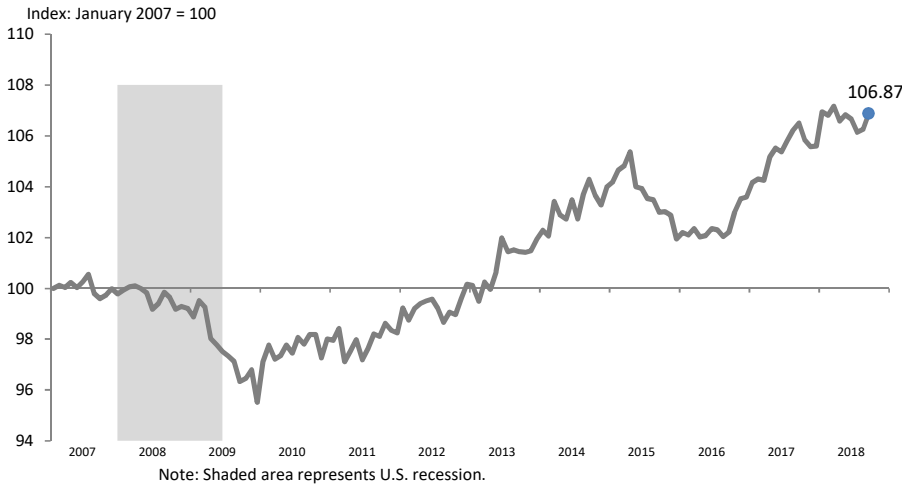


► Chart 1: Cheyenne Business-Cycle Index as of September 2018

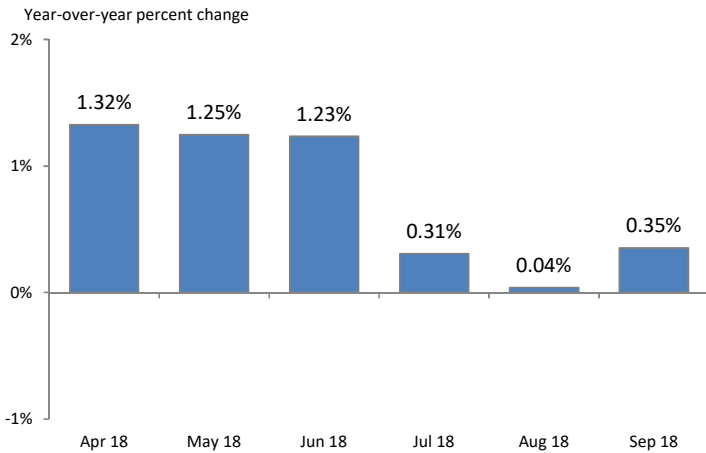


►► SUMMARY: The Cheyenne Business-Cycle Index (ChBCI) registered an index value of 106.87 in September of 2018 (see Chart 1), an increase compared to the August 2018 value of 106.25 and slightly higher in comparison to the September 2017 value of 106.50.

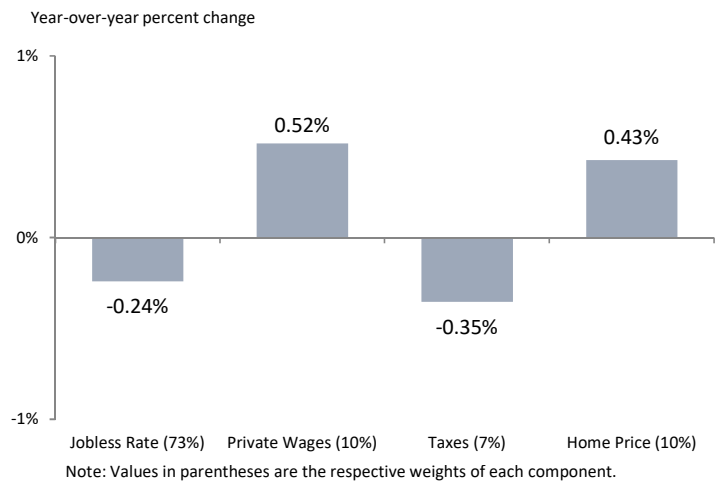
As displayed in Chart 2, the April through September period indicated that the ChBCI had recorded year-over-year increases in each of the six months with the September 2018 index value increasing by 0.35 percent over the previous year.

As Chart 3 demonstrates, two of the four components of the ChBCI declined in September while two were positive. The unemployment rate was 4.2 percent in September, an increase compared to the previous September's value of 3.8 percent. The collection of the 4 percent sales and use tax attributed to taxable sales in Laramie County also posted a slight year-over-year decline. Both the private wages and the median price of homes were contributors to the ChBCI increase to the September index value.

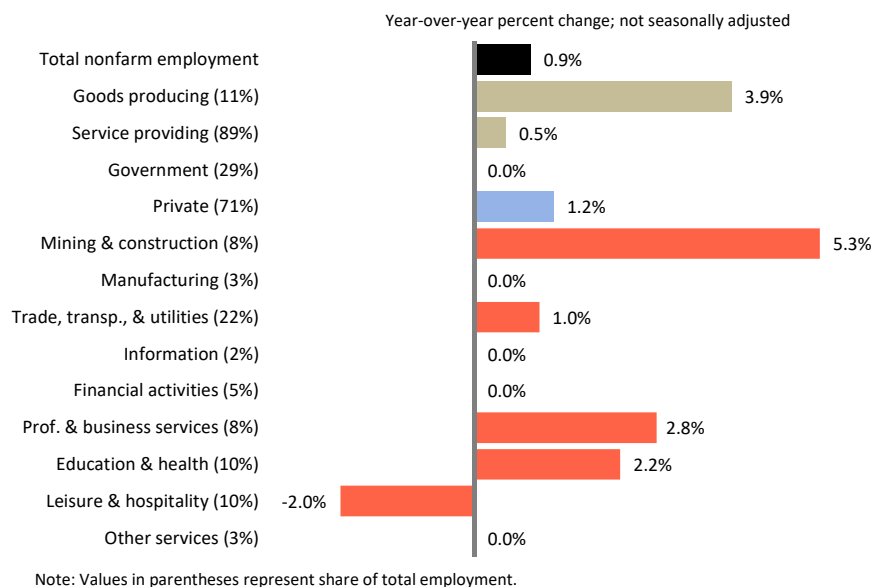
► Chart 2: Change in Business-Cycle Index — Last 6 Months



► Chart 3: Component Changes in the Index — September 2018



► Chart 4: September 2018 Employment Growth



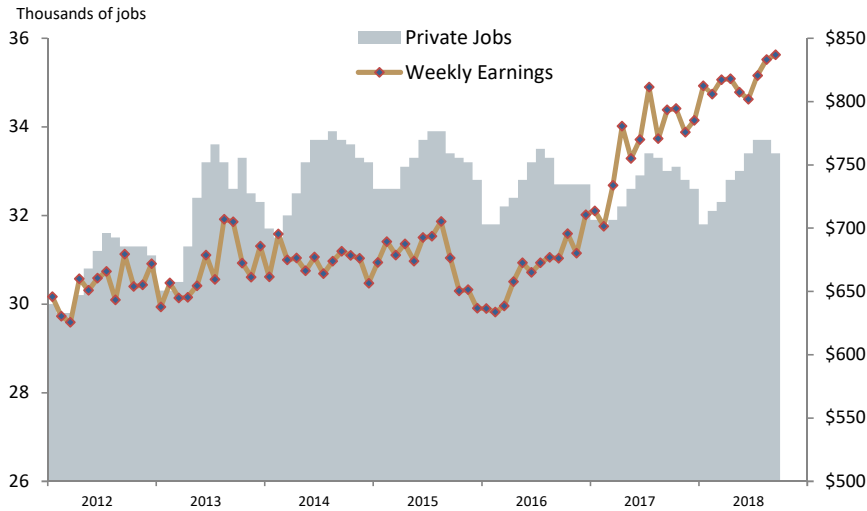
►► The total number of nonfarm payroll jobs in Cheyenne increased at a 0.9 percent pace in September in a year ago comparison as seen in Chart 4. The September job count was 47,100, higher than the September 2017 level by 400 jobs. The number of jobs in the government sector was unchanged from a year ago.

In the private sector, mining & construction added the largest number of jobs (+200) in September. Leisure & hospitality incurred the largest decline (-100 jobs).

►► NOTE: The Cheyenne Business-Cycle Index unites four city/county-level indicators to sum up current economic conditions in a single number. The indicators consist of (1) Laramie County's monthly unemployment rate, (2) private sector wages, estimated by multiplying the total number of private sector jobs in Cheyenne each month by the average hours worked per week and by the average hourly wage, (3) monthly sales and use tax collections which reflect taxable sales in Laramie County, and (4) monthly median sold price for Cheyenne single family homes. All data used in the determination of the ChBCI are seasonally adjusted; all dollar amounts are inflation adjusted.

SOURCES: Cheyenne business-cycle index: Economic Analysis Division; private sector wages and unemployment rate: U.S. Bureau of Labor Statistics; sales and use taxes: WY Dept. of Revenue; median home price: Cheyenne Board of REALTORS.

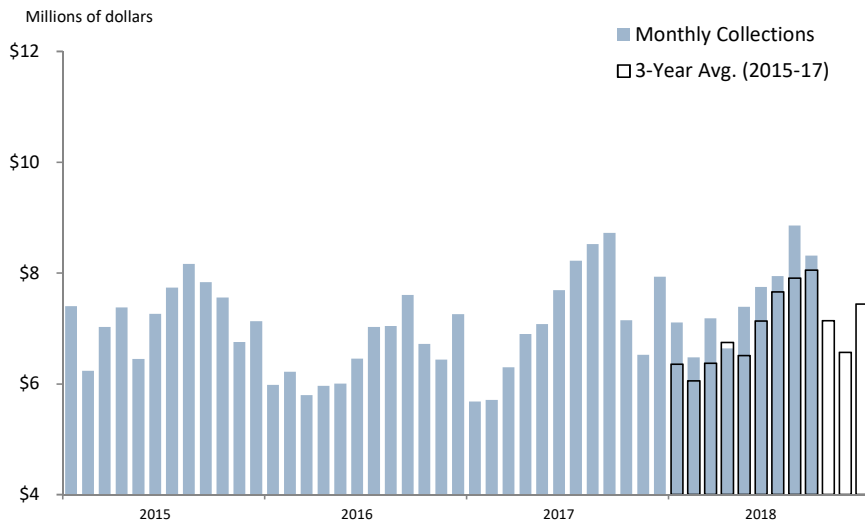
▶ Chart 5: Cheyenne Labor Market as of September 2018



▶▶ Jobs associated with Cheyenne's private sector declined in September by 300 compared to August (see Chart 5). The September 2018 private job count was 33,400, higher than the September 2017 level by 400.

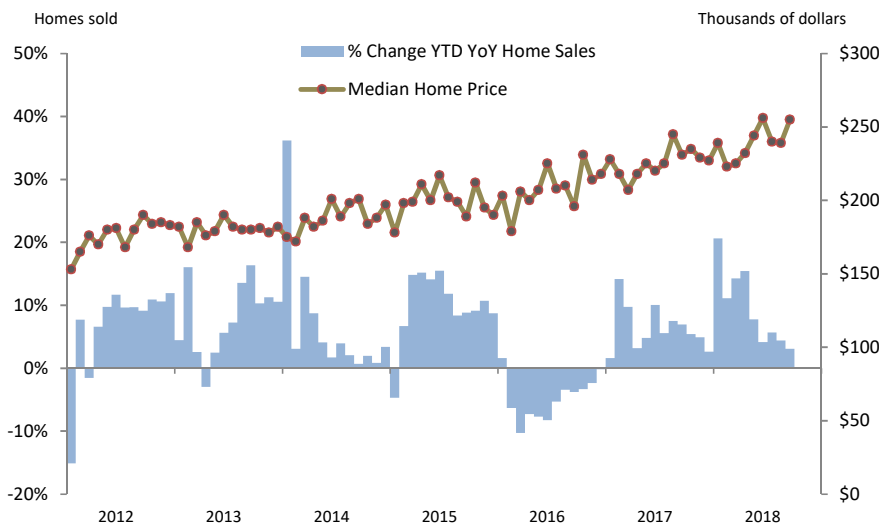
Cheyenne's weekly earnings increased in September to \$836.94 compared to August's \$833.27 and was higher than the level attained in September 2017 of \$793.50. The weekly earnings indicator is a product of average weekly hours multiplied by average hourly earnings. Weekly hours rose to 34.8 in September 2018 from 34.5 in a year ago comparison. Hourly earnings also improved, reaching \$24.05, considerably higher than the \$23.00 achieved in September 2017.

▶ Chart 6: Laramie County 4% Sales and Use Tax Collections



▶▶ Laramie County's collection of the 4 percent sales and use tax rose to \$8.3 million in September of 2018 (these are actually October 2018 collections that mostly represent sales that took place in September), \$0.4 million lower than September collections from a year ago (see Chart 6). After nine months of calendar year 2018, total collections were ahead of the 3-year average over the same number of months by \$4.9 million or 7.8 percent.

▶ Chart 7: Cheyenne Home Sales and Median Home Prices



▶▶ For the Cheyenne housing market, year-to-date home sales volume continued to surpass the 2017 pace while home prices were trending higher over the first nine months of 2018.

The number of homes sold decreased to 109 in September 2018 compared to sales of 117 a year ago while total sales of homes for the nine months of calendar year 2018 were 3.1 percent ahead of last year's sales for the same number of months.

The median home price was \$255,000 in September of 2018, higher than August's price of \$239,000 and appreciably higher than the \$231,000 price from one year ago.

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

Cheyenne Business-Cycle Index Values			
			YOY
Year	Month	Index	Change
2007	Jan	100.00	
2007	Feb	100.12	
2007	Mar	100.03	
2007	Apr	100.23	
2007	May	100.04	
2007	Jun	100.26	
2007	Jul	100.55	
2007	Aug	99.79	
2007	Sep	99.59	
2007	Oct	99.73	
2007	Nov	99.98	
2007	Dec	99.79	
2008	Jan	99.94	-0.06%
2008	Feb	100.06	-0.06%
2008	Mar	100.09	0.06%
2008	Apr	100.00	-0.23%
2008	May	99.83	-0.20%
2008	Jun	99.18	-1.08%
2008	Jul	99.41	-1.13%
2008	Aug	99.84	0.04%
2008	Sep	99.63	0.05%
2008	Oct	99.18	-0.55%
2008	Nov	99.29	-0.69%
2008	Dec	99.22	-0.57%
2009	Jan	98.87	-1.06%
2009	Feb	99.51	-0.54%
2009	Mar	99.27	-0.82%
2009	Apr	98.03	-1.97%
2009	May	97.78	-2.05%
2009	Jun	97.52	-1.67%
2009	Jul	97.34	-2.08%
2009	Aug	97.13	-2.71%
2009	Sep	96.33	-3.31%
2009	Oct	96.46	-2.75%
2009	Nov	96.79	-2.51%
2009	Dec	95.52	-3.73%
2010	Jan	97.13	-1.76%
2010	Feb	97.77	-1.76%
2010	Mar	97.21	-2.07%
2010	Apr	97.35	-0.70%
2010	May	97.77	-0.01%
2010	Jun	97.45	-0.07%
2010	Jul	98.07	0.75%
2010	Aug	97.80	0.69%
2010	Sep	98.19	1.93%
2010	Oct	98.18	1.78%
2010	Nov	97.26	0.48%
2010	Dec	98.01	2.61%
2011	Jan	97.96	0.85%
2011	Feb	98.43	0.67%
2011	Mar	97.11	-0.11%
2011	Apr	97.53	0.19%
2011	May	97.99	0.22%
2011	Jun	97.18	-0.28%
2011	Jul	97.63	-0.45%
2011	Aug	98.21	0.41%
2011	Sep	98.11	-0.08%
2011	Oct	98.62	0.45%
2011	Nov	98.34	1.12%
2011	Dec	98.25	0.24%
2012	Jan	99.22	1.29%
2012	Feb	98.74	0.32%
2012	Mar	99.20	2.15%
2012	Apr	99.40	1.93%
2012	May	99.51	1.55%
2012	Jun	99.58	2.47%
2012	Jul	99.21	1.62%
2012	Aug	98.66	0.46%
2012	Sep	99.06	0.97%
2012	Oct	98.96	0.34%
2012	Nov	99.60	1.28%
2012	Dec	100.15	1.94%

Cheyenne Business-Cycle Index Values			
			YOY
Year	Month	Index	Change
2013	Jan	100.11	0.89%
2013	Feb	99.48	0.75%
2013	Mar	100.25	1.06%
2013	Apr	99.95	0.55%
2013	May	100.65	1.15%
2013	Jun	101.98	2.41%
2013	Jul	101.44	2.24%
2013	Aug	101.51	2.89%
2013	Sep	101.44	2.40%
2013	Oct	101.41	2.48%
2013	Nov	101.47	1.88%
2013	Dec	101.95	1.79%
2014	Jan	102.29	2.18%
2014	Feb	102.06	2.59%
2014	Mar	103.42	3.16%
2014	Apr	102.89	2.94%
2014	May	102.73	2.06%
2014	Jun	103.48	1.47%
2014	Jul	102.73	1.27%
2014	Aug	103.70	2.15%
2014	Sep	104.28	2.80%
2014	Oct	103.66	2.21%
2014	Nov	103.28	1.78%
2014	Dec	103.98	2.00%
2015	Jan	104.17	1.84%
2015	Feb	104.65	2.54%
2015	Mar	104.83	1.36%
2015	Apr	105.37	2.42%
2015	May	103.99	1.23%
2015	Jun	103.93	0.43%
2015	Jul	103.53	0.78%
2015	Aug	103.49	-0.20%
2015	Sep	102.99	-1.24%
2015	Oct	103.01	-0.62%
2015	Nov	102.88	-0.39%
2015	Dec	101.94	-1.97%
2016	Jan	102.19	-1.89%
2016	Feb	102.09	-2.45%
2016	Mar	102.35	-2.37%
2016	Apr	102.02	-3.18%
2016	May	102.07	-1.86%
2016	Jun	102.35	-1.52%
2016	Jul	102.30	-1.18%
2016	Aug	102.03	-1.40%
2016	Sep	102.21	-0.76%
2016	Oct	103.01	-0.01%
2016	Nov	103.53	0.64%
2016	Dec	103.59	1.62%
2017	Jan	104.15	1.92%
2017	Feb	104.29	2.16%
2017	Mar	104.24	1.85%
2017	Apr	105.18	3.10%
2017	May	105.52	3.38%
2017	Jun	105.37	2.94%
2017	Jul	105.81	3.43%
2017	Aug	106.21	4.10%
2017	Sep	106.50	4.20%
2017	Oct	105.84	2.75%
2017	Nov	105.56	1.96%
2017	Dec	105.60	1.94%
2018	Jan	106.94	2.68%
2018	Feb	106.80	2.40%
2018	Mar	107.16	2.80%
2018	Apr	106.58	1.32%
2018	May	106.83	1.25%
2018	Jun	106.67	1.23%
2018	Jul	106.14	0.31%
2018	Aug	106.25	0.04%
2018	Sep	106.87	0.35%
2018	Oct		
2018	Nov		
2018	Dec		



## Cheyenne Business-Cycle Index Addendum

The Cheyenne Business-Cycle Index (ChBCI) is a coincident economic indicator and is designed to provide a current assessment of Cheyenne's economy. There are four main components of the ChBCI. Two of these components, unemployment rate and private sector weekly wages, are included to capture labor market activity for Cheyenne. The third component, sales and use tax collections, gauges economic activity related to taxable sales in the Laramie County while the fourth component, median home prices, serves as a proxy for the housing market.

**Unemployment Rate:** The first component of the ChBCI is the unemployment rate. This statistic measures the percentage of people in Laramie County who want to work but don't have jobs. Within the ChBCI 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, sales and use tax collections, and median home prices, is considered to be a positive impact on the economy. This statistic is available monthly from the U.S. Bureau of Labor Statistics (not seasonally adjusted). The data are then seasonally adjusted. It is included as a component because it provides an assessment of the Laramie County's labor market.

**Private Sector Weekly Wages:** The second component of the ChBCI is total private sector weekly wages. This component is estimated by multiplying the number of private sector jobs in Cheyenne 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 Cheyenne. These statistics are available monthly from the U.S. Bureau of Labor Statistics (not seasonally adjusted). 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 is another measure of the Laramie County's labor market health.

**Sales and Use Taxes:** The third component of the ChBCI is Laramie County's sales and use tax collections associated with the state's 4 percent tax rate. Because sales and use tax collections received by the county for a given month represent transactions that took place 4 to 6 weeks prior, the data is lagged one month for use in the ChBCI model. This statistic is available monthly from the State of Wyoming's Department of Revenue (not seasonally adjusted). 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 taxable sales activity in Laramie County.

**Median Home Prices:** The fourth component of the ChBCI is the Cheyenne median home price. This statistic is compiled by the Cheyenne Board of REALTORS and is available monthly (not seasonally adjusted). The home price statistic is defined as the median sales price for a single family, non-rural residence. 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. Median home prices are included because they capture another critical part of Cheyenne's economy – housing.

**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 ChBCI in that month. As the components change from month to month, so does the value of the ChBCI. 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.

