

# Nebraska Monthly Economic Indicators: March 18, 2016

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**Summary:** The Leading Economic Indicator – Nebraska (LEI-N) rose by 0.91% in February 2016. The increase in the LEI-N, which predicts economic growth in the state six months in the future, suggests that economic growth will be solid in Nebraska during the summer of 2016. Five of the six components of the LEI-N improved during February. Business expectations were positive. Respondents to the February Survey of Nebraska Business predicted growth in employment at their businesses over the next 6 months. Initial claims for unemployment insurance also fell during February, in a sign of strength for the labor market. There also was an increase in airline passenger counts and building permits for single-family homes. Finally, for the first time in several months, there was a drop in the value of the U.S. dollar during February. This provides relief to export-oriented businesses in Nebraska. Manufacturing hours was the only declining components of the LEI-N.

## Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) in February 2016, compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 0.91% during February.

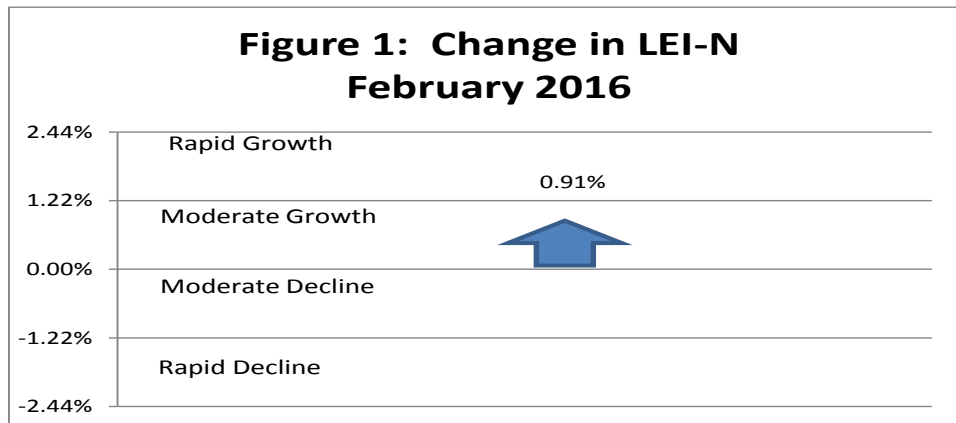


Figure 2 shows the change in the LEI-N over the last 6 months. The figure shows that the LEI-N has risen four out of the last six months. In particular, the LEI-N was mixed during the last four months of 2015 but increased during January and February of 2016. This suggests solid growth in the Nebraska economy during the summer of 2016.

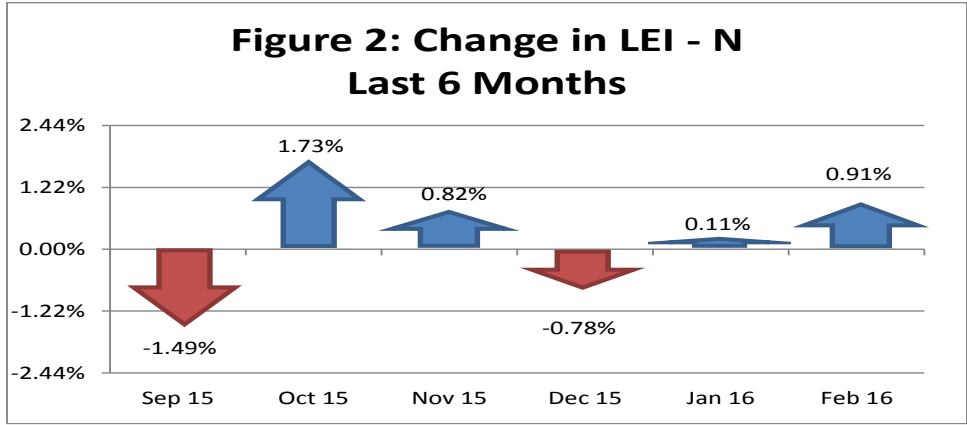
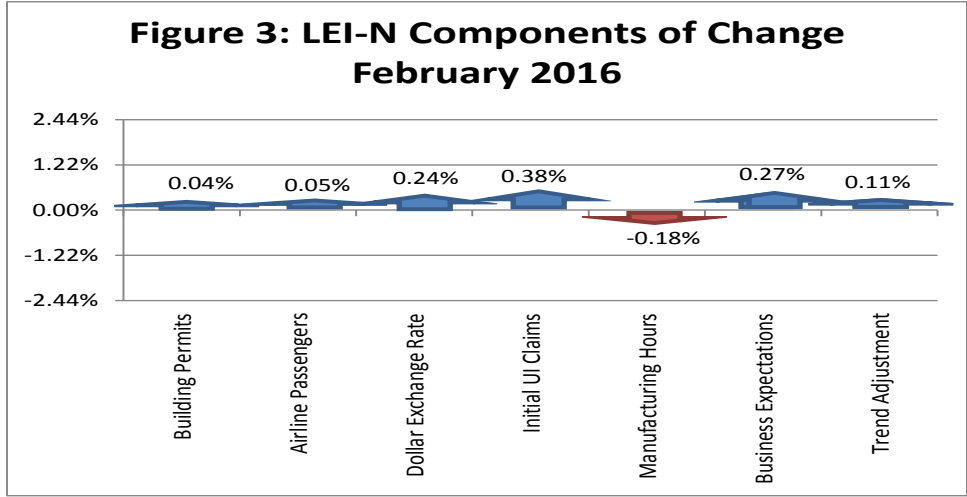
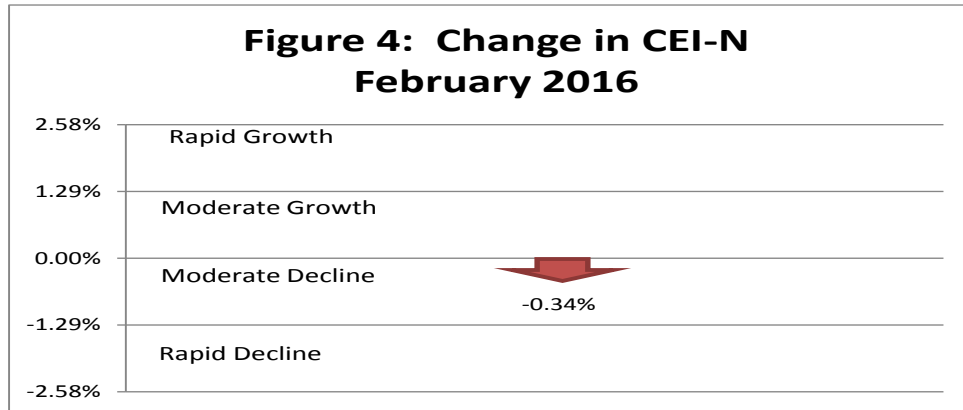


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during February 2016. The change in the overall LEI-N is the weighted average of changes in each component (see page 5). Looking at individual components, business expectations were positive. Respondents to the February *Survey of Nebraska Business* predicted growth in employment at their businesses over the next six months. There also was a decline in initial claims for unemployment insurance, suggesting that the Nebraska labor market is continuing to strengthen. Airline passenger counts and building permits for single-family homes also rose during February. Finally, for the first time in several months, there was a drop in the value of the U.S. dollar, which is a positive for Nebraska’s export-oriented businesses. Manufacturing hours was the only declining component of the LEI-N during February. Note that the trend adjustment component pictured in Figure 3 is discussed on page 5.

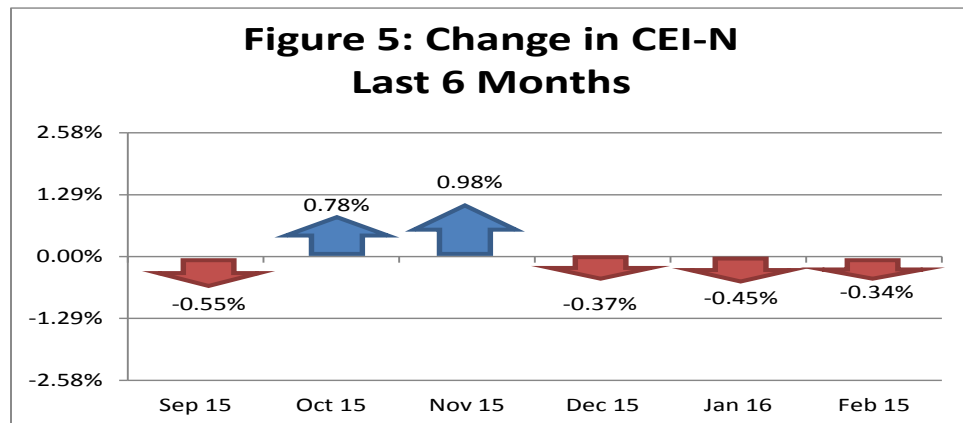


## Coincident Economic Indicator – Nebraska

The Coincident Economic Indicator - Nebraska (CEI-N) is a measure of the current size of the Nebraska economy. The CEI-N fell by 0.34% during February, as seen in Figure 4.



As seen in Figure 5, the CEI-N has declined modestly during each of the last 3 months, after solid gains in October and November of 2015. Declines of this magnitude suggest that the Nebraska economy has been weak in recent months but by themselves do not suggest a serious slowdown. Naturally, it will be critical to monitor whether the CEI-N begins to grow again, starting in March.



As seen in Figure 6, three of four components of the CEI-N declined during February. There was a modest drop in real private wages, reflecting a decline in weekly hours and real hourly wages during the month. There also was a decline in business conditions, as measured in the February *Survey of Nebraska Business*. Responding businesses reported a slight decline in sales and employment. In addition, agricultural commodity prices fell during February. On the positive side, electricity sales grew during the month, after adjusting for weather and other seasonal factors. A detailed discussion of the components of the CEI-N and LEI-N can be found at [www.cba.unl.edu](http://www.cba.unl.edu) in *Technical Report: Coincident and Leading Economic Indicators- Nebraska*.

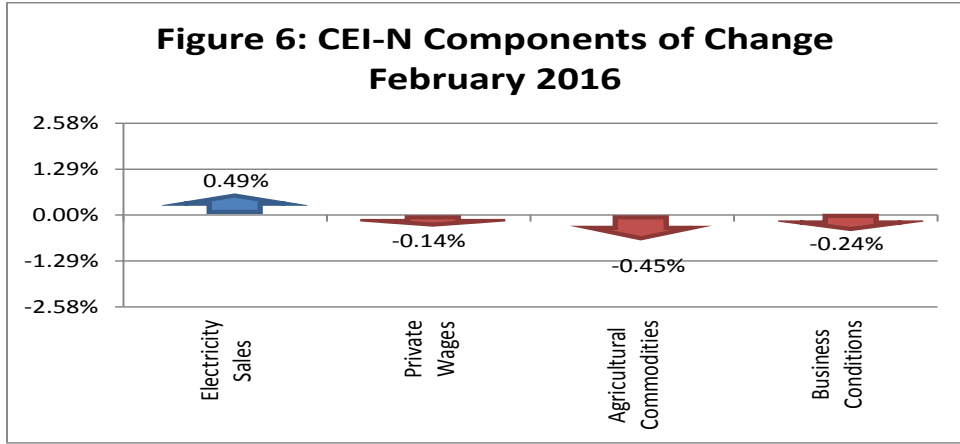
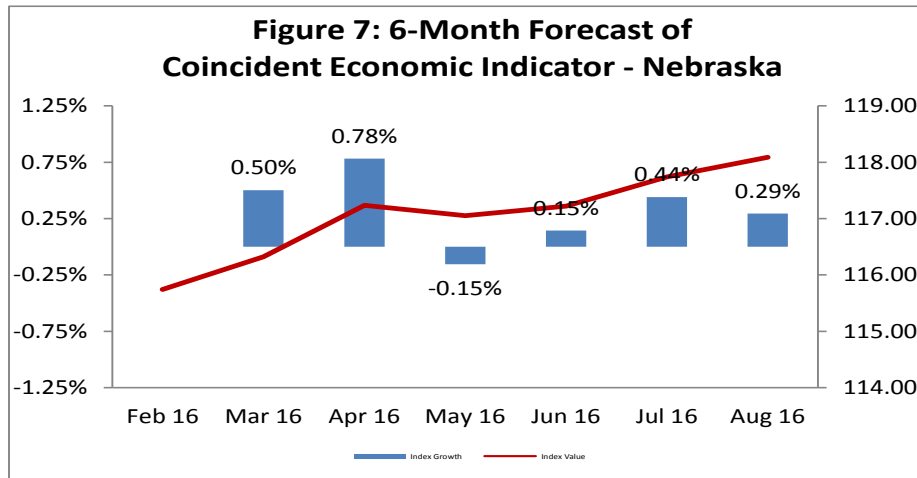


Figure 7 shows the forecast for the CEI-N over the next six months. The forecast calls for strong economic growth in Nebraska during March and April of 2016, and solid growth during the summer months of July and August. Growth, however, will be weak during May and June given mixed values for the LEI-N during the last few months of 2015 (see Figure 2).



## Weights and Component Shares

Table 1 shows the weights used to aggregate the individual components into the LEI-N and CEI-N. The weights are the inverse of the “standardized” standard deviation of each component variable. The term standardized simply means that the inverse standard deviations are adjusted proportionately to sum to 1. This weighting scheme makes sense since individual components that are more stable have smaller standard deviations, and therefore, a larger inverse standard deviation. A large movement in a typically stable economic series would provide a more powerful signal of economic change than a large movement in a series that regularly has large movements.

<b>Table 1: Component Weights for LEI-N and CEI-N</b>							
Leading Economic Indicator - Nebraska				Coincident Economic Indicator - Nebraska			
Variable	Standard Deviation	Inverse STD	Weight (Inverse STD Standardize)	Variable	Standard Deviation	Inverse STD	Weight (Inverse STD Standardize)
SF Housing Permits	13.6166	0.0734	0.0342	Electricity Sales	4.7296	0.2114	0.1554
Airline Passengers	3.3973	0.2944	0.1369	Private Wages	1.7191	0.5817	0.4275
Exchange Rate	1.2111	0.8257	0.3840	Agricultural Commodities	3.2544	0.3073	0.2258
Initial UI Claims	10.2029	0.0980	0.0456	Survey Business Conditions	3.8431	0.2602	0.1912
Manufacturing Hours	1.5880	0.6297	0.2929				
Survey Business Expectations	4.3677	0.2290	0.1065				

Tables 2 and 3 show the calculation for the change in CEI-N and LEI-N between January and February of 2016. Weights (from Table 1) are multiplied by the change to calculate the contribution of each component. Contributions are converted to percentage terms and summed. Note that in Table 2 a trend adjustment factor is utilized in calculating LEI-N. This is done because LEI-N historically under-predicts CEI-N by 0.11% per month. The U.S. Leading Economic Indicator also has a trend adjustment.

<b>Table 2: Component Contributions to the Change in Leading Economic Indicator</b>						
Leading Economic Indicator - Nebraska						
Component Index Value (May 2007=100)						
Component	Current	Previous	Difference	Weight	Contribution	Percentage Contribution (Relative to Previous LEI-N)
SF Building Permits	58.91	57.43	1.48	0.03	0.05	0.04%
Airline Passengers	95.27	94.86	0.41	0.14	0.06	0.05%
U.S. Dollar Exchange Rate (Inverse)	84.29	83.53	0.75	0.38	0.29	0.24%
Initial Unemployment Insurance Claims (Inverse)	133.10	123.25	9.84	0.05	0.45	0.38%
Manufacturing Hours	95.66	96.38	-0.71	0.29	-0.21	-0.18%
Survey Business Expectations <sup>1</sup>	52.96		2.96	0.11	0.32	0.27%
Trend Adjustment					0.13	0.11%
<b>Total (weighted average)</b>	<b>119.48</b>	<b>118.40</b>			<b>1.08</b>	<b>0.91%</b>

<sup>1</sup> Survey results are a diffusion Index, which is always compared to 50

<b>Table 3: Component Contributions to the Change in Coincident Economic Indicator</b>						
Coincident Economic Indicator - Nebraska						
Component Index Value (May 2007=100)						
Component	Current	Previous	Difference	Weight	Contribution	Percentage Contribution (Relative to Previous CEI-N)
Electricity Sales	141.91	138.27	3.64	0.16	0.57	0.49%
Private Wage	105.13	105.51	-0.39	0.43	-0.17	-0.14%
Agricultural Commodities	130.03	132.33	-2.31	0.23	-0.52	-0.45%
Survey Business Conditions <sup>1</sup>	48.55		-1.45	0.19	-0.28	-0.24%
<b>Total (weighted average)</b>	<b>115.74</b>	<b>116.14</b>			<b>-0.40</b>	<b>-0.34%</b>

<sup>1</sup> Survey results are a diffusion Index, which is always compared to 50

## Performance of the LEI-N and CEI-N

Further information is available on both economic indicators to demonstrate how well the CEI-N tracks the Nebraska economy and how well the LEI-N leads the CEI-N. Figure 8 shows the value of CEI-N and the real gross state product (real GDP) in Nebraska for 2001 through 2012. The comparison ends in 2012 since this is the last year for which data on real gross state product is available. Annual real gross state product data is provided by the Bureau of Economic Analysis, U.S. Department of Commerce, and quarterly values were estimated using quarterly earnings data. CEI-N closely tracks Nebraska real GDP for the period. The correlation coefficient between the two pictured series is 0.96.

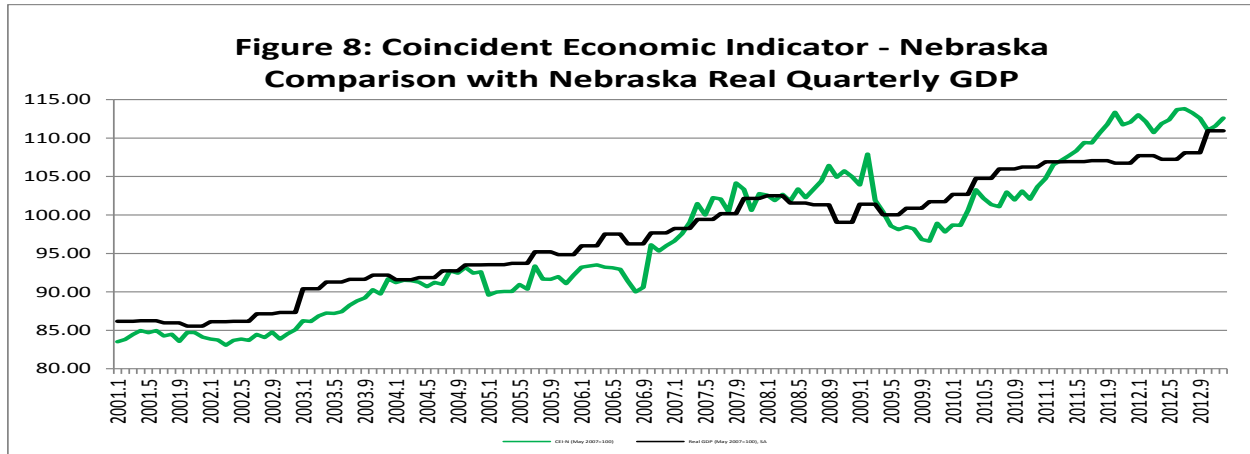


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months earlier) with the actual movement in CEI-N. In Figure 9, predicted values using the LEI-N closely track trends and movement in the CEI-N. The correlation coefficient between CEI-N and six-month forward values of LEI-N is 0.92.

