

Nebraska Monthly Economic Indicators: March 31, 2021

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

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Summary: The LEI-N rose by 1.05% during February 2021. The indicator has risen during each of the last five months, suggesting that the Nebraska economy will expand solidly through the summer of 2021. In February, the leading indicator primarily rose due to increased manufacturing activity and strong business expectations. There was a large increase in manufacturing hours-worked and respondents to the February Survey of Nebraska Business reported plans to increase sales and employment over the next six months. Airline passenger counts also rose modestly, while there was a small decline in initial claims for unemployment insurance on a seasonally-adjusted basis. In terms of declining indicators, the value of the U.S. dollar rose during February, creating a more challenging for Nebraska businesses that compete in international markets.

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during February of 2021 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 1.05% during February.

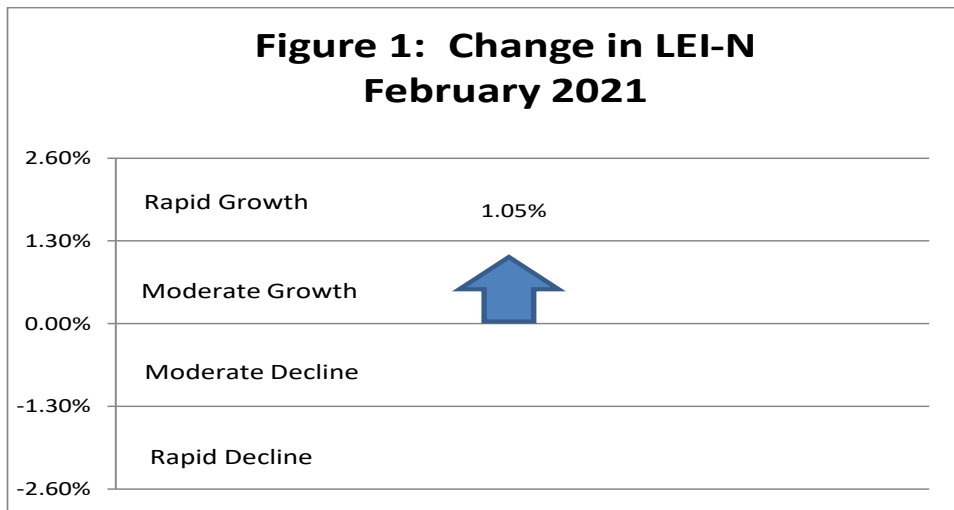


Figure 2 shows the change in the leading indicator over the last six months. The leading indicator has risen for five consecutive months. This pattern is consistent with economic growth in Nebraska through the summer of 2021.

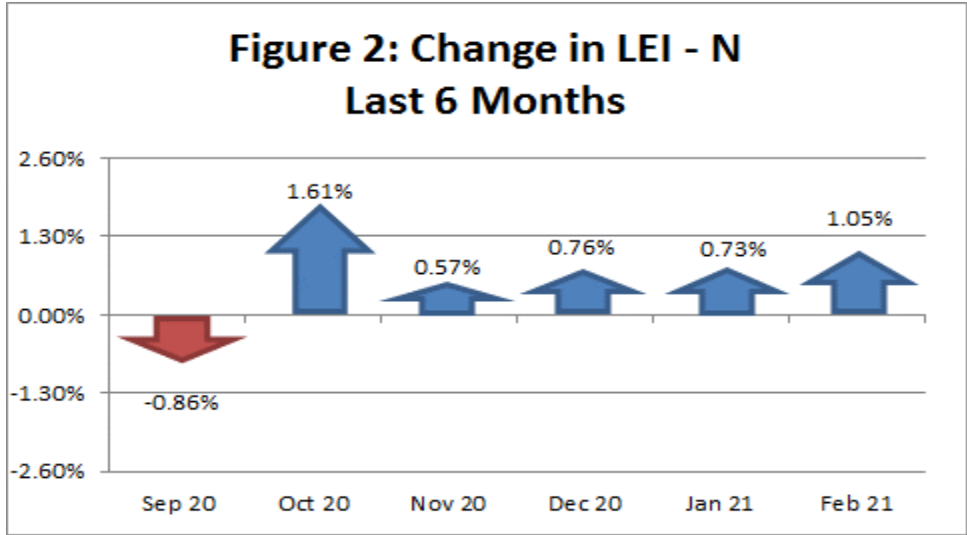
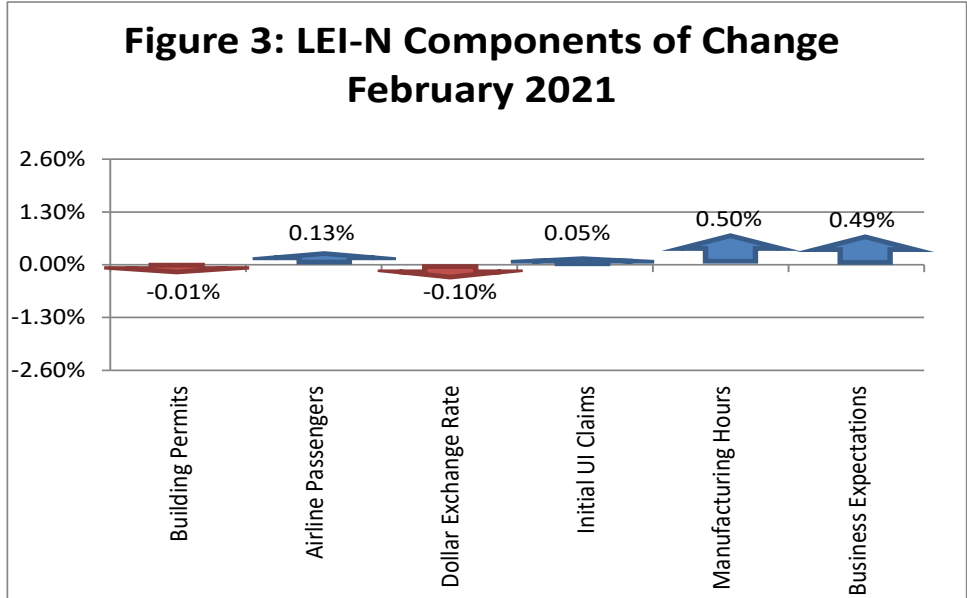


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during February of 2021. The change in the LEI-N is the weighted average of changes in each component (see page 5). Four of six LEI-N components improved during February. Manufacturing activity and business expectations were strong. There was a large increase in manufacturing hours-worked and respondents to the February *Survey of Nebraska Business* reported plans to increase employment and sales over the next six months. There also was a modest increase in airline passenger counts and a small decline in initial claims for unemployment insurance on a seasonally-adjusted basis. In terms of negative components, there was an increase in the value of the U.S. dollar in February. A stronger dollar creates a more challenging environment for agricultural producers, manufacturers, and other Nebraska businesses that compete in international markets.



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 1.30% during February 2021, as seen in Figure 4.

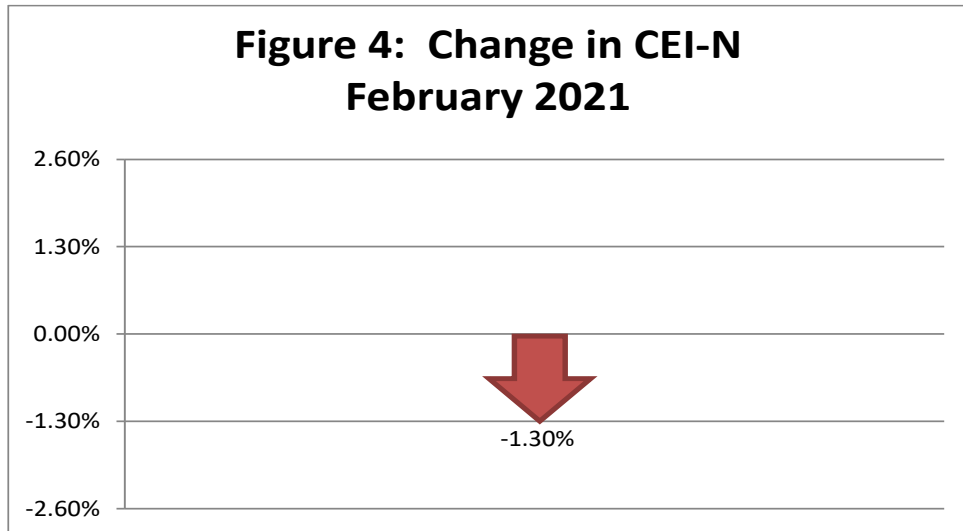
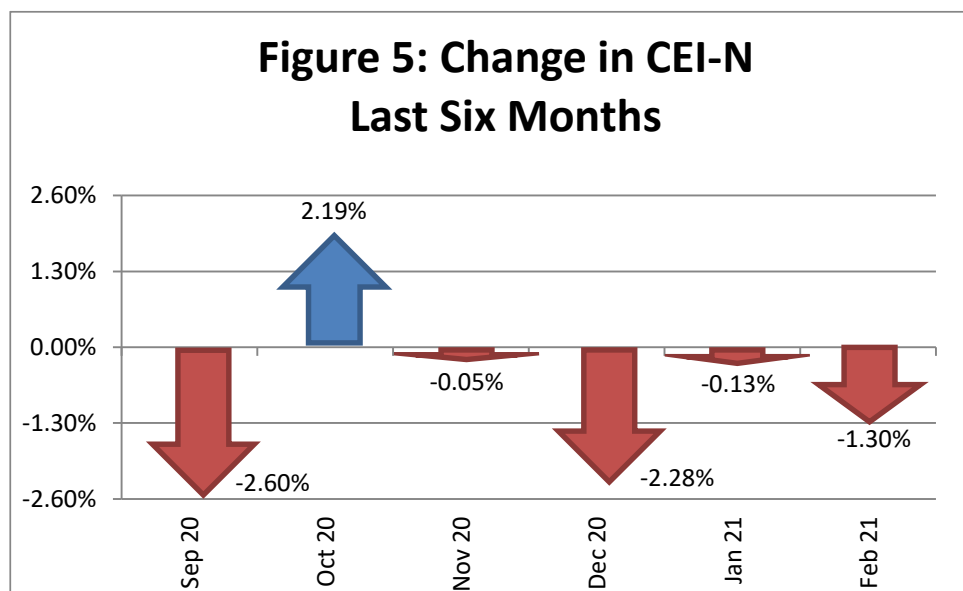


Figure 5 shows the change in the CEI-N over the last 6 months. Annual revisions in employment and wage data led to a decline in the CEI-N in some recent months, in particular November and January. As a result, recent trends have turned negative. In particular, economic activity has declined in Nebraska over the last three months. It will be useful to monitor whether this trend continues.



The CEI-N fell in February due to poor reported business conditions. Respondents to the February *Survey of Nebraska Business* reported a decline in both sales and employment in recent months. The other three components of the CEI-N were mixed. Private wages fell while there was an increase in agricultural commodity prices. Electricity sales changed little on a seasonally-adjusted basis. 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*.

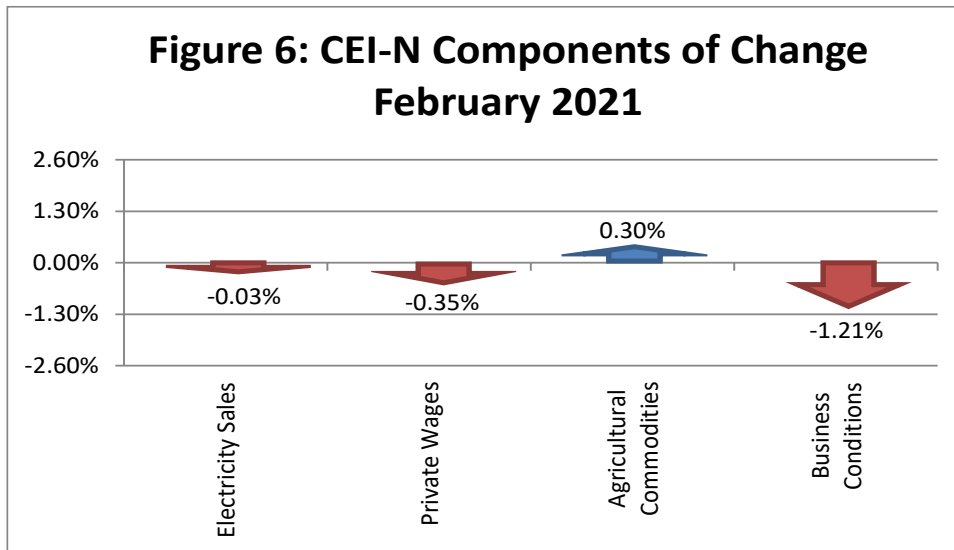
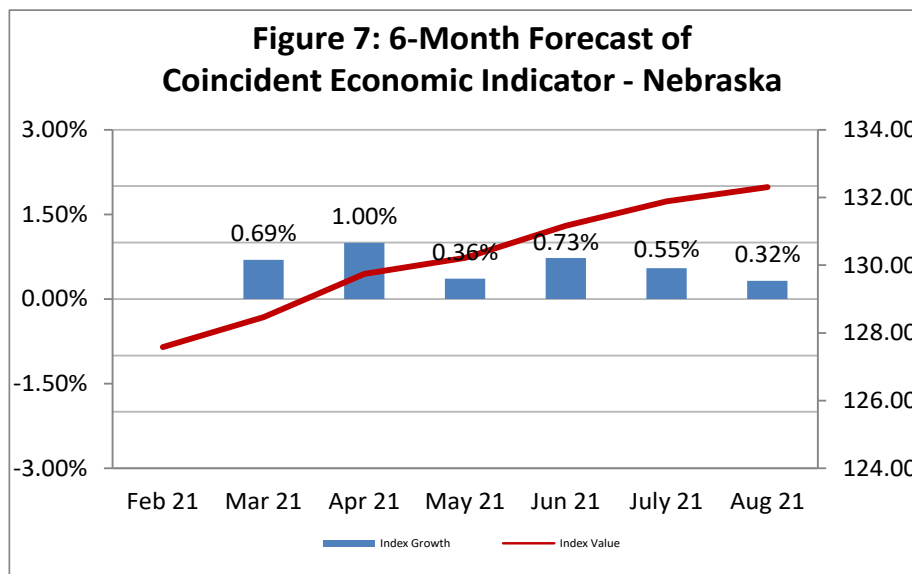


Figure 7 shows a forecast for the CEI-N over the next six months. The forecast calls for growth in the CEI-N through August 2021. This finding is consistent with the recent increase in the LEI-N reported in Figure 2.



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.

Table 1: Component Weights for LEI-N and CEI-N							
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	13.5617	0.0737	0.0375	Electricity Sales	4.1528	0.2408	0.1917
Airline Passengers	5.9180	0.1690	0.0859	Private Wages	2.1298	0.4695	0.3737
Exchange Rate	1.1680	0.8562	0.4353	Agricultural Commodities	3.3824	0.2956	0.2353
Initial UI Claims	18.8185	0.0531	0.0270	Survey Business Conditions	3.9944	0.2504	0.1993
Manufacturing Hours	1.7391	0.5750	0.2924				
Survey Business Expectations	4.1728	0.2396	0.1219				

Tables 2 and 3 show the calculation for the change in LEI-N and CEI-N between January and February of 2021. Weights (from Table 1) are multiplied by the change to calculate the contribution of each component. Contributions are converted to percentage terms and summed.

Table 2: Component Contributions to the Change in Leading Economic Indicator						
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	89.01	89.45	-0.44	0.04	-0.02	-0.01%
Airline Passengers	45.84	43.45	2.39	0.09	0.21	0.13%
U.S. Dollar Exchange Rate (Inverse)	83.14	83.50	-0.36	0.44	-0.16	-0.10%
Initial Unemployment Insurance Claims (Inverse)	96.21	93.48	2.73	0.03	0.07	0.05%
Manufacturing Hours	97.75	95.05	2.70	0.29	0.79	0.50%
Survey Business Expectations ¹	56.34		6.34	0.12	0.77	0.49%
Total (weighted average)	159.87	158.20			1.67	1.05%

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

Table 3: Component Contributions to the Change in Coincident Economic Indicator						
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	152.33	152.56	-0.23	0.19	-0.04	-0.03%
Private Wage	112.44	113.66	-1.22	0.37	-0.45	-0.35%
Agricultural Commodities	115.84	114.20	1.64	0.24	0.39	0.30%
Survey Business Conditions ¹	42.13		-7.87	0.20	-1.57	-1.21%
Total (weighted average)	127.58	129.26			-1.68	-1.30%

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.

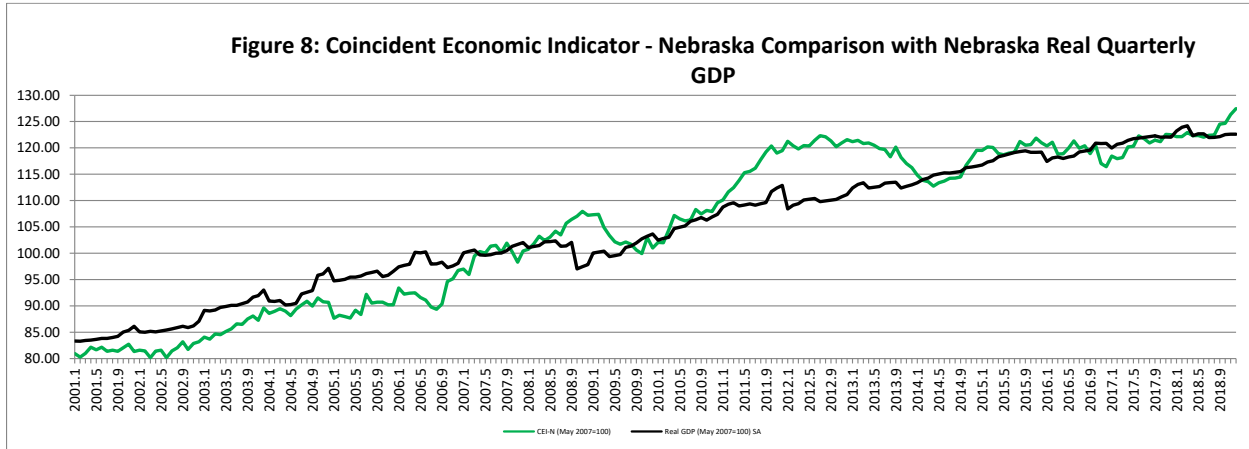


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months 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 0.85.

