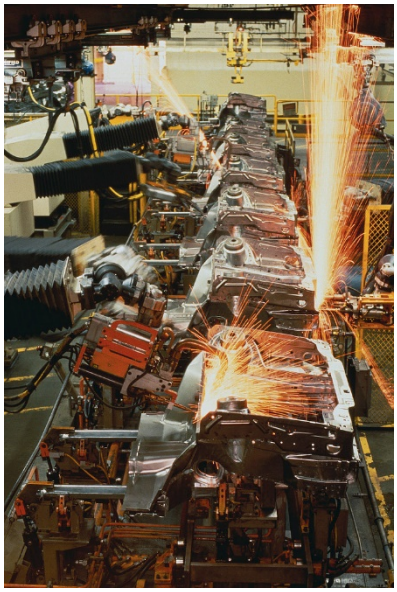

OKLAHOMA
Economic Indicators

March 2023

OKLAHOMA
ECONOMIC INDICATORS

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March 2023

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SPECIAL REPORT:

Urban Oklahoma Health Industry and All Industry Employment and Earnings: A Trend Analysis Comparison of Change by Age and Gender, 2012 to 2021

Introduction

OESC recently published an updated report covering employment and earnings trends in the urban Oklahoma health industry between 2012 to 2021, the third in a series.[1] This report includes two of Oklahoma's urban areas, specifically, a combination of Oklahoma City and Tulsa Oklahoma Metropolitan Statistical Areas (MSA).

This analysis covers a 10-year interval annually, from 2012 through 2021, using data from the Longitudinal Employer-Household Dynamics (LEHD) program, part of the Center for Economic Studies at the U.S. Census Bureau. The data refers to the first three subsectors of the healthcare and social assistance sector as defined by the North American Industry Classification System (NAICS), ambulatory healthcare services (NAICS 621), hospitals (NAICS 622), nursing and residential care facilities (NAICS 623), social assistance (NAICS 624) is excluded from this analysis. This analysis of health care employment and earnings refers to NAICS 621, 622, and 623 in these two MSA in a comparison with those of an aggregate of Oklahoma industries, the former three are referred to as industry groups, and the latter is referenced as 'all industry' in this report.

Major Findings for Employment and Employment Change

- In the three industry groups of all industries, hospitals, and nursing and residential care facilities looking at the three gender groups and the eight age groups, the two age groups highest 2021 employment are in ages 25 to 34 and 35 to 44. These same age groups are highest for both genders and females in ambulatory health care services. However, males in ambulatory health care services have their highest employment in ages 35 to 44 and 45 to 54.
- The two health industry groups of ambulatory health care services and hospitals for both genders, males and females have either their largest or second largest employment change in age group 35 to 44; while the same three gender groups have either their largest and second largest employment change in all industries and nursing and residential care facilities in the two oldest age groups of 65 to 99, and 55 to 64, respectively.
- Likely the most important employment finding in this analysis in urban Oklahoma of the eight age groups in both genders, males, and females: in the three health industries the age group with the largest employment rate of change is ages 65 to 99, with males' rate of change higher than that of females.

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[1] Jesse Fuchs, PhD, "Oklahoma Health Industry and All Industry Employment and Earnings: A Trend Analysis Comparison of Change by Age and Gender 2011 to 2020", Oklahoma Employment Security Commission, Economic Research and Analysis Division, August 2021.
Jesse Fuchs, PhD, "Rural Oklahoma Health Industry and All Industry Employment and Earnings: A Trend Analysis Comparison of Change by Age and Gender, 2001 to 2017", Oklahoma Employment Security Commission, Economic Research and Analysis Division, April 2019.

- While the ratio of males to female employment in all industries is almost 1 to 1, in the three health industries, the ration of females to males' range is 3.5 to 3.8 ratios.

Major Findings for Earnings and Earnings Change

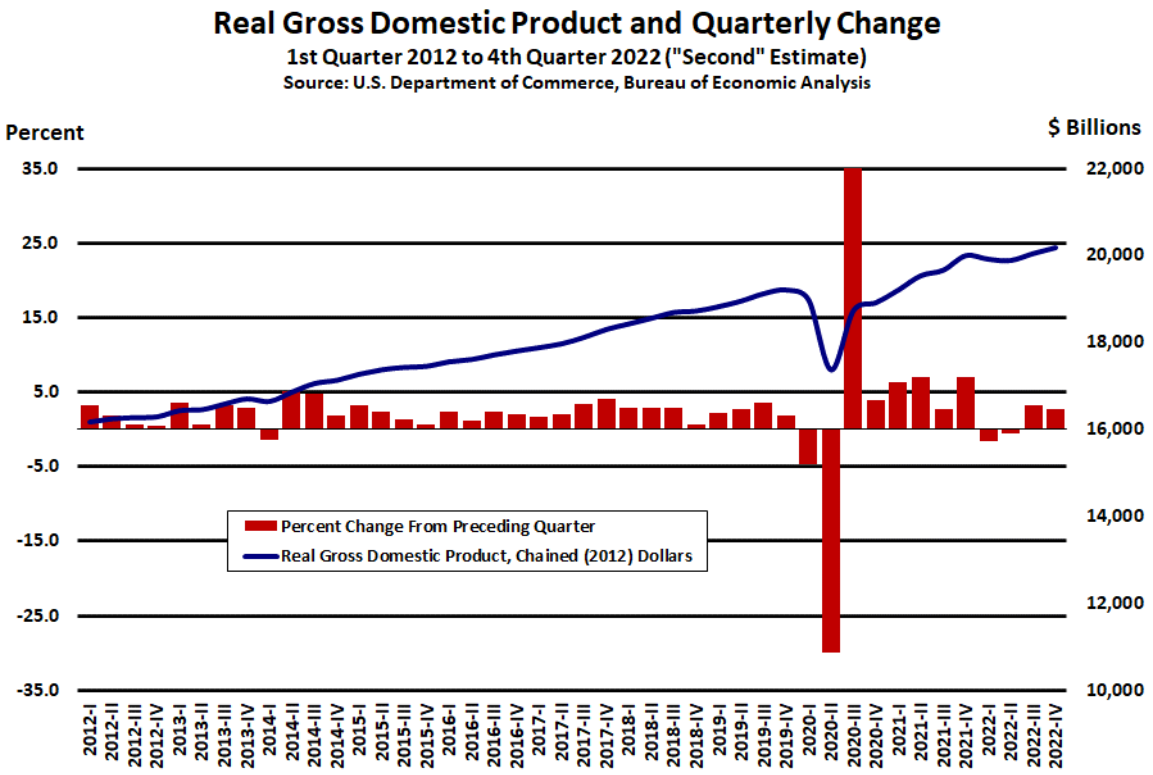
- In the four industry groups and the three gender groups, the two age groups with the largest 2021 earnings are most often ages 45 to 54, and 55 to 65. The two exceptions to this are females in ambulatory health care services and males in hospitals that have only their largest 2021 earnings in the one of these two age groups, that of ages 45 to 54.
- In the four industry groups examined the most common age group for the three gender groups to have one of their two largest 2012 to 2021 10 year earnings change is ages 45 to 54, with the two exceptions of males and females in ambulatory health care services.
- The eight age groups and in both gender, males, and females the age group with the largest or second largest earnings rate of change most often is in ages 65 to 99. The exceptions are males in all industries, and hospitals.
- The ratio of male to female industry earnings in year 2021 is 1.5 to 1 in all industries, 2.7 in ambulatory health care services, 1.5 in hospitals and 1.1 to 1 in nursing and residential care facilities.

Conclusions

- Urban Oklahoma female health industry group employment outnumbering male employment will likely continue for some time into the future, as indicated by their current larger than male ratio in all three health industry groups, even with the male employment change rate higher than female in the three health industry groups.
- Females' traditionally lower than males' earnings have the probability of reaching earnings parity at varying rates in each of the three health industry groups, as indicated by the huge difference in male to female earnings in ambulatory health care services, and hospitals; and the near parity in male to female earnings in nursing and residential care facilities, as modified by the rapid changing rate for females in ambulatory health care services. The relative low earnings change rates for females in hospitals and the lower earrings change rates for females compared to that of males in nursing and residential care facilities.
- Urban Oklahoma health industry staffing, which has historically been problematic and presently still is the case, likely will increasingly be so in the future, as indicated by both gender's employment more rapid increase in the older two age groups and relatively lower employment 10-year increase in some of the three health groups four younger age groups.

More Information

A copy of the full urban health industry report along with detailed tables and charts is available on the OESC website at: Urban Oklahoma Health Industry and All Industry Employment and Earnings: A Trend Analysis Comparison of Change by Age and Gender, 2012 to 2021.



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. Each revision is based on more complete economic data.

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

The U.S. economy grew less than previously estimated in 4th quarter, but still maintained a healthy pace, as consumer spending grew at a slower rate. Real gross domestic product (GDP) increased at an annual rate of 2.7 percent in the 4th quarter of 2022, according to the "second" estimate released by the Bureau of Economic Analysis (BEA). In the 3rd quarter, real GDP increased 3.2 percent. Real GDP increased 2.1 percent in 2022 (from the 2021 annual level to the 2022 annual level), compared with an increase of 5.9 percent in 2021.

Consumer spending, which accounts for more than two-thirds of U.S. economic activity, was revised sharply downward to a 1.4 percent pace in the 4th quarter, rather than a 2.1 percent rate reported in the previous estimate. Outlays on services, such as health care, housing and utilities, increased 2.4 percent. Spending on durable goods, such as automobiles, declined 1.8 percent, while spending on nondurable goods, such as food and beverages, advanced 0.2 percent. Personal consumption expenditures (PCE) added 0.93 percentage points to 4th quarter GDP growth, instead of 1.42 percentage points previously reported.

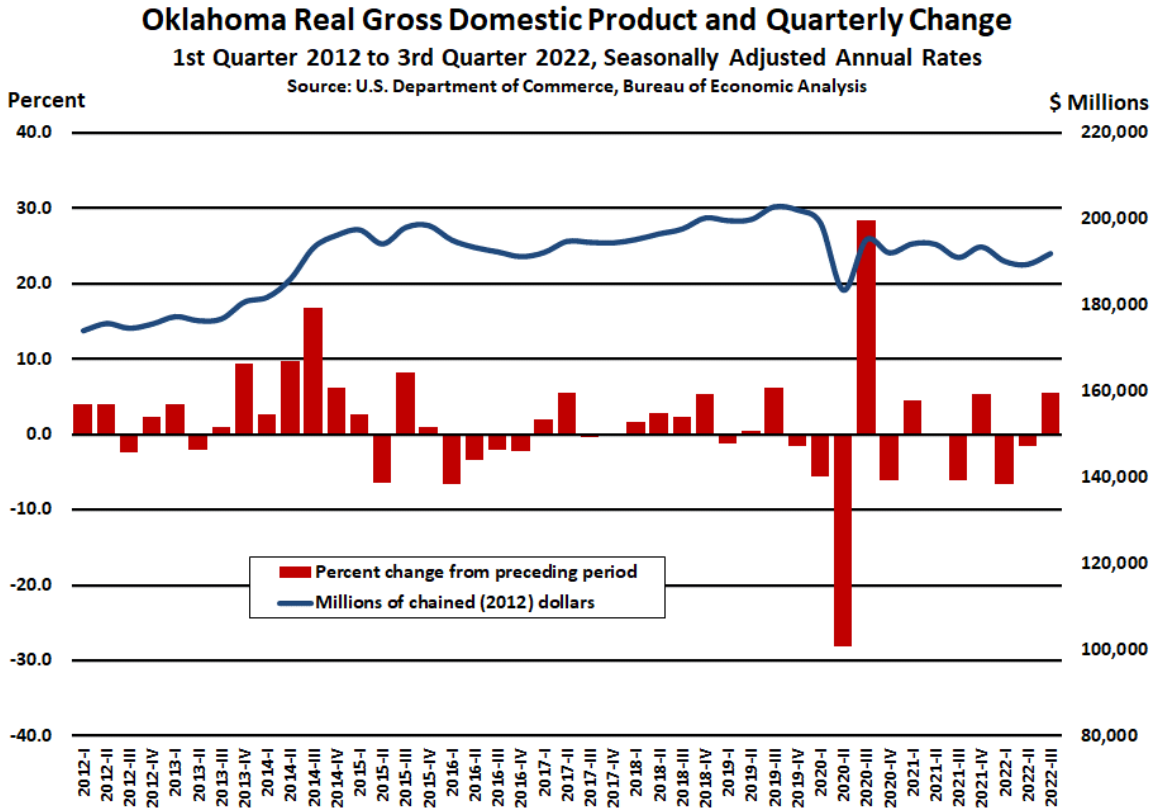
Business investment was much more robust in the 4th quarter, growing at a 3.3 percent rate, as firms ramped up spending on structures and intellectual property products. Expenditures on structures, which are tied to the oil and gas sector and commercial real estate, grew at a 8.5 percent rate. Spending on equipment, such as such as trucks, aircraft and computers, declined 3.2 percent. Outlays on intellectual property products grew 7.4 percent in the 4th quarter. Nonresidential fixed investment contributed 0.43 percentage point to 4th quarter GDP, up from 0.09 percentage point reported earlier.

Businesses accelerated the pace of inventory accumulation in the 4th quarter, after drawing down inventories in the previous quarter. Business inventories increased at a rate of $ 136.3 billion, up from the $ 129.9 billion pace reported earlier. The change in private inventories added 1.47 percentage point to GDP growth in the 4th quarter.

Housing construction slumped in the 4th quarter, as higher borrowing costs have weakened the home market. Residential investment, a gauge of homebuilding, slumped 25.9 percent after plunging 27.1 percent in the previous quarter. Residential fixed investment shaved 1.24 percentage point from 4th quarter GDP.

Both exports and imports dropped in the 4th quarter. Exports, which add to GDP, fell 1.6 percent while imports, which subtract, declined by a larger 4.2 percent. The narrowed trade gap added 0.46 percentage points to 4th quarter GDP.

Government outlays rose for the second straight quarter in the October to December period, led by federal nondefense spending. Federal government spending increased 5.9 percent in the 4th quarter, as national defense spending rose 2.4 percent, while nondefense spending grew 10.8 percent. Consumption outlays by state and local governments increased 2.3 percent in the 4th quarter. Government consumption expenditures and investment added 0.64 percentage point to 4th quarter GDP.



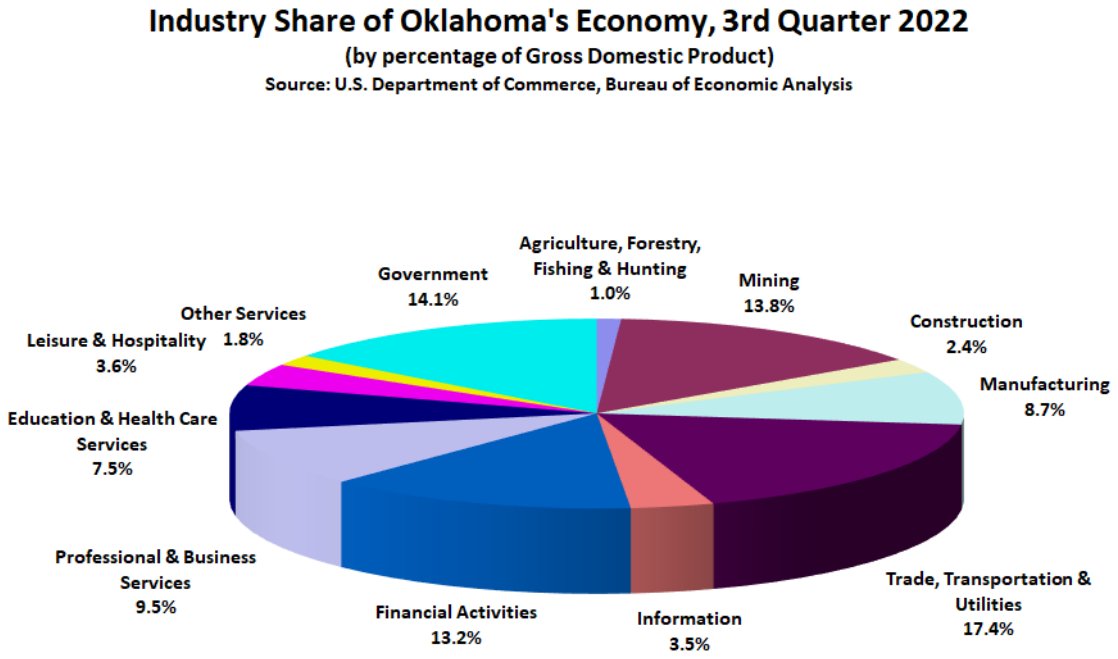
Definition & Importance

The U.S. Bureau of Economic Analysis (BEA) recently began producing statistics of quarterly gross domestic product (GDP) by state dating back to 2005. 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

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 47 states and the District of Columbia in the 3rd quarter of 2022, with the percent change in real GDP ranging from 8.7 percent in Alaska to –0.7 percent in Mississippi, according to the Bureau of Economic Analysis (BEA).

Oklahoma's real GDP grew 5.5 percent in the 3rd quarter of 2022, following a 1.6 percent decline in the 2nd quarter, ranking Oklahoma 3rd among all other states and the District of Columbia. Statewide GDP was at a level of $192.0. billion (in constant 2012 dollars) in the 3rd quarter, up $2.6 billion from the 2nd quarter level of $ 189.4 billion.



Real GDP increased in 16 of the 23 industry groups that the BEA prepares quarterly state estimates. Information services; professional, scientific, and technical services; and mining were the leading contributors to the increase in real GDP nationally in the 3rd quarter.

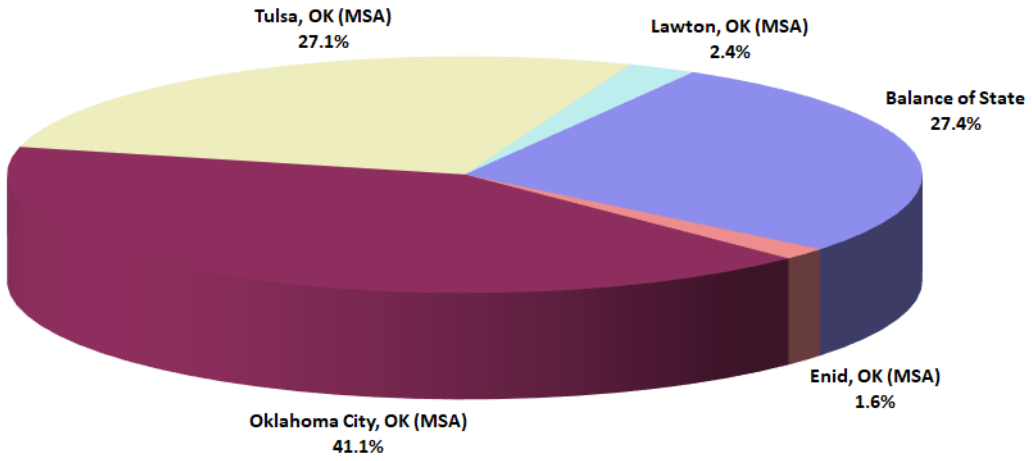
The mining industry was the leading contributor to the increases in real GDP in Alaska, Texas, Oklahoma, Wyoming, North Dakota, and New Mexico, the six states with the largest increases in real GDP, and in West Virginia, the state with the eighth-largest increase in real GDP. In Oklahoma, mining was the leading contributor to the increase in 3rd quarter GDP, adding 2.66 percentage points.

Transportation and warehousing increased in all 50 states and the District of Columbia. In Oklahoma, transportation and warehousing was the second-largest contributor to 3rd quarter GDP growth, adding 1.20 percentage points.

Professional, scientific, and technical services increased in 48 states and the District of Columbia and was the leading contributor to the increase in 5 states and the District of Columbia. In Oklahoma, professional, scientific, and technical services subtracted 0.02 percentage point from 3rd quarter GDP.

The construction industry was the leading contributor to the decrease in Mississippi and Indiana, two of three states with decreases in real GDP. This industry also moderated increases in real GDP in 47 states and the District of Columbia. Including Oklahoma. In Oklahoma, nondurable-goods manufacturing subtracted 0.60 percentage point from statewide GDP in the 3rd quarter.

Metropolitan Area Contribution to State Real Gross Domestic Product
2021
Source: U.S. Department of Commerce, Bureau of Economic Analysis



Definition & Importance

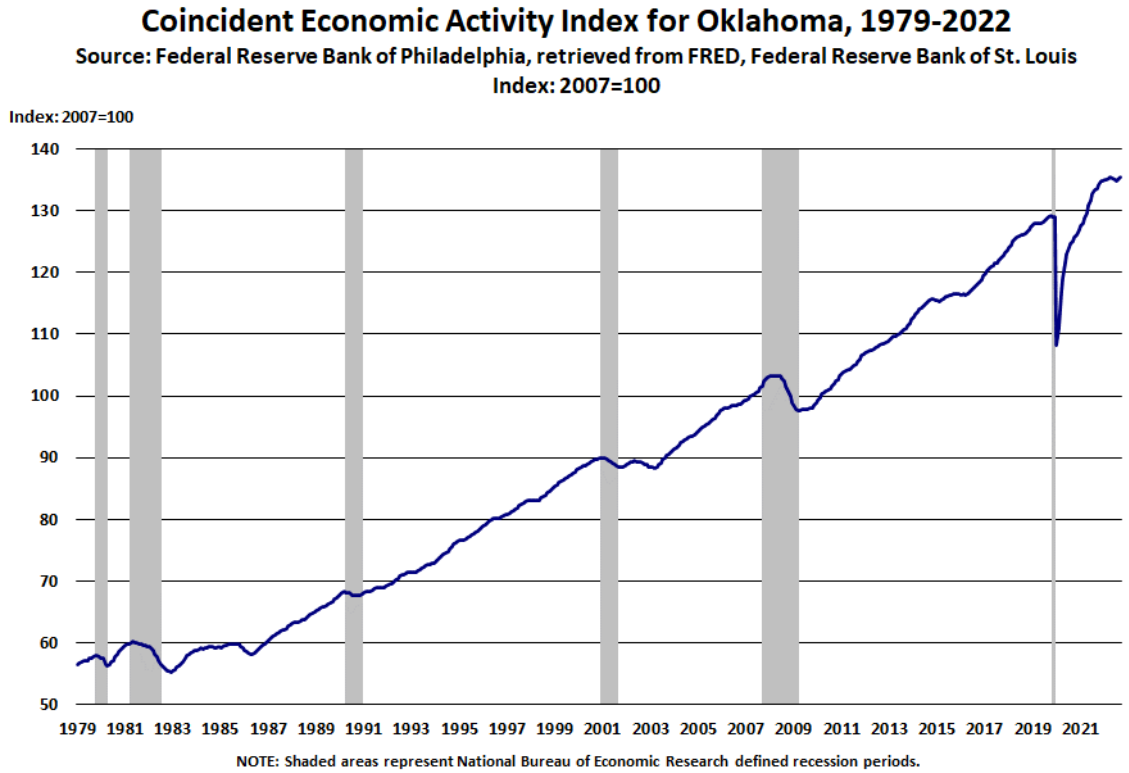
Metropolitan Statistical Areas (MSA) are county-based definitions developed by the Office of Management and Budget for federal statistical purposes. A metropolitan area is defined as a geographic area consisting of a large population nucleus together with adjacent communities having a high degree of economic and social integration with the nucleus.

GDP by metropolitan area is the sub-state counterpart of the Nation's gross domestic product (GDP), the BEA's featured and most comprehensive measure of U.S. economic activity. GDP by metropolitan area is derived as the sum of the GDP originating in all the industries in the metropolitan area. Nationally, metropolitan statistical areas represent approximately 90 percent of total GDP. In Oklahoma, the four MSAs of Oklahoma City, Tulsa, Lawton, and Enid accounted for 71.8 percent of total state GDP in 2019.

Current Developments

Real gross domestic product (GDP) increased in 365 out of 384 metropolitan areas in 2021, according to the U.S. Bureau of Economic Analysis (BEA). The percent change in real GDP by metropolitan area ranged from 25.3 percent in Elkhart-Goshen, IN to -6.7 percent in Wheeling, WV-OH. Real GDP for U.S. metropolitan areas increased 6.2 percent in 2021 as every major industry group, (with the exception of information and finance, insurance, real estate, rental, and leasing), saw declines over the year.

In 2021, all of Oklahoma's four metropolitan areas experienced positive GDP growth. Enid MSA real GDP rose 5.7 percent in 2021 to a level of $3.17 billion, ranking it 154th among 384 metro areas. Lawton MSA real GDP increased 1.4 percent in 2021 to a level of $4.66 billion, and ranked 349th among U.S. metro areas. Oklahoma City MSA grew 0.9 percent to $79.33 billion and ranked 354th. Tulsa MSA real GDP increased 0.3 percent to a level of $51.27 and ranking 362nd among 384 U.S. metropolitan areas in 2021.



Definition & Importance

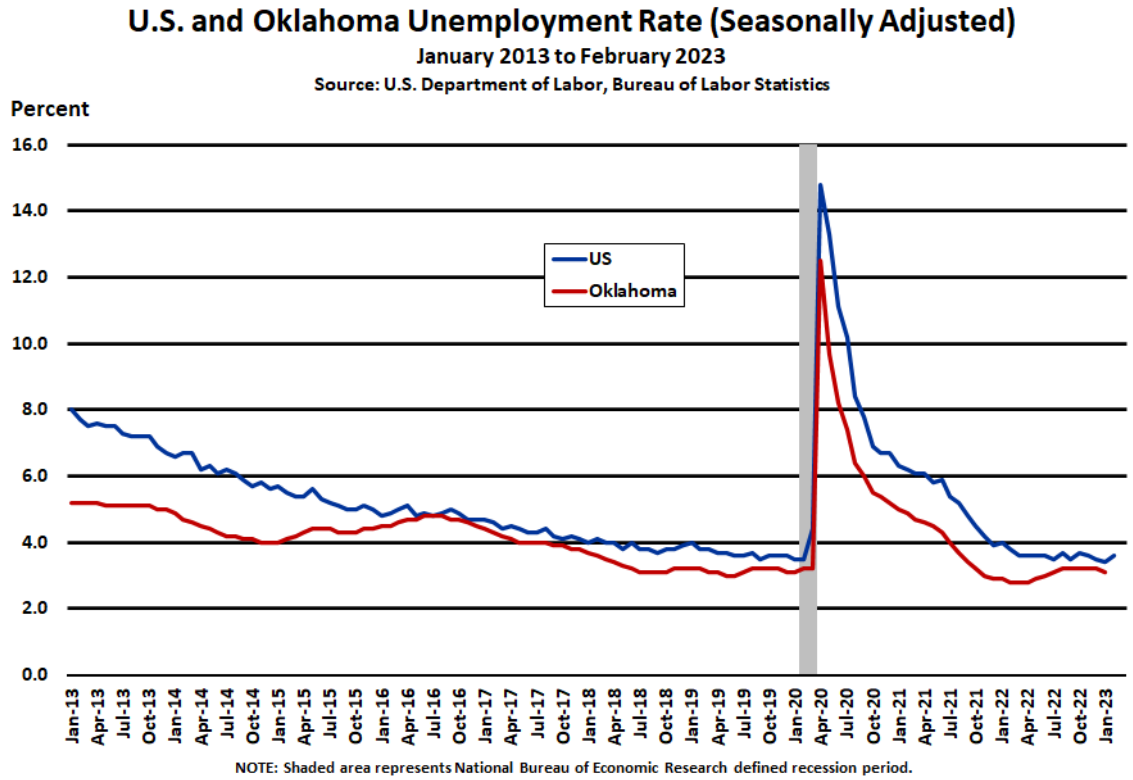
The Federal Reserve Bank of Philadelphia produces leading indexes for each of the 50 states. The indexes are calculated monthly and are usually released a week after the release of the coincident indexes. The Bank issues a release each month describing the current and future economic situation of the 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

The Federal Reserve Bank of Philadelphia has released the coincident indexes for the 50 states for December 2022. Over the past three months, the indexes increased in 30 states, decreased in 14 states, and remained stable in six, for a three-month diffusion index of 32. Additionally, in the past month, the indexes increased in 33 states, decreased in 11 states, and remained stable in six, for a one-month diffusion index of 44. For comparison purposes, the Philadelphia Fed has also developed a similar coincident index for the entire United States. The Philadelphia Fed's U.S. index increased 0.8 percent over the past three months and 0.3 percent in December.

In the three months to December, the coincident index for Oklahoma increased 0.3 percent. The level of payroll employment increased over the past three months but remained slightly lower than that of February 2020. The unemployment rate increased during the three-month period. However, average hours worked in manufacturing increased. Overall, Oklahoma's economic activity as measured by the coincident index has risen 1.3 percent over the past 12 months.



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.

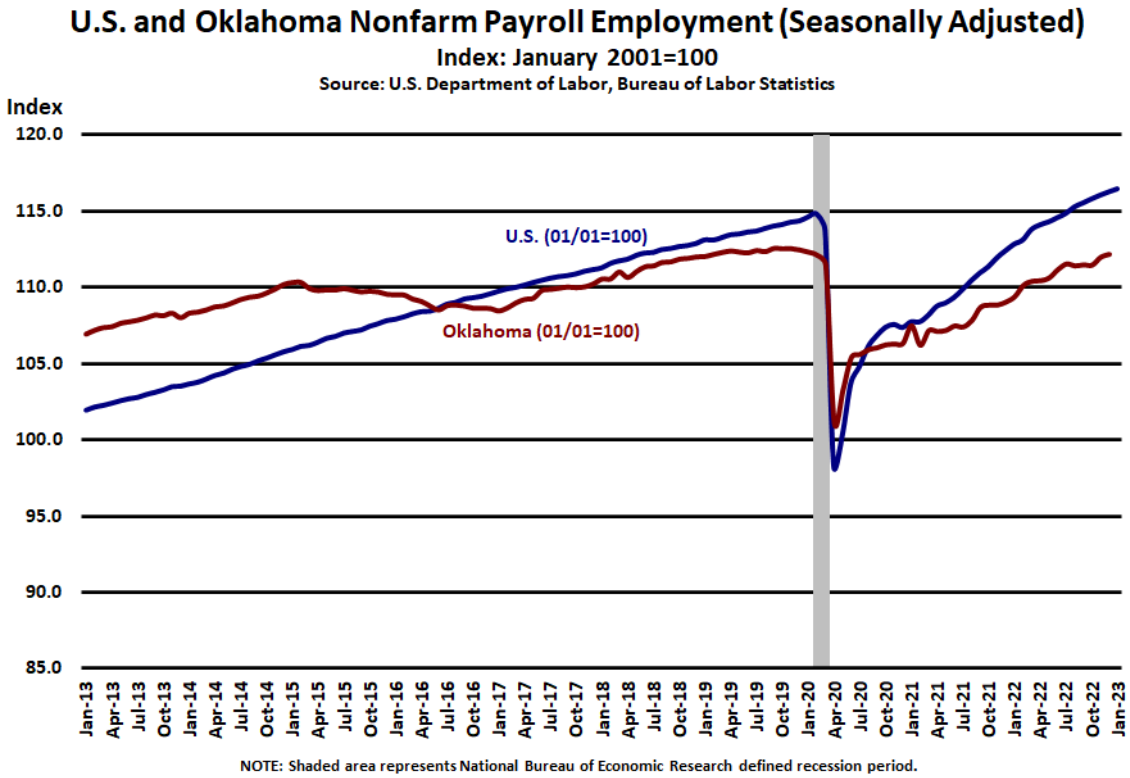
The unemployment rate is a lagging indicator of economic activity. During a recession, many people leave the labor force entirely. As a result, the jobless rate may not increase as much as expected. This means that the jobless rate may continue to increase in the early stages of recovery because more 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 moved up in February and the labor force participation rate ticked higher to 62.5 percent, its highest level since March 2020, as more people returned to the labor force. Both the unemployment rate, at 3.6 percent, and the number of unemployed persons, at 5.9 million, edged up in February, according to the Bureau of Labor Statistics (BLS). These measures have shown little net movement since early 2022.

Oklahoma's seasonally adjusted unemployment rate declined to 3.1 percent in January. Over the year, the state's seasonally adjusted unemployment rate was 0.2 percentage point higher than January 2022.

In January, Latimer County posted Oklahoma's highest county unemployment rate of 5.9 percent. McIntosh County reported the second-highest rate for the month, followed by Tillman County. Cimarron County reported the lowest county unemployment rate of 1.7 percent in January. Unemployment rates in January were higher than a year earlier in 38 counties, down in 29 counties and unchanged in 10 counties.



Definition & Importance

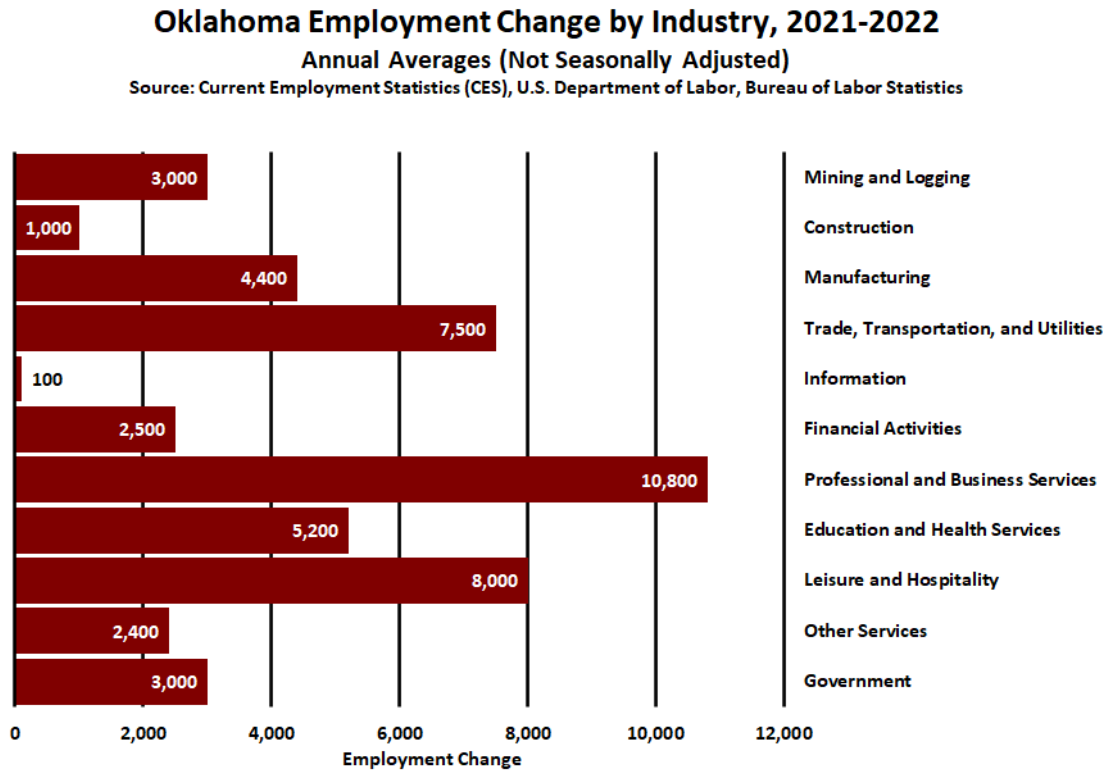
Nonfarm payroll employment data is produced by the Current Employment Statistics (CES) program of the Bureau of Labor Statistics (BLS). The CES Survey is a monthly survey of approximately 145,000 businesses and government agencies representing approximately 697,000 worksites throughout the United States. 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 of 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. employers continued solid hiring in February, although at a slower pace than the previous month. Total nonfarm payroll employment rose by 311,000 in February, compared with the average monthly gain of 343,000 over the prior 6 months, according to the Bureau of Labor Statistics (BLS). Job growth was widespread in February, led by gains in leisure and hospitality (105,000 jobs), retail trade (50,000 jobs), government (46,000 jobs), and health care (44,000 jobs).

Oklahoma's seasonally adjusted nonfarm employment added 5,400 jobs (0.3 percent) in January, to a level of 1,727,300 while December's estimate was upwardly revised to 1,721,900. In January, five of Oklahoma's supersectors added jobs, as leisure & hospitality (2,600 jobs) followed by construction (1,200 jobs) reported the largest job gains over the month. Manufacturing (-300 jobs) followed by financial activities (-200 jobs) posted the largest over-the-month job losses in January.



Definition & Importance

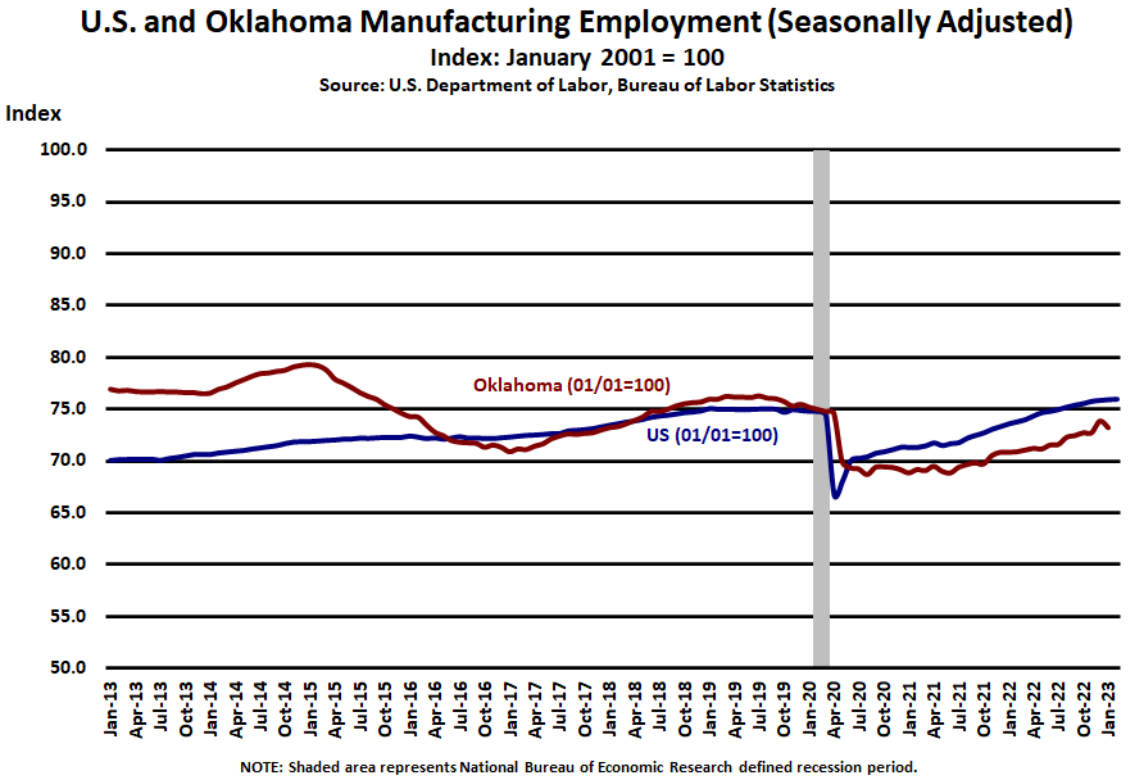
Employment growth by industry identifies the types of jobs being created in the state. Conversely, industries with a declining employment trend indicate those which are becoming less important in the state's economy. There may also be industries which behave more cyclically, growing during expansion 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

Oklahoma's annual average nonfarm employment added jobs in 2022, as the pace of hiring accelerated. Total nonfarm employment added a non-seasonally adjusted 47,900 jobs (2.9 percent) in 2022. For comparison, in the previous year annual average nonfarm employment added 22,300 jobs (1.4 percent).

In 2022, all of 11 of Oklahoma's supersectors reported job gains. Professional and business services saw the largest job gain adding 10,800 jobs (5.6 percent), as administrative and support and waste management and remediation services (6,000 jobs) along with professional, scientific, and technical services (4,000 jobs) accounted for most of the job gains. Leisure and hospitality added 8,000 jobs (4.8 percent). Trade, transportation, and utilities added a non-seasonally adjusted 7,500 jobs (2.4 percent), over the year. Professional and business services employment grew by 5,000 jobs (6.3 percent). Other sectors adding jobs were education and health services (5,200 jobs), manufacturing (4,400 jobs), mining and logging 3,000 jobs), financial activities (2,500 jobs), other services (2,400 jobs), construction (1,000 jobs), and information.

Government employment added 3,000 jobs (0.9 percent) over the year in 2022, as local government excluding educational services (2,300 jobs) accounted for most of the job gains.



Definition & Importance

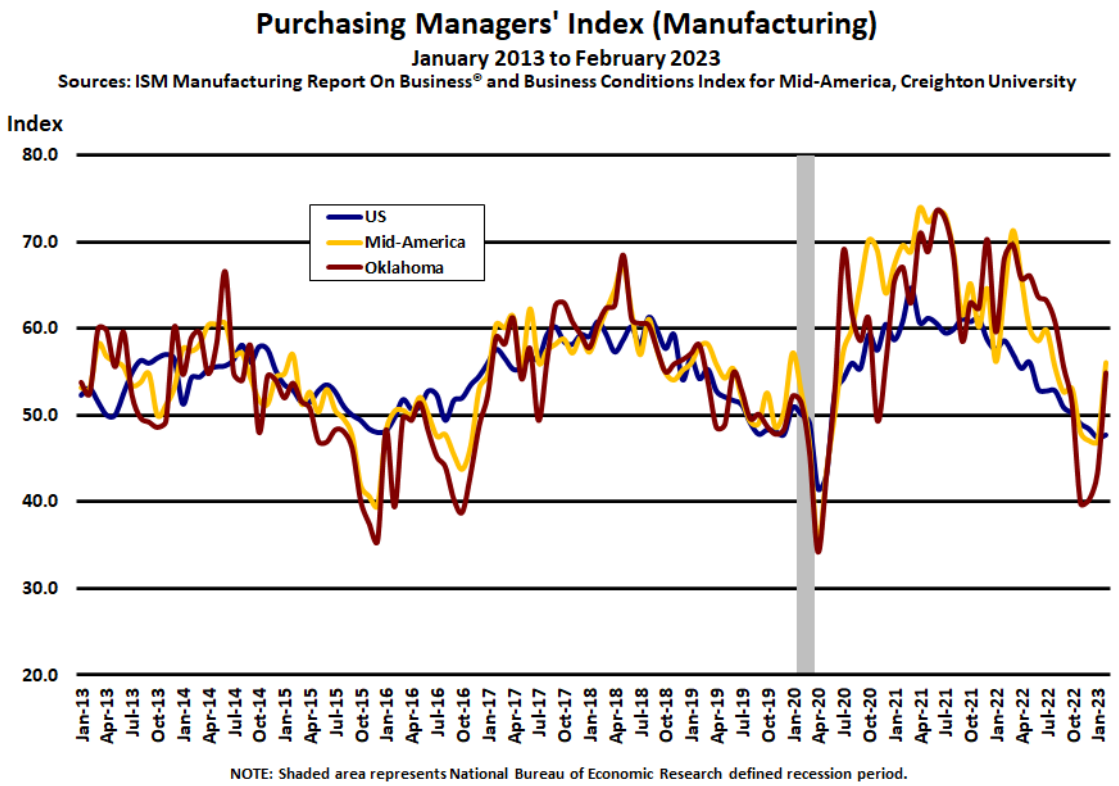
Manufacturing employment data is also produced by the Bureau of Labor Statistics' Current Employment Statistics (CES) program. Manufacturing and production are still important parts of both the U.S. and Oklahoma economies. According to the *2020 County Business Patterns*, the manufacturing sector was the 5th-largest employer, employing 12.0 million workers in the United States—and the top 10 average annual employee payroll at $61,520. 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. factory employment declined for the first time in nearly two years in February, although the decline was negligible. Manufacturing employment decreased by 4,000 jobs in February, according to the Bureau of Labor Statistics (BLS). In 2022, manufacturing added an average of 33,000 jobs per month, compared to an average of 30,000 jobs per month in 2021, according to the BLS.

Oklahoma manufacturing employment shed a seasonally adjusted 300 jobs (-0.4 percent) over the month in January to a level of 135,000. In January, job losses in durable goods manufacturing, 600 jobs (-0.2 percent), were partially offset by job gains in non-durable goods manufacturing 300 jobs (0.6 percent).

Over the year, statewide manufacturing employment added a seasonally adjusted 4,000 jobs (3.1 percent) compared to January 2022, as durable goods manufacturing gained 2,600 jobs (3.0 percent) and non-durable goods manufacturing added 1,400 jobs (3.1 percent).



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, which accounts for about 12 percent of the U.S. economy. 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. manufacturing contracted for a fourth straight month in February, but there were signs that factory activity might be stabilizing, as a measure of new orders pulled back from a more than 2-1/2-year low. The February Manufacturing PMI® registered 47.7 percent, 0.3 percentage point higher than the 47.4 percent recorded in January, according to the latest ISM *Manufacturing Report On Business®*.

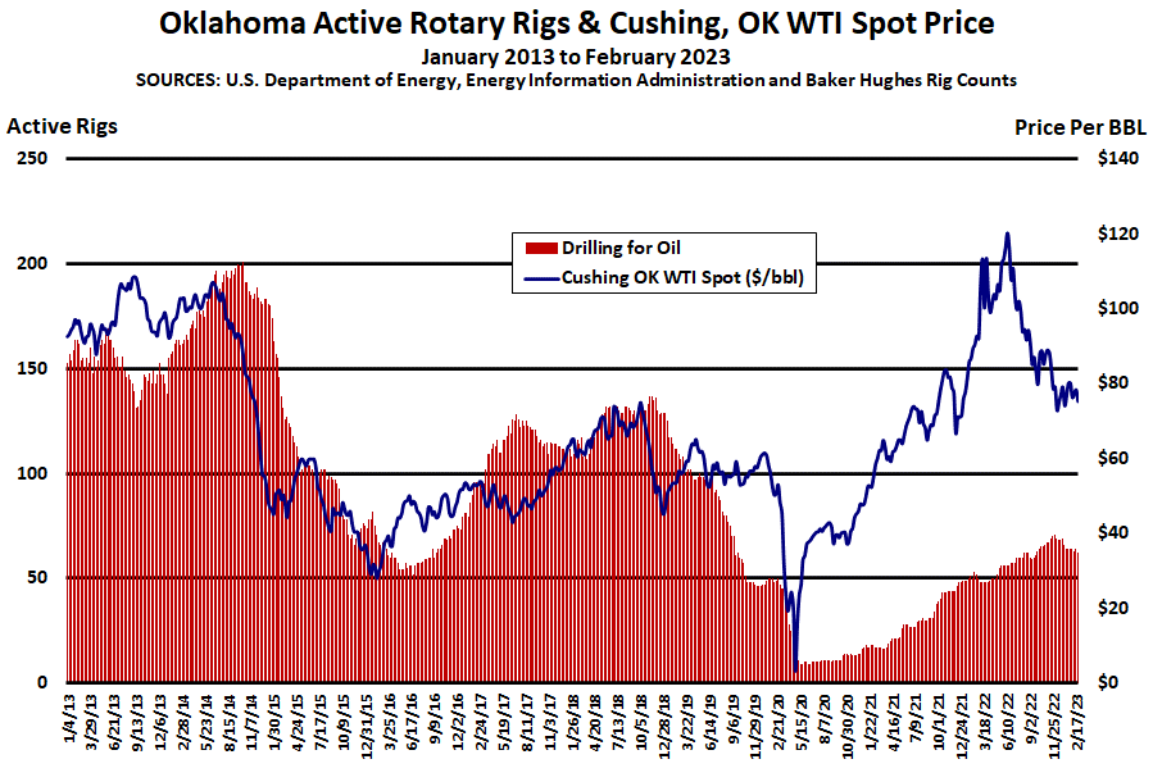
ISM®'s forward-looking new orders sub-index improved to 47.0 last month from 42.5 in January—the lowest reading since May 2020. The gauge of factory employment fell to 49.1 from 50.6 in January. A measure of prices paid by manufacturers rebounded to 51.3 in February from 44.5 in January, breaking above the 50 mark for the first time in five months. The survey's measure of supplier deliveries was little changed at 45.2, the fastest supplier delivery performance since March 2009. A reading below 50 indicates faster deliveries to factories.

After falling below growth neutral for three straight months, the Creighton University Mid-America Business Conditions Index, a leading economic indicator for the nine-state region stretching from Minnesota to Arkansas, rebounded to its highest level since July of last year. The Business Conditions Index, which uses the identical methodology as the national ISM and ranges between 0 and 100 with 50.0 representing growth neutral, climbed to 56.1 from 47.0 in January.

"After flashing recession warning signals for three consecutive months, Creighton's monthly survey of manufacturing supply managers rebounded to its highest level since July of last year," said Ernie Goss, Ph.D., director of Creighton University's Economic Forecasting Group and the Jack A. MacAllister Chair in Regional Economics in the Heider College of Business.

"While it's too early to tell if this is an end to the downward trend, it was certainly promising on the growth front. However, the soaring inflation reading serves as a very negative signal for financial markets and the Federal Reserve," said Goss.

Oklahoma's Business Conditions Index advanced in February to a reading above growth neutral. The February index rose to 54.9 from 43.3 in January. Components of the overall February index were: new orders at 55.4, production or sales at 56.8, delivery lead time at 57.6, inventories at 45.4, and employment at 59.1. "Manufacturing industries, both durable and non-durable goods producers, are experiencing solid growth in the state," noted 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 set in the domestic spot market at Cushing, Oklahoma.

Background

The discovery of oil transformed Oklahoma's economy. By the time Oklahoma became a state in 1907, it was the largest oil producer in the nation. Excluding federal offshore areas, Oklahoma was the 6th-largest crude oil producer among the states in 2021, accounting for over 4 percent of the nation's crude oil production (at 143,052,000 barrels). Crude oil wells and gathering pipeline systems are concentrated in central Oklahoma. The state's largest producing field and the 11th largest in the United States, the Sho-Vel-Tum field, in eastern Stephens and western Carter Counties has continuously produced crude oil since its discovery in 1905.

The city of Cushing, in central Oklahoma, is home to about 14 percent of the nation's commercial crude oil storage capacity and 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. As of January 2021, those refineries had a combined distillation capacity of more than 522,000 barrels per day—roughly 3.0 percent of the total U.S. refining capacity.

Current Developments

According to the most recent *This Week in Petroleum*, the U.S. Energy Information Administration (EIA), reported that in 2022, the United States exported 5.97 million barrels per day (bbl/d) of petroleum products, an increase of 7 percent (or 405,000 bbl/d) compared with 2021, setting a new record for total petroleum product exports. In volumetric terms, the largest increase was in exports of distillate fuel oil—usually consumed as diesel—which increased by 18 percent (193,000 bbl/d) compared with 2021.

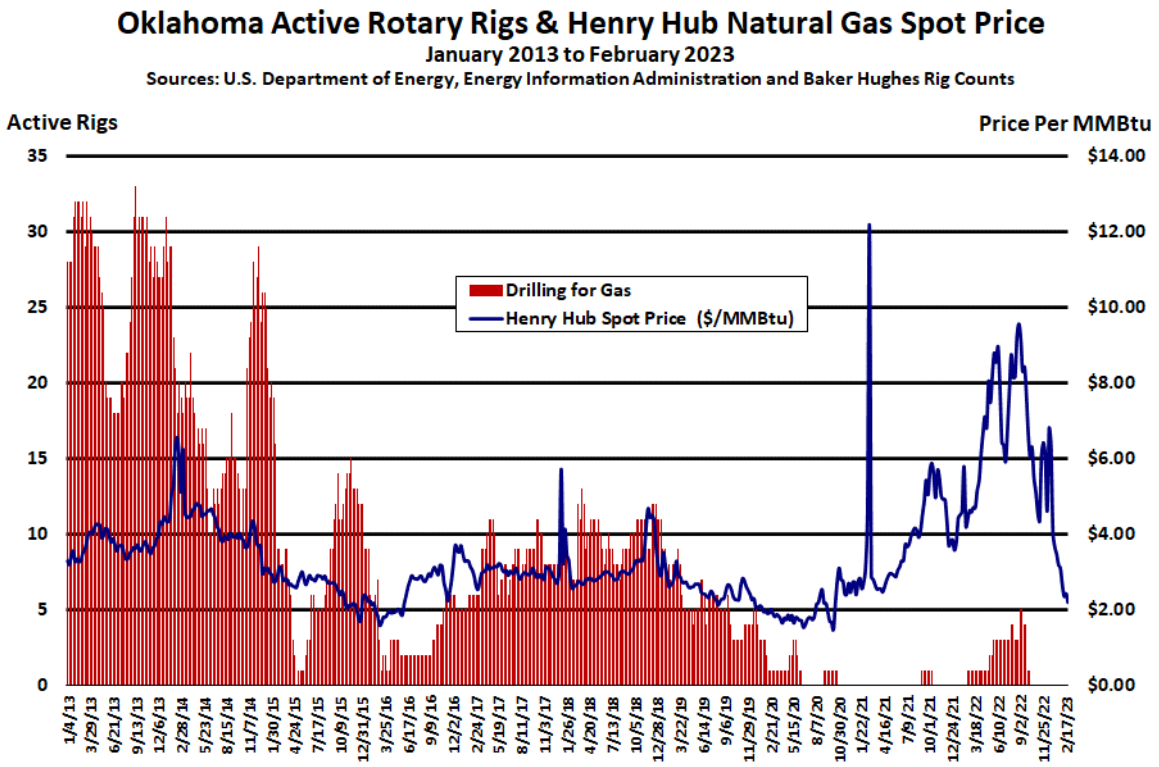
EIA also noted that aside from the European Union ban on Russia's crude oil and petroleum imports, the high volume of U.S. petroleum product exports in 2022 also reflected longer-term trends. Since 2010, U.S. exports of total petroleum products (excluding crude oil) have increased from 2.31 million bbl/d to 5.97 million bbl/d, an increase of 3.66 million bbl/d, or 159 percent.

Crude production in Oklahoma decreased over the month in December—the most recently reported monthly data point. Statewide field production of crude oil was at a preliminary level of 12,967,000 bbl in December, down 361,000 bbl (-2.7 percent) from the upwardly revised November level of 13,328,000 bbl, according to data reported by the EIA. Compared to a year ago, Oklahoma crude production was up 517,000 bbl (4.2 percent) from the December 2021 production level of 12,450,000 bbl.

West Texas Intermediate (WTI-Cushing) crude oil for delivery at Cushing, Oklahoma, averaged $76.83/bbl in February, down $1.25/bbl from the January average of $78.08/bbl. The EIA expects the WTI crude oil price to increase to an average of $77/bbl in 2023, declining to $72/bbl in 2024.

According to oil field services company Baker Hughes, oil-directed rig activity in the United States, which reflect crude oil drilling, was down 7 rigs to 600 for the week ending February 24, 2023, while the nation's total rig count was also down 7 to a level of 753. Compared to a year ago, the nation's total rig count was 103 more than 650 rigs reported on February 25, 2022.

For the week ending February 24, 2023, Oklahoma's total active rig count was at a level of 62, down 2 rigs from a month earlier, according to Baker Hughes. Oil-directed rigs accounted for all of total rig activity in February. Oklahoma's active rig count was up 11 from 51 active rigs reported operating on February 25, 2022.



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's proved natural gas reserves are the 3rd-largest in the nation, after Texas and Pennsylvania. The state has 8 percent of the nation's total proved reserves and contains all or part of 14 of the 100 largest U.S. natural gas fields, as measured by proved reserves. In 2021, Oklahoma was the nation's 5th-largest producer of marketed natural gas. Statewide annual natural gas production was at an all-time high of more than 3.0 trillion cubic feet in 2019.

In 2020, Oklahoma was the nation's fourth-largest consumer of natural gas on a per capita basis. The electric power sector and the industrial sector together use slightly more than four-fifths of the natural gas delivered to consumers in Oklahoma.

Current Developments

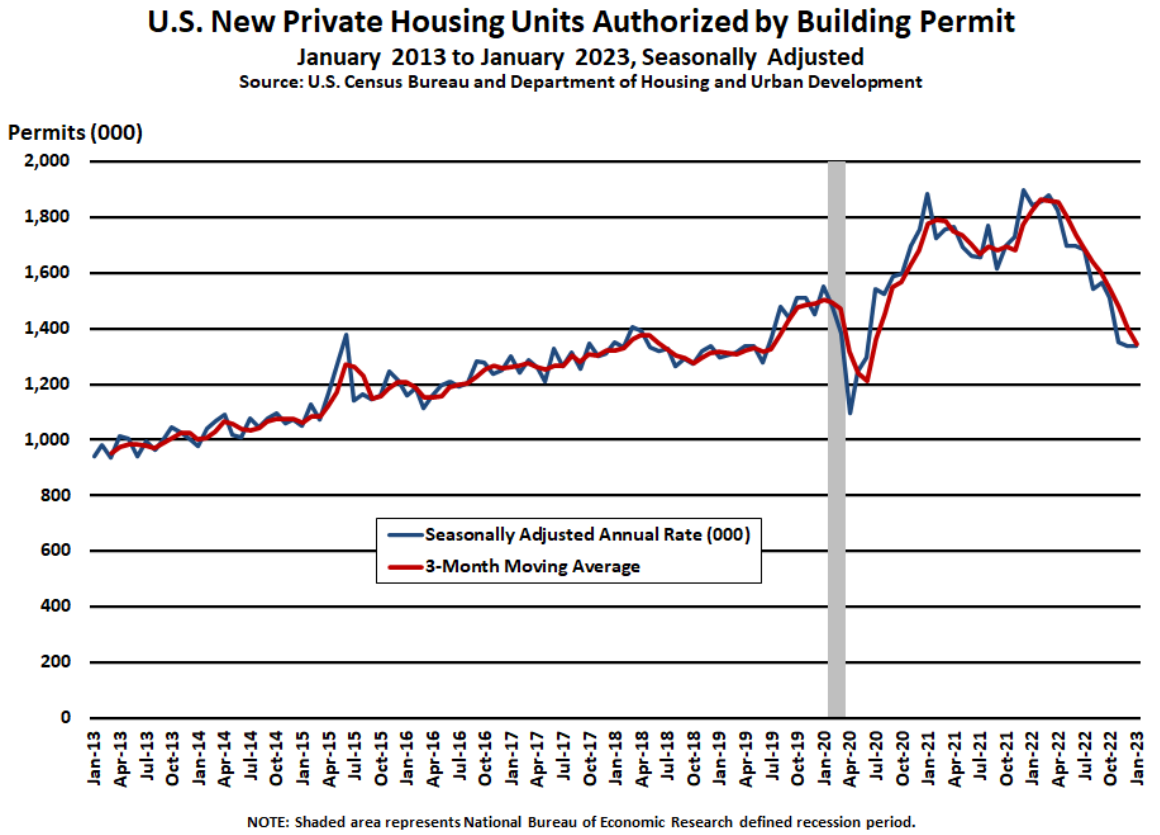
According to the March *Short-Term Energy Outlook* (STEO), the U.S. Energy Information Administration (EIA), noted that as a result of less natural gas consumption than had previously been expected, EIA forecasts that the United States will close the withdrawal season at the end of March with more than 1.9 trillion cubic feet of natural gas in storage, 23 percent more than the five-year average and 27 percent more than EIA's forecast in the January STEO. The Henry Hub natural gas spot price in EIA's forecast averages about $3 per million British thermal units (MMBtu) in 2023, down by more than 50 percent from last year. EIA previously expected almost $5/MMBtu in the January STEO forecast.

Oklahoma natural gas production increased over the month in December. Statewide natural gas gross withdrawals were at a preliminary level of 236,693 million cubic feet (MMcf) in December, up 286 MMcf (0.1 percent) from the previous month's downwardly revised level of 236,407 MMcf. Over the year, statewide natural gas production was up 17,888 MMcf (8.2 percent) from the December 2021 level of 218,805 MMcf.

In February, the Henry Hub spot price averaged $2.38 per million British thermal units (MMBtu), down 89 cents from $3.27/MMBtu in January. Increased natural gas production and less demand has allowed U.S. natural gas inventories to rise after a period of below-average levels. EIA expects natural gas inventories to remain above average through the summer.

According to Baker Hughes, for the week ending February 24, 2023, the national natural gas rig count was flat at 151 over the week but up 24 rigs over the year.

Oklahoma drillers reported no active natural gas-directed rigs for the week ending February 24, 2023, unchanged over the month, according to Baker Hughes.



Definition & Importance

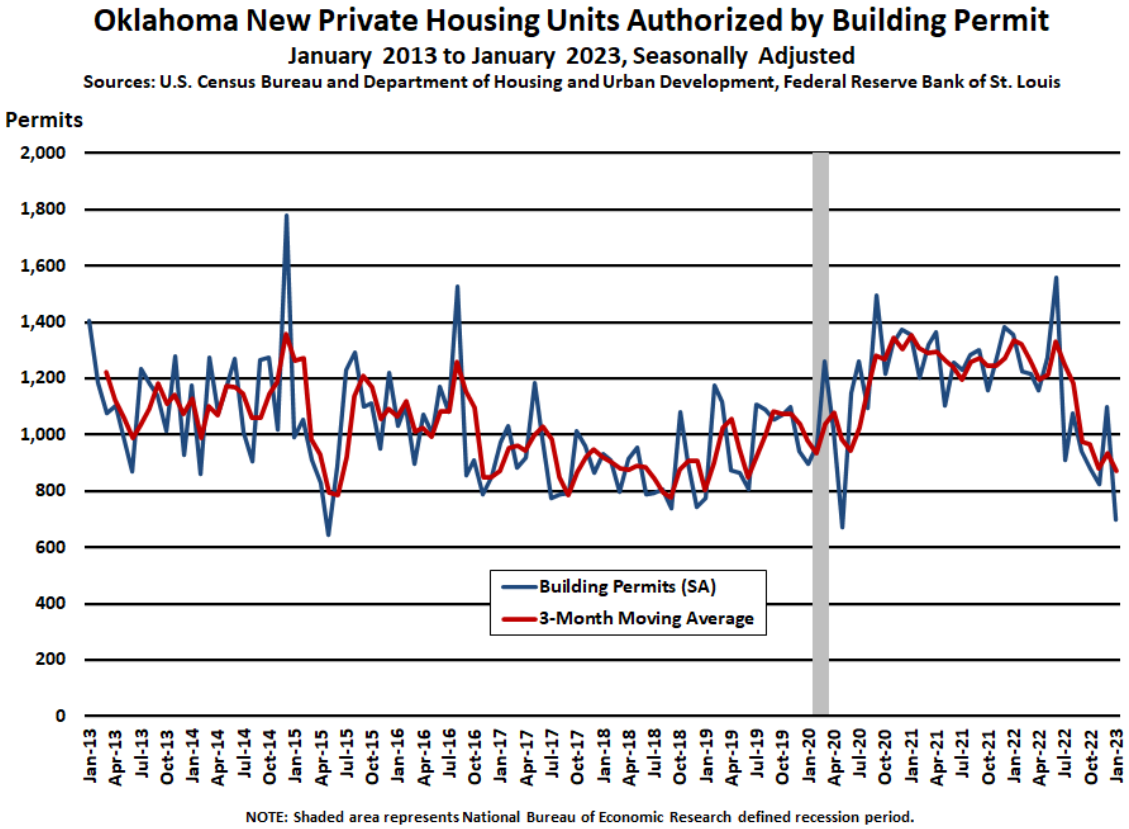
The U.S. Census Bureau and the Department of Housing and Urban Development jointly provide monthly national and regional data on the number of new housing units authorized by building permits; authorized, but not started; started; under construction; and completed. The data are for new, privately-owned 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 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 outsize impact on the economy. Each home built creates an average of three jobs for a year and about $130,000 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

U.S. applications to build, a sign of future residential construction activity, rose in January, as an easing in mortgage rates and improvement in homebuilder confidence indicate the housing market may be close to reaching a floor. Privately-owned housing units authorized by building permits in January were at a seasonally adjusted annual rate of 1,339,000, 0.1 percent above the revised December rate of 1,337,000, but 27.3 percent below the January 2022 rate of 1,841,000, according to the U.S. Census Bureau and the U.S. Department of Housing and Urban Development. Permits for single-family homes declined 1.8 percent to a rate of 718 units in January, while permits for multi-family housing projects rose 0.5 percent to a rate of 563,000 units.

The National Association of Home Builders/Wells Fargo Housing Market Index (HMI) surged to a five-month high in February, climbing to a reading of 42, up from 35 in December.



Definition & Importance

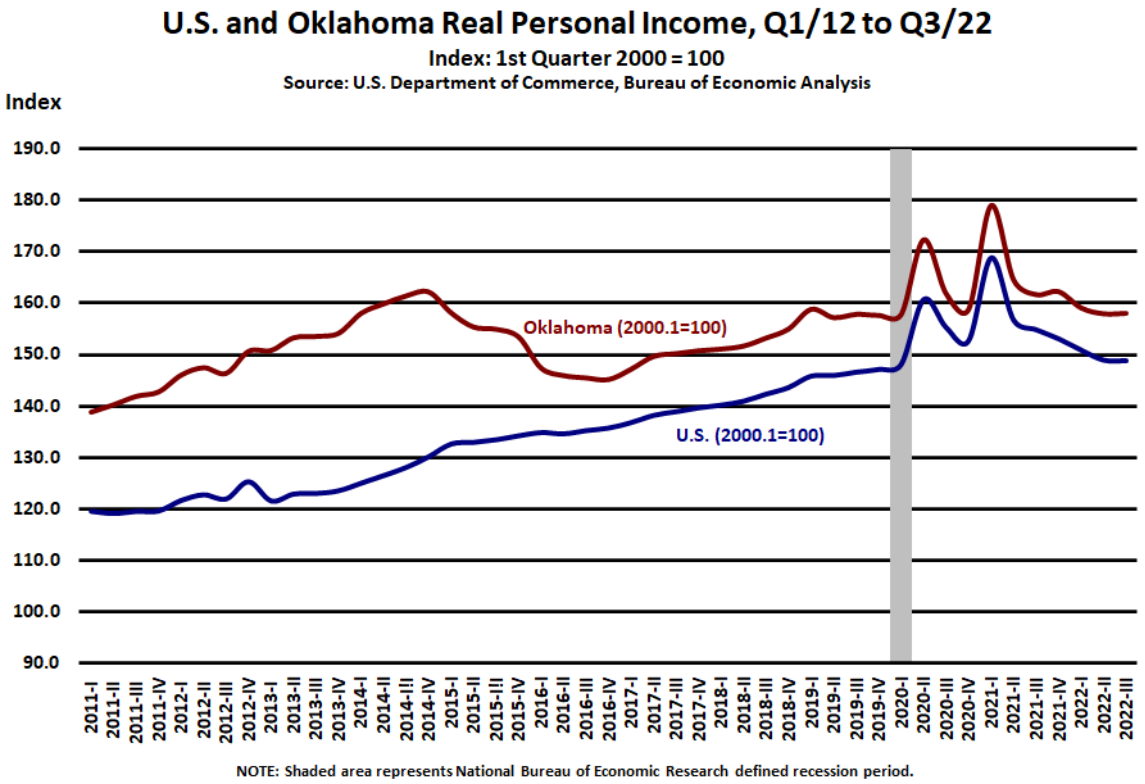
The data services of the Federal Reserve Bank of St. Louis produce a seasonally adjusted series including monthly state level data on the number of new housing units authorized by building permits. These adjustments are made using the X-12 Procedure of SAS to remove the seasonal component of the series 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

Oklahoma home builders requested the fewest number of applications for new residential construction in more than two years in January, led by a surge in apartment permitting. Total residential permitting in December was at a seasonally adjusted level of 1,088, up 257 (30.9 percent) from the downwardly revised November level of 831, but down 285 (-20.7 percent) from the December 2021 level of 1,372 permits, according to figures from the U.S. Census Bureau and the Federal Reserve Bank of St. Louis.

In December, permitting for single family homes was at a seasonally adjusted level of 712 units, up 10 (1.4 percent), from a level of 702 in November. Multi-family permitting was at a seasonally adjusted level of 376 in December, up 247 (191.8 percent), from the previous month's level of 129 permits. Single-family permitting accounted for 65.5 percent of total residential permitting activity in December while the more volatile multi-family permitting accounted for 34.5 percent.

In 2022, statewide residential construction slipped from a 15-year high set in 2021. Oklahoma total residential permitting for 2022 was at a seasonally adjusted level of 13,500 permits. This is 1,720 fewer permits (-11.3 percent) less than the 15,220 total permits issued during 2021.



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.

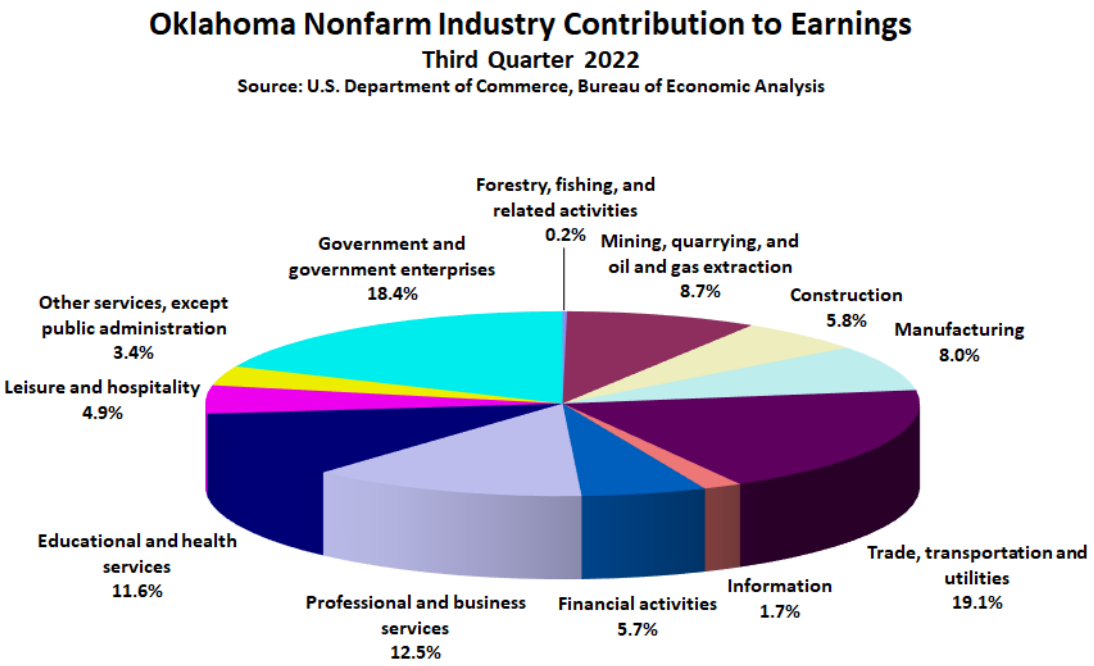
To show the vastly different levels of total personal income for the U.S. and Oklahoma on the same chart, these data have been converted to index numbers. This chart shows a comparison of Oklahoma and U.S. growth in real personal income with 1st quarter 2000 as the base year.

Current Developments

U.S. household income rose in January, as wages and salaries jumped and consumer spending increased by the most in nearly two years. Personal income increased $131.1 billion (0.6 percent) in January, according to estimates by the Bureau of Economic Analysis (BEA). Disposable personal income (DPI) increased $387.4 billion (2.0 percent) and personal consumption expenditures (PCE) increased $312.5 billion (1.8 percent). The PCE price index increased 0.6 percent in January. Excluding food and energy, the PCE price index also increased 0.6 percent. Real DPI increased 1.4 percent and Real PCE increased 1.1 percent; goods increased 2.2 percent and services increased 0.6 percent.

In January, spending on goods, such as motor vehicles and household furnishings, jumped 5.5 percent. Spending on services, such as healthcare and transportation, rose 1.3 percent over the month.

The personal savings rate—personal saving as a percentage of disposable personal income—was 4.7 percent in January, the highest savings rate in a year.



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.

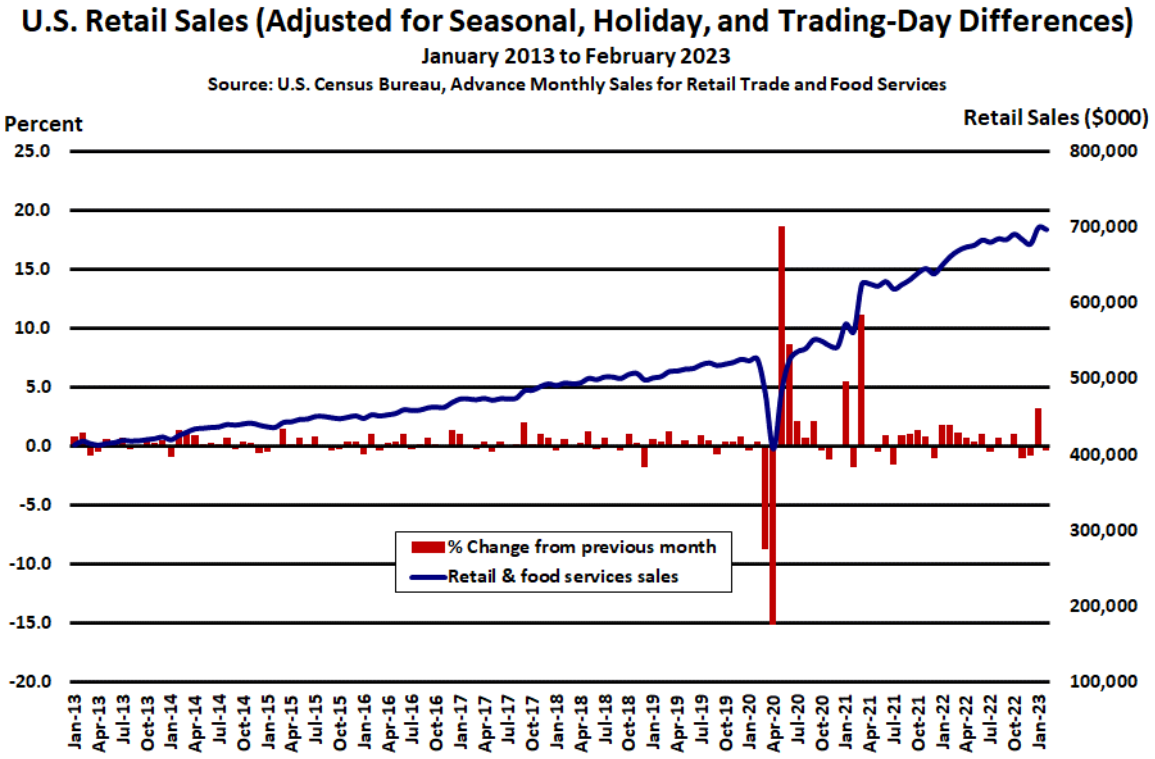
Current Developments

State personal income—a measure of nationwide income calculated as the sum of personal income of all states and the District of Columbia—increased in all 50 states and the District of Columbia in the 3rd quarter of 2022, with the percent change ranging from 14.2 percent in Colorado to 1.4 percent in Kentucky, according to estimates released today by the U.S. Bureau of Economic Analysis (BEA).

Oklahoma's personal income increased at a 5.9 percent rate in the 3rd quarter of 2022, to a level of $222.3 billion, ranking the state 13th among all states. For the 2nd quarter of 2022, Oklahoma's personal income was revised upward to $219.1 billion (7.3 percent) from the previous estimate of $215.2 billion (6.3 percent).

Earnings increased in all 50 states and the District of Columbia, increasing 6.5 percent nationally. The percent change in earnings ranged from 8.5 percent in Texas to 3.2 percent in Indiana. In Oklahoma, earnings increased 7.1 percent in the 3rd quarter of 2022.

Earnings increased in 22 of the 24 industries for which BEA prepares quarterly estimates. Health care and social assistance; professional, scientific, and technical services; and state and local government were the leading contributors to the overall growth in earnings. In Oklahoma, transportation and warehousing; retail trade; and wholesale trade were the leading contributors to the overall growth in earnings in the 3rd quarter of 2022.



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.

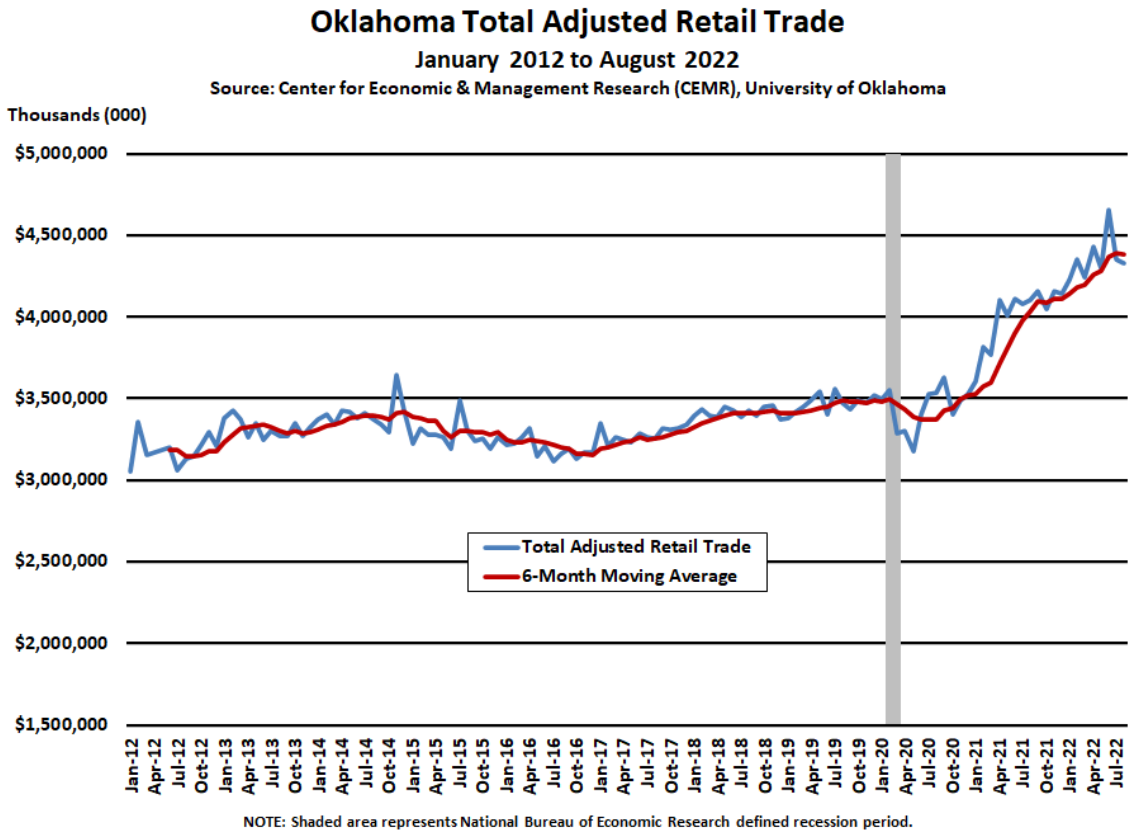
Current Developments

U.S. retail spending slipped in February, as consumers trimmed their spending after a buying burst in January. Advance estimates of U.S. retail and food services for February 2023, adjusted for seasonal variation and holiday and trading-day differences, but not for price changes, were $697.9 billion, down 0.4 percent from the previous month, but up 5.4 percent above February 2022, according to the U.S. Census Bureau. Total sales for the December 2022 through February 2023 period were up 6.4 percent from the same period a year ago. The December 2022 to January 2023 percent change was revised from up 3.0 percent to up 3.2 percent.

Sales at auto dealerships slipped 2.0 percent in February, after jumping 7.8 percent in the previous month. Receipts at service stations declined 0.6 in February, on lower pump prices. Excluding sales from auto and gasoline, retail sales were unchanged from January.

Sales at furniture stores dropped 2.5 percent, while business at restaurants fell 2.2 percent in February from January. Sales at department stores slid 4.0 percent. But shoppers spent more online (1.6 percent), health and beauty stores (0.9 percent) as well as food retailers (0.5 percent).

The less volatile "core" or retail-control group sales which are used to calculate gross domestic product, and strips out automobiles, gasoline, building materials, and food services sales, rose 0.5 percent in February, following a revised 2.3 percent rate in the previous month.



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 spending declined in August, as Oklahomans spent less at the pump and on other discretionary spending items. Total adjusted retail trade in August was at a level of $4.33 billion, down 0.4 percent from the previous month's revised level of $4.35 billion. Over the year, total adjusted retail trade was up 5.6 percent from the August 2021 level of $4.10 billion. Excluding estimated gasoline sales, total retail sales for August increased 0.4 percent over the month.

In August, total durable goods sales increased 0.5 percent, as all but one of the six durable goods categories reported rising receipts over the month. Furniture (2.4 percent); auto accessories & repair (0.8 percent); miscellaneous durable goods (0.5 percent); used merchandise (0.2 percent) and lumber & hardware (0.1 percent) reported gains over the month. The only declining durable goods category in August was computer, electronics & music stores (-0.4 percent).

Non-durable goods expenditures declined 0.8 percent in August, as estimated gasoline sales dropped 6.2 percent over the month on lower pump prices. Other declining non-durable goods categories in August were drug stores (-1.5 percent); liquor stores (-1.8 percent); and miscellaneous non-durable goods (-0.3 percent). Advancing non-durable goods categories in August were apparel (1.4 percent); eating & drinking places (0.6 percent); general merchandise stores (0.6 percent); and food stores (0.1 percent).