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SPECIAL REPORT:
Analysis of Oklahoma Mining UI Claimants: Post-Downturn Employment and Earnings Changes

Oklahoma’s mining industry has historically been linked to the overall health of the state’s economy. In regard to this link, pertinent questions often ask are in the nature of: ‘what actually happened to mining workers’ employment and their earnings after the most recent cyclic mining downturn?’ This analysis addresses many of these questions by identifying 4,481 Unemployment Insurance (UI) individual claimants filing in the economic downturn during the 1st quarter of 2015, and by tracing their employment and earnings histories over the succeeding six quarters. Pre-downturn mining earnings were also researched for a comparison with post earnings. This special report highlights and summarizes the findings of the original report.

The analysis of the mining UI claimants’ employment over the succeeding six quarters found that the largest minority of claimants did not work in any of the six quarters, the second-largest minority worked all six quarters and the third-largest minority worked five quarters, and the fourth-largest minority worked one of the six quarters. Table 1, below, illustrates this distribution.

<table>
<thead>
<tr>
<th>Number of Quarters</th>
<th>Number of Claimants</th>
<th>Percent of Claimants</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1,472</td>
<td>32.8</td>
</tr>
<tr>
<td>1</td>
<td>485</td>
<td>10.8</td>
</tr>
<tr>
<td>2</td>
<td>375</td>
<td>8.4</td>
</tr>
<tr>
<td>3</td>
<td>357</td>
<td>8.0</td>
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<td>4</td>
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<td>5</td>
<td>559</td>
<td>12.5</td>
</tr>
<tr>
<td>6</td>
<td>843</td>
<td>18.8</td>
</tr>
<tr>
<td>Total</td>
<td>4,481</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Note: Mining industry unemployment insurance claimants were determined by their having filed in 1st quarter 2015, the initial quarter of mining’s downturn.

The largest minority of mining UI claimants worked at one job and one industry. However, in five of the six quarters over 5 percent of the mining UI claimants worked at two or more jobs and over 4 percent worked in two or more industries. In all six of the post-downturn quarters, the largest number of employed claimants worked in mining. In four of the post-downturn quarters the second-largest numbers of those employed worked in NAICS 23 Construction, followed by a third-largest number working in NAICS 56 Administrative and Support and Waste Management and Remediation Services, with the fourth-largest number of working UI claimants employed in ‘Mixed Industries without Mining’. The two exceptions to this order were the 1st and 3rd post-downturn quarters, in which the rank order of second through fourth places were rearranged or tied for the latter three industry categories. If more specific and detailed information is desired about the NAICS 2-digit industries in which the mining claimants worked, during each of the six
quarters, this is provided in the complete online published report, which also provides this information by number of quarters actually worked.

Other interesting findings appeared when mining UI claimants’ earnings, identified for six industry categories, were evaluated and compared to past mining earnings in each of the six subsequent quarters and by number of quarters worked. In each of the six quarters, the claimants all had earnings declines. However, the mining claimants employed in the ‘Mining Only’ industry category had the least median earnings declines in four of the six quarters. The quarters where this industry category was not the lowest were the 2nd and 4th quarters of 2015, when ‘Mixed Industries with Mining’ had the smallest median earnings decline. In a similar fashion, in five of the six post-downturn quarters, the one industry category of ‘Mixed Industries without Mining’ also had the largest median earnings declines. An exception to this was the 2nd quarter of 2015 when ‘Mining Only’ had the highest median earnings decline.

Similar and interesting findings appeared when examined by number of quarters worked. In three through six quarters worked, the ‘Mining Only’ again had the lowest median earnings decline. However, of the mining UI claimants that worked one through two quarters, those working in other industry categories had the lower median earnings decline.

Likely, the most interesting findings of this analysis were revealed when an analysis for a typical mining UI claimant employment and earnings was completed. The employment portion this analysis is provided in Table 6 below.

| Table 6. History of Mining UI Claimants After 2nd Quarter 2015 (3rd Quarter 2015 through 3rd Quarter 2016) |
|--------------------------------------------------|-----------------|-----------------|
| Possibilities                                    | Number of Claimants | Percent of Claimants |
| Mining claimants remaining in mining in 3rd quarter 2015 | 426              | 45.2            |
| Mining claimants remaining in mining in 4th quarter 2015 | 333              | 35.4            |
| Mining claimants remaining in mining in 1st quarter 2016 | 253              | 26.9            |
| Mining claimants remaining in mining in 2nd quarter 2016 | 194              | 20.6            |
| Mining claimants remaining in mining in 3rd quarter 2016 | 166              | 17.6            |
| Mining claimants who left mining after 2nd quarter 2015, but eventually returned | 111              | 11.8            |
| Mining claimants who left mining after 2nd quarter 2015, and only worked in other industries | 88               | 9.3             |
| Mining claimants who left mining after 2nd quarter 2015, and did not work afterward | 239              | 25.4            |
| Mining claimants who left mining after 2nd quarter 2015 and never returned to mining again | 405              | 43.0            |
| Total†                                             | 942              |                 |

Note1: Total of Mining unemployment insurance claimants who worked in mining in 2015 2nd Quarter is 942.
Note2: The percent of the 4,481 original mining UI claimants who worked in mining in 2015 2nd Quarter is 21.0% (942), another 20.1% (935) worked in other industries, with 58.2% (2,608) unemployed (see Table 4).
Note3: Percentages do not add to 100.0% due to overlapping categories.

Using and combining the information in Table 6, Table 1 and other tables in the report, the typical mining UI applicant was not employed in the 2nd quarter of 2015 (1,873 cases). However, if he or she was employed, they most likely worked in mining (942 cases). In the 3rd quarter of 2015, if the mining applicants remained working, they again most likely worked in mining (426 cases). After these two quarters of mining employment, the claimant likely left mining (405 cases), working in other industries in some quarters, working in multiple industries and perhaps two or more jobs in other quarters and not employed in part of the quarters during
the four remaining quarters. By the 3rd quarter of 2016, most employed mining claimants worked in other industries (1,432 total cases).

When the latter quarter percentile earnings of these mining UI claimants working in other industries was compared with their ‘Past Mining’ earnings, their median earnings of $7,953, showed a 48.6 percent decline from ‘Past Mining’ earnings.

More Information
A full copy of After the Downturn: An Analysis of Oklahoma Mining UI Claimants Post 1st Quarter 2015, Employment and Earnings is available on the OESC website at:

Definition & Importance

Gross Domestic Product (GDP)—the output of goods and services produced by labor and property located in the United States—is the broadest measure of economic activity. It is also the measure that is most indicative of whether the economy is in recession. In the post-World War II period, there has been no recession in which GDP did not decrease in at least two quarters, (the exceptions being during the recessions of 1960-61 and 2001).

The Bureau of Economic Analysis (BEA), U.S. Department of Commerce releases GDP data on a quarterly basis, usually during the fourth week of the month. Data are for the prior quarter, so data released in April are for the 1st quarter. Each quarter’s data are revised in each of the following two months after the initial release.

Background

There are four major components to GDP:

1. **Personal consumption expenditures:** Individuals purchase durable goods (such as furniture and cars), nondurable goods (such as clothing and food) and services (such as banking, education and transportation).

2. **Investment:** Private housing purchases are classified as residential investment. Businesses invest in nonresidential structures, durable equipment and computer software. Inventories at all stages of production are counted as investment. Only inventory changes, not levels, are added to GDP.

3. **Net exports:** Equal the sum of exports less imports. Exports are the purchases by foreigners of goods and services produced in the United States. Imports represent domestic purchases of foreign-produced goods and services and are deducted from the calculation of GDP.

4. **Government:** Government purchases of goods and services are the compensation of government employees and purchases from businesses and abroad. Data show the portion attributed to consumption and investment. Government outlays for transfer payments or interest payments are not included in GDP.
The four major categories of GDP—personal consumption expenditures, investment, net exports and government—all reveal important information about the economy and should be monitored separately. This allows one to determine the strengths and weaknesses of the economy.

**Current Developments**

U.S. economic growth in the 2nd quarter was more robust than first thought, as stronger consumer spending pushed growth to its fastest pace in two years. Real gross domestic product (GDP) increased at an annual rate of 3.0 percent in the 2nd quarter of 2017, according to the "second" estimate released by the Bureau of Economic Analysis (BEA). In the 1st quarter, real GDP increased 1.2 percent.

Consumer spending, which accounts for more than two-thirds of U.S. economic activity, expanded at a 3.3 percent rate, rather than the previously reported 2.8 percent, the fastest pace in a year. Spending on durable goods jumped 8.9 percent, up from 6.3 percent reported earlier. Nondurable goods outlays rose to an upwardly-revised 4.3 percent rate. Spending on services, such as health care and insurance, was up 2.1 percent. Personal consumption expenditures (PCE) added 2.28 percentage points to 2nd quarter GDP, up from 1.93 percentage points previously estimated.

Business investment in plant and equipment grew at an upwardly-revised 6.9 percent rate in the 2nd quarter as businesses outlays on equipment rose at an 8.8 percent rate, the most in nearly two years. Investment on nonresidential structures increased to a 6.2 percent pace, rather than the previously reported 4.9 percent. Nonresidential fixed investment contributed 0.85 percentage point to 2nd quarter GDP growth, rather than 0.64 percentage point reported earlier.

Businesses made modest inventory reductions in the 2nd quarter. Businesses inventory accumulation was essentially flat in the 2nd quarter. The change in private inventories added a scant 0.02 percentage point to 2nd quarter GDP growth after subtracting 1.46 percentage points in the 1st quarter.

Housing turned in its worst performance in nearly seven years, plunging to a -6.5 percent rate in the 2nd quarter, although not quite as bad as the initial estimate of -6.8 percent. Residential investment sliced 0.26 percentage point from 2nd quarter growth.

Exports rose 3.7 percent while imports, which subtract from the GDP, grew at a slower 1.6 percent pace. The narrowing trade gap added 0.21 percentage point to GDP growth in the 2nd quarter.

Government spending estimates reversed direction in the ‘second’ GDP estimate shrinking to a -0.3 percent rate, rather than expanding 0.7 percent. Federal government outlays advanced only 1.9 percent as national defense spending increased 4.7 percent and were partially offset by non-defense spending which shrank 1.9 percent. Spending by state and local governments declined 1.7 percent in the 2nd quarter instead of the previous -0.2 percent estimate. Government consumption expenditures and investment subtracted 0.3 percentage point to 2nd quarter GDP growth rather than adding 0.7 percentage point as previously reported.
Definition & Importance
The U.S. Bureau of Economic Analysis (BEA) recently released prototype statistics of quarterly gross domestic product (GDP) by state for 2005–2013. These new statistics provide a more complete picture of economic growth across states that can be used with other regional data to gain a better understanding of regional economies as they evolve from quarter to quarter. The new data provide a fuller description of the accelerations, decelerations, and turning points in economic growth at the state level, including key information about changes in the distribution of industrial infrastructure across states.

Current Developments
Growth of U.S. real gross domestic product (GDP) by state—a measure of nationwide growth calculated as the sum of GDP of all states and the District of Columbia—increased in 43 states and the District of Columbia in the 1st quarter of 2017, according to the Bureau of Economic Analysis (BEA). Real GDP by state growth ranged from 3.9 percent in Texas to -4.0 percent in Nebraska.

Real estate and rental and leasing; mining; and durable-goods manufacturing were the leading contributors to U.S. economic growth in the 1st quarter, according to the BEA. The BEA also noted that overall growth in real GDP slowed in the 1st quarter from the 4th quarter of 2016, with finance and insurance, retail trade, and agriculture, forestry, fishing, and hunting leading the deceleration in real GDP.

In the 1st quarter of 2017, Oklahoma’s real GDP expanded for a second consecutive quarter after contracting for four consecutive quarters. Oklahoma’s real GDP grew at a 1.9 percent rate in the 1st quarter of 2017, ranking the state 11th among all other states and the District of Columbia. Statewide GDP was at a level of $175.6 billion (in constant 2009 dollars) in the 1st quarter, up $809 million from 4th quarter’s revised level of $174.8 billion.
Based on overall U.S. real GDP growth by state, real estate and rental and leasing grew 2.7 percent nationally in the 1st quarter of 2017. This industry contributed to growth in 44 states and the District of Columbia including Oklahoma where it added 0.53 percentage point to the state’s real GDP growth.

Mining grew 21.6 percent nationally and contributed to growth in 48 states in the 1st quarter of 2017. In Oklahoma, mining was the leading contributor to GDP growth in the 1st quarter, adding 1.64 percentage points to statewide growth.

Durable-goods manufacturing grew 4.4 percent nationally in the 1st quarter of 2017. This industry contributed to growth in 47 states and the District of Columbia and added 0.51 percentage point to real GDP growth in Oklahoma.

Finance and insurance declined 2.1 percent nationally, subtracting from growth in 45 states and the District of Columbia. However, finance and insurance added 0.08 percentage point to 1st quarter GDP growth in Oklahoma.

Retail trade declined 3.6 percent nationally and subtracted from growth in every state in the 1st quarter of 2017. In Oklahoma, retail trade subtracted 0.50 percentage point from GDP growth.

Agriculture, forestry, fishing, and hunting declined 39.8 percent nationally. This industry subtracted from growth in 39 states and was the leading decelerator of growth in Oklahoma subtracting 1.10 percentage points from 1st quarter GDP growth in 2017.
Definition & Importance
Metropolitan Statistical Areas (MSAs) are county-based definitions developed by the Office of Management and Budget for federal statistical purposes. A metropolitan area is defined as a geographic area consisting of a large population nucleus together with adjacent communities having a high degree of economic and social integration with the nucleus.

Nationally, metropolitan statistical areas represent approximately 90 percent of total GDP. In Oklahoma, the three MSAs of Oklahoma City, Tulsa and Lawton accounted for roughly 75 percent of total state GDP in 2010.

Current Developments
Real gross domestic product (GDP) increased in 267 out of 382 metropolitan areas in 2016, according to the U.S. Bureau of Economic Analysis (BEA). Real GDP for U.S. metropolitan areas grew 1.7 percent in 2016, led by growth in professional and business services; information services; and finance, insurance, real estate, rental, and leasing.

Natural resources & mining declined 5.3 percent in 2016 and subtracted from GDP growth in 169 metropolitan areas including three of the four MSAs in Oklahoma, (Enid MSA being the exception), where this industry shaved 2.24 from statewide metropolitan area GDP growth.

In 2016, all four of Oklahoma’s metropolitan areas experienced negative growth. Tulsa MSA’s real GDP contracted at a rate of 3.3 percent to $57.5 billion and ranked 362nd (out of 382 metro areas). Oklahoma City MSA shrank 2.2 percent to $65.7 billion and ranked 354th. Enid MSA fell 1.2 percent to $3.1 billion and ranked 315th. Lawton MSA declined 0.7 percent to $4.4 billion in 2015 and ranked 304th among U.S. metro areas.
Definition & Importance
The Federal Reserve Bank of Philadelphia produces leading indexes for each of the 50 states. The indexes are calculated monthly and are usually released a week after the release of the coincident indexes. The Bank issues a release each month describing the current and future economic situation of the 50 states with special coverage of the Third District: Pennsylvania, New Jersey, and Delaware.

The leading index for each state predicts the six-month growth rate of the state's coincident index. In addition to the coincident index, the models include other variables that lead the economy: state-level residential housing permits (1 to 4 units), state initial unemployment insurance claims, delivery times from the Institute for Supply Management (ISM) manufacturing survey, and the interest rate spread between the 10-year Treasury bond and the 3-month Treasury bill.

Current Developments
Oklahoma's leading index, a six-month forecast of the state's coincident index, slipped again in August but remained in positive territory. The state's leading index dipped to 0.22 percent in August after falling to an upwardly-revised 0.98 percent in July. The index level for June was revised up to 2.33 percent from the previous estimate of 1.93 percent, according to the latest figures from the Federal Reserve Bank of Philadelphia.

From November 2015 through May 2016 Oklahoma's leading index was in negative territory for six out of seven readings. However, the state's economy has turned around. Since June 2016, the leading index has returned to positive readings for the past year. Overall, Oklahoma's leading index for August suggests expansion in the state's economy into the 1st quarter of 2018.
Definition & Importance
The Bureau of Labor Statistics Local Area Unemployment Statistics (LAUS) program produces monthly estimates of total employment and unemployment from a national survey of 60,000 households. The unemployment rate measures the percentage of people who are without work and is calculated by dividing the estimated number of unemployed people by the civilian labor force. The result expresses unemployment as a percentage of the labor force.

The unemployment rate is a lagging indicator of economic activity. During a recession many people leave the labor force entirely. As a result, the jobless rate may not increase as much as expected. This means that the jobless rate may continue to increase in the early stages of recovery because more people are returning to the labor force as they believe they will be able to find work. The civilian unemployment rate tends towards greater stability than payroll employment on a monthly basis and reveals the degree to which labor resources are utilized in the economy.

Current Developments
The U.S. unemployment rate fell to a 16-year low in September as more workers reported finding work. In September, the unemployment rate decreased by 0.2 percentage point to 4.2 percent, according to the Bureau of Labor Statistics (BLS). The labor force participation rate—the share of working-age Americans who are employed or looking for work—changed little at 63.1 percent in September.

Oklahoma’s seasonally adjusted unemployment rate increased for a second consecutive month to 4.5 percent in August. Over the year, Oklahoma’s seasonally adjusted unemployment rate has declined by 0.5 percentage point.

In August, jobless rates declined in 62 of Oklahoma’s 77 counties, increased in ten counties and were unchanged in five counties. McIntosh County had the state’s highest unemployment rate at 8.3 percent while Grant County had the lowest unemployment rate at 2.6 percent.
Definition & Importance

Initial unemployment claims are compiled weekly by the U.S. Department of Labor, Employment and Training Administration and show the number of individuals who filed for unemployment insurance benefits for the first time. This particular variable is useful because it gives a timely assessment of the overall economy.

Initial claims are a leading indicator because they point to changes in labor market conditions. An increasing trend signals that layoffs are occurring. Conversely, a decreasing trend suggests an improving labor market. The four-week moving average of initial claims smooths out weekly volatility and gives a better perspective on the underlying trend.

Current Developments

The number of Americans filing for state unemployment benefits fell in the last week of September, although the impact of Hurricanes Harvey and Irma has made it difficult to get an accurate reading. In the week ending September 30, the advance figure for seasonally adjusted initial claims was 260,000, a decrease of 12,000 from the previous week's unrevised level of 272,000, according to the Department of Labor. The less volatile 4-week moving average was 268,250, a decrease of 9,500 from the previous week's unrevised average of 277,750.

The Department of Labor also reported that Hurricanes Harvey, Irma, and Maria impacted this week's claims.

Statewide initial claims for jobless benefits fell to its lowest level in 28 years in September. For the file week ending September 23, initial claims for unemployment insurance benefits fell below 1,000 to a level of 986, down 171 from the previous week and down 354 over the month. For the same file week ending, the less volatile four-week moving average dropped 89 from the previous week to 1,383.

Oklahoma Initial Weekly Claims for Unemployment Insurance
(Not Seasonally Adjusted)

Source: U.S. Department of Labor, Employment and Training Administration

Initial Claims

NOTE: Shaded area represents National Bureau of Economic Research defined recession period.
Definition & Importance

Nonfarm payroll employment data is produced by the Current Employment Statistics (CES) program of the Bureau of Labor Statistics (BLS). The CES Survey is a monthly survey of approximately 140,000 nonfarm businesses and government agencies representing approximately 440,000 individual worksites. The CES program has provided estimates of employment, hours, and earnings data by industry for the nation as a whole, all States, and most major metropolitan areas since 1939. In order to account for the size disparity between U.S. and Oklahoma employment levels, we have indexed the data with January 2001 as the start value.

Payroll employment is one of the most current and reliable indicators of economic conditions and recessionary trends. Increases in nonfarm payrolls translate into earnings that workers will spend on goods and services in the economy. The greater the increases in employment, the faster the total economic growth.

Current Developments

U.S. employment posted its first monthly decline in seven years in September, reflecting the disruptive effects from Hurricanes Harvey and Irma. Total nonfarm payroll employment lost 33,000 jobs in September according to the Bureau of Labor Statistics (BLS). Employment in food services and drinking places dropped sharply in September (-105,000), as many workers were off payrolls due to the recent hurricanes. Health care added 23,000 jobs while transportation and warehousing increased by 22,000 in September.

Oklahoma nonfarm employment gained a seasonally-adjusted 3,900 jobs (0.2 percent) in August to a level of 1,669,000 while July’s estimate was downwardly revised to 1,665,100 (-1,900 jobs). Six of Oklahoma’s 11 supersectors added jobs over the month as Trade, Transportation, and Utilities (+1,800 jobs) posted the largest monthly gain. Government reported the largest over-the-month job loss (-600 jobs).

Oklahoma payroll employment added 19,900 jobs (1.2 percent) over the year as trade, transportation, and utilities (-6,000 jobs) also provided the largest boost.
Definition & Importance

Employment growth by industry identifies the types of jobs being created in the state. Conversely, industries with a declining employment trend indicate those which are becoming less important in the state’s economy. There may also be industries which behave more cyclically, growing during expansion and decreasing in times of economic slowdown or contraction. These changes are crucial in that they help to recognize the types of jobs being lost by individuals. Anticipating what will happen in recovery helps identify whether those jobs will return or what types of new jobs will be created. Consequently, key information for planning re-employment, retraining, and other workforce and economic development programs is contained within these data. For this analysis, we are using CES non-seasonally adjusted annual averages to compare year-over-year employment changes.

Current Developments

Statewide annual average employment growth slumped in 2016, as mounting energy and manufacturing sector layoffs weighed on overall job growth. Total nonfarm employment lost a non-seasonally adjusted 16,100 jobs for a -1.0 percent growth rate, (compared to 2015, when 11,400 jobs were added at a 0.7 percent growth rate).

In 2016, six out of Oklahoma’s 11 statewide supersectors recorded job losses. Mining & logging led all other supersectors shedding 10,400 jobs with most of the job losses occurring in support activities for mining. Manufacturing lost 8,500 jobs with the largest losses coming from machinery and fabricated metal manufacturing. Professional and business services dropped 3,600 jobs in 2016.

The largest annual average over-the-year job gains were seen in leisure & hospitality which added a non-seasonally adjusted 2,400 jobs (1.5 percent). Education & health services employment gained 2,300 jobs. Government added 2,400 jobs with most of the gains coming from local and federal government. State government employment dropped 200 jobs in 2016.
Definition & Importance
Manufacturing employment data is also produced by the Bureau of Labor Statistics’ Current Employment Statistics (CES) program. Manufacturing and production are still important parts of both the U.S. and Oklahoma economies. During the 2007-09 recession, employment in manufacturing declined sharply. Although manufacturing plunged in 2008 and early 2009 along with the rest of the economy, it is on the rebound today while other key economic sectors, such as construction, still suffer. In Oklahoma, manufacturing accounts for one of the largest shares of private output and employment in the state. In addition, many manufacturing jobs are among the highest paying jobs in the state. In order to account for the size disparity between the U.S. and Oklahoma employment levels, we have indexed the data with January 2001 as the starting value.

Current Developments
U.S. manufacturers took a break from hiring in September. Manufacturing employment lost 1,000 jobs in September, according to the Bureau of Labor Statistics (BLS). Job gains were seen in durable goods manufacturing with fabricated metal products adding 3,800 jobs and computer and electronic products gaining 3,000 jobs. The BLS also noted that from a recent employment trough in November 2016 through August of this year, the industry had added an average of 14,000 jobs per month.

Statewide manufacturing employment added a seasonally-adjusted 500 jobs (0.4 percent) in August. Employment in durable goods manufacturing expanded a non-seasonally adjusted 400 jobs led by fabricated metal product manufacturing (+200 jobs). Non-durable goods manufacturing added 100 jobs over the month.

Over the year, statewide manufacturing employment expanded a seasonally-adjusted 3,500 jobs (2.7 percent) with durable goods manufacturing providing all of the job growth.
Definition & Importance
Economists consider the Institute for Supply Management’s Purchasing Managers’ Index (PMI™) a key economic indicator. The Institute for Supply Management (ISM) surveys more than 300 manufacturing firms on employment, production, new orders, supplier deliveries, and inventories. The ISM manufacturing index is constructed so that any level at 50 or above signifies growth in the manufacturing sector. A level above 43 or so, but below 50, indicates that the U.S. economy is still growing even though the manufacturing sector is contracting. Any level below 43 indicates that the economy is in recession.

For the region, since 1994, the Creighton Economic Forecasting Group at Creighton University has conducted a monthly survey of supply managers in nine states (including Arkansas, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, Oklahoma and South Dakota), to produce leading economic indicators for the Mid-America economy using the same methodology as the national survey by the ISM.

Current Developments
U.S. factory activity, as measured by the ISM manufacturing index, jumped to a 13-year high in September, boosted by strong gains in new orders and raw material prices. The September PMI® registered 60.8 percent, an increase of 2 percentage points from the August reading of 58.8 percent and the highest reading since May 2004, according to the latest Manufacturing ISM Report On Business®. Of the 18 manufacturing industries surveyed, 17 reported growth in September.

A gauge of new orders jumped to 64.6 in September from 60.3 in August. The Employment Index registered 60.3 percent, an increase of 0.4 percentage point from the August reading of 59.9 percent. A measure of production jumped 1.2 percentage points to 62.2 percent. Factories also reported paying more for raw materials, with the survey's Prices Index surging 9.5 point to 71.5, the highest reading since May 2011.
The Creighton University Mid-America Business Conditions Index, a leading economic indicator for a nine-state region stretching from North Dakota to Arkansas, climbed to a healthy reading according to the latest monthly survey results. The Business Conditions Index, which ranges between 0 and 100, rose to 58.2 from August’s 57.5. This is the 10th straight month the index has remained above growth neutral, continuing to point to positive growth for the region over the next three to six months.

“The overall index over the past several months indicates a healthy regional manufacturing economy, and points to solid growth for both manufacturing and nonmanufacturing for the rest of 2017,” said Ernie Goss, Ph.D., director of Creighton University’s Economic Forecasting Group.

After falling below growth neutral for July, Oklahoma’s Business Conditions Index rose above the 50.0 threshold for August and September. The overall index from a monthly survey of supply managers climbed to a healthy 62.7 from 56.2 in August. Components of the overall September index from a survey of supply managers in the state were new orders at 67.8, production or sales at 71.9, delivery lead time at 61.5, inventories at 56.6, and employment at 55.4.

“Over the past 12 months, Oklahoma increased manufacturing employment by 2.8 percent, or approximately 3,600 manufacturing jobs. Contrary to the other eight states, Oklahoma’s gains were driven by the state’s durable goods manufacturers,” said Goss.
Definition & Importance

Crude oil is an important commodity in the global market. Prices fluctuate depending on supply and demand conditions in the world. Since oil is such an important part of the economy, it can also help determine the direction of inflation. In the U.S. consumer prices have moderated whenever oil prices have fallen, but have accelerated when oil prices have risen. The U.S. Energy Information Administration (EIA) provides weekly information on petroleum inventories in the U.S., whether produced here or abroad.

The Baker Hughes rig count is an important indicator for the energy industry and Oklahoma. When drilling rigs are active they consume products and services produced by the oil service industry. The active rig count acts as a leading indicator of demand for products used in drilling, completing, producing and processing hydrocarbons.

West Texas Intermediate (WTI-Cushing) is a light crude oil produced in Texas and southern Oklahoma which serves as a reference or "marker" for pricing a number of other crude streams and which is traded in the domestic spot market at Cushing, Oklahoma.

Background

Oklahoma produces a substantial amount of oil. Oklahoma ranked fifth in the nation in crude oil production in 2015 (at 163,278,000 barrels), excluding federal offshore areas. Crude oil wells and gathering pipeline systems are concentrated in central Oklahoma. Two of the 100 largest oil fields in the United States are found in Oklahoma.

The city of Cushing, in central Oklahoma, is a major crude oil trading hub connecting Gulf Coast producers to Midwest refining markets. In addition to Oklahoma crude oil, the Cushing hub receives supply from several major pipelines that originate in Texas. Traditionally, the Cushing Hub has pushed Gulf Coast and Mid-Continent crude oil supply north to Midwest refining markets. However, production from those regions is in decline, and an underused crude oil pipeline system has been reversed to deliver rapidly expanding heavy crude oil supply produced in Alberta, Canada to Cushing, where it can access Gulf Coast refining markets. For this reason,
Cushing is the designated delivery point for the New York Mercantile Exchange (NYMEX) crude oil futures contracts. Crude oil supplies from Cushing that are not delivered to the Midwest are fed to Oklahoma’s five refineries, which have a combined distillation capacity of over 500 thousand barrels per day—roughly 3 percent of the total U.S. refining capacity.

**Current Developments**

In its September *Short-Term Energy Outlook*, the U.S. Energy Information Administration (EIA) noted that while significant disruptions in the U.S. energy market have occurred in recent weeks as a result of Hurricanes Harvey and Irma it was too early to have meaningful information on the extent to which these storms will cause disruptions to the U.S. energy system.

The EIA estimates that U.S. crude oil production to have averaged 9.2 million b/d in August, down about 40,000 b/d from the July average. Crude oil production in the Gulf of Mexico fell to a monthly average of 1.6 million b/d in August, down by 70,000 b/d from the July level. Many oil production platforms in the Gulf of Mexico have returned to operation and EIA forecasts overall U.S. crude oil production will continue to grow in the coming months. EIA forecasts total U.S. crude oil production to average 9.3 million b/d for all of 2017 and 9.8 million b/d in 2018, which would mark the highest annual average production in U.S. history, surpassing the previous record of 9.6 million b/d set in 1970.

July statewide total crude production was at a level of 13,749,000 barrels (bbl), 513,000 bbl (3.9 percent) more than June’s upwardly-revised production level of 13,454,000 bbl. Over the year, statewide crude production was up 815,000 bbl from the July 2016 level of 12,934,000 bbl. Domestic benchmark crude prices improved in September as West Texas Intermediate (WTI-Cushing) began the month at $47.32/barrel (b), climbed as high as $52.14/b and settled at $51.67/b, gaining $4.35/b over the month.

The number of rigs drilling for oil and natural gas in the U.S. increased by five to 940 for the week ending September 29, 2017, according to Houston oilfield services company Baker Hughes Inc. Of that total, 750 rigs drilled for oil and 189 explored for natural gas. Compared to a year ago, the nation’s rig count increased 418 from 522 rigs reported on September 30, 2016.

Oklahoma’s rig count for the week ending August 25, 2017 was down three (3) rigs from the previous week for a total of 124 active rigs, according to Baker Hughes. Oil-directed rigs accounted for approximately 93 percent of total rig activity (115 active rigs). Over the year, Oklahoma’s rig count was up 51 from 64 rigs reported on September 30, 2016.
Definition & Importance
The U.S. Energy Information Administration (EIA) provides weekly information on natural gas stocks in underground storage for the U.S., and three regions of the country. The level of inventories helps determine prices for natural gas products. Natural gas product prices are determined by supply and demand—like any other good or service. During periods of strong economic growth, one would expect demand to be robust. If inventories are low, this will lead to increases in natural gas prices. If inventories are high and rising in a period of strong demand, prices may not need to increase at all, or as much. However, during a period of sluggish economic activity, demand for natural gas may not be as strong. If inventories are rising, this may push down oil prices.

The Henry Hub in Erath, Louisiana is a key benchmark location for natural gas pricing throughout the United States. The Henry Hub is the largest centralized point for natural gas spot and futures trading in the United States. The New York Mercantile Exchange (NYMEX) uses the Henry Hub as the point of delivery for its natural gas futures contract. Henry Hub “spot gas” represents natural gas sales contracted for next day delivery and title transfer at the Henry Hub. The settlement prices at the Henry Hub are used as benchmarks for the entire North American natural gas market. Approximately 49 percent of U.S. wellhead production either occurs near the Henry Hub or passes close to the Henry Hub as it moves to downstream consumption markets.

Background
Oklahoma is one of the top natural gas-producing states in the nation, accounting for 7.6 percent of U.S. gross production and 8.7 percent of marketed production in 2015. More than a dozen of the 100 largest natural gas fields in the country are found in Oklahoma and proven reserves of conventional natural gas have been increasing in recent years.

Most natural gas in Oklahoma is consumed by the electricity generation and industrial sectors. About three-fifths of Oklahoma households use natural gas as their primary energy source for home heating. Nevertheless, only about one-third of Oklahoma’s natural gas output is
consumed within the state. The remaining supply is sent via pipeline to neighboring states, the majority to Kansas, including the natural gas trading hubs in Texas and Kansas.

**Current Developments**

According to the most recent *Short-Term Energy Outlook* (STEO), the U.S. Energy Information Administration (EIA) expects U.S. dry natural gas production to average 73.7 billion cubic feet per day (Bcf/d) in 2017, a 1.4 Bcf/d increase from the 2016 level. Natural gas production in 2018 is forecast to be 4.4 Bcf/d higher than the 2017 level. The EIA also expects Henry Hub natural gas spot prices to rise from an annual average of $3.05/MMBtu in 2017 to $3.29/MMBtu in 2018.

Oklahoma natural gas gross production grew to a level of 212,505 MMcf in July, an increase of 9,679 MMcf (-2.2 percent) from the downwardly-revised June production level of 202,826 MMcf. Over the year, Oklahoma natural gas production was 1,888 MMcf (0.9 percent) more than 210,617 MMcf produced in July 2016.

In September, the average Henry Hub natural gas spot price was $2.97 per million British thermal units (MMBtu), up 7 cents/MMBtu from the August average of $2.90 MMBtu.

According to oil services company Baker Hughes, for the week ending Friday, September 29, the U.S. natural gas rig count decreased by one to 189 rigs. The natural gas rig count is 93 units more than the 96 rigs operating on September 30, 2016.

Oklahoma’s natural gas-directed drilling rig count stood at nine (9) for the week ending September 29, 2017, unchanged from the previous week. Over the year, the number of statewide rotary rigs exploring for natural gas was up five (5) units from four (4) reported for the week ended September 30, 2016.
Definition & Importance
The U.S. Census Bureau and the Department of Housing and Urban Development jointly provide monthly national and regional data on the number of new housing units authorized by building permits; authorized, but not started; started; under construction; and completed. The data are for new, privately-owned housing units (single and multifamily), excluding "HUD-code" manufactured homes. Because permits precede construction, they are considered a leading indicator for the residential construction industry and the overall economy. Most of the construction begins the same month the permit is issued. The remainder usually begins construction during the following three months; therefore we also use a three-month moving average.

While home construction represents a small portion of the housing market, it has an outsized impact on the economy. Each home built creates an average of three jobs for a year and about $90,000 in taxes, according to the National Association of Home Builders. Overall, homebuilding fell to its lowest levels in 50 years in 2009, when builders began work on just 554,000 homes.

Current Developments
Although U.S. homebuilding slipped for the second consecutive month in August, building permits surged to a seven-month high. Privately-owned housing units authorized by building permits in August were at a seasonally adjusted annual rate of 1,300,000, or 5.7 percent above the revised July rate of 1,230,000 and 8.3 percent above the August 2016 rate of 1,200,000, according to the U.S. Census Bureau and the Department of Housing and Urban Development.

The Census Bureau also noted that response for August from the jurisdictions affected by Hurricanes Harvey and Irma was not significantly lower than normal. Hurricane Harvey impacted construction activity in Texas only for the last week of the month and Hurricane Irma did not have an impact until September. The imputation was not adjusted to attempt to reduce the August estimates for any nonreporting jurisdictions.
Definition & Importance
The data services of the Federal Reserve Bank of St. Louis produces series that are seasonally adjusted including monthly state level data on the number of new housing units authorized by building permits. These adjustments are made using the X-12 Procedure of SAS to remove the seasonal component of the series so that non-seasonal trends can be analyzed. This procedure is based on the U.S. Bureau of the Census X-12-ARIMA Seasonal Adjustment Program.

Current Developments
Statewide applications for residential construction dipped for the third consecutive month in August, as permitting activity fell to its lowest level in over two years. Total residential building permitting for August was at a seasonally-adjusted level of 771, or 14 permits (-1.7 percent) less than July’s downwardly revised level of 785 and 726 permits (-48.5 percent) less than the August 2016 estimate of 1,497 units, according to figures from the Federal Reserve Bank of St. Louis.

Building permits for single-family homes in August were at a seasonally adjusted level of 740, rising 2.7 percent from July’s level of 721 permits. Multi-family permitting dropped to a non-seasonally adjusted level of only 31 units in August, down 33 units (-51.2 percent) from July’s level of 64 units. Single-family permitting accounted for a seasonally adjusted 96.0 percent of total residential permitting activity in August while the more volatile multi-family permitting accounted for only 4.0 percent.

Over the year, single-family permits were down 69 or 8.5 percent over the year while multi-family permitting was down 657 (-95.5 percent) from the previous year’s non-seasonally adjusted level of 688 units.
Definition & Importance

Personal income is a broad measure of economic activity and one for which relatively current data are available. Personal income includes earnings, property income such as dividends, interest, and rent and transfer payments, such as retirement, unemployment insurance, and various other benefit payments. It is a measure of income that is available for spending and is seen as an indicator of the economic well-being of the residents of a state. Earnings and wages make up the largest portion of personal income.

To show the vastly different levels of total personal income for the U.S. and Oklahoma on the same chart, these data have been converted to index numbers. This chart shows a comparison of Oklahoma and U.S. growth in real personal income with 1st quarter 2000 as the base year.

Current Developments

U.S. consumer spending and income growth was sluggish in August, reflecting the impact of Hurricane Harvey, while inflation increased at its slowest pace since late 2015. Personal income increased $28.6 billion (0.2 percent) in August according to estimates by the Bureau of Economic Analysis (BEA). Disposable personal income (DPI) increased $14.9 billion (0.1 percent) and personal consumption expenditures (PCE) increased $18.0 billion (0.1 percent). The increase in personal income in August primarily reflected an increase in government social benefits to persons and compensation of employees.

Spending on durable goods, such as autos and appliances, plunged 1.0 percent in August, while outlays on non-durable goods, such as gasoline and clothing, dropped 0.2 percent. Household spending on services, such as doctor’s visits and utilities, increased 0.1 percent in August.

Inflation, as measured by the PCE Price Index, remained tame in August posting a slight 0.2 percent increase for a 1.4 percent rate over the past year—well below the Fed’s 2 percent target.

The personal saving rate, personal saving as a percentage of disposable personal income, was unchanged at 3.6 percent in August, the same as July.
Definition & Importance
Quarterly estimates of state personal income are seasonally adjusted at annual rates by the Bureau of Economic Analysis (BEA). Quarterly personal income estimates are revised on a regular schedule to reflect more complete information than the data that were available when the estimates were initially prepared and to incorporate updated seasonal factors.

Current Developments
State personal income grew 0.7 percent on average in the 2nd quarter of 2017, after increasing 1.4 percent in the 1st quarter, according to estimates by the U.S. Bureau of Economic Analysis (BEA). Growth rates ranged from 0.1 percent in Iowa and Nebraska to 1.3 percent in Nevada.

Oklahoma’s personal income matched the state average at a 0.7 percent rate, to a level of $169.4 billion, ranking the state 27th among all states in the 2nd quarter of 2017.

Earnings increased 0.8 percent in the 2nd quarter of 2017, after increasing 1.5 percent in the 1st quarter. Earnings growth ranged from 1.6 percent in Nevada to -0.1 percent in Nebraska, and was the leading contributor to growth in personal income in most states. Oklahoma’s net earnings grew 0.8 percent and contributed 0.55 percentage point to personal income growth in the 2nd quarter of 2017.

In Oklahoma, earnings in professional and business services was the leading contributor to earnings growth in the 2nd quarter of 2017, adding 0.10 percentage point to personal income growth. Growth in durable goods manufacturing contributed 0.09 percentage point to earnings along with transportation and warehousing contributing 0.09 percentage point.

Farm earnings declined for the nation and in every state in the 2nd quarter of 2017 and was the leading contributor to slow earnings growth in many states including Nebraska, Iowa and North Dakota. In Oklahoma, farm earnings was also the leading contributor to slower income growth, subtracting 0.07 percentage point in the 2nd quarter.
Definition & Importance
Retail sales measure the total receipts at stores that sell merchandise and related services to final consumers. Sales are by retail and food services stores. Data are collected from the Monthly Retail Trade Survey conducted by the U.S. Bureau of the Census. Essentially, retail sales cover the durables and nondurables portions of consumer spending. Consumer spending accounts for roughly two-thirds of the U.S. GDP and is therefore essential to Oklahoma’s economy. Retail sales account for around one-half of consumer spending and economic recovery calls for consumption growth.

Current Developments
American consumers cut back their spending in August as Hurricane Harvey likely depressed motor vehicle purchases on the Gulf Coast. Advance estimates of U.S. retail and food services sales for August 2017, adjusted for seasonal variation and holiday and trading-day differences, but not for price changes, were $474.8 billion, a decrease of 0.2 percent from the previous month, and 3.2 percent above August 2016, according to the U.S. Census Bureau. Total sales for the June 2017 through August 2017 period were up 3.2 percent from the same period a year ago. The June 2017 to July 2017 percent change was revised lower from 0.6 percent to 0.3 percent.

Automobile sales plunged 1.6 percent in August for the biggest drop since January. However, the Census Bureau could not isolate the effect of Hurricane Harvey on the Advance Monthly Retail Trade and Food Services Survey (MARTS) estimates since the sample is designed to measure retail and food services activity at the national level and not at specific geographic areas. Excluding autos, retail sales rose 0.2 percent. Receipts at service stations jumped 2.5 percent mostly due to higher pump prices. Excluding both auto and gasoline sales, retail sales dipped 0.1 percent in August.

The less volatile “core” sales which are used to calculate gross domestic product, and strips out automobiles, gasoline, building materials, and food services sales sank 0.2 percent last month after an unrevised 0.6 percent gain in July.
Definition & Importance
The Center for Economic and Management Research (CEMR) Price College of Business, at the University of Oklahoma produces the Oklahoma Monthly Retail Sales Series containing monthly estimates of retail sales for Oklahoma, the Oklahoma City, Tulsa and Lawton Metropolitan Statistical Areas and 48 selected cities in Oklahoma. The series is based on sales tax collection data provided by the Business Tax Division, Oklahoma Tax Commission (OTC). In order to take out monthly volatility, we have used a six-month moving average.

Current Developments
Statewide retail expenditures slumped in July, as lower pump prices pulled down overall spending totals. Total adjusted retail trade for July was at a level of $3.20 billion, a 5.6 percent decline from June’s downwardly revised level of $3.39 billion. Over the year, total adjusted retail sales were up 5.3 percent from the July 2016 level of $3.04 billion. Excluding gasoline sales, total retail sales for July advanced 0.5 percent.

Total durable goods sales rose 0.7 percent in July with gains in auto accessories & repair (1.3 percent); lumber, building materials & hardware (0.9 percent); used merchandise (0.8 percent); miscellaneous durable goods (0.7 percent); and furniture (0.5 percent). The only declining durable goods category was computer, electronics & music store sales (-0.7 percent).

Nondurable goods purchases sank 7.7 percent in July as the volatile estimated gasoline sales category plummeted 45.4 percent on lower pump prices. Excluding gasoline sales, total retail sales for July advanced 0.5 percent. In July, advancing nondurable categories were miscellaneous nondurables (1.0 percent); liquor stores (0.9 percent); eating & drinking places (0.5 percent); general merchandise stores (0.4 percent); food stores (0.4 percent); and apparel (0.4 percent). The only other declining nondurable goods category in July was drugstore sales (-0.2 percent).