

# Nebraska Monthly Economic Indicators: November 20, 2019

Prepared by the UNL College of Business, Bureau of Business Research

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**Summary:** *The Leading Economic Indicator – Nebraska (LEI-N)<sup>1</sup> rose by 1.26% during October of 2019. The increase in the LEI-N, which is designed to predict economic activity six months into the future, implies ongoing economic growth in Nebraska through the Spring of 2020. For the second consecutive month, the leading indicator rose due to solid business expectations and a drop in initial claims for unemployment insurance. Respondents to the October Survey of Nebraska Business reported plans to increase sales and employment at their businesses over the next six months. Among other components, building permits for single-family homes rose during October.*

## Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during October 2019 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 1.26% during October.

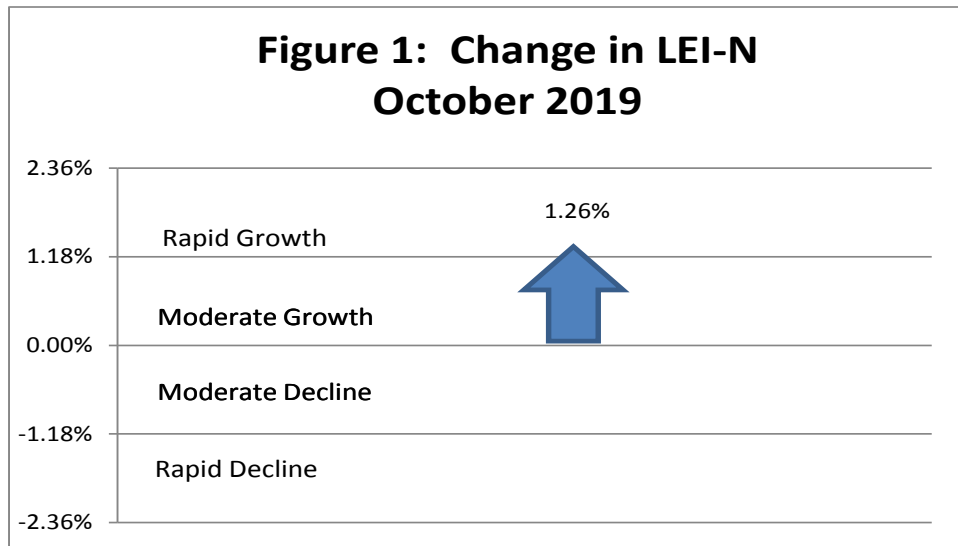


Figure 2 shows that the LEI-N has risen over the last two months. The leading indicator was volatile from May through August, but rose solidly in September and October.

<sup>1</sup> The author would like to thank Dr. William Walstad for helping to design the LEI-N.

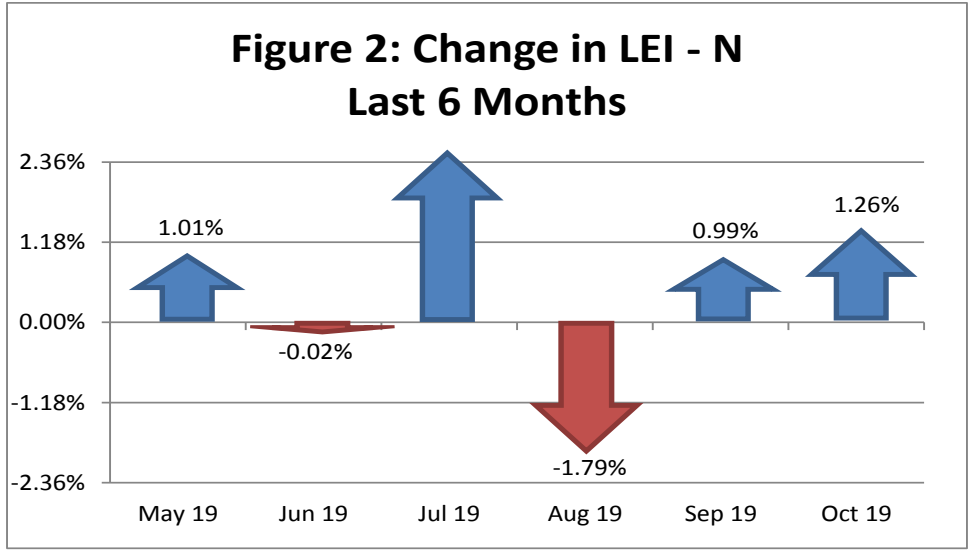
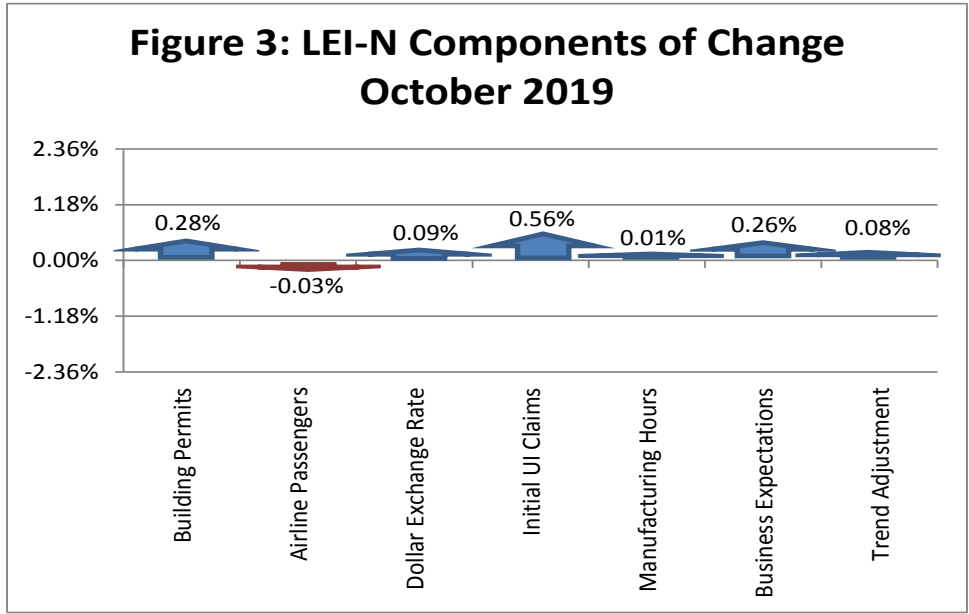


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during October. The change in the overall LEI-N is the weighted average of changes in each component (see page 5). The increase in the leading indicator primarily resulted from positive business expectations and a drop in initial claims for unemployment insurance. Respondents to the October *Survey of Nebraska Business* reported plans to increase sales and employment at their business over the next six months. Initial claims for unemployment insurance also fell on a seasonally-adjusted basis, while building permits for single-family homes rose. The value of the dollar fell modestly, providing a slight lift for Nebraska businesses which export. 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 rose by 0.65% during October of 2019, as seen in Figure 4.

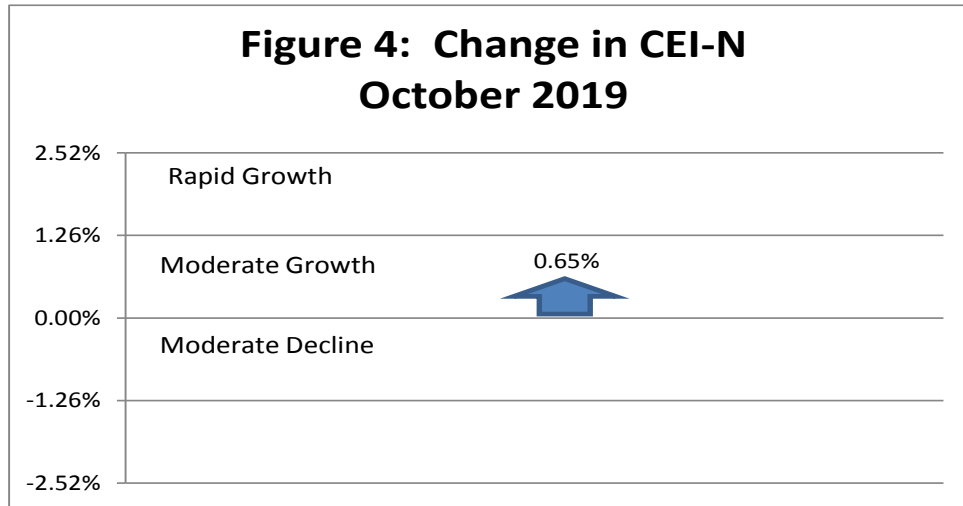
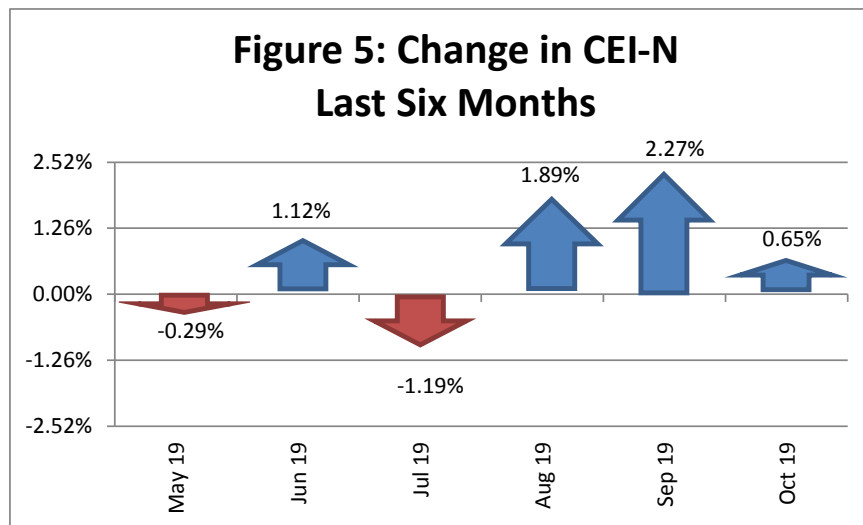


Figure 5 shows the change in the CEI-N over the last 6 months. The Nebraska economy has improved recently. The CEI-N was mixed during the May to July 2019 period but has risen for the last three months.



The increase in the CEI-N was primarily due to an increase in business conditions. Respondents to the October *Survey of Nebraska Business* reported an increase in sales and employment in recent months. Electricity sales and agricultural commodity prices also improved during October. A detailed discussion of the components of the CEI-N and LEI-N can be found at [www.business.unl.edu](http://www.business.unl.edu) in *Technical Report: Coincident and Leading Economic Indicators- Nebraska*.

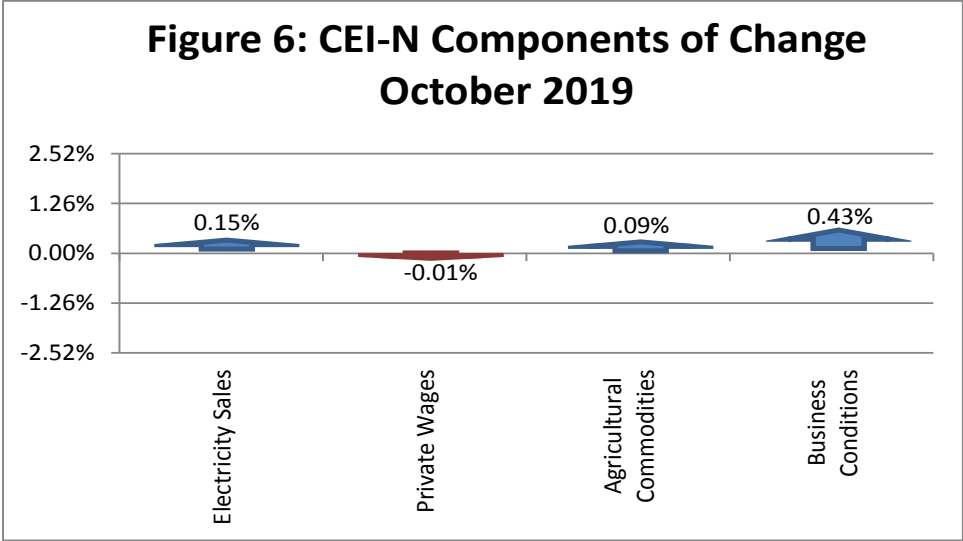
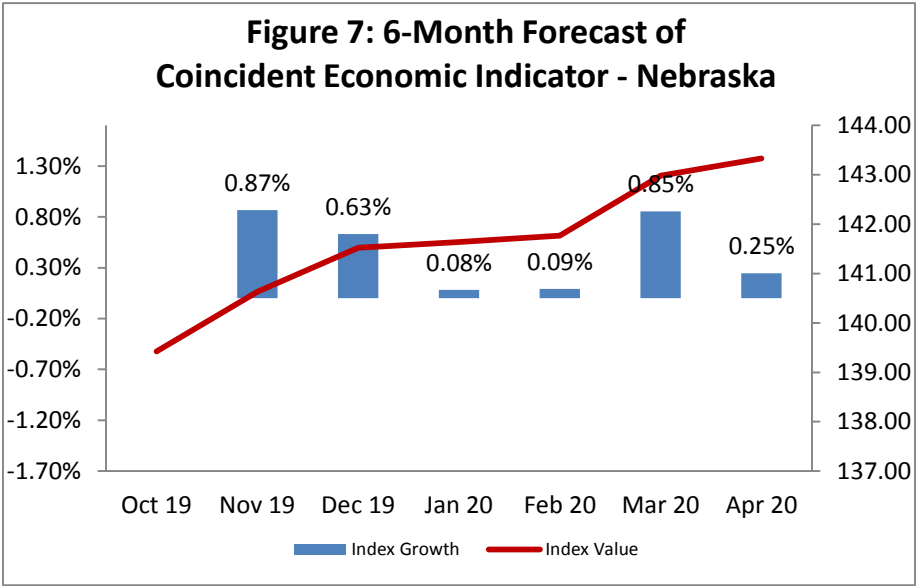


Figure 7 shows the forecast for the CEI-N over the next six months. Solid economic growth is expected in November and December of 2019. Growth will dip during the first two months of 2020 but moderate growth will return in March and April. Growth expectations for the CEI-N are consistent with growth in the LEI-N over the last 6 months (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 with significant month-to-month fluctuations.

<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	13.3245	0.0750	0.0348	Electricity Sales	4.5380	0.2204	0.1651
Airline Passengers	3.2243	0.3101	0.1437	Private Wages	1.8559	0.5388	0.4038
Exchange Rate	1.1739	0.8519	0.3947	Agricultural Commodities	3.2360	0.3090	0.2316
Initial UI Claims	11.7977	0.0848	0.0393	Survey Business Conditions	3.7565	0.2662	0.1995
Manufacturing Hours	1.6689	0.5992	0.2777				
Survey Business Expectations	4.2190	0.2370	0.1098				

Tables 2 and 3 show the calculation for the change in LEI-N and CEI-N between September and October of 2019. 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 0.08% 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	89.00	76.14	12.86	0.03	0.45	0.28%
Airline Passengers	108.25	108.63	-0.38	0.14	-0.05	-0.03%
U.S. Dollar Exchange Rate (Inverse)	80.32	79.96	0.37	0.39	0.14	0.09%
Initial Unemployment Insurance Claims (Inverse)	195.68	172.92	22.76	0.04	0.89	0.56%
Manufacturing Hours	94.35	94.29	0.07	0.28	0.02	0.01%
Survey Business Expectations <sup>1</sup>	53.76		3.76	0.11	0.41	0.26%
Trend Adjustment					0.13	0.08%
<b>Total (weighted average)</b>	<b>160.66</b>	<b>158.67</b>			<b>1.99</b>	<b>1.26%</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	212.77	211.53	1.25	0.17	0.21	0.15%
Private Wage	117.95	117.99	-0.05	0.40	-0.02	-0.01%
Agricultural Commodities	118.60	118.09	0.51	0.23	0.12	0.09%
Survey Business Conditions <sup>1</sup>	52.96		2.96	0.20	0.59	0.43%
<b>Total (weighted average)</b>	<b>139.42</b>	<b>138.53</b>			<b>0.90</b>	<b>0.65%</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 2017. 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 0.95.

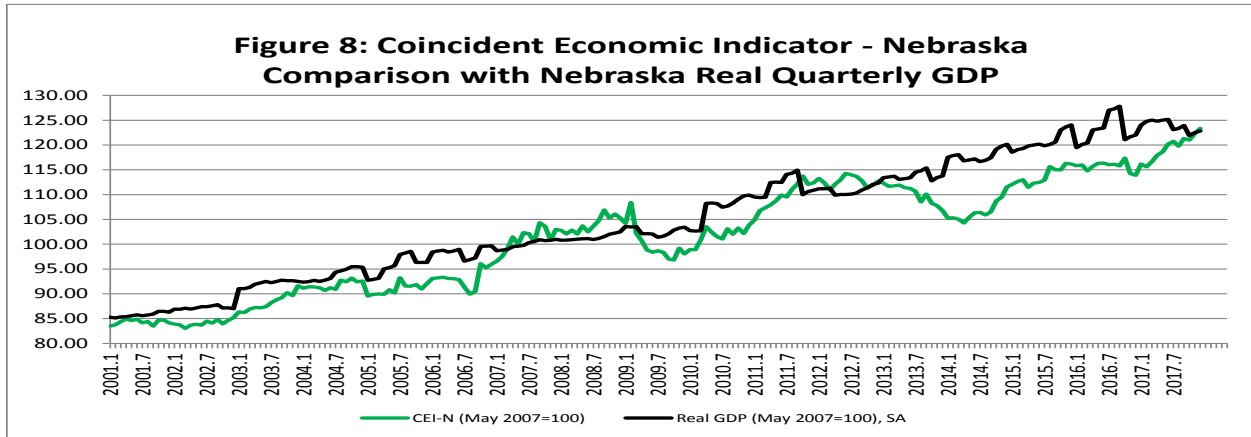


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months 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 0.94.

