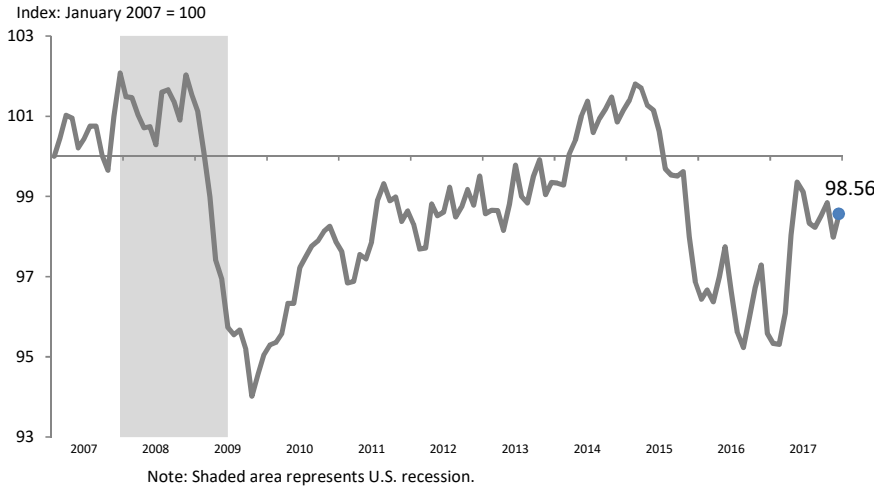


► Chart 1: Wyoming Business-Cycle Index as of December 2017

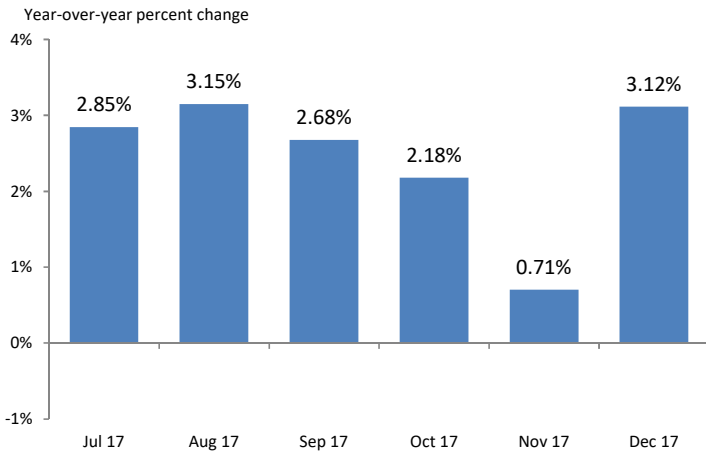


► SUMMARY: The Wyoming Business-Cycle Index (WBCI) registered an index value of 98.56 in December 2017 (see Chart 1), a slight increase compared to the November 2017 value of 97.98 and considerably higher by comparison to the December 2016 value of 95.58.

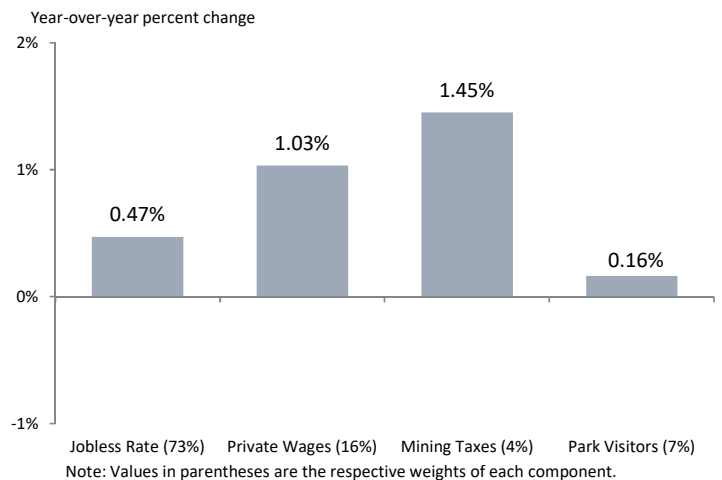
For the July through December period, the WBCI recorded year-over-year increases (see Chart 2) every month with the December 2017 index value seeing the second largest increase at 3.12 percent over the previous year.

As Chart 3 demonstrates, each of the four components of the WBCI were positive in December. The state's unemployment rate was at 4.2 percent in December, a significant decline over the previous year's 4.8 percent. The private wages component increased as each of its three sub-components, hourly wages, hours worked, and private jobs, increased. The state's collection of the 4 percent sales and use tax associated with the mining sector had improved as well and was the main driver for the increase in the December index value. The last component, visits to the state's national parks, recorded an increase of 0.16 percent, acknowledging park visits in 2017 were comparable to 2016.

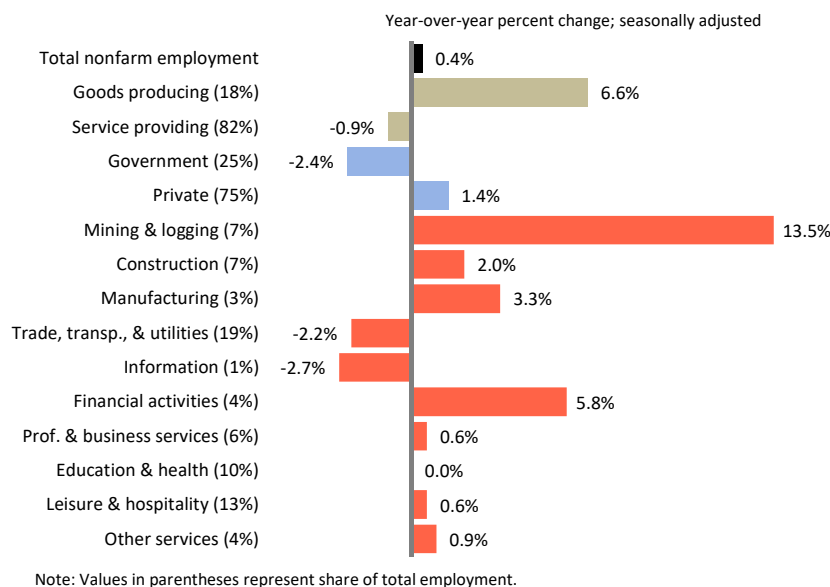
► Chart 2: Change in Business-Cycle Index — Last 6 Months



► Chart 3: Component Changes in the Index — December 2017



► Chart 4: December 2017 Employment Growth

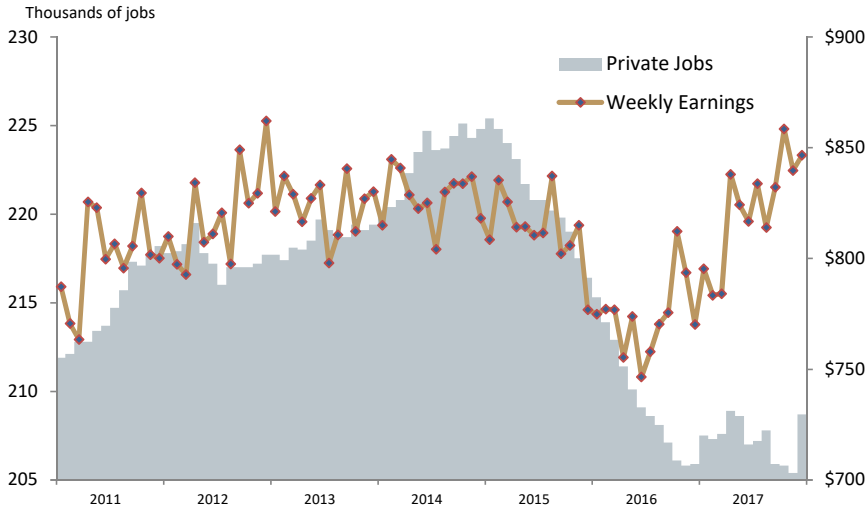


► The total number of nonfarm payroll jobs in Wyoming increased at a 0.4 percent pace in December in a year ago comparison as seen in Chart 4. The December job count was 277,900, higher than the December 2016 level by 1,100 jobs.

The mining sector (+2,400) added the most jobs in December while trade, transportation, & utilities incurred the largest decline (-1,200 jobs).

► NOTE: The Wyoming Business-Cycle Index unites four state-level indicators to sum up current economic conditions in a single number. The indicators consist of (1) the state's monthly unemployment rate, (2) private sector wages, estimated by multiplying the total number of private sector jobs in Wyoming each month by the average hours worked per week and by the average hourly wage, (3) monthly sales and use tax collections related to the mining sector, and (4) monthly national park recreation visits. All data used in calculating the WBCI is seasonally adjusted; all dollar amounts are inflation adjusted. SOURCES: Business-cycle index: Economic Analysis Division; private sector wages and unemployment rate: U.S. Bureau of Labor Statistics; mining sales and use taxes: WY Dept. of Revenue; national park visits: National Park Service Visitor Use Statistics.

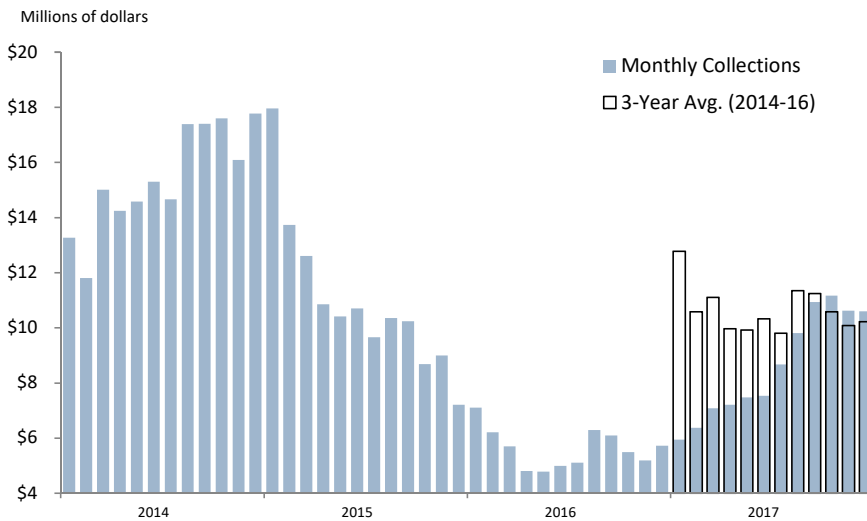
▶ Chart 5: Wyoming Labor Market as of December 2017



▶▶ Jobs associated with Wyoming's private sector increased in December by 3,300 compared to November (see Chart 5). The December 2017 private job count was 208,700, higher than the December 2016 level by 2,800 jobs.

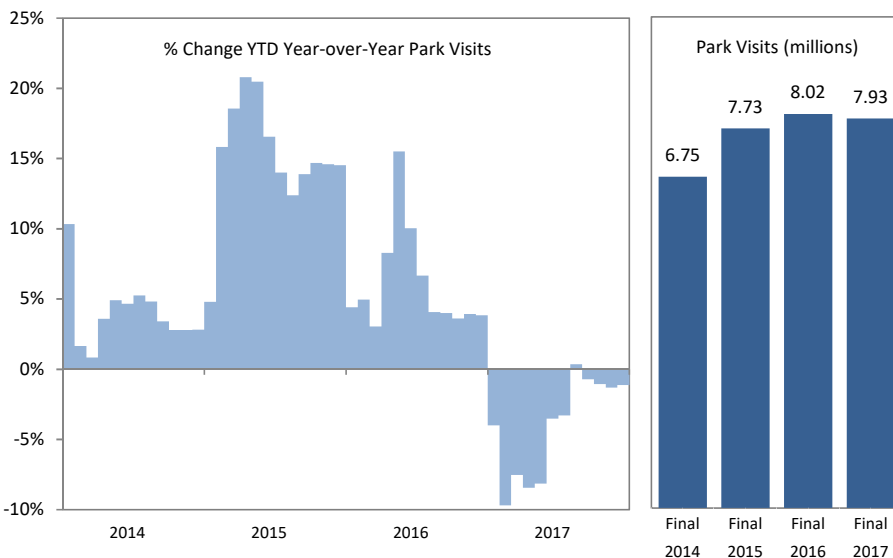
The state's weekly earnings rose in December to \$846.58 compared to November's \$839.74 and much higher than the level attained in December 2016 of \$770.25. The weekly earnings indicator is a product of average weekly hours multiplied by average hourly earnings. Weekly hours rose to 34.4 in December 2017 from 32.5 in a year ago comparison. Hourly earnings also increased to \$24.61 compared to a level of \$23.70 reached one year ago.

▶ Chart 6: Wyoming 4% Sales and Use Tax Collections — Mining Sector



▶▶ Wyoming's collection of the 4 percent sales and use tax related to the mining sector increased to \$10.6 million in December of 2017 (these are actually January 2018 collections that mostly represent sales that took place in December), \$4.9 million higher than December collections from a year ago (see Chart 6). After twelve months of calendar year 2017, total mining collections trailed the 3-year average over the same number of months by \$24.6 million.

▶ Chart 7: National Park Recreation Visits — Cumulative Year-to-Date



▶▶ For the twelve months of 2017, visits to the state's national parks ran slightly behind the previous year's attendance as seen in Chart 7. Cumulative park visits by the end of December were lagging last year's pace by just 1.1 percent. Park attendance in 2017 was bolstered by the solar eclipse on the 21<sup>st</sup> of August, helping drive recreation visits to near 2016 levels.

▶▶ NOTE: The data used in the construction of charts 5, 6, and 7, with the exception of private jobs, are not seasonally adjusted and all dollar amounts are not inflation adjusted.

Wyoming Business-Cycle Index Values			
Year	Month	Index	YOY Change
2007	Jan	100.00	
2007	Feb	100.46	
2007	Mar	101.03	
2007	Apr	100.95	
2007	May	100.21	
2007	Jun	100.43	
2007	Jul	100.75	
2007	Aug	100.75	
2007	Sep	100.02	
2007	Oct	99.65	
2007	Nov	100.99	
2007	Dec	102.08	
2008	Jan	101.49	1.49%
2008	Feb	101.46	1.00%
2008	Mar	101.03	0.00%
2008	Apr	100.71	-0.24%
2008	May	100.74	0.53%
2008	Jun	100.29	-0.14%
2008	Jul	101.61	0.85%
2008	Aug	101.66	0.91%
2008	Sep	101.38	1.36%
2008	Oct	100.90	1.26%
2008	Nov	102.03	1.03%
2008	Dec	101.54	-0.53%
2009	Jan	101.11	-0.37%
2009	Feb	100.10	-1.33%
2009	Mar	98.99	-2.02%
2009	Apr	97.40	-3.28%
2009	May	96.93	-3.79%
2009	Jun	95.73	-4.55%
2009	Jul	95.55	-5.96%
2009	Aug	95.67	-5.90%
2009	Sep	95.18	-6.11%
2009	Oct	94.02	-6.83%
2009	Nov	94.57	-7.31%
2009	Dec	95.05	-6.39%
2010	Jan	95.30	-5.75%
2010	Feb	95.36	-4.74%
2010	Mar	95.57	-3.45%
2010	Apr	96.33	-1.10%
2010	May	96.33	-0.62%
2010	Jun	97.23	1.56%
2010	Jul	97.49	2.03%
2010	Aug	97.76	2.19%
2010	Sep	97.88	2.84%
2010	Oct	98.13	4.37%
2010	Nov	98.26	3.90%
2010	Dec	97.88	2.98%
2011	Jan	97.63	2.45%
2011	Feb	96.84	1.56%
2011	Mar	96.88	1.37%
2011	Apr	97.55	1.26%
2011	May	97.44	1.15%
2011	Jun	97.87	0.67%
2011	Jul	98.91	1.46%
2011	Aug	99.32	1.59%
2011	Sep	98.89	1.03%
2011	Oct	98.99	0.88%
2011	Nov	98.37	0.12%
2011	Dec	98.64	0.78%
2012	Jan	98.31	0.70%
2012	Feb	97.68	0.87%
2012	Mar	97.71	0.86%
2012	Apr	98.81	1.30%
2012	May	98.52	1.11%
2012	Jun	98.61	0.75%
2012	Jul	99.22	0.31%
2012	Aug	98.48	-0.84%
2012	Sep	98.74	-0.15%
2012	Oct	99.17	0.19%
2012	Nov	98.78	0.41%
2012	Dec	99.50	0.88%

Wyoming Business-Cycle Index Values			
Year	Month	Index	YOY Change
2013	Jan	98.57	0.26%
2013	Feb	98.65	0.99%
2013	Mar	98.64	0.95%
2013	Apr	98.15	-0.68%
2013	May	98.80	0.29%
2013	Jun	99.78	1.19%
2013	Jul	99.00	-0.23%
2013	Aug	98.84	0.36%
2013	Sep	99.50	0.77%
2013	Oct	99.91	0.75%
2013	Nov	99.05	0.27%
2013	Dec	99.35	-0.15%
2014	Jan	99.33	0.77%
2014	Feb	99.28	0.64%
2014	Mar	100.05	1.43%
2014	Apr	100.40	2.30%
2014	May	101.00	2.23%
2014	Jun	101.37	1.60%
2014	Jul	100.59	1.61%
2014	Aug	100.94	2.12%
2014	Sep	101.17	1.69%
2014	Oct	101.48	1.57%
2014	Nov	100.85	1.82%
2014	Dec	101.15	1.81%
2015	Jan	101.40	2.09%
2015	Feb	101.80	2.54%
2015	Mar	101.70	1.64%
2015	Apr	101.27	0.87%
2015	May	101.15	0.14%
2015	Jun	100.62	-0.74%
2015	Jul	99.69	-0.90%
2015	Aug	99.53	-1.39%
2015	Sep	99.51	-1.65%
2015	Oct	99.62	-1.83%
2015	Nov	97.99	-2.84%
2015	Dec	96.87	-4.23%
2016	Jan	96.43	-4.90%
2016	Feb	96.67	-5.05%
2016	Mar	96.37	-5.24%
2016	Apr	96.99	-4.23%
2016	May	97.74	-3.37%
2016	Jun	96.64	-3.96%
2016	Jul	95.61	-4.09%
2016	Aug	95.23	-4.33%
2016	Sep	95.95	-3.58%
2016	Oct	96.73	-2.90%
2016	Nov	97.29	-0.71%
2016	Dec	95.58	-1.33%
2017	Jan	95.33	-1.14%
2017	Feb	95.31	-1.40%
2017	Mar	96.09	-0.29%
2017	Apr	98.04	1.08%
2017	May	99.35	1.65%
2017	Jun	99.10	2.55%
2017	Jul	98.33	2.85%
2017	Aug	98.23	3.15%
2017	Sep	98.52	2.68%
2017	Oct	98.84	2.18%
2017	Nov	97.98	0.71%
2017	Dec	98.56	3.12%



## Wyoming Business-Cycle Index Addendum

The Wyoming Business-Cycle Index (WBCI) is a coincident economic indicator and is designed to provide a current assessment of the state's economy. There are four main components of the WBCI. Two of these components, unemployment rate and private sector weekly wages, are included to capture aggregate economic activity for Wyoming. The third component, mining taxes, gauges economic activity related to mineral production in the state while the fourth component, national park visits, serves as a proxy for the impact of tourism.

**Unemployment Rate:** The first component of the WBCI is the unemployment rate. This statistic measures the percentage of people in Wyoming who want to work but don't have jobs. Within the WBCI model, the employment rate statistic (1.00 or 100% minus the unemployment rate) is indexed rather than the unemployment rate because an increase in the employment rate, similar to increases in private wages, mining taxes, and park visits are considered to be positive impacts on the economy. This statistic is available monthly, in seasonally adjusted form, from the U.S. Bureau of Labor Statistics. It is included as a component because it provides an assessment of the state's overall well-being.

**Private Sector Weekly Wages:** The second component of the WBCI is total private sector weekly wages. This component is estimated by multiplying the number of private sector jobs in Wyoming each month by the average weekly hours and then multiplying this product by the average hourly earnings to achieve a dollar value of private sector jobs in the state. Each of these statistics are available monthly from the U.S. Bureau of Labor Statistics. The data are seasonally adjusted and all dollar amounts have been converted to constant dollars using the Consumer Price Index – All Urban Consumers database. This indicator is included because it is another broad-based measure of the state's economic health. Since earnings account for about 67 percent of Wyoming's personal income, this component serves as a partial estimate of this income statistic.

**Mining Taxes:** The third component of the WBCI is the State of Wyoming's sales and use tax collections attributed to the mining sector. Because sales and use tax collections received by the state for a given month represent transactions that took place 4 to 6 weeks prior, the data is lagged one month for use in the WBCI model. This statistic is available monthly from the State of Wyoming's Department of Revenue. All dollar amounts have been converted to constant dollars using the Consumer Price Index – All Urban Consumers database and then the data are seasonally adjusted. This indicator is included because it represents mining activity which is an important part of the Wyoming economy. As of 2014, almost 36 percent of Wyoming's annual GDP was attributed to the mining industry.

**National Park Recreation Visits:** The fourth component of the WBCI is national park recreation visits. This statistic is compiled by the National Park Service Public Use Statistics Office and is available monthly. The park visits statistic includes recreational visits to Yellowstone and Grand Teton National Parks, and Devils Tower National Monument. The data are seasonally adjusted. Park visits are included because they capture another critical part of Wyoming's economy – tourism.

**Methodology:** After the data for each component have been adjusted as noted above, each series is then standardized starting in January 2007 resulting in a value of 100.00 for each component and the WBCI in that month. As the components change from month to month, so does the value of the WBCI. Monthly index values for each of the components not including the unemployment rate are then smoothed using a weighted moving average. The unemployment rate is excluded from this treatment because the data are relatively stable to begin with. Next, the standard deviation of each component's monthly standardized values is determined followed by the calculation of the inverse of each component's standard deviation. Finally, the individual inverse standard deviations are standardized resulting in weights that sum to 1.00. The rationale for this weighting approach is the same used by the U.S. Conference Board implying that those components that are more stable over time will generate a smaller standard deviation but a larger inverse standard deviation, and thus, a larger weight. A substantial shift in a traditionally stable data series would provide a more compelling signal of economic change than a large shift in a series that commonly has large shifts.

