

Nebraska Monthly Economic Indicators: February 24, 2021

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

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Leading Economic Indicator.....	1
Coincident Economic Indicator.....	3
Weights and Component Shares.....	5
Performance of the LEI-N and CEI-N.....	6

Summary: The LEI-N rose by 0.72% during January 2021. The indicator has risen during each of the last four months, suggesting that the Nebraska economy will expand solidly through mid-2021. In January, the leading indicator primarily rose due to strong business expectations. Respondents to the January Survey of Nebraska Business reported plans to increase sales and employment over the next six months. Overall, three of the six components of the leading indicator improved during January. Airline passenger counts rose modestly, while the value of the U.S. dollar fell. A weaker dollar is positive for Nebraska businesses which compete in international markets. In terms of declining indicators, building permits for single-family homes and manufacturing hours declined during the month. There also was an uptick in initial claims for unemployment insurance.

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during January of 2021 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 0.72% during January.

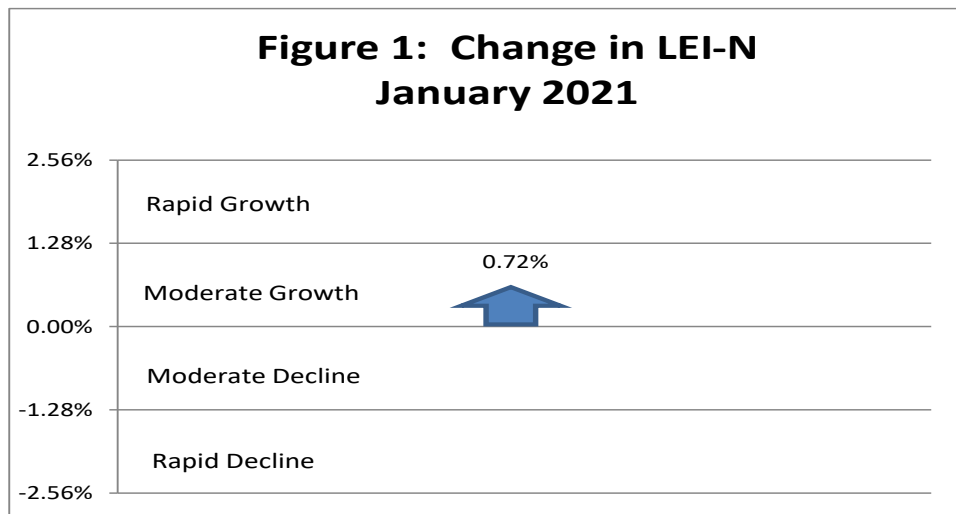


Figure 2 shows the change in the leading indicator over the last six months. The leading indicator has risen for five out of the last six months. This pattern is consistent with economic growth in Nebraska through mid-2021.

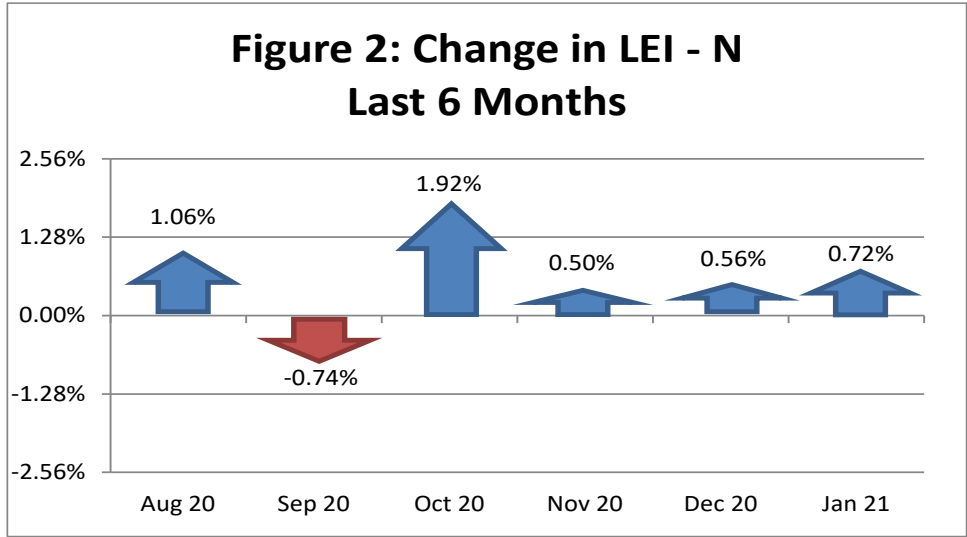
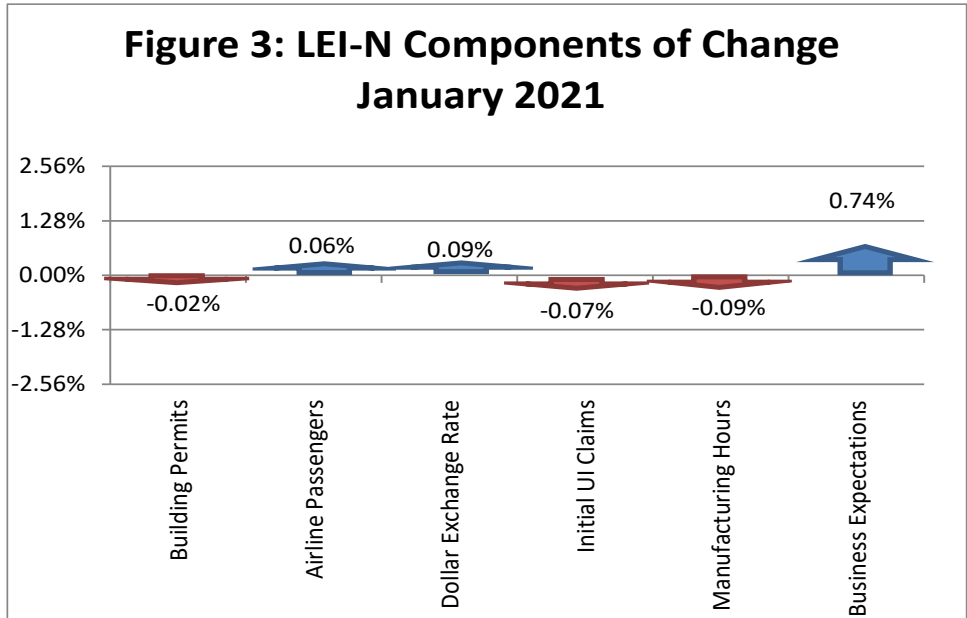


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during January of 2021. The change in the LEI-N is the weighted average of changes in each component (see page 5). Three of six LEI-N components improved during January. Business expectations were strong. Respondents to the *January Survey of Nebraska Business* reported plans to increase employment and sales over the next six months. Airline passenger counts also rose in January while the value of the U.S. dollar fell. A weaker dollar supports agricultural producers, manufacturers, and other Nebraska businesses that compete in international markets. In terms of declining components, manufacturing hours and building permits for single-family homes both declined during January. There also was an uptick in initial claims for unemployment insurance.



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 0.92% during January 2021, as seen in Figure 4.

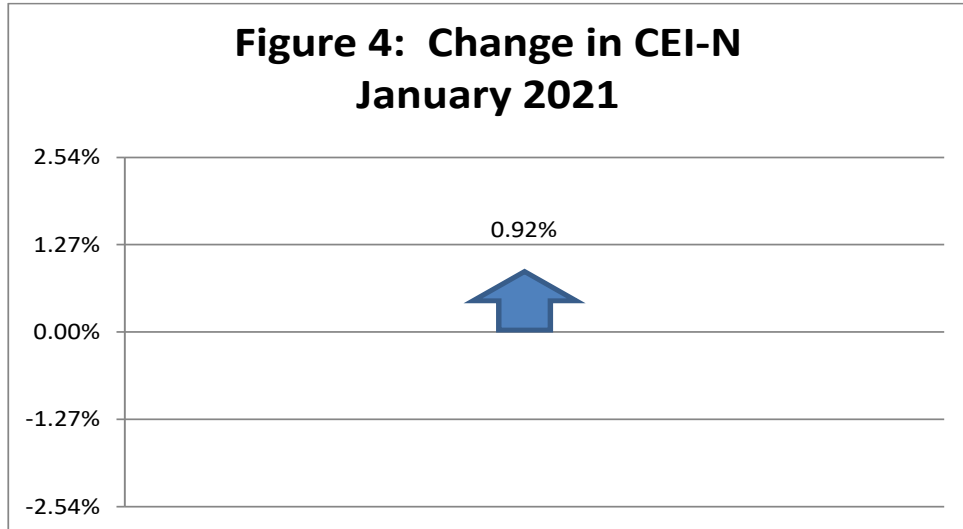
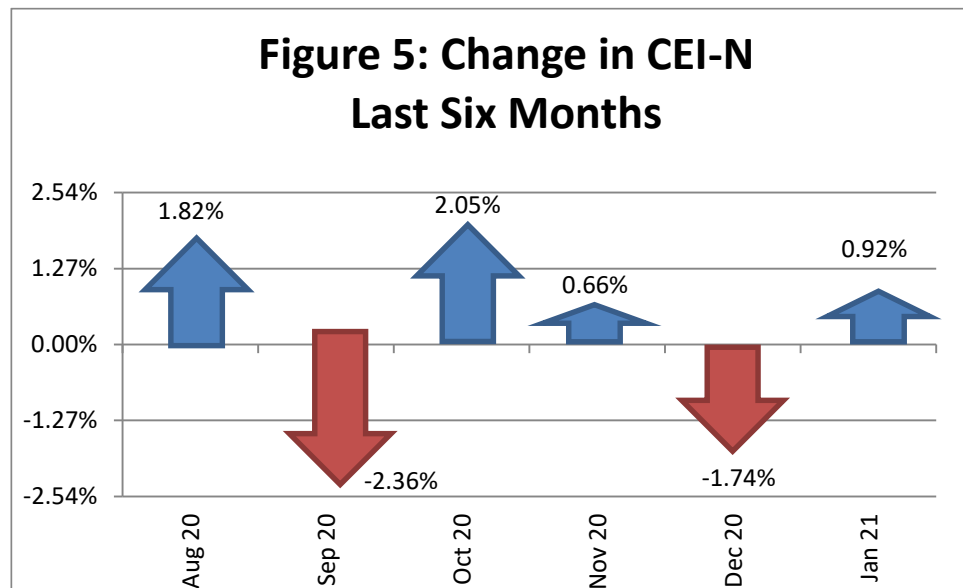


Figure 5 shows the change in the CEI-N over the last 6 months. Economic growth has been mixed in Nebraska, with the economy expanding in some months and declining in others. Overall, economic growth in Nebraska has been positive since October.



Three of four CEI-N components rose during January, as seen in Figure 6. Electricity sales, agricultural commodity prices, and private wages all improved. However, business conditions were negative as respondents to the January *Survey of Nebraska Business* reported a decline in both sales and employment in recent months. 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*.

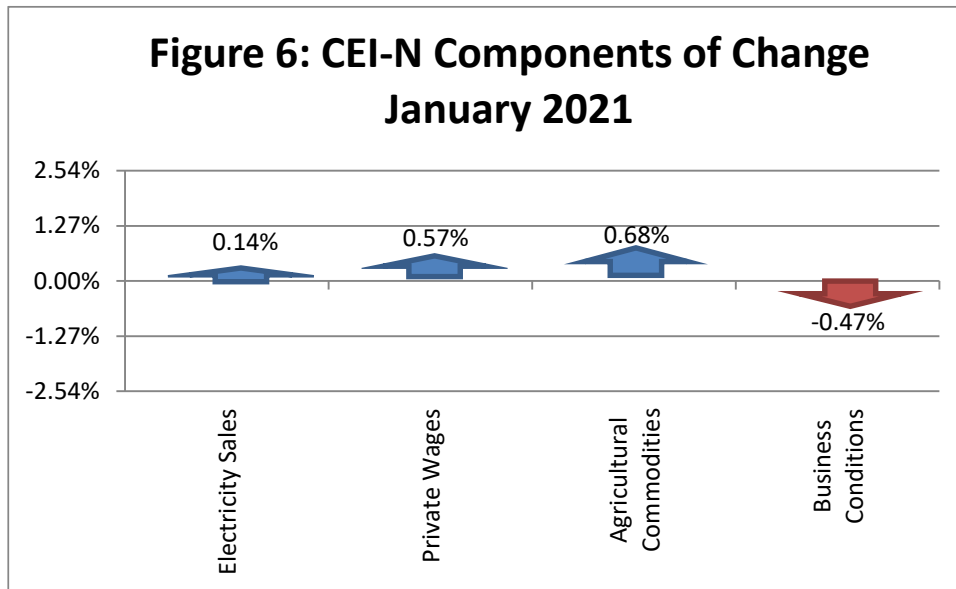
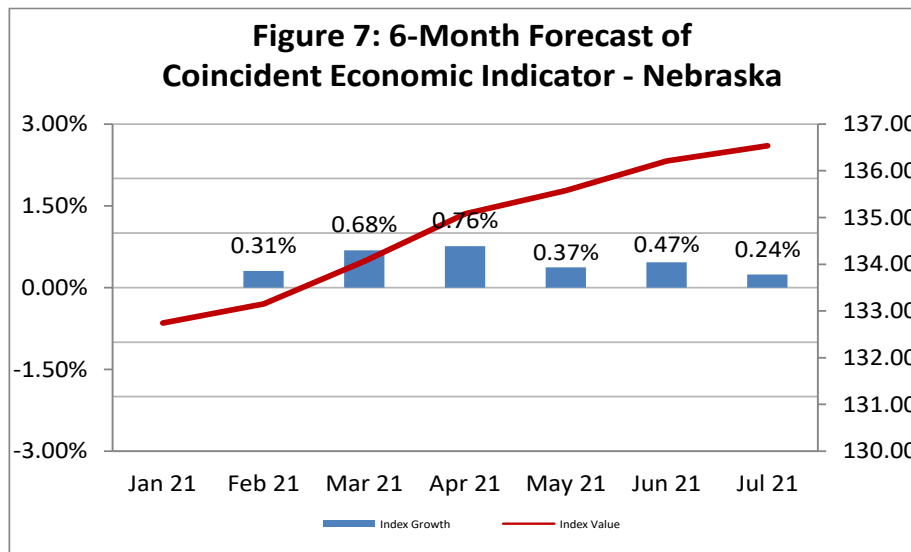


Figure 7 shows a forecast for the CEI-N over the next six months. The forecast calls for growth in the CEI-N through July 2021. This finding is consistent with the recent increase in the LEI-N reported in Figure 2.



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	13.5563	0.0738	0.0375	Electricity Sales	4.1402	0.2415	0.1922
Airline Passengers	6.0873	0.1643	0.0834	Private Wages	2.1290	0.4697	0.3738
Exchange Rate	1.1843	0.8444	0.4289	Agricultural Commodities	3.4020	0.2939	0.2339
Initial UI Claims	17.5885	0.0569	0.0289	Survey Business Conditions	3.9785	0.2514	0.2000
Manufacturing Hours	1.6945	0.5901	0.2998				
Survey Business Expectations	4.1791	0.2393	0.1215				

Tables 2 and 3 show the calculation for the change in LEI-N and CEI-N between December of 2020 and January 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	105.00	105.81	-0.81	0.04	-0.03	-0.02%
Airline Passengers	43.31	42.22	1.08	0.08	0.09	0.06%
U.S. Dollar Exchange Rate (Inverse)	84.47	84.14	0.33	0.43	0.14	0.09%
Initial Unemployment Insurance Claims (Inverse)	83.06	86.69	-3.63	0.03	-0.10	-0.07%
Manufacturing Hours	93.20	93.64	-0.45	0.30	-0.13	-0.09%
Survey Business Expectations ¹	59.61		9.61	0.12	1.17	0.74%
Total (weighted average)	158.50	157.37			1.13	0.72%

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	164.49	163.54	0.94	0.19	0.18	0.14%
Private Wage	116.16	114.16	2.00	0.37	0.75	0.57%
Agricultural Commodities	115.01	111.22	3.80	0.23	0.89	0.68%
Survey Business Conditions ¹	46.94		-3.06	0.20	-0.61	-0.47%
Total (weighted average)	132.75	131.54			1.21	0.92%

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.

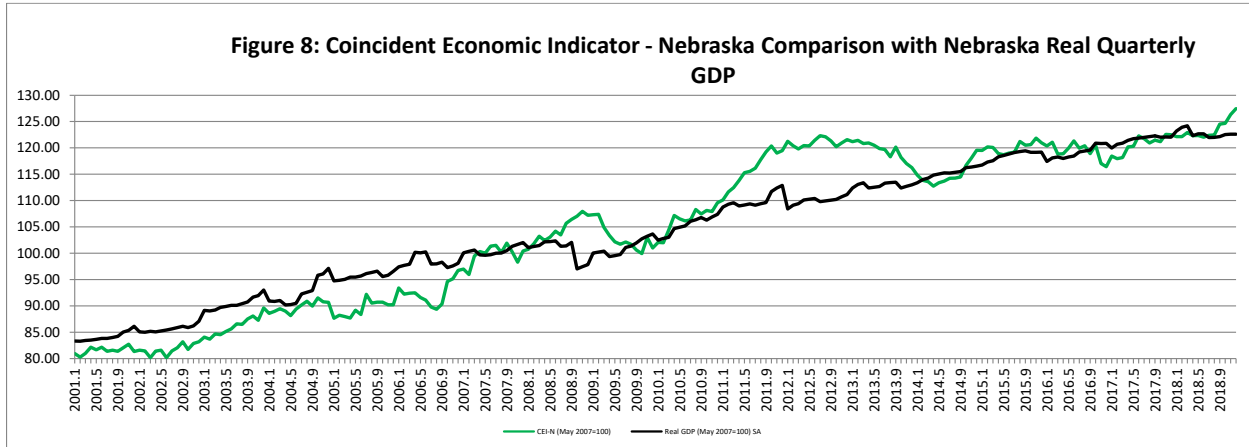


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months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

