

# Nebraska Monthly Economic Indicators: November 25, 2020

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**Summary:** The LEI-N rose during October 2020, by 1.83%. The rising indicator confirms that the Nebraska economy should continue to expand over the next 6 months. Five of the six components of the leading indicator improved during October. Manufacturing hours-worked rebounded in October after declining over the previous 3 months. Business expectations also were positive, with respondents to the October Survey of Nebraska Business reporting plans to increase employment over the next 6 months. The value of the U.S. dollar also declined, which will improve competitive conditions for Nebraska businesses that export. Building permits for single-family homes and airline passenger enplanements also grew modestly during October. Initial claims for unemployment insurance were flat for the month.

## Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during October of 2020 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 1.83% during October.

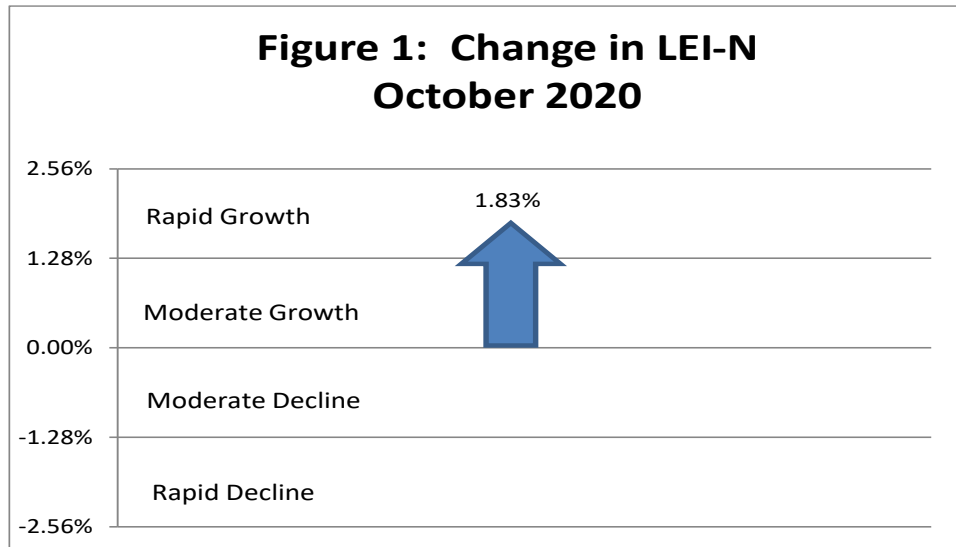


Figure 2 shows the value of the leading indicator over the last six months. The leading indicator rebounded in October after a decline in September according to revised data. Taking out month-to-month fluctuations, the overall pattern has been a modest improvement in the LEI-N over the last 4 months. Growth in May and June was faster as the economy snapped back from April job losses.

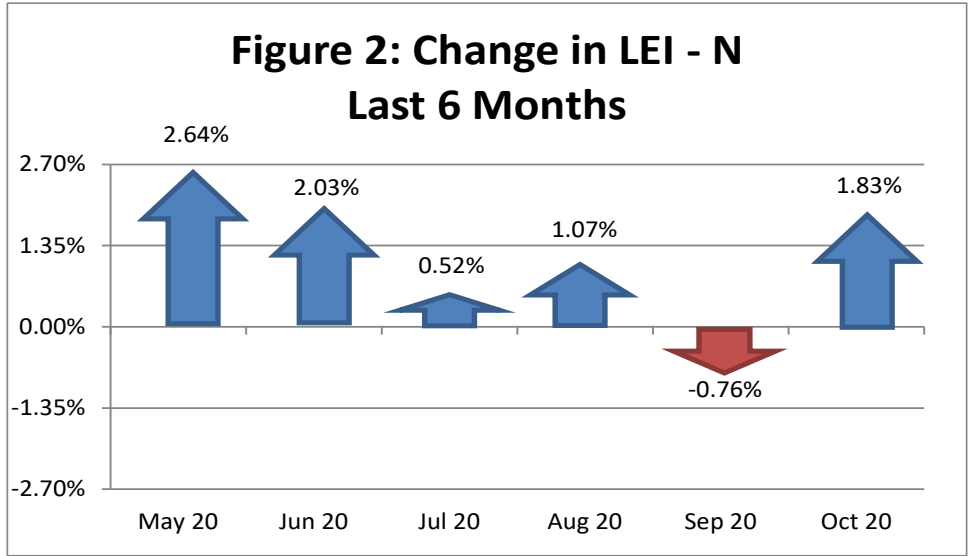
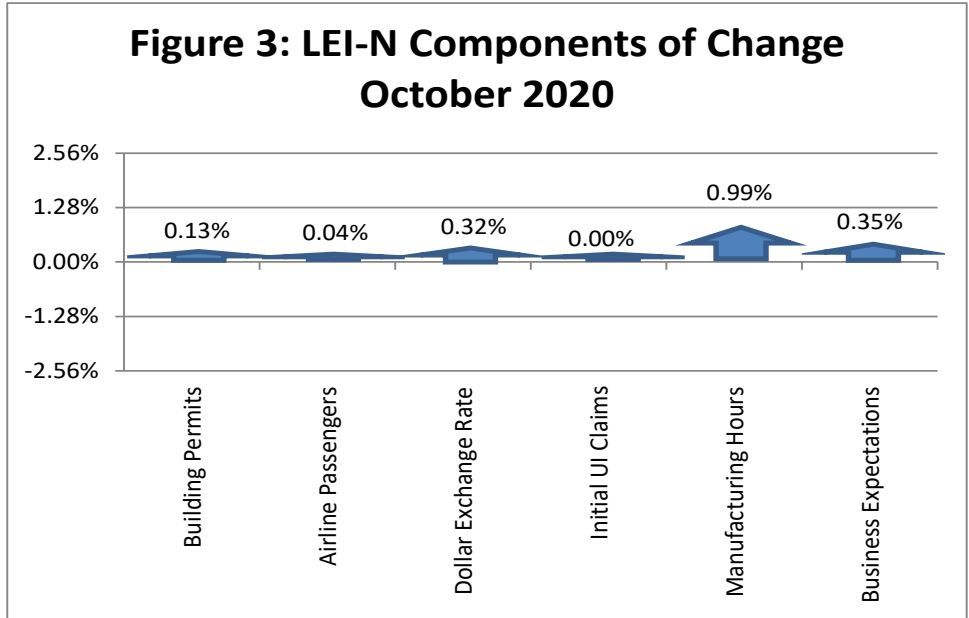


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during October 2020. The change in the overall LEI-N is the weighted average of changes in each component (see page 5). Five of six LEI-N components improved during October. Manufacturing hours rebounded in October after declining in June, July, and August. Business expectations also were positive, with respondents to the *October Survey of Nebraska Business* reporting plans to increase employment over the next six months. Building permits for single-family homes and airline passenger counts rose modestly in October, although airline activity remains far below pre-pandemic levels. There also was a decline in the value of the U.S. dollar, which improves the competitive position of Nebraska businesses that export. Initial claims for unemployment insurance were flat on a seasonally-adjusted basis.



## 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 a rapid 2.09% during October 2020, as seen in Figure 4.

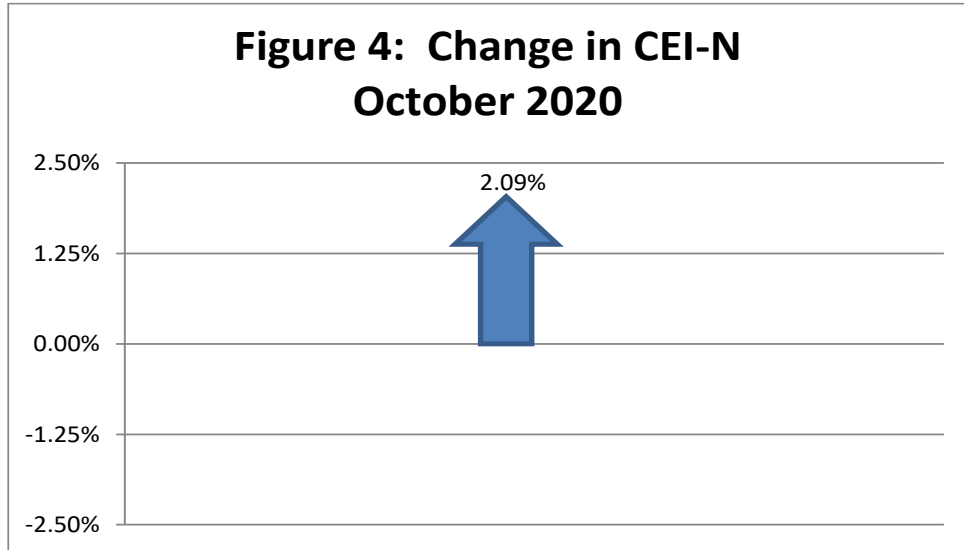
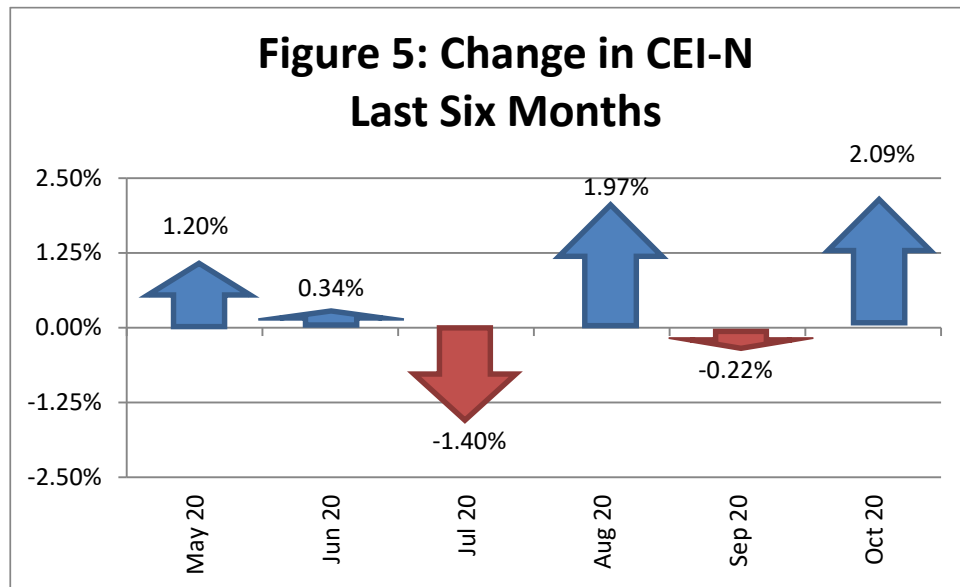
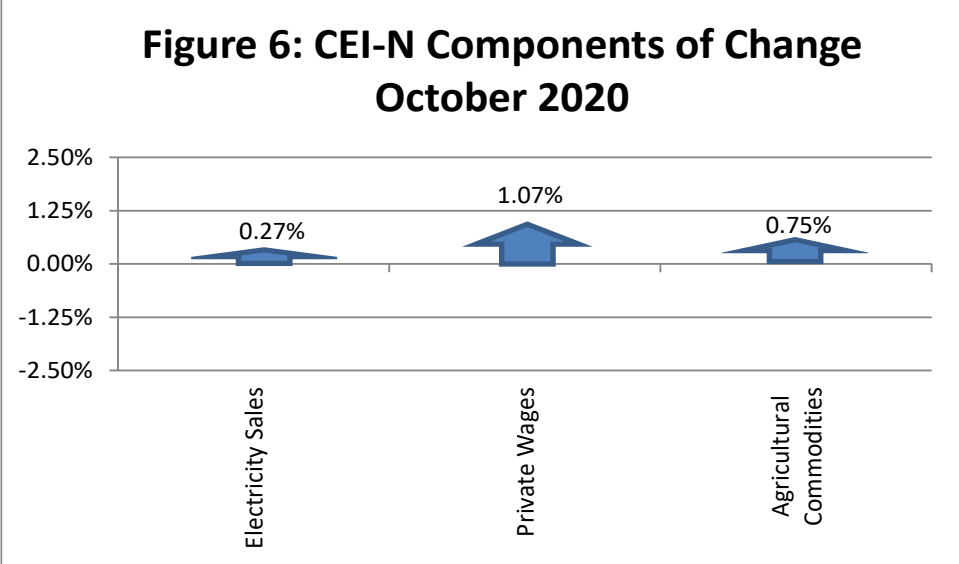


Figure 5 shows the change in the CEI-N over the last 6 months. The Nebraska economy has expanded, but growth has been inconsistent. However, the economy has seen rapid growth in two of the last three months.



All three components of the CEI-N rose during October, as seen in Figure 6. There was solid growth in private wages, in large part due to an increase in real hourly wages. Agricultural commodity prices also rose. Finally, the seasonally-adjusted revenue from electricity sales improved in October. Note that the results for business conditions based on the monthly survey were excluded from the October CEI-N calculation. Such responses would likely reflect the declining economy in April much more than current conditions. A detailed discussion of the components of the CEI-N and LEI-N can be found at <https://business.unl.edu/research/bureau-of-business-research/> in *Technical Report: Coincident and Leading Economic Indicators- Nebraska*.



## 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 a smaller standard deviation, 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	13.6081	0.0735	0.0374	Electricity Sales	4.1899	0.2387	0.2390
Airline Passengers	6.1015	0.1639	0.0833	Private Wages	2.1343	0.4685	0.4691
Exchange Rate	1.1810	0.8467	0.4306	Agricultural Commodities	3.4303	0.2915	0.2919
Initial UI Claims	17.6902	0.0565	0.0287				
Manufacturing Hours	1.7072	0.5858	0.2979				
Survey Business Expectations	4.1641	0.2401	0.1221				

Tables 2 and 3 show the calculation for the change in LEI-N and CEI-N between September and October of 2020. Weights (from Table 1) are multiplied by the change to calculate the contribution of each component. Contributions are converted to percentage terms and summed.

<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	80.86	75.60	5.26	0.04	0.20	0.13%
Airline Passengers	42.18	41.41	0.77	0.08	0.06	0.04%
U.S. Dollar Exchange Rate (Inverse)	80.88	79.75	1.12	0.43	0.48	0.32%
Initial Unemployment Insurance Claims (Inverse)	87.46	87.22	0.24	0.03	0.01	0.00%
Manufacturing Hours	94.48	89.38	5.11	0.30	1.52	0.99%
Survey Business Expectations <sup>1</sup>	54.32		4.32	0.12	0.53	0.35%
<b>Total (weighted average)</b>	<b>155.70</b>	<b>152.90</b>			<b>2.80</b>	<b>1.83%</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	172.47	170.98	1.49	0.24	0.36	0.27%
Private Wage	114.74	111.69	3.05	0.47	1.43	1.07%
Agricultural Commodities	108.44	105.01	3.43	0.29	1.00	0.75%
<b>Total (weighted average)</b>	<b>136.24</b>	<b>133.45</b>			<b>2.79</b>	<b>2.09%</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 2018, using data provided by the Bureau of Economic Analysis, U.S. Department of Commerce. CEI-N closely tracks Nebraska's real GDP for the period. The correlation coefficient between the two-pictured series is 0.95.

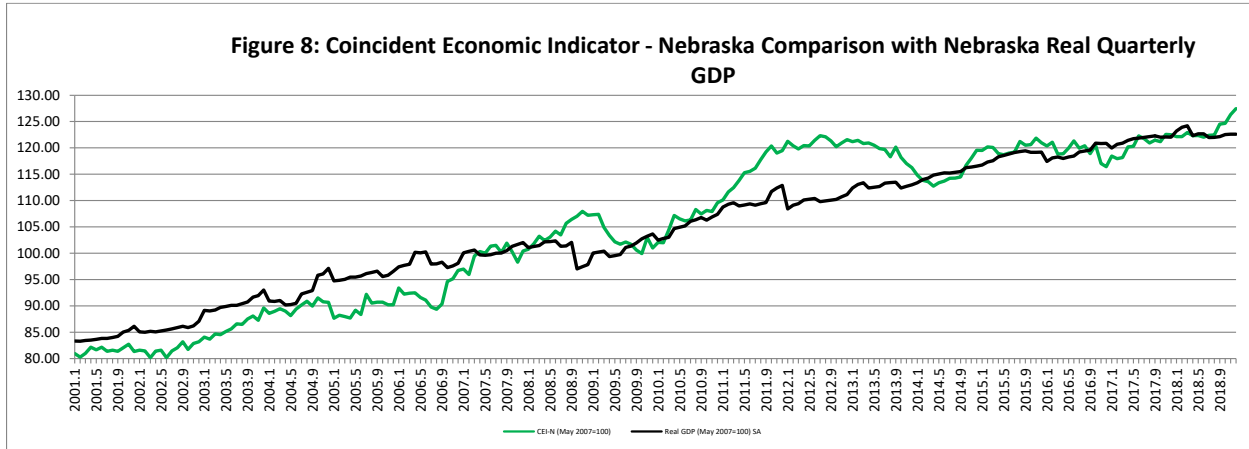


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months earlier) with the actual movement in CEI-N. In Figure 9, predicted values using the LEI-N track trends and movement in the CEI-N. The correlation coefficient between CEI-N and six-month forward values of LEI-N is 0.85.

