Nebraska Monthly Economic Indicators: August 24, 2022

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

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Summary: *The LEI-N fell by 0.08% during July 2022. The decrease in the leading indicator, which is designed to predict economic activity six months in the future, signals that economic growth in Nebraska will be slow at the end of 2022 and the beginning of 2023. The indicator declined for two primary reasons. First, there was an increase in the value of the U.S. dollar in July, creating challenges for agriculture, manufacturers, and other businesses that compete in international markets. Second, there was a decline in airline passenger counts in July, likely in response to large increases in airline ticket prices. On the positive side, businesses remained confident. Respondents to the July Survey of Nebraska Business reported plans to increase sales and employment.*

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during July 2022 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N fell by 0.08% during June.

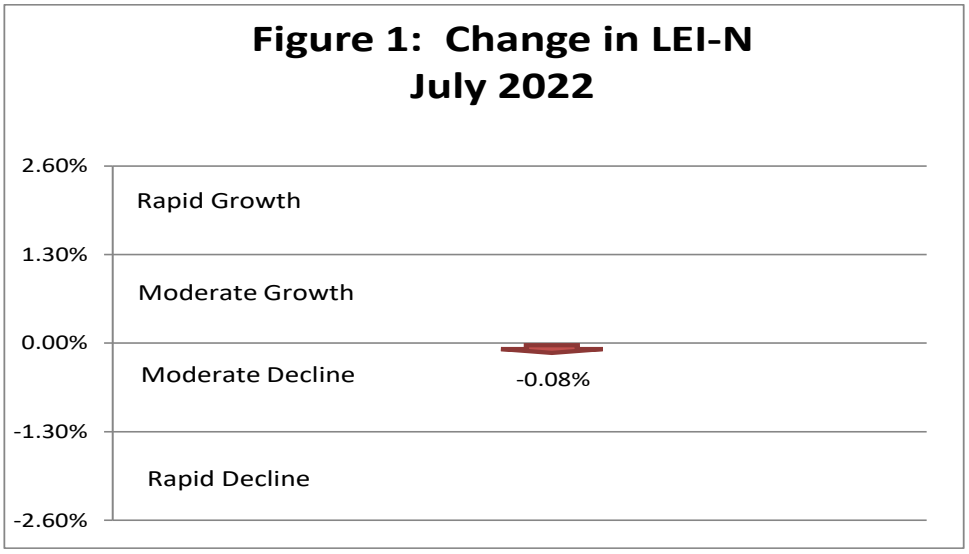


Figure 2 shows the change in the leading indicator over the last six months. The indicator rose significantly from February through April but has declined over the last three months. This pattern is consistent with a significant slowdown in Nebraska's economic growth.

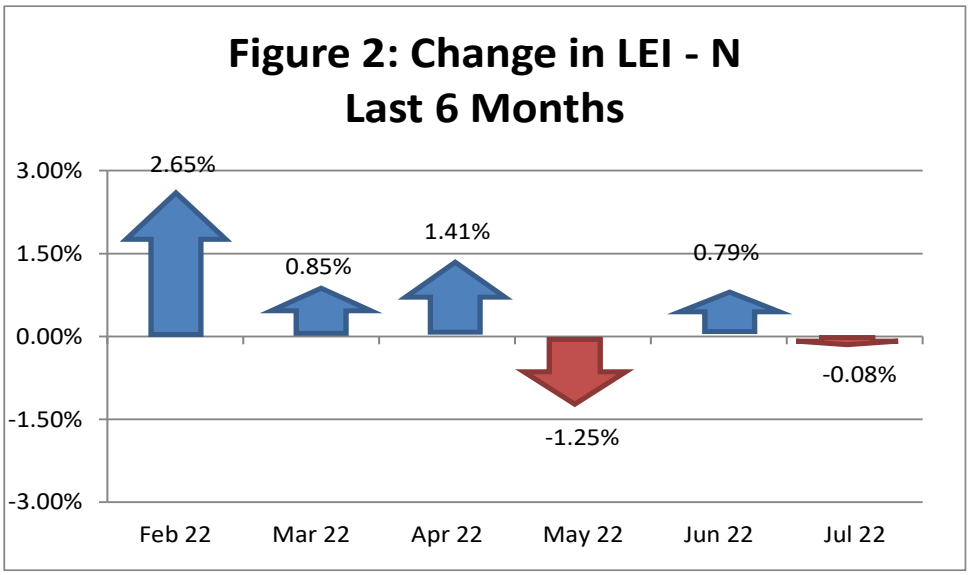
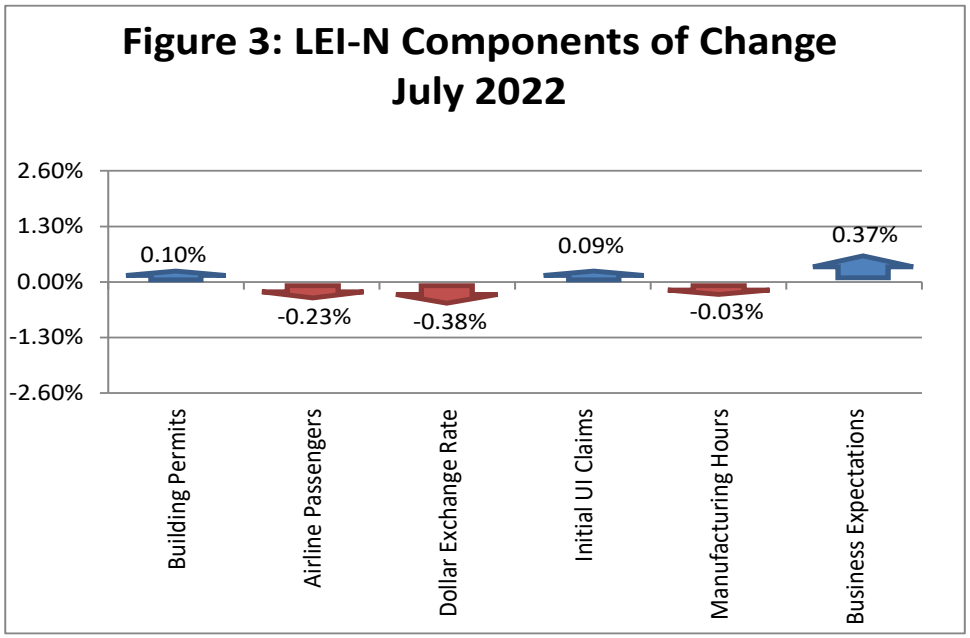


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during July. The change in the LEI–N is the weighted average of changes in each component (see page 5). The July decline was primarily due to two components. First, there was an increase in the value of the U.S. dollar in July, creating challenges for agriculture, manufacturing, and other Nebraska businesses that export. Second, there was a decline in airline passenger counts in July. On the positive side, Nebraska businesses remain confident about the future. Respondents to the July *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 0.80% during July 2022, as seen in Figure 4.

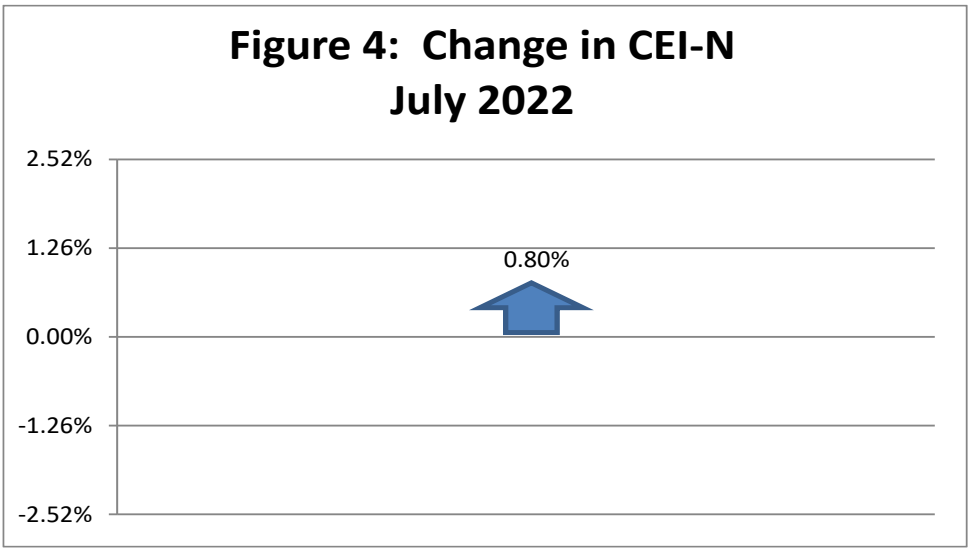
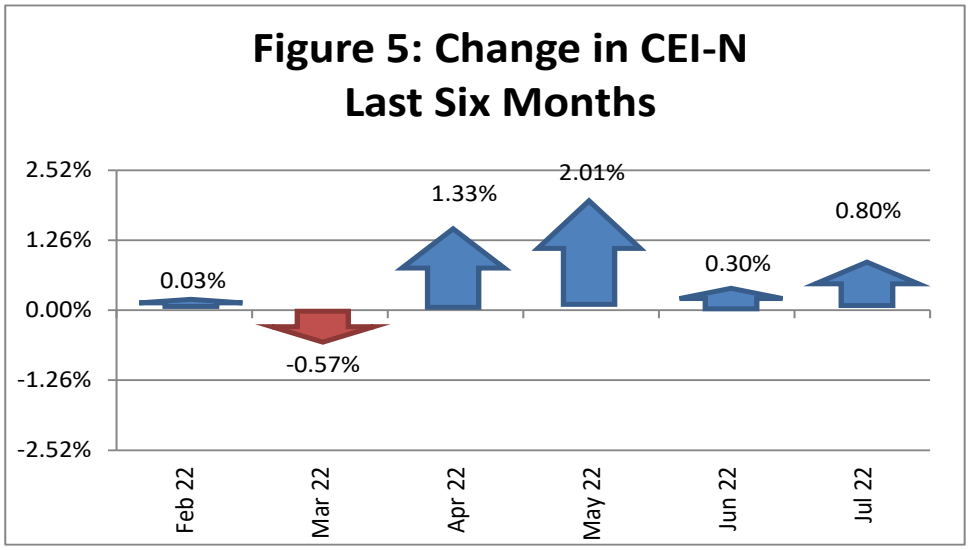


Figure 5 shows the change in the CEI-N over the last 6 months. The Nebraska economy has grown solidly over the last four months. The Nebraska economy grew in the 2nd Quarter of 2022 and during the first month of the 3rd Quarter.



Three components of the CEI-N rose during July. There was an increase in agricultural commodity prices during the month. Business conditions also were positive according to respondents to the July *Survey of Nebraska Business*. Further, there was an increase in real private wages, as both employment and real hourly wage expanded. 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.*

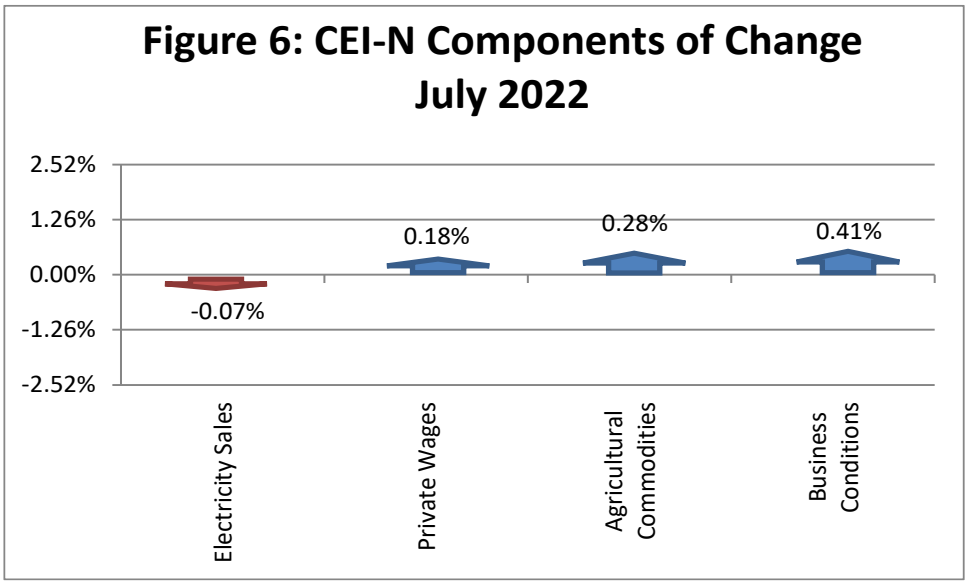
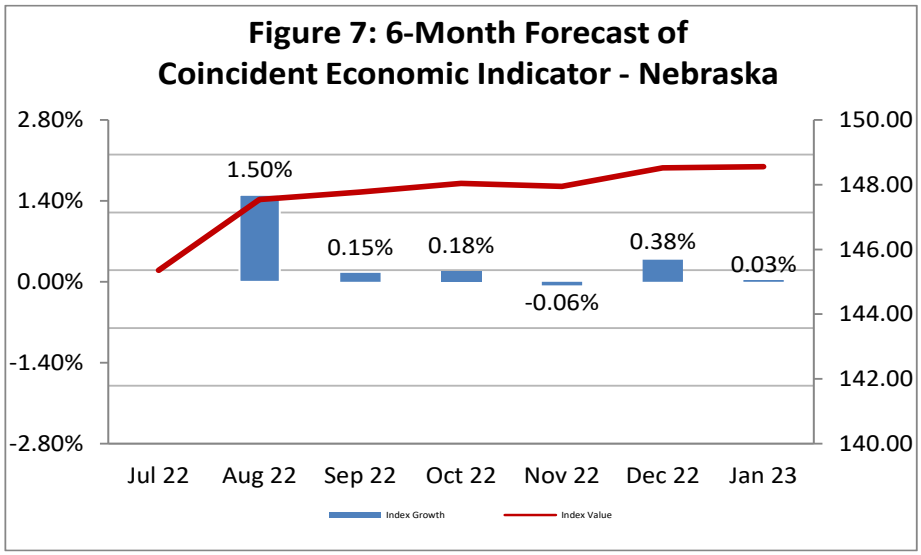


Figure 7 shows a forecast for the CEI-N over the next six months. The forecast calls for slow growth beginning in September 2022. This expectation is consistent with the recent changes in the LEI-N reported in Figure 2.



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.

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	13.0097	0.0769	0.0391	Electricity Sales	4.5421	0.2202	0.1790
Airline Passengers	6.2865	0.1591	0.0809	Private Wages	2.0732	0.4823	0.3921
Exchange Rate	1.1454	0.8731	0.4438	Agricultural Commodities	3.6835	0.2715	0.2207
Initial UI Claims	19.4896	0.0513	0.0261	Survey Business Conditions	3.9055	0.2560	0.2082
Manufacturing Hours	1.7503	0.5713	0.2904				
Survey Business Expectations	4.2465	0.2355	0.1197				

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

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	76.38	71.68	4.69	0.04	0.18	0.10%
Airline Passengers	102.16	107.32	-5.16	0.08	-0.42	-0.23%
U.S. Dollar Exchange Rate (Inverse)	76.72	78.25	-1.53	0.44	-0.68	-0.38%
Initial Unemployment Insurance Claims (Inverse)	225.24	219.34	5.90	0.03	0.15	0.09%
Manufacturing Hours	87.54	87.75	-0.21	0.29	-0.06	-0.03%
Survey Business Expectations[1]	55.57		5.57	0.12	0.67	0.37%
Total (weighted average)	178.26	178.41			-0.15	-0.08%

[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	176.54	177.09	-0.55	0.18	-0.10	-0.07%
Private Wage	114.37	113.69	0.68	0.39	0.27	0.18%
Agricultural Commodities	166.02	164.22	1.80	0.22	0.40	0.28%
Survey Business Conditions[1]	52.81		2.81	0.21	0.58	0.41%
Total (weighted average)	145.36	144.21			1.15	0.80%

[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 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 8: Coincident Economic Indicator - Nebraska Comparison with Nebraska Real Quarterly GDP

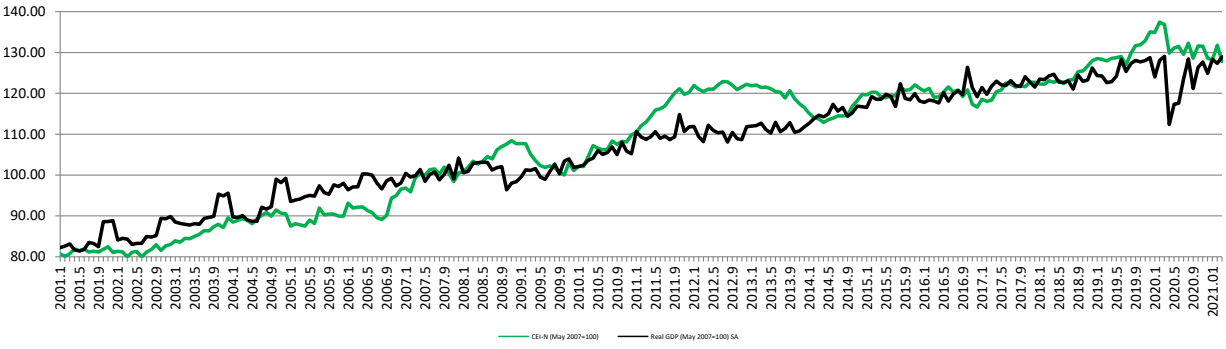


Figure 9 again shows the values for the CEI-N. It also graphs six-month forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months 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 0.89.

Figure 9: 6-Month Forward Value of Leading Economic Indicator - Nebraska Comparison with Coincident Economic Indicator - Nebraska