

2016

# Nebraska Monthly Economic Indicators: February 19, 2016

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Prepared by the UNL College of Business Administration, Department of Economics

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**Summary:** The Leading Economic Indicator – Nebraska (LEI-N) rose by 0.11% in January 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 modest in Nebraska during the summer of 2016. Four of the six components of the LEI-N improved during January. Business expectations, in particular, were strong during the month. Respondents to the January Survey of Nebraska Business predicted strong growth in both sales and employment over the next 6 months. Initial claims for unemployment insurance also fell during January, on a seasonally adjusted basis. Further, there were modest increases in manufacturing hours and airline passenger counts. In terms of declining components, there was a drop in building permits for single-family homes. There also was a sharp increase in the value of the U.S. dollar in January. A higher U.S. dollar reduces the competitiveness of Nebraska exporters in manufacturing and agriculture.

## Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) in January 2016, compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 0.11% during January.

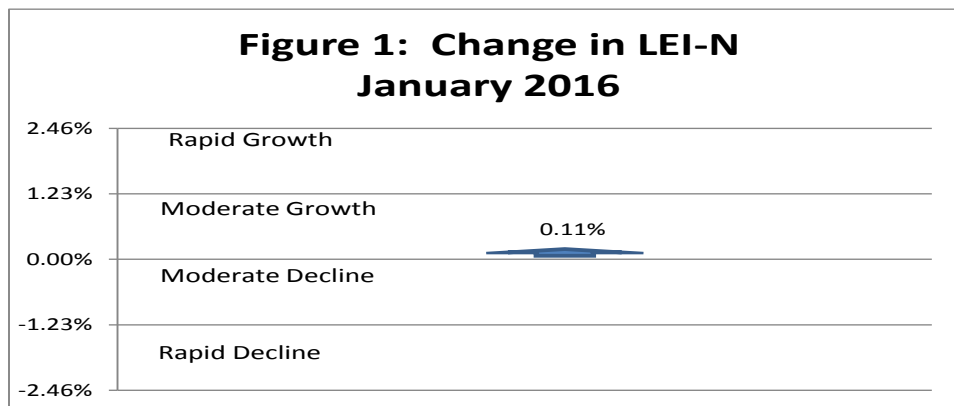


Figure 2 shows the change in the LEI-N over the last 6 months. The figure shows that the LEI-N has risen four out of the last six months. The LEI-N, however, has been mixed since November with the increase in November and small increase in January barely exceeding the drop during December. This suggests modest growth in the Nebraska economy during mid-2016.

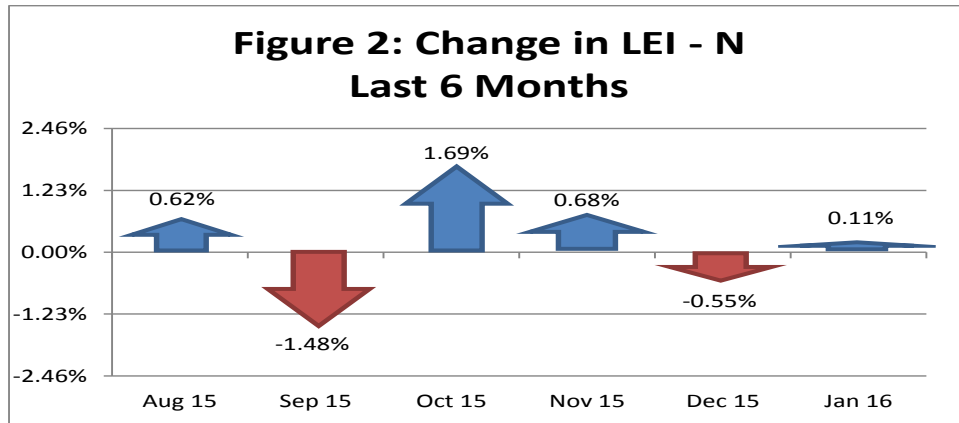
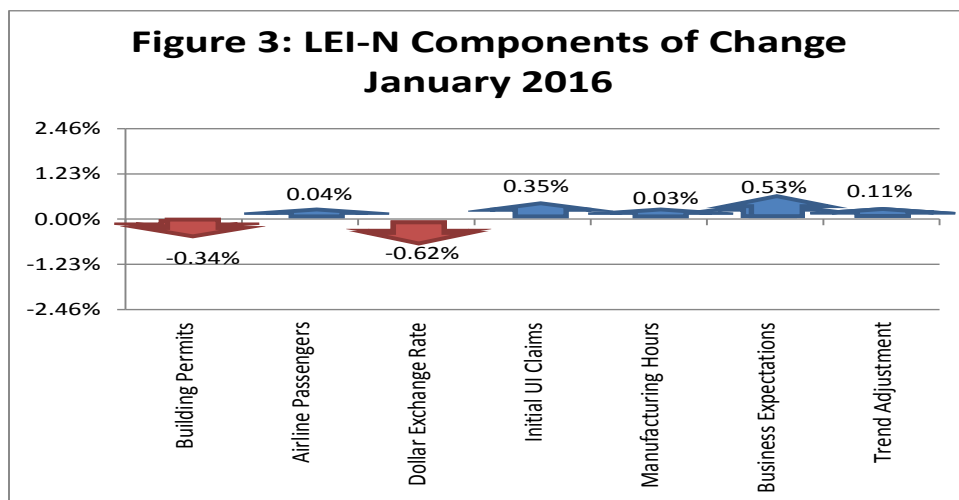
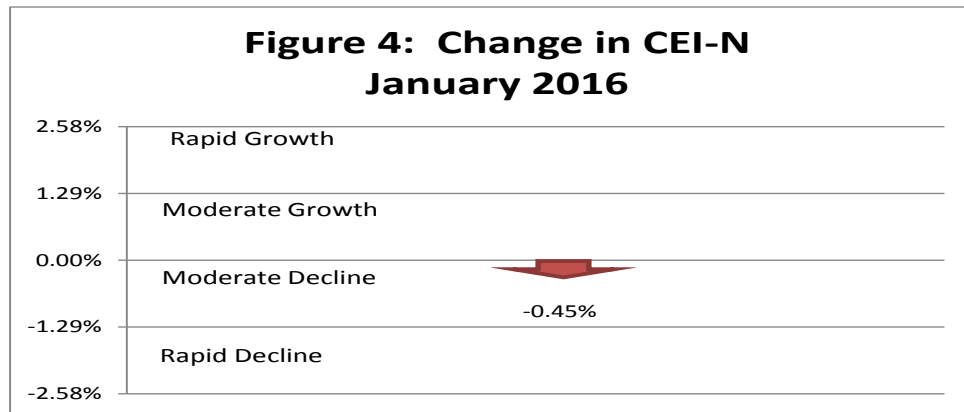


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during January 2016. The change in the overall LEI-N is the weighted average of changes in each component (see page 5). Among individual components, there were strong business expectations. Respondents to the January *Survey of Nebraska Business* predicted strong growth in sales and 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 manufacturing hours also rose slightly during January. Among declining components, there was a drop in building permits for single-family homes during January. There also was a sharp increase in the value of the U.S. dollar. A higher dollar is negative for Nebraska’s export-oriented businesses in manufacturing and agricultural. Note that the trend adjustment component pictured in Figure 3 is discussed on page 5.

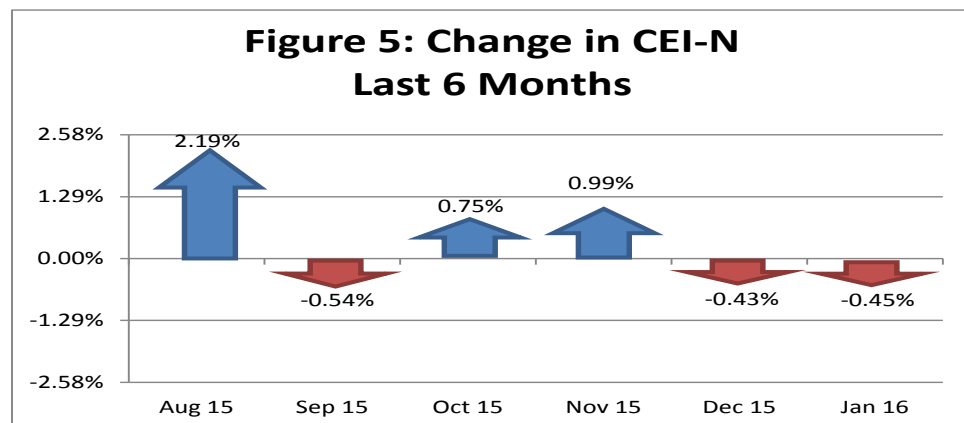


## Coincident Economic Indicator – Nebraska

The Coincident Economic Indicator - Nebraska (CEI-N) is a measure of the current size of the Nebraska economy. The CEI-N fell by 0.45% during January, as seen in Figure 4.



As seen in Figure 5, the CEI-N has been mixed in recent months with a strong gain in November 2015 largely reversed by a decline in December 2015 and January 2016. More generally, the Nebraska economy has grown slowly since a strong increase in the CEI-N during August of 2015. It will be important to monitor whether the change in the CEI-N turns positive during the month of February 2016.



As seen in Figure 6, two of four components of the CEI-N rose during January. There was a modest improvement in real private wages, reflecting growth in employment, weekly hours and real hourly wages. Electricity sales also grew during January, after adjusting for weather and other seasonal factors. However, there was a decline in business conditions, as measured in the January *Survey of Nebraska Business*. Responding businesses reported a recent decline in sales. In addition, agricultural commodity prices fell during January. 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*.

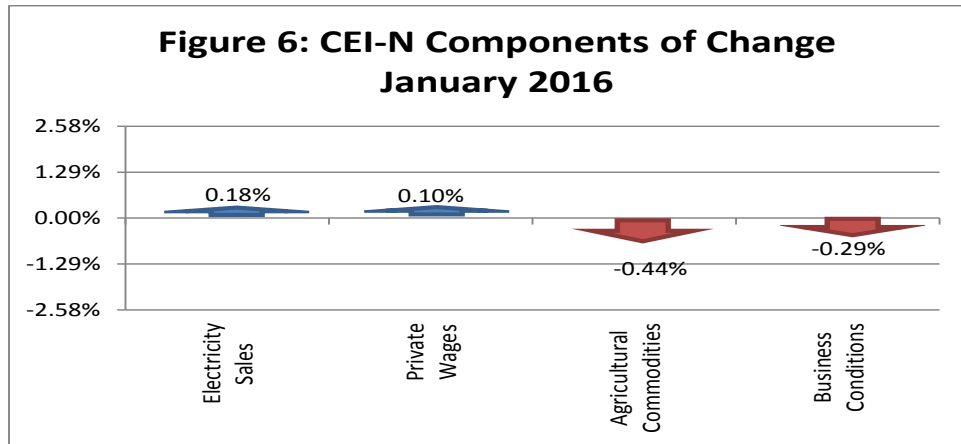
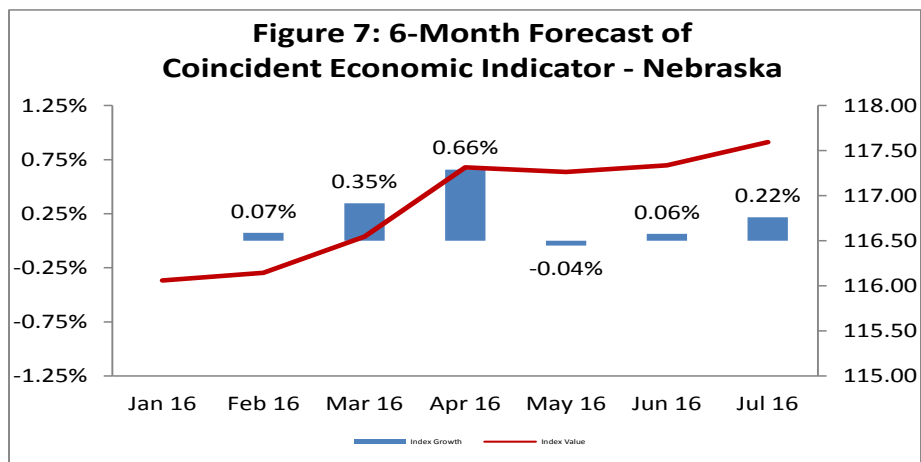


Figure 7 shows the forecast for the CEI-N over the next six months. The forecast calls for solid economic growth in Nebraska during March and April of 2016, but weaker growth during the May through July period. This forecast is consistent with trends in the LEI-N during the last six months (see Figure 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>							
<b>Leading Economic Indicator - Nebraska</b>				<b>Coincident Economic Indicator - Nebraska</b>			
<b>Variable</b>	<b>Standard Deviation</b>	<b>Inverse STD</b>	<b>Weight (Inverse STD Standardize)</b>	<b>Variable</b>	<b>Standard Deviation</b>	<b>Inverse STD</b>	<b>Weight (Inverse STD Standardize)</b>
SF Housing Permits	13.5954	0.0736	0.0343	Electricity Sales	4.7326	0.2113	0.1558
Airline Passengers	3.4038	0.2938	0.1369	Private Wages	1.7267	0.5791	0.4271
Exchange Rate	1.2129	0.8245	0.3842	Agricultural Commodities	3.2617	0.3066	0.2261
Initial UI Claims	10.1823	0.0982	0.0458	Survey Business Conditions	3.8630	0.2589	0.1909
Manufacturing Hours	1.5916	0.6283	0.2928				
Survey Business Expectations	4.3893	0.2278	0.1062				

Tables 2 and 3 show the calculation for the change in CEI-N and LEI-N between December of 2015 and January 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>						
<b>Leading Economic Indicator - Nebraska</b>						
Component Index Value (May 2007=100)						
<b>Component</b>	<b>Current</b>	<b>Previous</b>	<b>Difference</b>	<b>Weight</b>	<b>Contribution</b>	<b>Percentage Contribution (Relative to Previous LEI-N)</b>
SF Building Permits	60.37	71.96	-11.59	0.03	-0.40	-0.34%
Airline Passengers	94.88	94.49	0.38	0.14	0.05	0.04%
U.S. Dollar Exchange Rate (Inverse)	83.53	85.44	-1.91	0.38	-0.73	-0.62%
Initial Unemployment Insurance Claims (Inverse)	122.11	112.99	9.12	0.05	0.42	0.35%
Manufacturing Hours	96.38	96.27	0.11	0.29	0.03	0.03%
Survey Business Expectations <sup>1</sup>	55.86		5.86	0.11	0.62	0.53%
Trend Adjustment					0.13	0.11%
Total (weighted average)	118.40	118.28			0.12	0.11%

<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>						
<b>Coincident Economic Indicator - Nebraska</b>						
Component Index Value (May 2007=100)						
<b>Component</b>	<b>Current</b>	<b>Previous</b>	<b>Difference</b>	<b>Weight</b>	<b>Contribution</b>	<b>Percentage Contribution (Relative to Previous CEI-N)</b>
Electricity Sales	137.33	136.02	1.31	0.16	0.20	0.18%
Private Wage	105.58	105.30	0.28	0.43	0.12	0.10%
Agricultural Commodities	132.35	134.61	-2.26	0.23	-0.51	-0.44%
Survey Business Conditions <sup>1</sup>	48.24		-1.76	0.19	-0.34	-0.29%
Total (weighted average)	116.06	116.58			-0.52	-0.45%

<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.

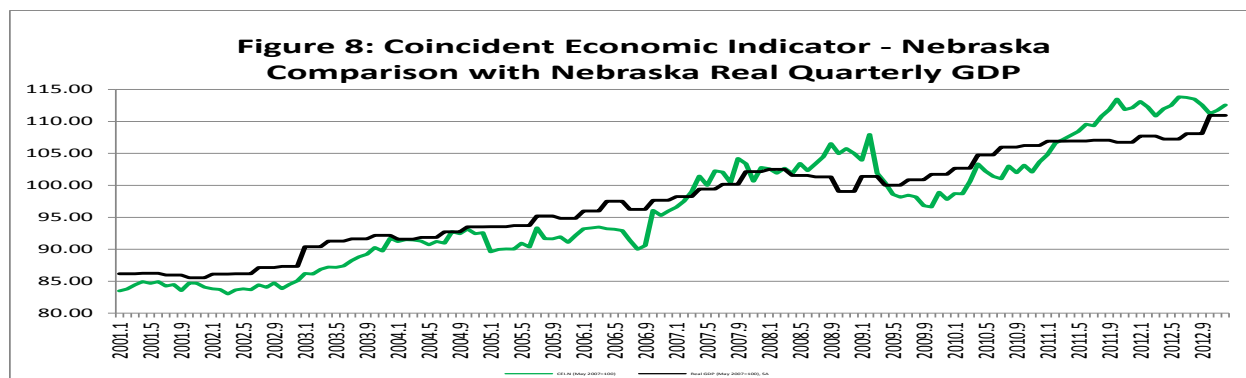


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months 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.

