

Nebraska Monthly Economic Indicators: December 23, 2020

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

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Summary: The LEI-N rose by 0.61% during November 2020. The rising indicator suggests that the Nebraska economy will expand over the next 6 months. Five of the six components of the leading indicator improved during November. Manufacturing hours-worked and building permits for single-family homes both rose. Business expectations also were positive, with respondents to the November Survey of Nebraska Business reporting plans to increase employment. The value of the U.S. dollar also declined in November, which will improve competitive conditions for agricultural producers, manufacturers, and other Nebraska businesses which export. Airline passenger enplanements were the only component to decline during November.

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during November of 2020 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 0.61% during November.

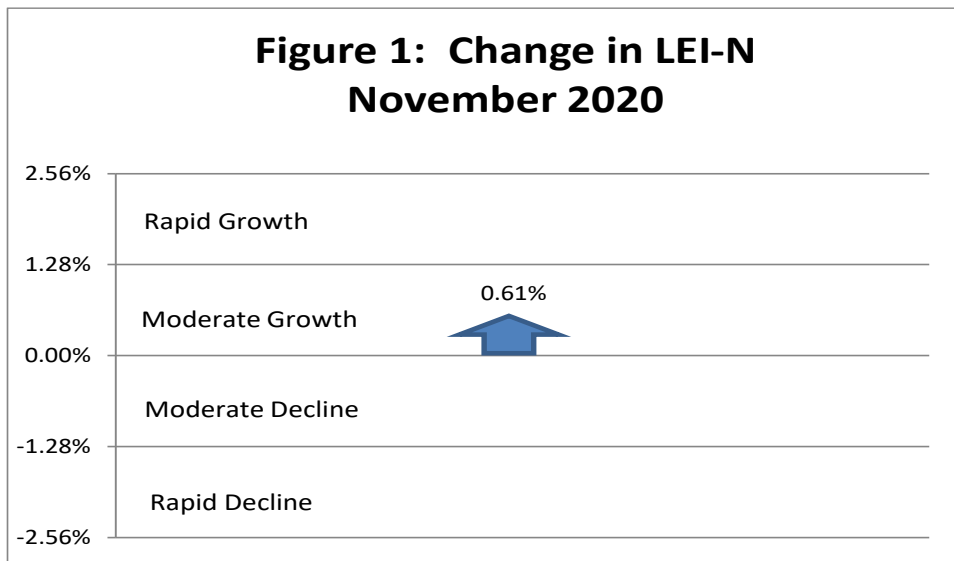


Figure 2 shows the value of the leading indicator over the last six months. The leading indicator has risen steadily during the period. Taking out month-to-month fluctuations, the overall pattern has been a solid improvement in the LEI-N. This pattern is consistent with an expectation of economic growth in Nebraska through mid-2021.

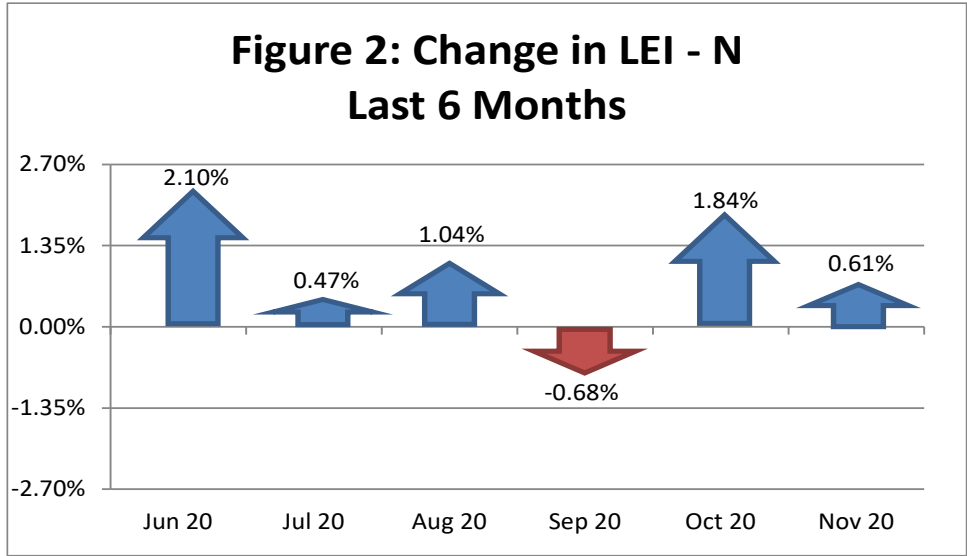
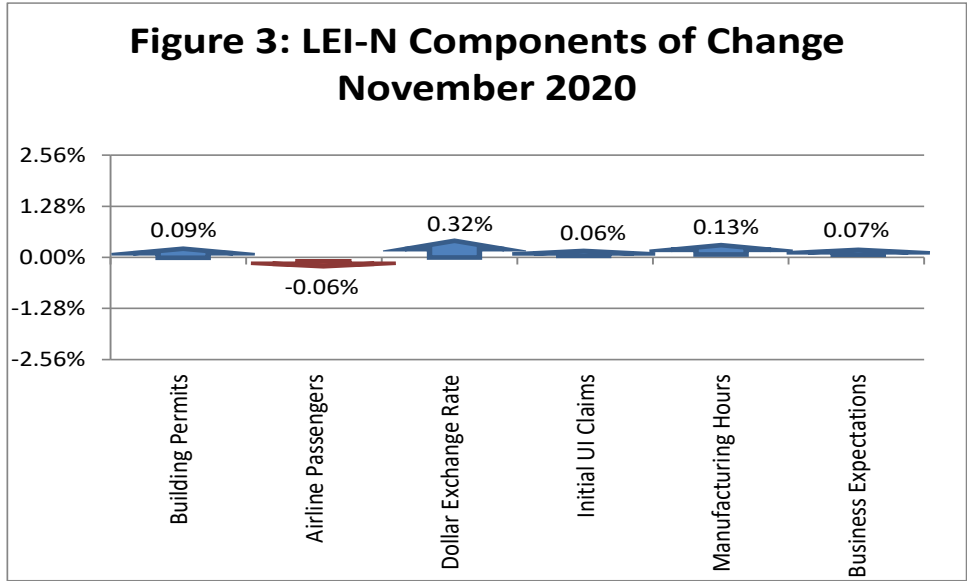


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during November 2020. The change in the LEI–N is the weighted average of changes in each component (see page 5). Five of six LEI-N components improved during November. Manufacturing hours and building permits for single-family homes both increased. Business expectations also were positive, with respondents to the November *Survey of Nebraska Business* reporting plans to increase employment over the next six months. There also was a decline in initial claims for unemployment insurance and the value of the U.S. dollar. A declining dollar improves the competitive position of agricultural producers, manufacturers, and other businesses that export. There was, however, a small decline in airline passenger counts in Nebraska during November.



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 0.79% during November 2020, as seen in Figure 4.

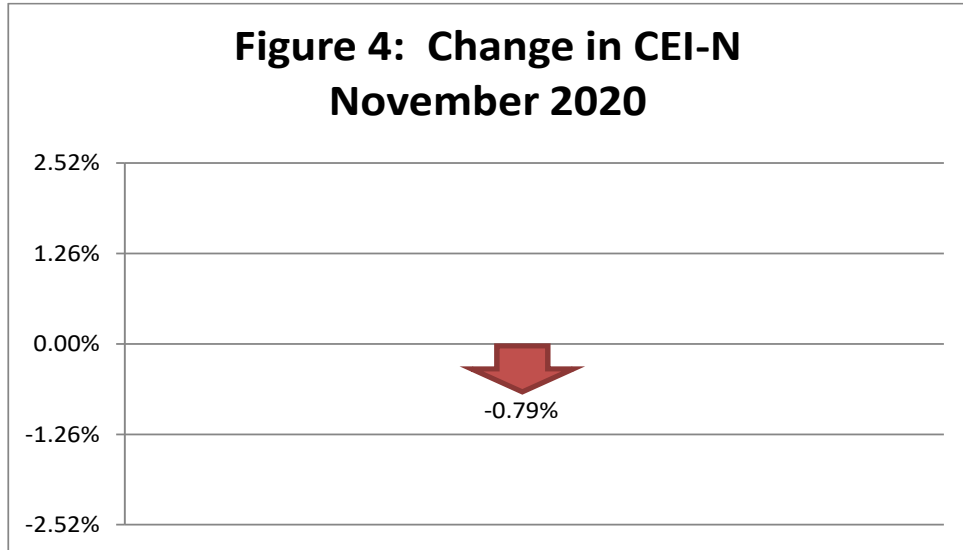
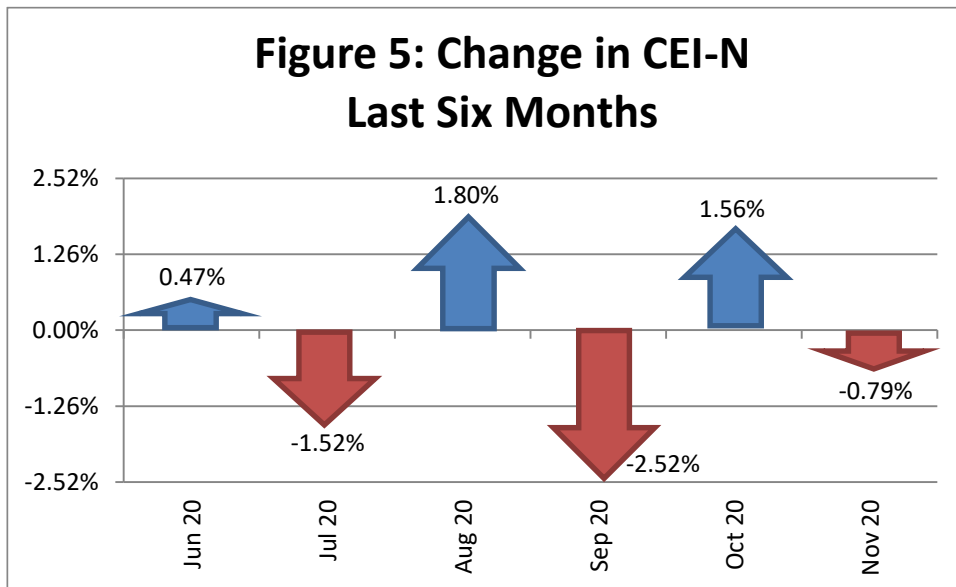


Figure 5 shows the change in the CEI-N over the last 6 months. Economic growth has been mixed in Nebraska, with the economy expanding in some months and declining in others. The overall change has been a modest drop in the CEI-N between June and November.



Two of four components of the CEI-N fell during November, as seen in Figure 6. Business conditions were negative as respondents to the November *Survey of Nebraska Business* reported a decline in both sales and employment in recent months. There also was a decline in the revenue from electricity sales during November. However, there was an increase in real private wages, primarily due to an increase in real hourly wages. Agricultural commodity prices also rose during November. 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*.

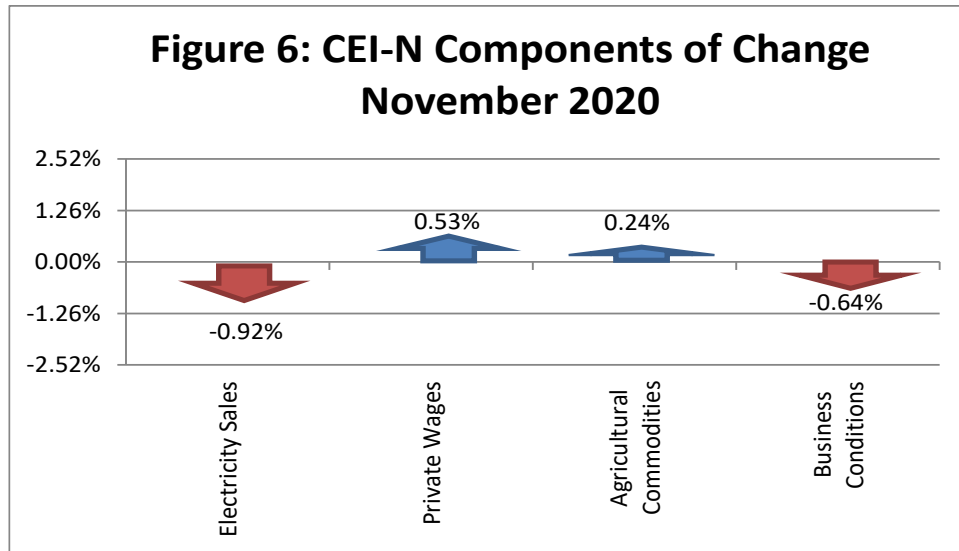
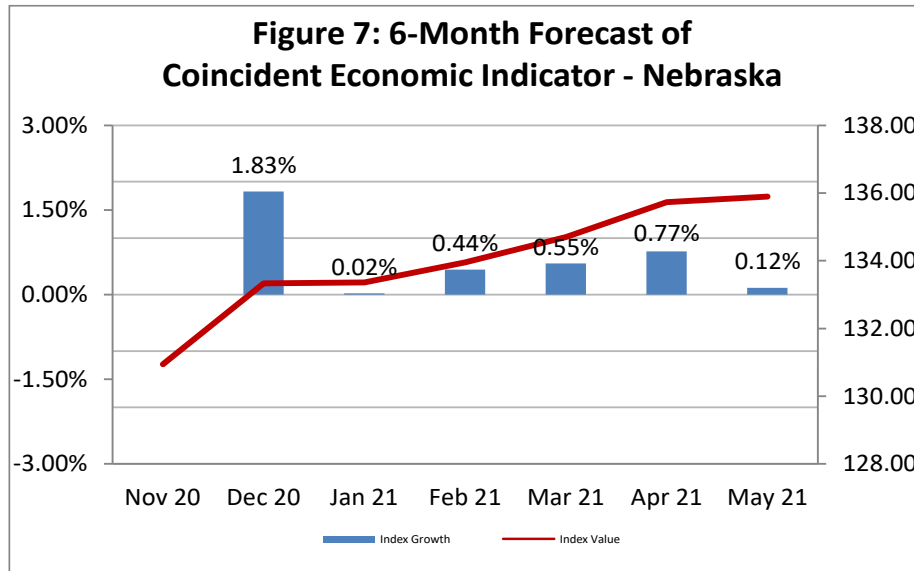


Figure 7 shows a forecast for the CEI-N over the next six months. The forecast calls for growth in the CEI-N through May 2021. This finding is consistent with the recent increase in the LEI-N reported in Figure 2.



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 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.

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	13.5627	0.0737	0.0375	Electricity Sales	4.1711	0.2397	0.1907
Airline Passengers	6.0922	0.1641	0.0834	Private Wages	2.1292	0.4696	0.3735
Exchange Rate	1.1811	0.8467	0.4303	Agricultural Commodities	3.3905	0.2949	0.2346
Initial UI Claims	17.6560	0.0566	0.0288	Survey Business Conditions	3.9534	0.2529	0.2012
Manufacturing Hours	1.7063	0.5861	0.2979				
Survey Business Expectations	4.1624	0.2402	0.1221				

Tables 2 and 3 show the calculation for the change in LEI-N and CEI-N between October and November 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.

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	86.52	82.69	3.84	0.04	0.14	0.09%
Airline Passengers	40.97	42.17	-1.20	0.08	-0.10	-0.06%
U.S. Dollar Exchange Rate (Inverse)	82.03	80.88	1.16	0.43	0.50	0.32%
Initial Unemployment Insurance Claims (Inverse)	90.65	87.46	3.19	0.03	0.09	0.06%
Manufacturing Hours	95.34	94.63	0.71	0.30	0.21	0.13%
Survey Business Expectations ¹	50.88		0.88	0.12	0.11	0.07%
Total (weighted average)	156.76	155.81			0.95	0.61%

¹ Survey results are a diffusion Index, which is always compared to 50

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	149.33	155.69	-6.36	0.19	-1.21	-0.92%
Private Wage	116.62	114.76	1.86	0.37	0.69	0.53%
Agricultural Commodities	109.02	107.66	1.37	0.23	0.32	0.24%
Survey Business Conditions ¹	45.81		-4.19	0.20	-0.84	-0.64%
Total (weighted average)	130.94	131.98			-1.04	-0.79%

¹ 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.

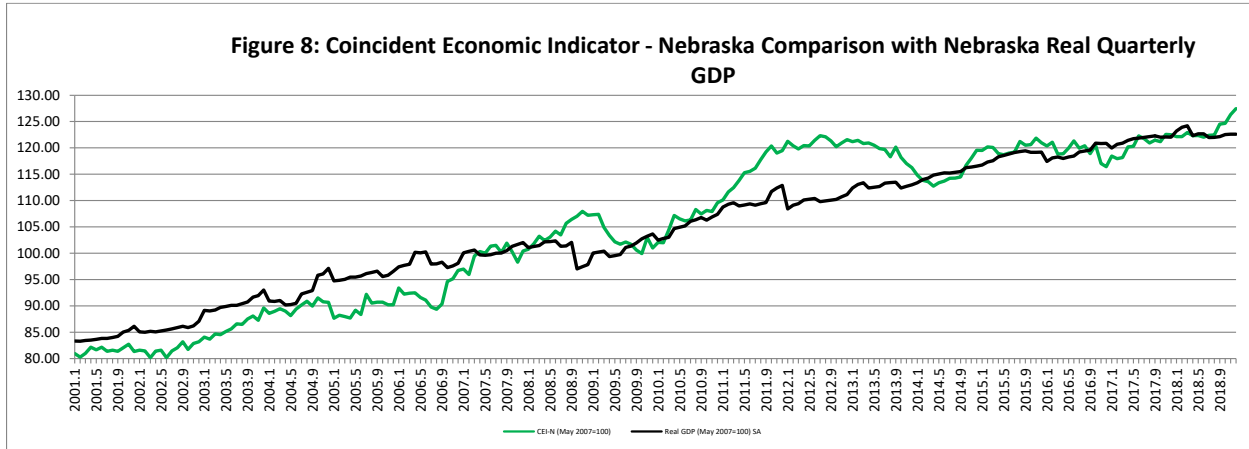


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months 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 0.84.

