

# Nebraska Monthly Economic Indicators: October 30, 2023

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**Summary:** The Leading Economic Indicator-Nebraska rose by 0.50% in September 2023. The increase in the leading indicator, which is designed to predict economic growth six months into the future, suggests slow economic growth in Nebraska during the first quarter of 2024. Two components of the leading economic indicator improved during September. There was an increase in manufacturing hours worked during the month. The Nebraska manufacturing industry benefits from high food prices and a strong agricultural economy. Nebraska businesses also were confident about the future. Respondents to the September Survey of Nebraska Business reported plans to increase sales and employment over the next six months. Other components of the LEI-N changed little, although there was a decline in building permits for single-family homes. High and rising interest rates continue to be a challenge for the homebuilding sector.

## Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during September 2023 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 0.50%.

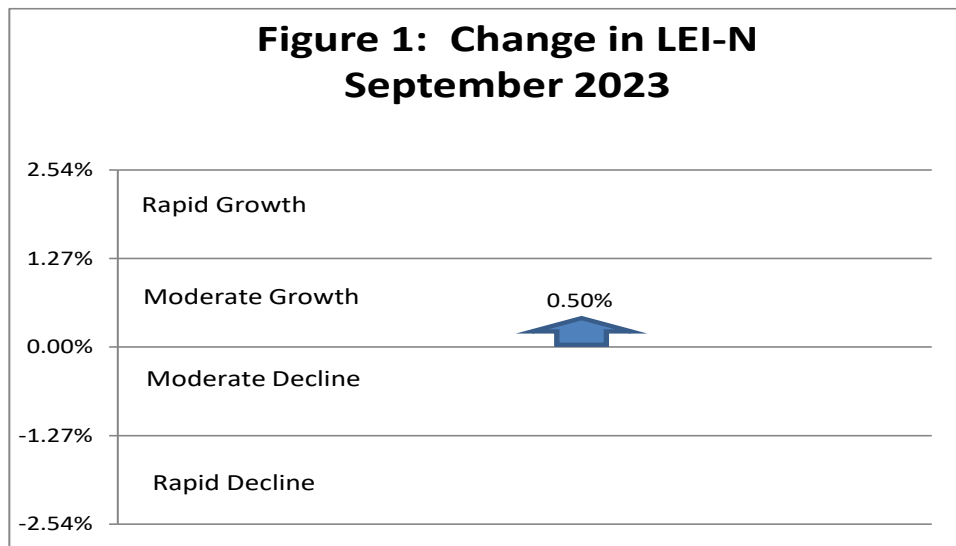


Figure 2 shows the change in the leading indicator over the last six months. The indicator rose steadily in the second quarter of 2023 but was mixed in the third quarter. The modest net increase in the LEI-N from July to September is consistent with slow economic growth in Nebraska during the first quarter of 2024.

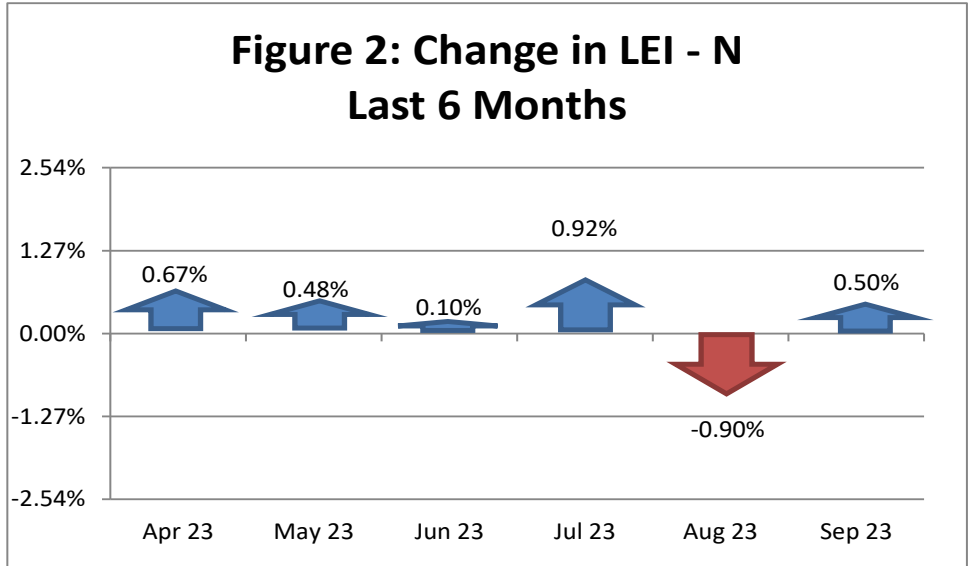
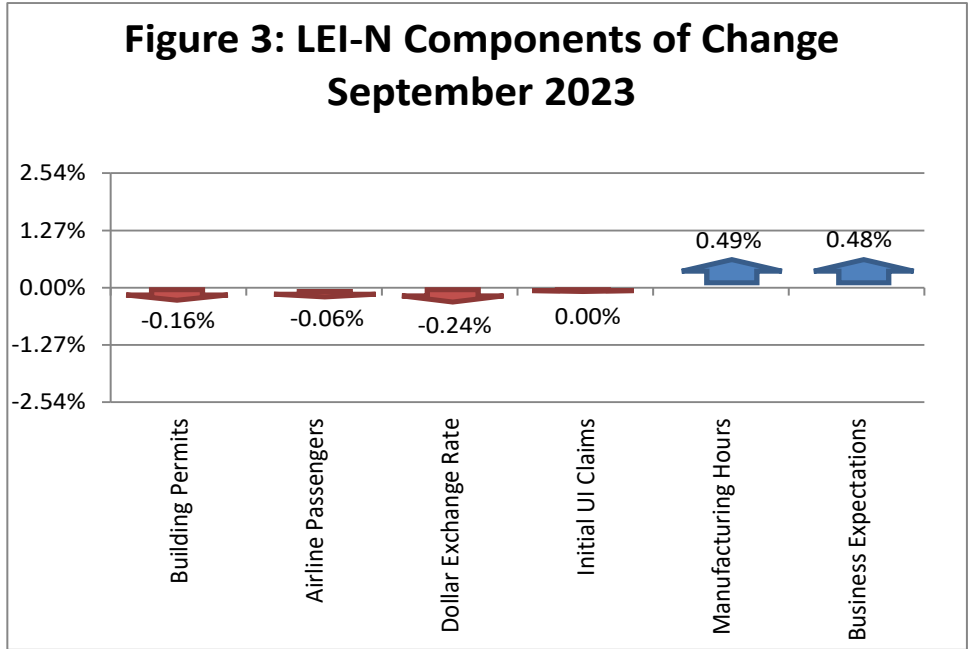


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during September. The change in the LEI–N is the weighted average of changes in each component (see page 5). Two leading indicator components improved. There was an increase in manufacturing hours during the month. The Nebraska manufacturing sector benefits from high food prices and a strong agricultural economy. Business expectations were another positive component. Respondents to the September *Survey of Nebraska Business* reported plans to increase sales and employment over the next six months. Most other components of the LEI-N changed little in September, although there was a decline in building permits for single-family homes. This is consistent with the recent pattern of high and rising interest rates.



## 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 0.69% during September 2023, as seen in Figure 4.

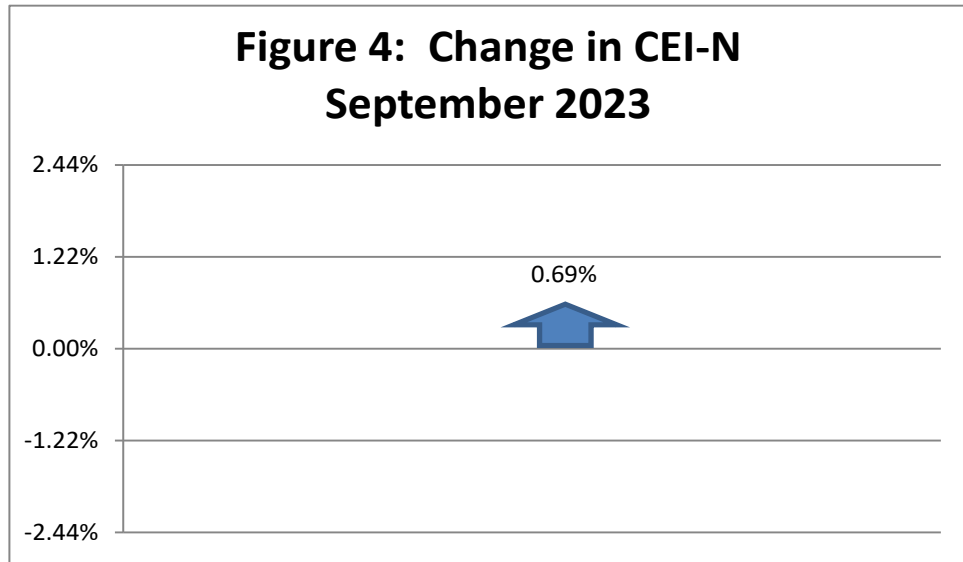
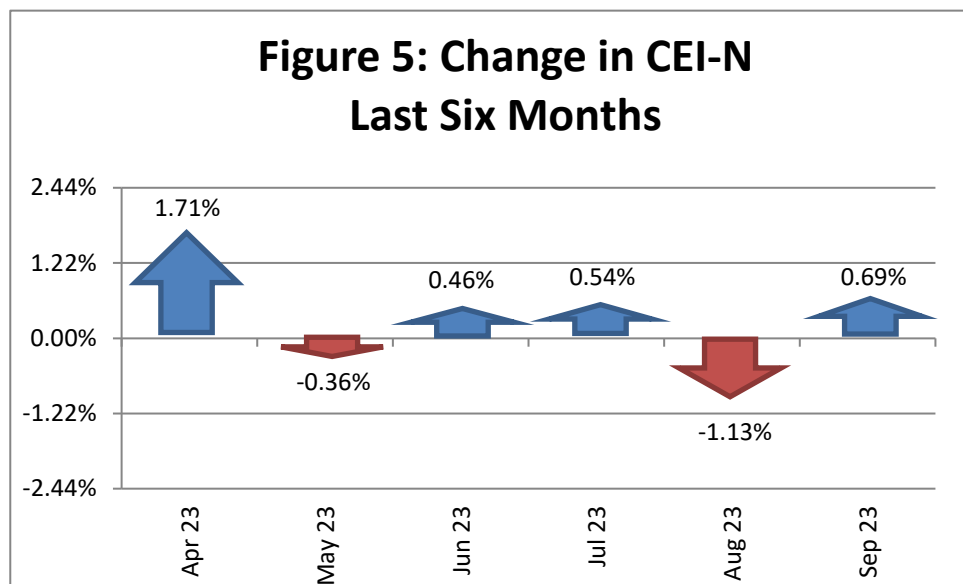


Figure 5 shows the change in the CEI-N over the last 6 months. The Nebraska economy grew during the second quarter of 2023 but has been mixed in the third quarter. The size of the August decline is similar to the combined increase in July and September.



All four components of the CEI-N declined during September. Real private wages rose due to an increase in average hours worked per week. Business conditions also were positive. Respondents to the September *Survey of Nebraska Business* reported a modest increase in sales. Electricity sales rose on a seasonally adjusted basis and agricultural commodity prices increased. 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*.

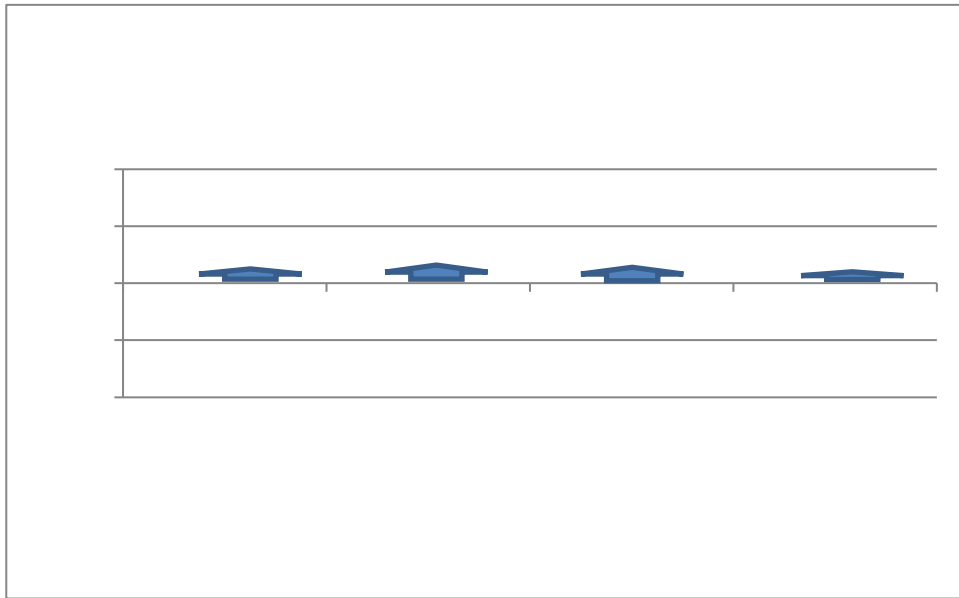
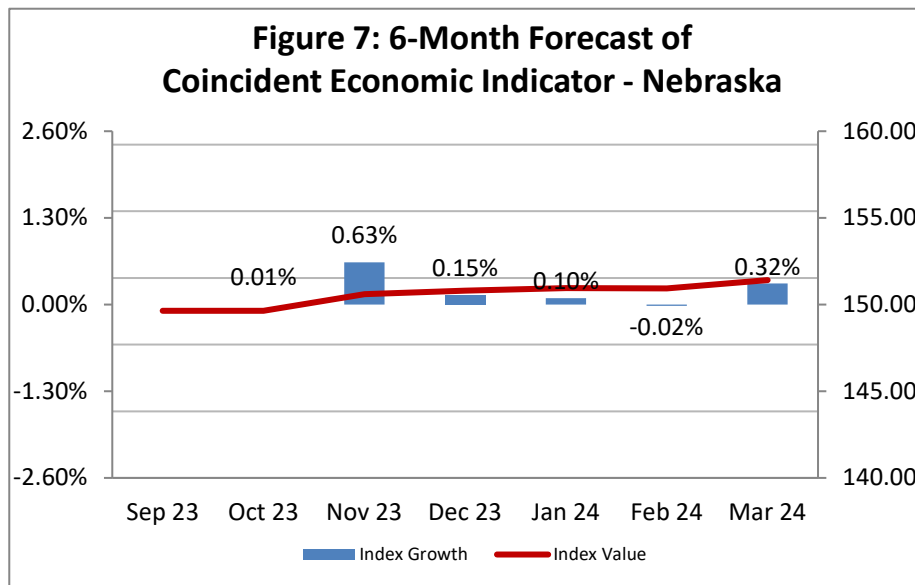


Figure 7 shows a forecast for the CEI-N over the next six months. The forecast calls for moderate economic growth in Nebraska during the fourth quarter of 2023 but slow economic growth in the first quarter of 2024. This expectation is consistent with the changes in the LEI-N reported in Figure 2.



## 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>							
<b>Leading Economic Indicator - Nebraska</b>				<b>Coincident Economic Indicator - Nebraska</b>			
Variable	Standard Deviation	Inverse STD	Weight (Inverse STD Standardize)	Variable	Standard Deviation	Inverse STD	Weight (Inverse STD Standardize)
SF Housing Permits	13.7696	0.0726	0.0370	Electricity Sales	4.5211	0.2212	0.1760
Airline Passengers	6.1585	0.1624	0.0827	Private Wages	2.0313	0.4923	0.3917
Exchange Rate	1.1383	0.8785	0.4473	Agricultural Commodities	3.5133	0.2846	0.2265
Initial UI Claims	20.0079	0.0500	0.0255	Survey Business Conditions	3.8670	0.2586	0.2058
Manufacturing Hours	1.7830	0.5609	0.2856				
Survey Business Expectations	4.1759	0.2395	0.1219				

Tables 2 and 3 show the calculation for the change in LEI-N and CEI-N between August and September of 2023. 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>						
<b>Leading Economic Indicator - Nebraska</b>						
Component Index Value (May 2007=100)						
Component	Current	Previous	Difference	Weight	Contribution	Percentage Contribution (Relative to Previous LEI-N)
SF Building Permits	64.71	73.06	-8.35	0.04	-0.31	-0.16%
Airline Passengers	107.04	108.41	-1.37	0.08	-0.11	-0.06%
U.S. Dollar Exchange Rate (Inverse)	77.11	78.12	-1.01	0.45	-0.45	-0.24%
Initial Unemployment Insurance Claims (Inverse)	172.01	172.15	-0.14	0.03	0.00	0.00%
Manufacturing Hours	96.90	93.68	3.22	0.29	0.92	0.49%
Survey Business Expectations <sup>1</sup>	57.33		7.33	0.12	0.89	0.48%
<b>Total (weighted average)</b>	<b>188.51</b>	<b>187.57</b>			<b>0.94</b>	<b>0.50%</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>						
<b>Coincident Economic Indicator - Nebraska</b>						
Component Index Value (May 2007=100)						
Component	Current	Previous	Difference	Weight	Contribution	Percentage Contribution (Relative to Previous CEI-N)
Electricity Sales	171.08	169.75	1.33	0.18	0.23	0.16%
Private Wage	115.95	114.82	1.12	0.39	0.44	0.30%
Agricultural Commodities	193.31	191.95	1.37	0.23	0.31	0.21%
Survey Business Conditions <sup>1</sup>	50.20		0.20	0.21	0.04	0.03%
<b>Total (weighted average)</b>	<b>149.63</b>	<b>148.61</b>			<b>1.03</b>	<b>0.69%</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 from 2001 through the second quarter of 2022, using data provided by the Bureau of Economic Analysis, U.S. Department of Commerce. CEI-N closely tracks Nebraska's real GDP for the full two-decade period, although it sometimes exceeds state GDP for a period, typically when agricultural commodity prices are higher. The correlation coefficient between the two-pictured series is 0.96.

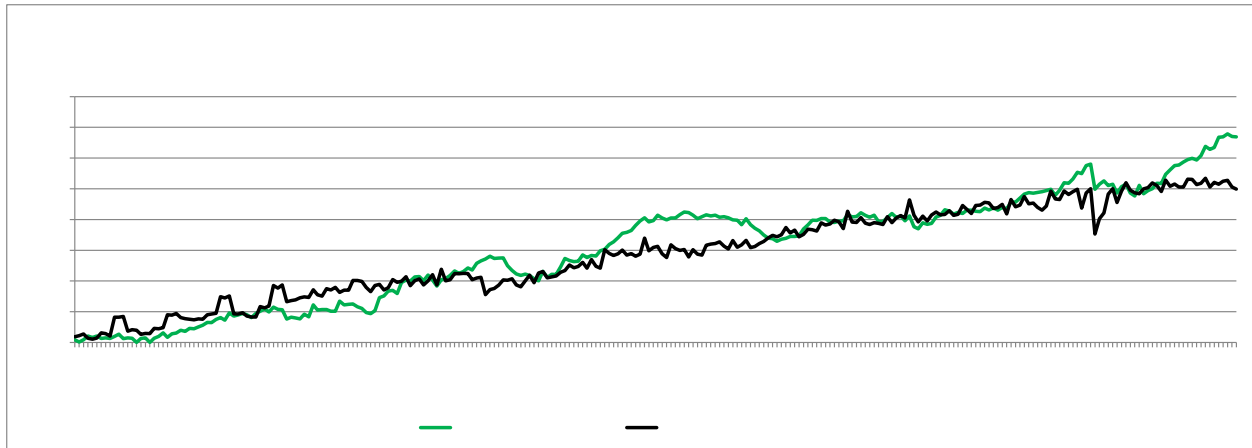


Figure 9 again shows the values for the CEI-N. It also graphs six-month forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months 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 0.91.

