<td>$53,306</td>
<td>10</td>
<td>Utility system construction</td>
<td>$62,951</td>
</tr>
<tr>
<td>11</td>
<td>Newspaper, book, and directory publishers</td>
<td>$48,003</td>
<td>11</td>
<td>Computer systems design and related services</td>
<td>$75,516</td>
</tr>
<tr>
<td>12</td>
<td>Insurance carriers</td>
<td>$72,697</td>
<td>12</td>
<td>Accounting and bookkeeping services</td>
<td>$61,444</td>
</tr>
<tr>
<td>13</td>
<td>Wired and wireless telecommunications carriers</td>
<td>$69,340</td>
<td>13</td>
<td>Offices of other health practitioners</td>
<td>$40,019</td>
</tr>
<tr>
<td>14</td>
<td>Automotive equipment rental and leasing</td>
<td>$40,087</td>
<td>14</td>
<td>Other ambulatory health care services</td>
<td>$35,579</td>
</tr>
<tr>
<td>15</td>
<td>Colleges and universities</td>
<td>$45,504</td>
<td>15</td>
<td>Gasoline stations</td>
<td>$24,566</td>
</tr>
<tr>
<td>16</td>
<td>Clothing stores</td>
<td>$16,164</td>
<td>16</td>
<td>Insurance agencies and brokerages</td>
<td>$57,848</td>
</tr>
</tbody>
</table>

* Local Government Sector  
** State Government Sector  
Note: Only includes industries with data disclosed for both 2013 and 2018. 
Sources: Bureau of Labor Statistics QCEW data and authors' calculations.
Summary

• The national economy continues to grow, with low unemployment, but business investment has slowed

• Oklahoma job growth has slowed in 2019, as lower oil and gas prices hurt, but unemployment remains very low

• A longer-term trend worth watching is the state’s switch in net domestic migration flows in recent years, as more highly educated Oklahomans have been moving out

• At the same time, though, some industries in the state continue to thrive, many of which pay good wages
Questions?

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