

# Nebraska Monthly Economic Indicators: May 25, 2022

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

Author: Dr. Eric Thompson

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 1.85% during April 2022. The increase in the leading indicator, which is designed to predict economic activity six months in the future, signals that the Nebraska economy will continue to grow through the 4<sup>th</sup> quarter of 2022. The indicator improved for three primary reasons. First, there was a sharp increase in airline passenger enplanements in April as that industry continues to recover. Second, initial claims for unemployment insurance fell, signaling a strong Nebraska labor market. Third, respondents to the April Survey of Nebraska Business reported plans to increase sales and employment. There also was a modest increase in hours-worked per week in the manufacturing industry.

## Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during April 2022 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 1.85% during April.

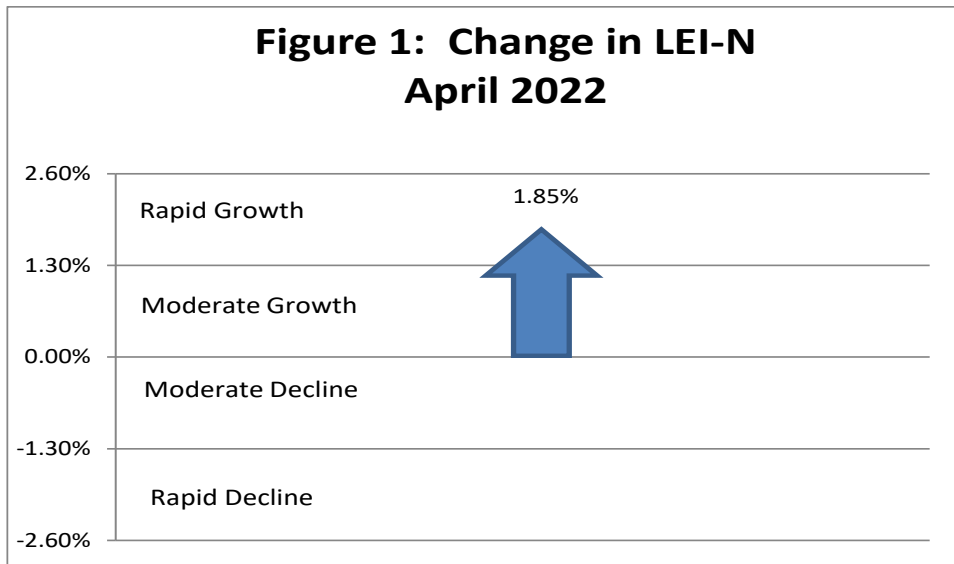


Figure 2 shows the change in the leading indicator over the last six months. The indicator rose significantly during four of the last six months, including the last three. This pattern suggests that the Nebraska economy will continue to grow through the 4<sup>th</sup> Quarter of 2022.

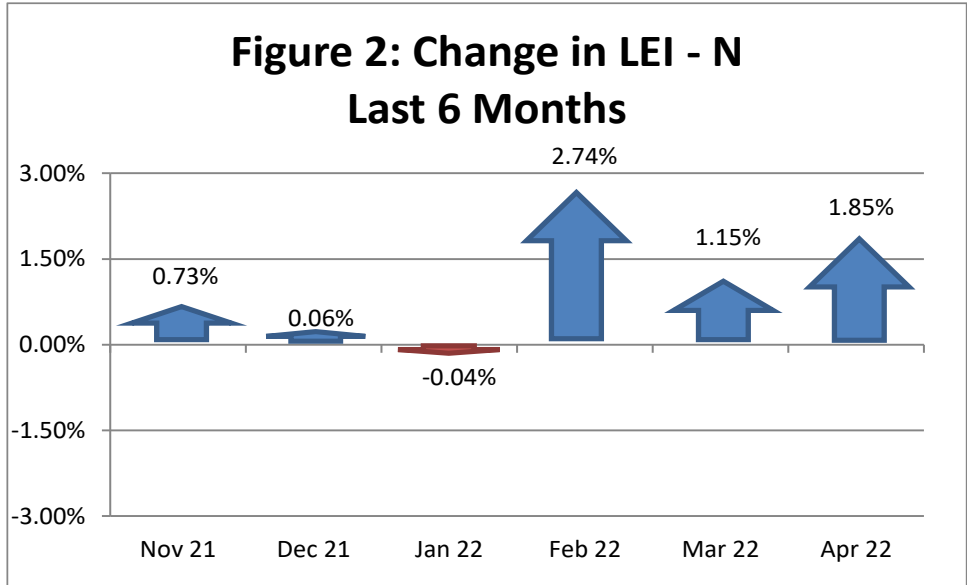
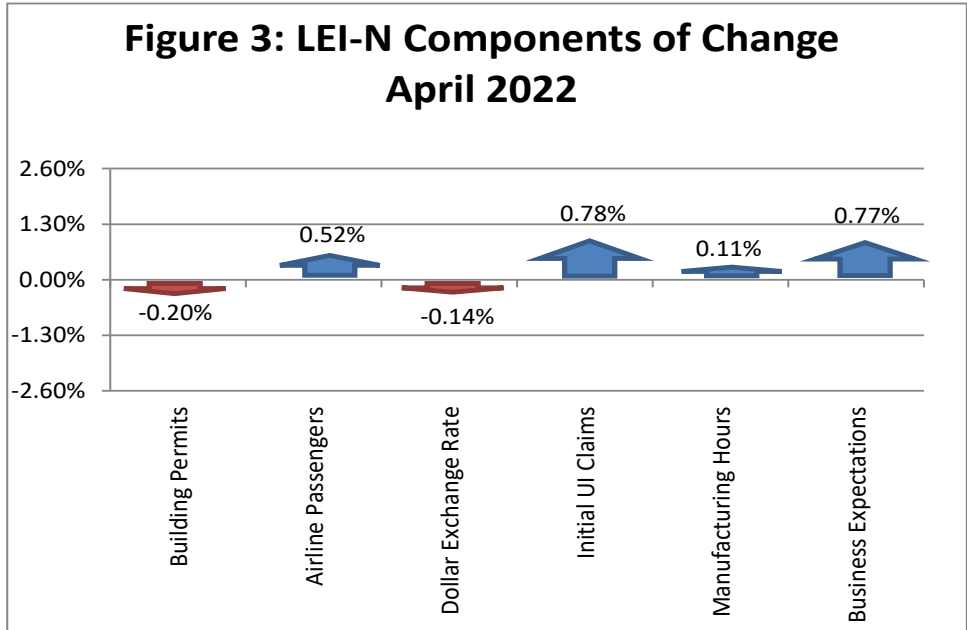


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during April. The change in the LEI-N is the weighted average of changes in each component (see page 5). The April rise was primarily due to three components. First, there was a sharp rise in airline passenger enplanements during the month, as that industry continues to recover. Second, there was another decline in initial claims for unemployment insurance, reflecting the strength of the Nebraska labor market. Third, business expectations were strong. Respondents to the *April Survey of Nebraska Business* reported plans to increase employment and sales over the next six months. There also was an increase in hours-worked in the manufacturing industry during April.



## 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 1.10% during April 2022, as seen in Figure 4.

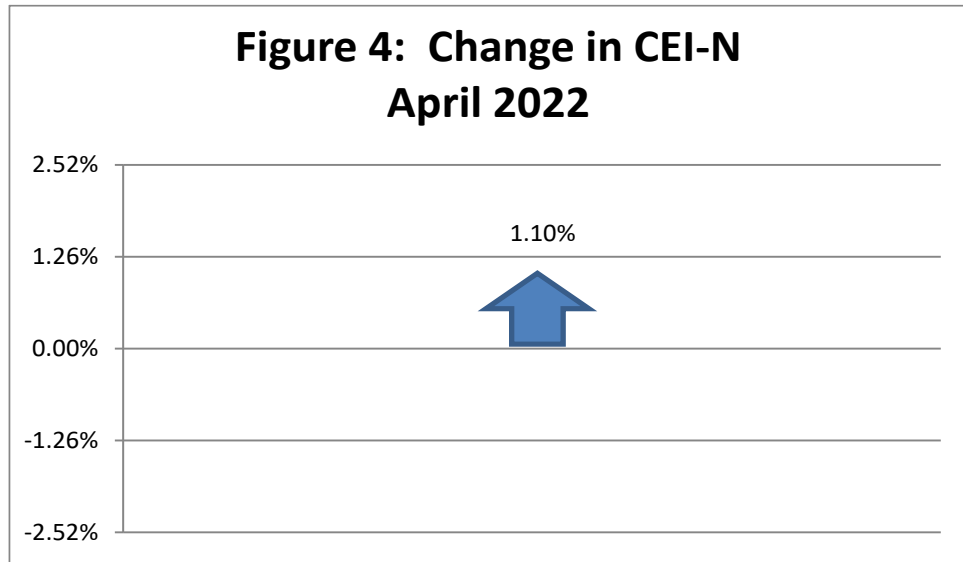
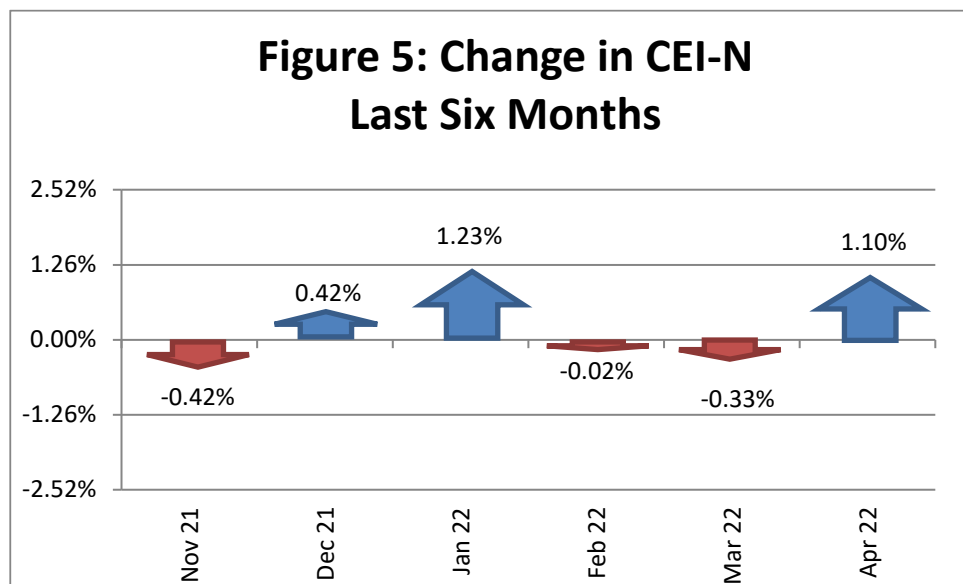


Figure 5 shows the change in the CEI-N over the last 6 months. The Nebraska economy grew during three of the last six months. Growth was solid in both January and April, leading to an overall increase in the size of the Nebraska economy between November 2021 and April 2022.



Three components of the CEI-N rose during April. There was an increase in agricultural commodity prices during the month as well as a rise electricity sales after accounting for seasonality and weather conditions. Business conditions also were positive according to respondents to the monthly *Survey of Nebraska Business*. There was, however, a small decline in real private wages, as the rate of inflation exceeded hourly wage growth. 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*.

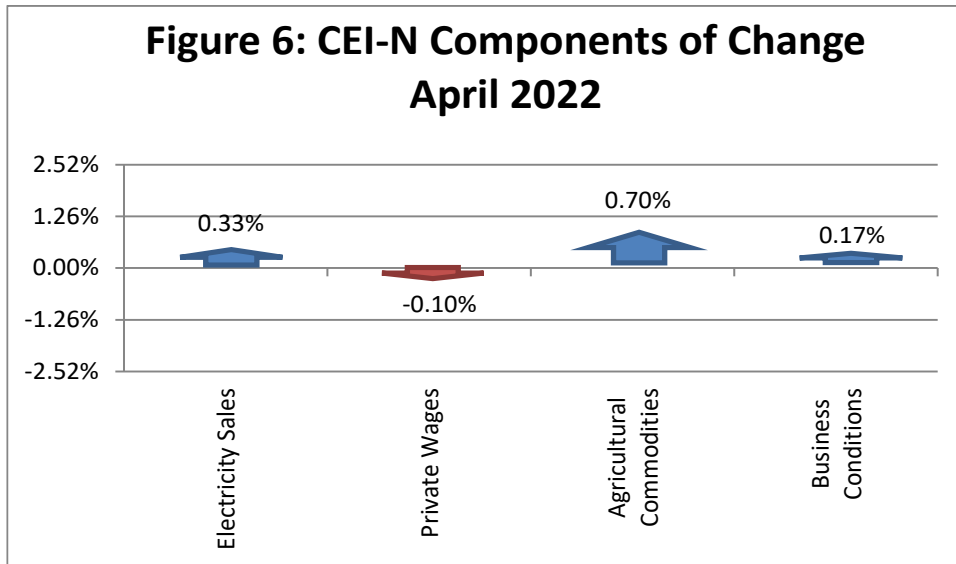
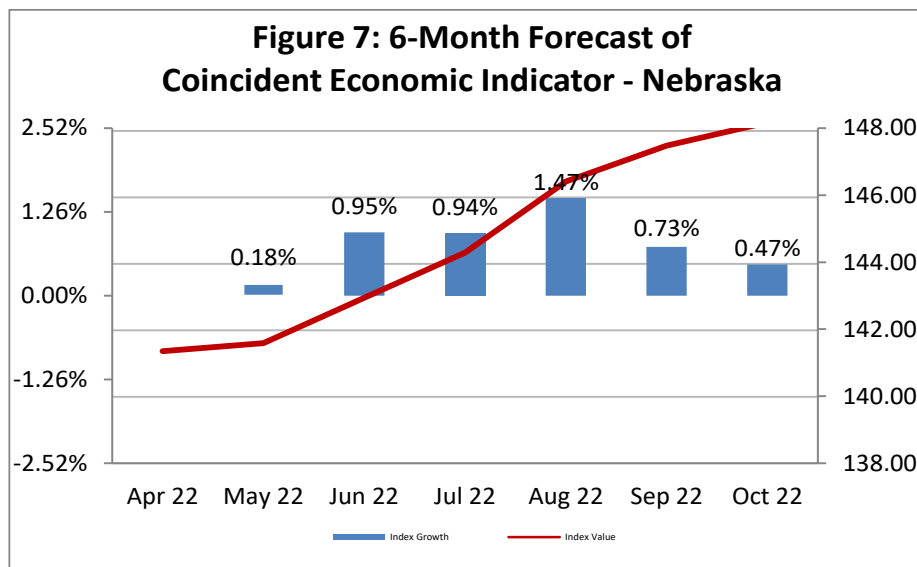


Figure 7 shows a forecast for the CEI-N over the next six months. The forecast calls for solid growth through October 2022. This expectation is consistent with the recent changes in the LEI-N reported in Figure 2.



## 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	13.1415	0.0761	0.0387	Electricity Sales	4.5873	0.2180	0.1769
Airline Passengers	6.3050	0.1586	0.0807	Private Wages	2.0779	0.4812	0.3906
Exchange Rate	1.1447	0.8736	0.4446	Agricultural Commodities	3.6010	0.2777	0.2254
Initial UI Claims	19.5198	0.0512	0.0261	Survey Business Conditions	3.9194	0.2551	0.2071
Manufacturing Hours	1.7515	0.5709	0.2905				
Survey Business Expectations	4.2634	0.2346	0.1194				

Tables 2 and 3 show the calculation for the change in LEI-N and CEI-N between March and April of 2022. 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	82.92	91.94	-9.02	0.04	-0.35	-0.20%
Airline Passengers	106.66	95.28	11.38	0.08	0.92	0.52%
U.S. Dollar Exchange Rate (Inverse)	79.95	80.51	-0.55	0.44	-0.25	-0.14%
Initial Unemployment Insurance Claims (Inverse)	309.82	256.66	53.16	0.03	1.39	0.78%
Manufacturing Hours	88.20	87.53	0.67	0.29	0.20	0.11%
Survey Business Expectations <sup>1</sup>	61.48		11.48	0.12	1.37	0.77%
Total (weighted average)	180.32	177.04			3.27	1.85%

<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	167.69	165.07	2.63	0.18	0.46	0.33%
Private Wage	115.06	115.42	-0.36	0.39	-0.14	-0.10%
Agricultural Commodities	155.34	150.99	4.35	0.23	0.98	0.70%
Survey Business Conditions <sup>1</sup>	51.15		1.15	0.21	0.24	0.17%
Total (weighted average)	141.34	139.80			1.54	1.10%

<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 from 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.

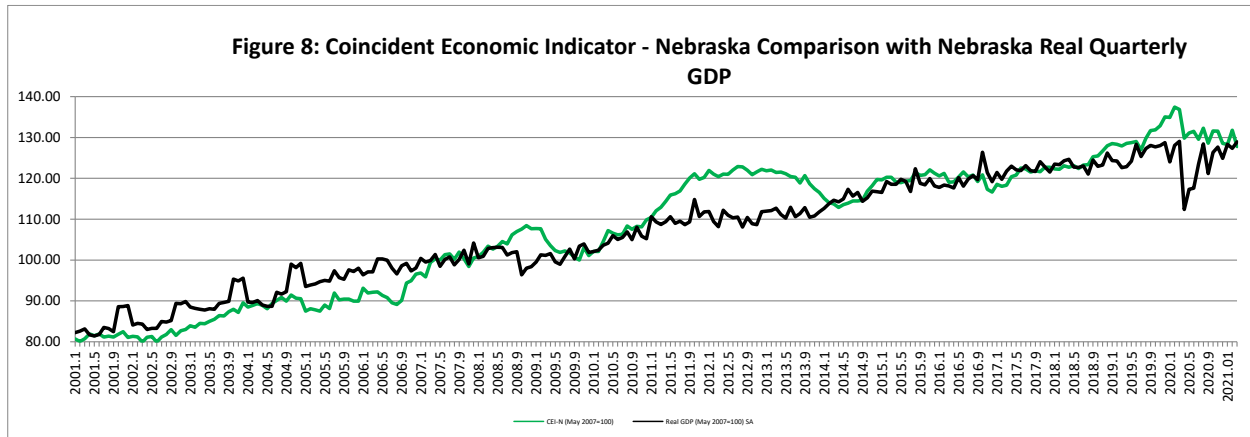


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months 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 0.88.

