

# Nebraska Monthly Economic Indicators: September 22, 2021

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

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**Summary:** The LEI-N rose by 0.79% during August 2021. The increase in the leading indicator, which is designed to predict economic activity six months in the future, suggests that economic growth will be moderate in Nebraska during the first months of 2022. Growth will decline from the rapid increases seen during 2021. Three components of the leading indicator improved during August. Building permits for single-family homes bounced back in August after weak permit activity in July. There also was growth in manufacturing hours-worked during the month. Finally, respondents to the August Survey of Nebraska Business reported plans to increase sales and employment in the state over the next six months.

## Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during August 2021 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 0.79% during August.

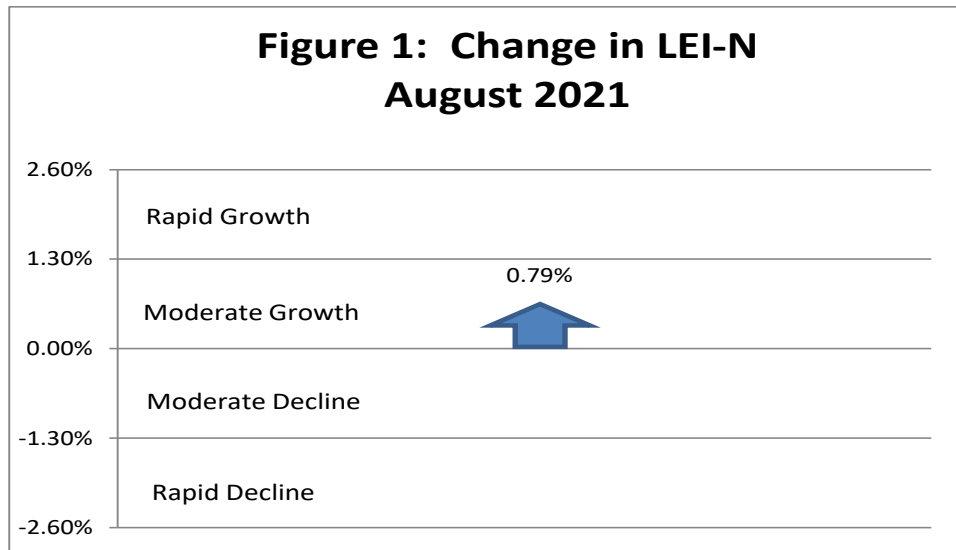


Figure 2 shows the change in the leading indicator over the last six months. The leading indicator fell in July after 4 months of often rapid increase but growth returned during August. This pattern suggests that economic growth will be strong in Nebraska for the rest of 2021, but should slow in early 2022.

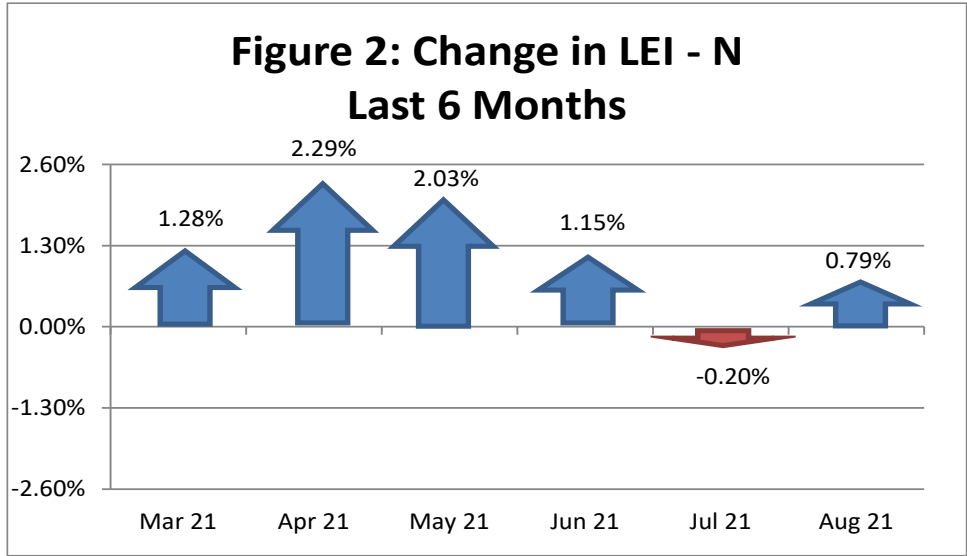
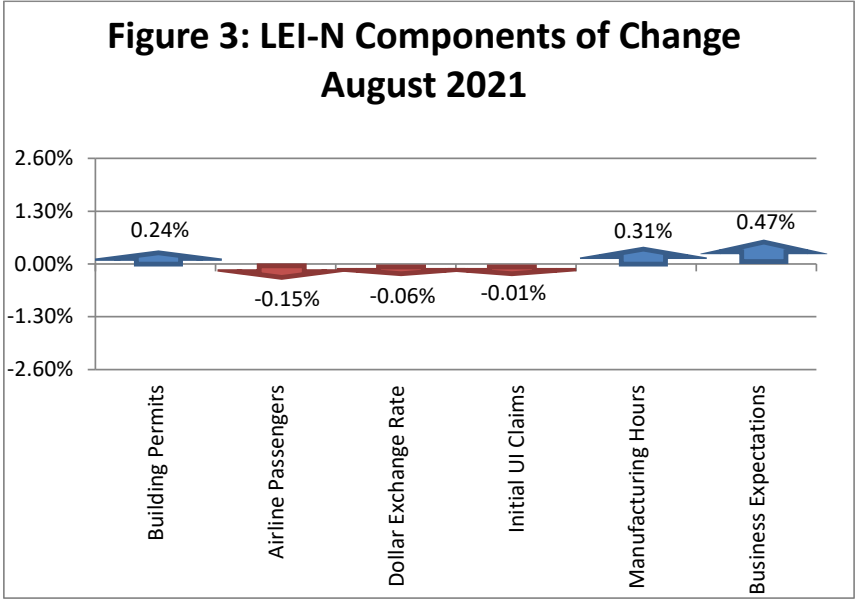


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during August. The change in the LEI-N is the weighted average of changes in each component (see page 5). Three of six LEI-N components improved during August. There was a rise in building permits for single-family homes and manufacturing hours worked during the month. Business expectations were another positive factor. Respondents to the August *Survey of Nebraska Business* reported plans to increase employment and sales over the next six months. Among negative components, there was a small increase in initial claims for unemployment insurance during August. There also was a small increase in the value of the U.S. dollar. A rising dollar is challenging 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 rose by a rapid 2.02% during August 2021, as seen in Figure 4.

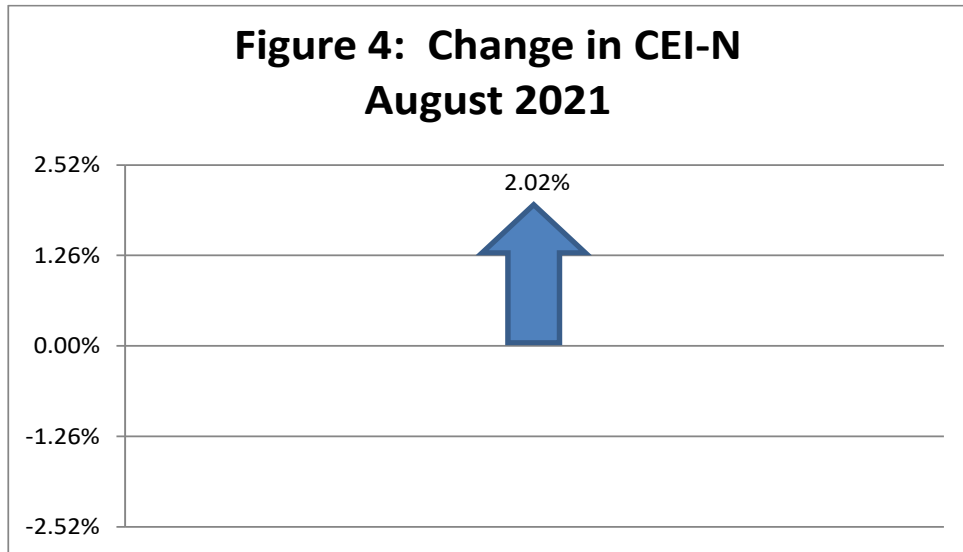
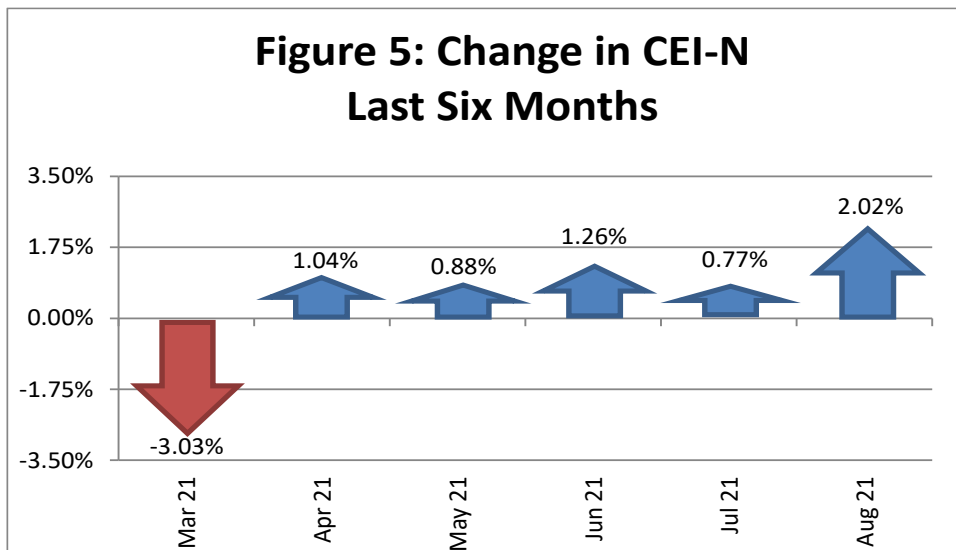


Figure 5 shows the change in the CEI-N over the last 6 months. The CEI-N has grown for five consecutive months. Growth has been rapid for two of the last three months.



Growth was rapid in Nebraska during August. All four components of the CEI-N rose during the month. There was strong growth in agricultural commodity prices and real private wages rose even after adjusting for higher inflation. Real wages rose both due to rising private sector employment and rising hourly wages. Electricity sales also rose modestly in Nebraska after adjusting for weather and other seasonal factors. Business conditions were positive in August. Respondents to the August *Survey of Nebraska Business* reported an increase in sales during 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*.

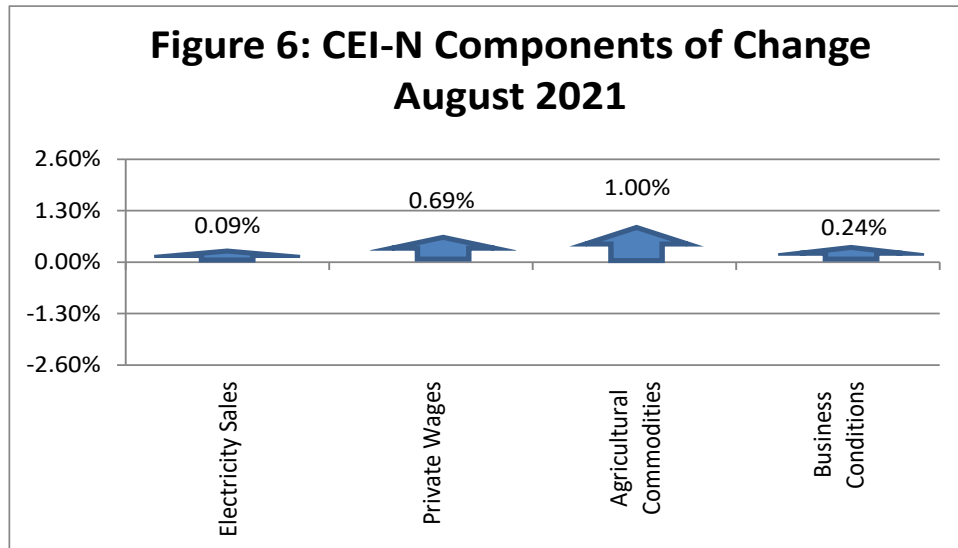
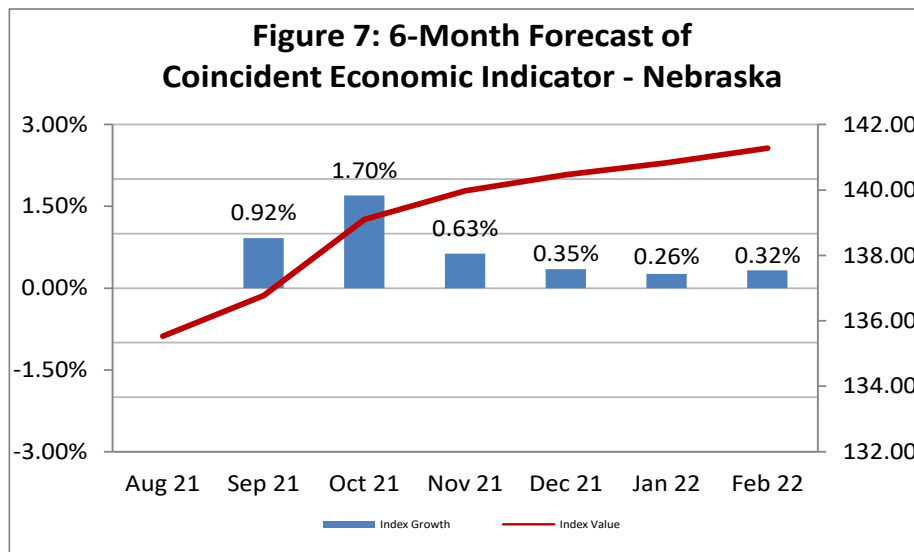


Figure 7 shows a forecast for the CEI-N over the next six months. The forecast calls for strong growth in the CEI-N through November 2021 before growth moderates in late 2021 and early 2022. This finding is consistent with the recent changes in the LEI-N reported in Figure 2.



## 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.

<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	13.8036	0.0724	0.0371	Electricity Sales	4.7730	0.2095	0.1697
Airline Passengers	6.2838	0.1591	0.0814	Private Wages	2.0564	0.4863	0.3938
Exchange Rate	1.1593	0.8626	0.4412	Agricultural Commodities	3.4867	0.2868	0.2323
Initial UI Claims	18.8035	0.0532	0.0272	Survey Business Conditions	3.9656	0.2522	0.2042
Manufacturing Hours	1.7479	0.5721	0.2926				
Survey Business Expectations	4.2416	0.2358	0.1206				

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

<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	61.09	50.22	10.86	0.04	0.40	0.24%
Airline Passengers	100.85	104.00	-3.16	0.08	-0.26	-0.15%
U.S. Dollar Exchange Rate (Inverse)	82.23	82.45	-0.23	0.44	-0.10	-0.06%
Initial Unemployment Insurance Claims (Inverse)	91.77	92.33	-0.56	0.03	-0.02	-0.01%
Manufacturing Hours	101.05	99.26	1.79	0.29	0.52	0.31%
Survey Business Expectations <sup>1</sup>	56.56		6.56	0.12	0.79	0.47%
Total (weighted average)	171.03	169.69			1.35	0.79%

<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	165.94	165.21	0.73	0.17	0.12	0.09%
Private Wage	115.34	113.02	2.32	0.39	0.91	0.69%
Agricultural Commodities	144.11	138.41	5.70	0.23	1.32	1.00%
Survey Business Conditions <sup>1</sup>	51.56		1.56	0.20	0.32	0.24%
Total (weighted average)	135.53	132.85			2.68	2.02%

<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 the first quarter of 2021, 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 0.96.

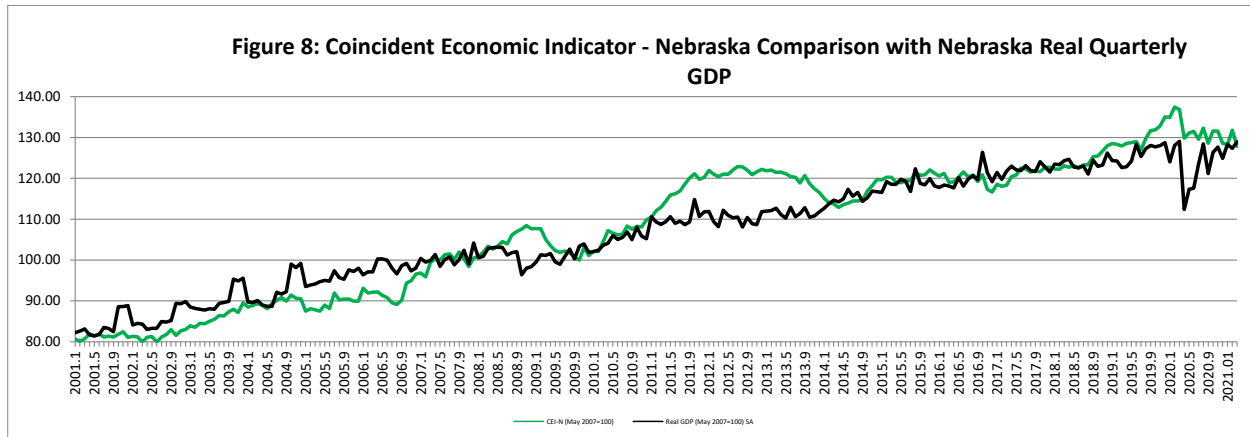


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months 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 long-run correlation coefficient between CEI-N and six-month forward values of LEI-N is 0.86.

