

# Nebraska Monthly Economic Indicators: October 27, 2021

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

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**Summary:** The LEI-N fell by 0.91% during September 2021. The decline in the leading indicator, which is designed to predict economic activity six months in the future, suggests that economic growth will slow significantly in Nebraska during the first quarter of 2022. While business expectations remained solid, other components of the leading indicator worsened. Manufacturing hours worked, airline passenger counts, and building permits for single-family homes all declined. There also was an increase in initial claims for unemployment insurance during the month.

## Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during September 2021 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N fell by 0.91% during September.

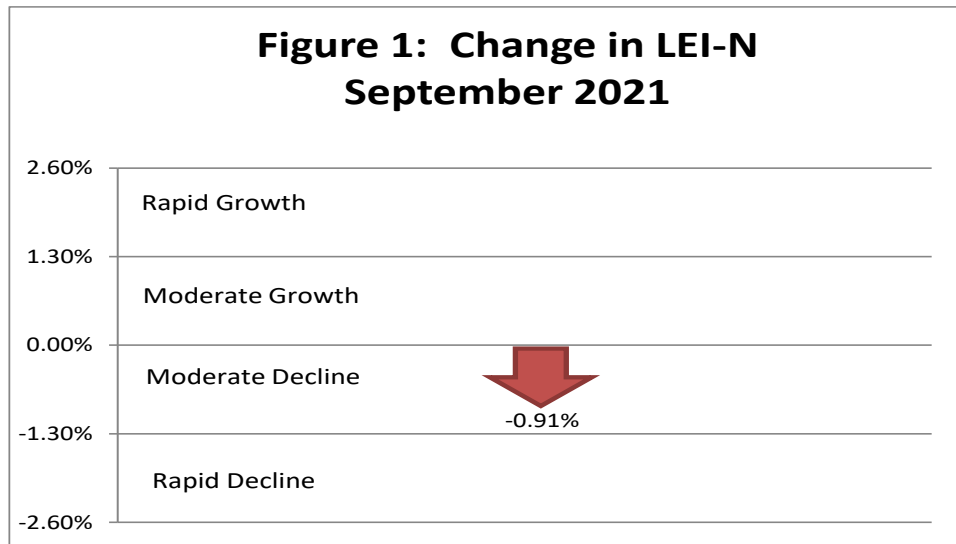


Figure 2 shows the change in the leading indicator over the last six months. The leading indicator rose sharply from April through June but declined during two of the last three months. This pattern suggests that economic growth will slow significantly in Nebraska during the first quarter of 2022.

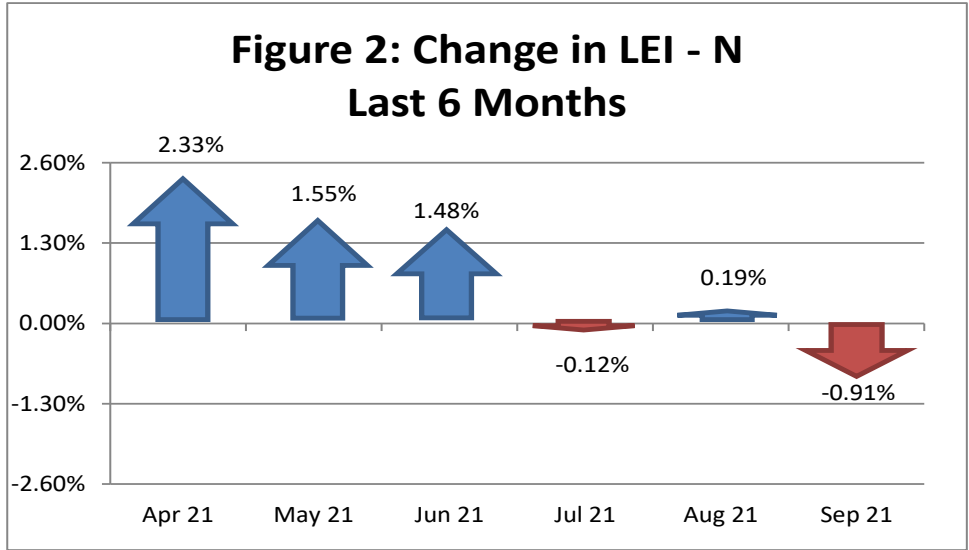
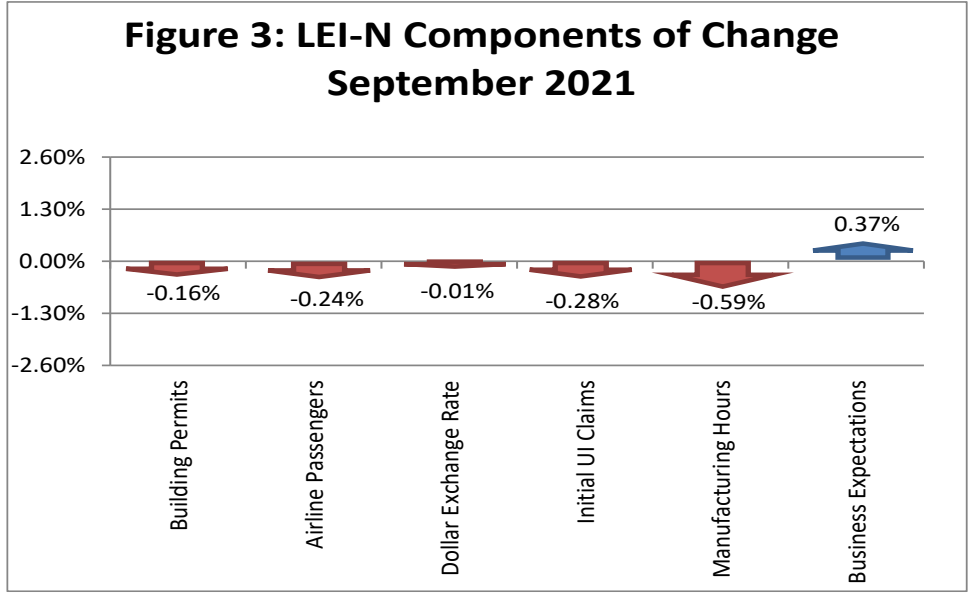


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during September. The change in the LEI-N is the weighted average of changes in each component (see page 5). Most components of the LEI-N declined during September. There was a decline in manufacturing hours-worked, airline passenger counts, and building permits for single-family homes. There also was an increase in initial claims for unemployment insurance. Business expectations were one positive component. Respondents to the September *Survey of Nebraska Business* reported plans to increase employment and sales over the next six months.

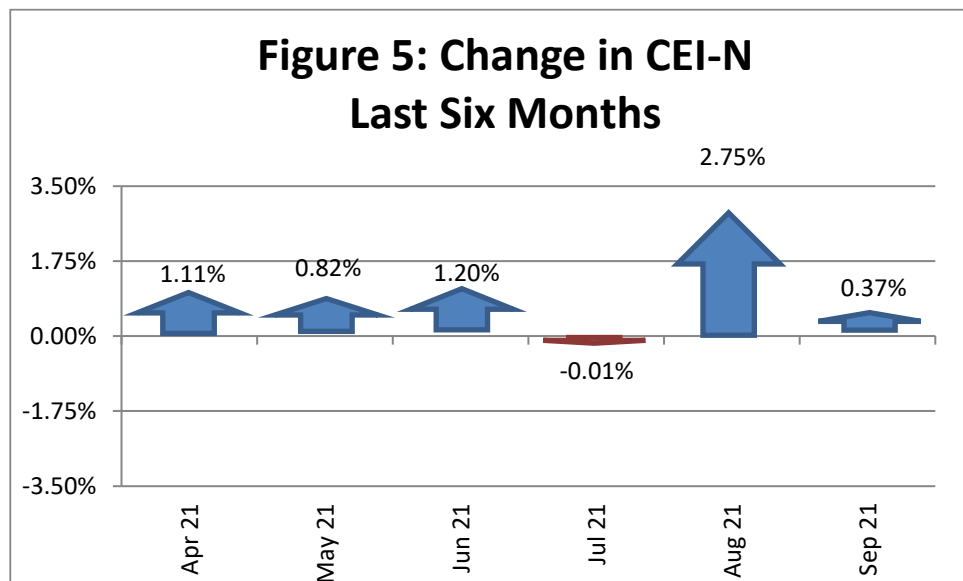


## Coincident Economic Indicator – Nebraska

The Coincident Economic Indicator - Nebraska (CEI-N) is a measure of the current size of the Nebraska economy. The CEI-N rose by 0.37% during September 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 of the last six months. Economic growth has been strong in Nebraska during 2021.



Two of four components of the CEI-N rose during September. There was strong growth in agricultural commodity prices. Business conditions also were positive as respondents to the September *Survey of Nebraska Business* reported an increase in sales during recent months. Electricity sales, however, fell modestly in Nebraska after adjusting for weather and other seasonal factors. Real private wages declined as weekly hours worked fell in Nebraska. 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*.

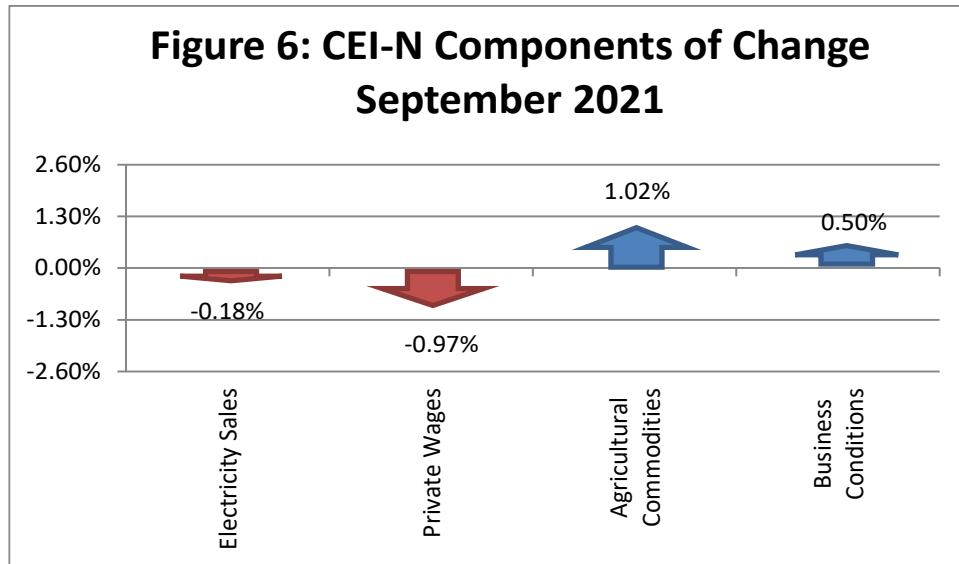
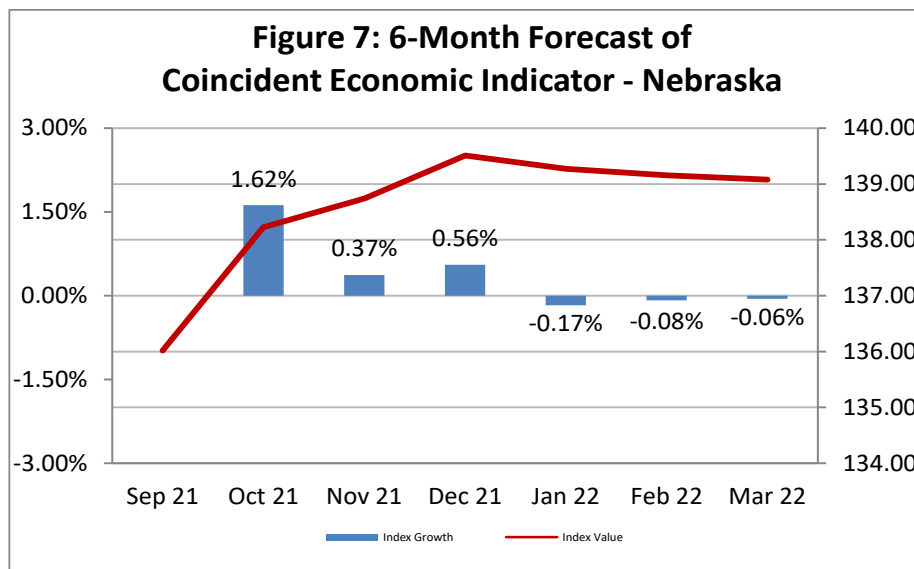


Figure 7 shows a forecast for the CEI-N over the next six months. The forecast calls for solid growth in the CEI-N for the rest of 2021, but growth is expected to slow significantly in the first quarter of 2022. These expectations are consistent with the recent changes in the LEI-N reported in Figure 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	13.1537	0.0760	0.0386	Electricity Sales	4.7770	0.2093	0.1708
Airline Passengers	6.2749	0.1594	0.0810	Private Wages	2.0936	0.4776	0.3897
Exchange Rate	1.1571	0.8642	0.4391	Agricultural Commodities	3.4918	0.2864	0.2337
Initial UI Claims	18.8758	0.0530	0.0269	Survey Business Conditions	3.9630	0.2523	0.2059
Manufacturing Hours	1.7266	0.5792	0.2943				
Survey Business Expectations	4.2336	0.2362	0.1200				

Tables 2 and 3 show the calculation for the change in LEI-N and CEI-N between August and September 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	73.00	80.07	-7.07	0.04	-0.27	-0.16%
Airline Passengers	87.06	92.16	-5.10	0.08	-0.41	-0.24%
U.S. Dollar Exchange Rate (Inverse)	82.19	82.23	-0.04	0.44	-0.02	-0.01%
Initial Unemployment Insurance Claims (Inverse)	71.17	88.98	-17.82	0.03	-0.48	-0.28%
Manufacturing Hours	96.30	99.72	-3.41	0.29	-1.00	-0.59%
Survey Business Expectations <sup>1</sup>	55.32		5.32	0.12	0.64	0.37%
<b>Total (weighted average)</b>	<b>168.76</b>	<b>170.31</b>			<b>-1.55</b>	<b>-0.91%</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	156.30	157.72	-1.42	0.17	-0.24	-0.18%
Private Wage	114.58	117.95	-3.37	0.39	-1.31	-0.97%
Agricultural Commodities	150.64	144.71	5.94	0.23	1.39	1.02%
Survey Business Conditions <sup>1</sup>	53.28		3.28	0.21	0.67	0.50%
<b>Total (weighted average)</b>	<b>136.02</b>	<b>135.51</b>			<b>0.51</b>	<b>0.37%</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 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 0.95.

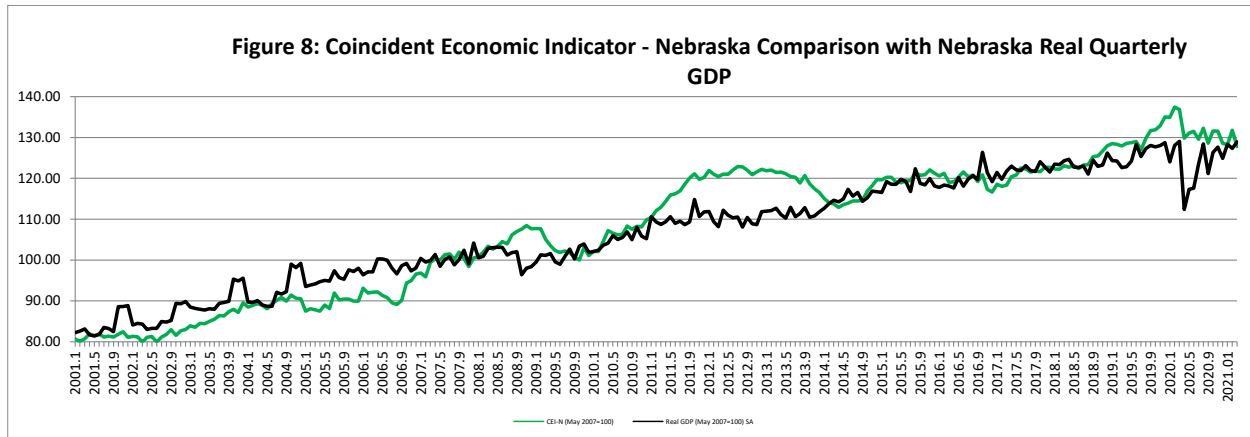


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months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

