

Nebraska Monthly Economic Indicators: November 29, 2023

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 Leading Economic Indicator-Nebraska rose by 0.30% in October 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 half of 2024. Two components of the leading economic indicator improved significantly during October. There was an increase in building permits for single-family homes during the month after a decline in three of the previous four months. Nebraska businesses also were confident about the future. Respondents to the October Survey of Nebraska Business reported plans to increase employment over the next six months.*

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during October 2023 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 0.30%.

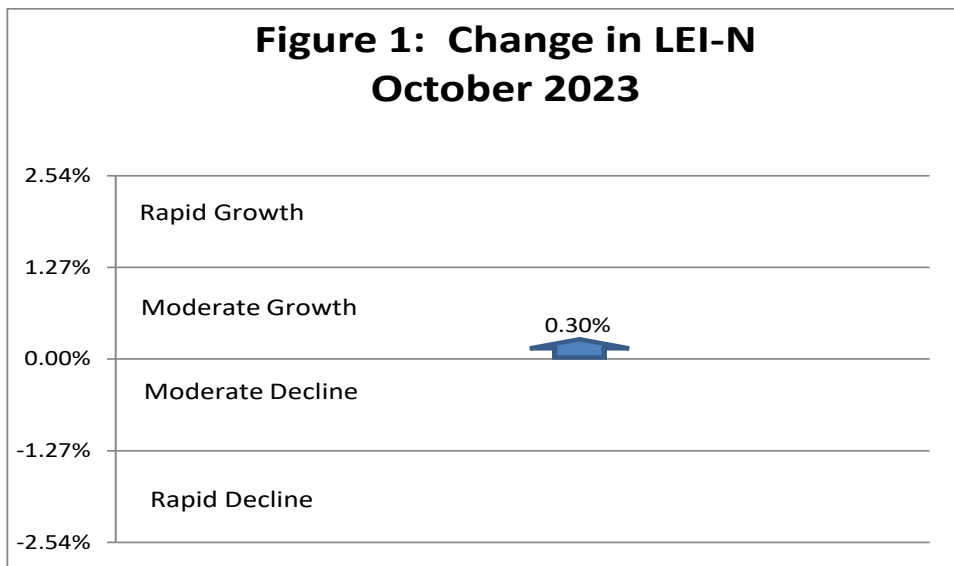


Figure 2 shows the change in the leading indicator over the last six months. The indicator rose in five of the last six months. Increases were typically modest, with a large increase during July reversed during August.

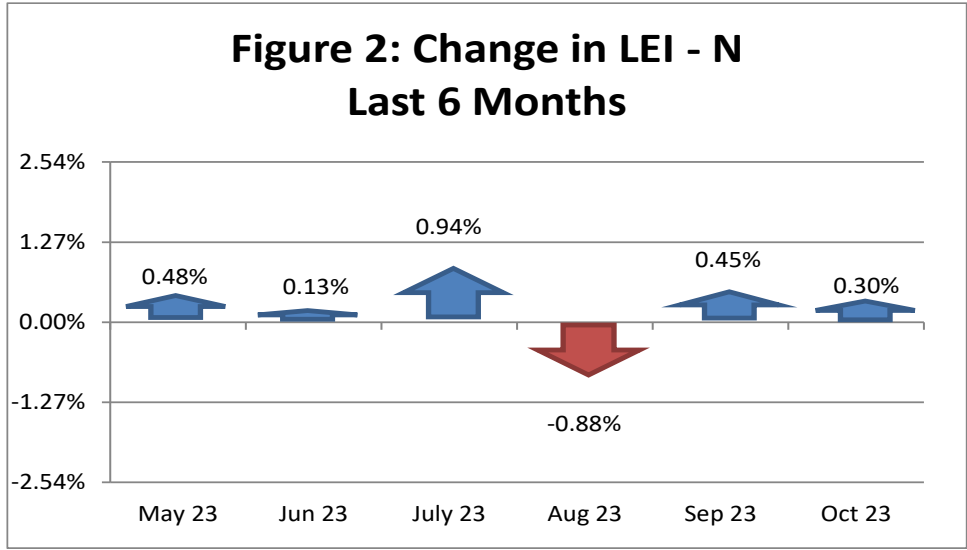
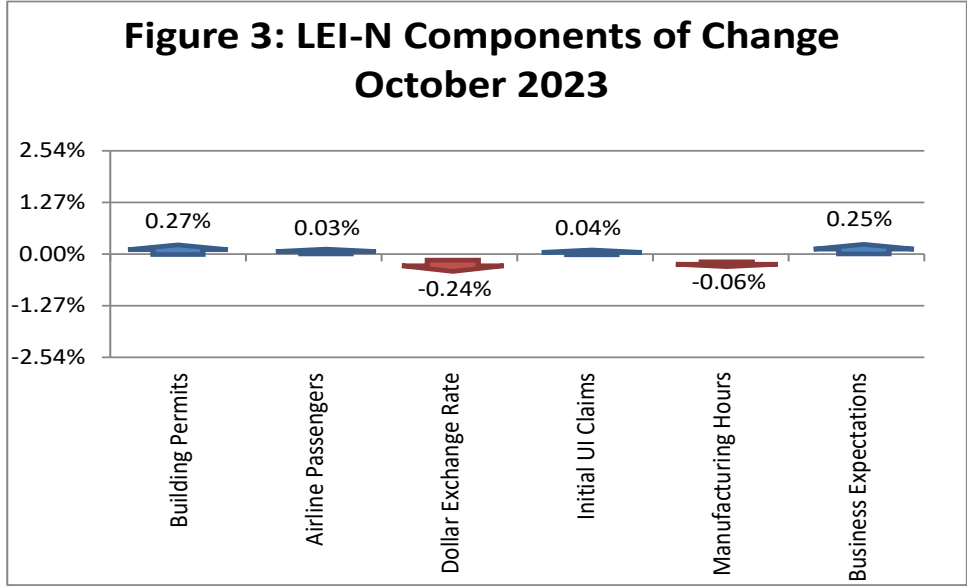


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during October. The change in the LEI-N is the weighted average of changes in each component (see page 5). Two leading indicator components improved significantly. There was an increase in building permits for single-family homes during October. The increase followed a decline in building permits during three of the last four months. Business expectations were another positive component. Respondents to the October *Survey of Nebraska Business* reported plans to increase employment 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 fell by 0.97% during October 2023, as seen in Figure 4.

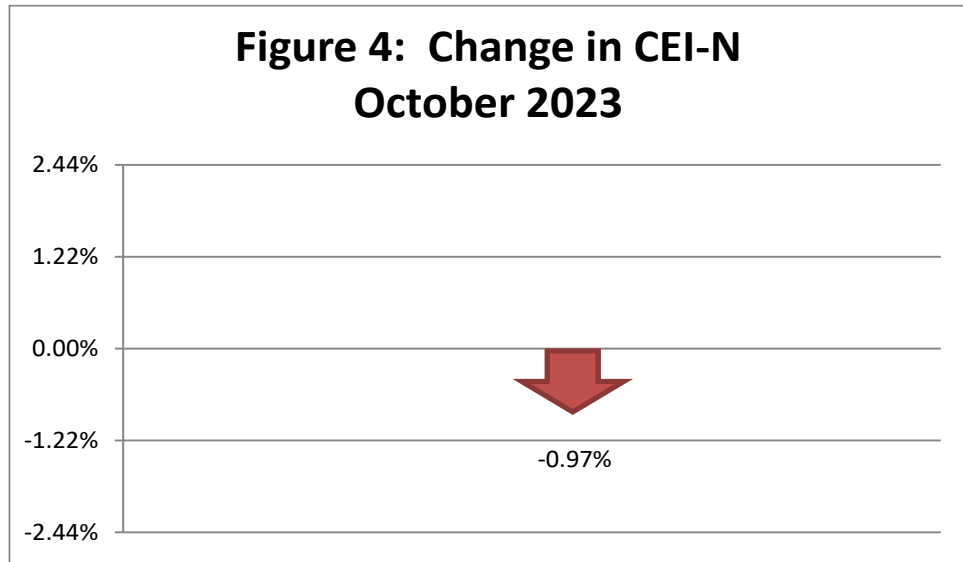
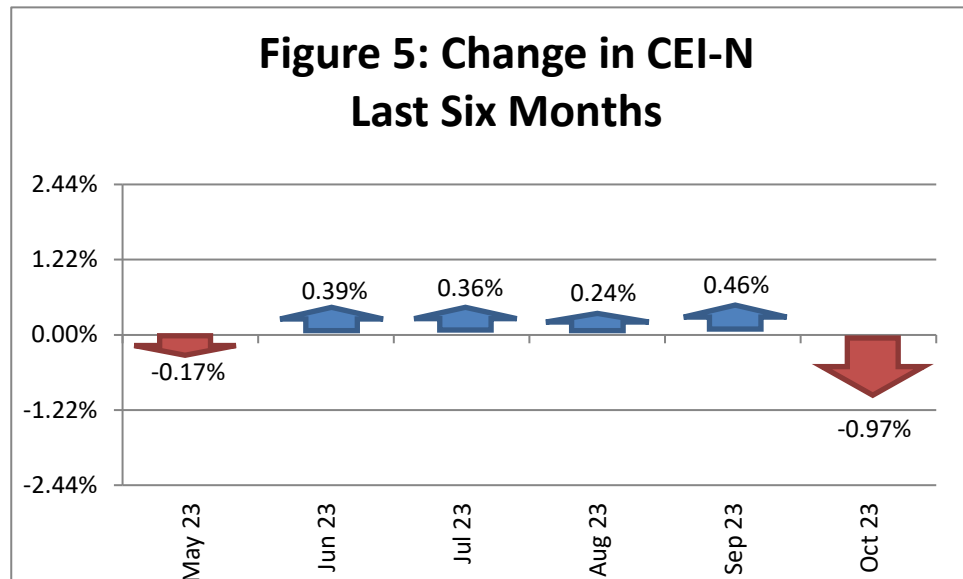


Figure 5 shows the change in the CEI-N over the last 6 months. The Nebraska economy grew for four consecutive months before the October drop.



Three of four components of the CEI-N declined during October. Business conditions were negative as respondents to the *October Survey of Nebraska Business* reported a decrease in sales in recent months. Electricity sales also fell on a seasonally adjusted basis. Finally, there was a modest decline in agricultural commodity prices. 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*.

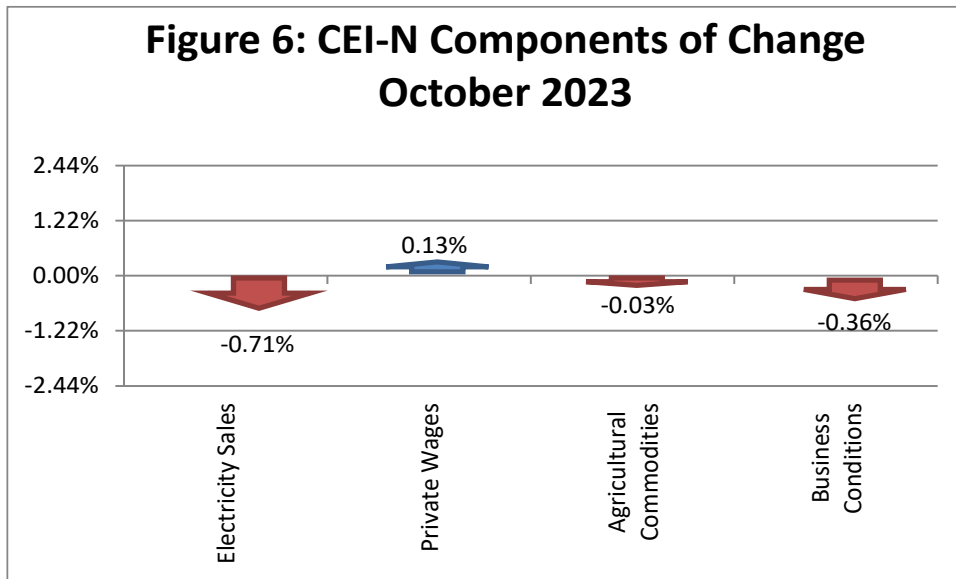
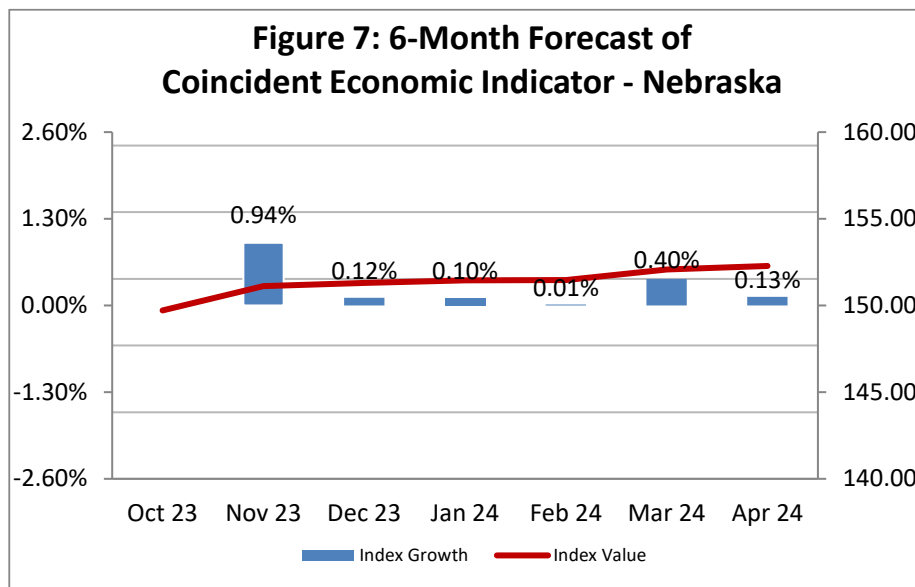


Figure 7 shows a forecast for the CEI-N over the next six months. The forecast calls for modest economic growth in Nebraska during the first four months of 2024. This expectation is consistent with the changes in the LEI-N reported in Figure 2.



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.

| 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 | 13.7694 | 0.0726 | 0.0369 | Electricity Sales | 4.5777 | 0.2185 | 0.1738 |
| Airline Passengers | 6.1371 | 0.1629 | 0.0827 | Private Wages | 2.0237 | 0.4941 | 0.3931 |
| Exchange Rate | 1.1377 | 0.8789 | 0.4462 | Agricultural Commodities | 3.5035 | 0.2854 | 0.2271 |
| Initial UI Claims | 19.9683 | 0.0501 | 0.0254 | Survey Business Conditions | 3.8605 | 0.2590 | 0.2061 |
| Manufacturing Hours | 1.7691 | 0.5653 | 0.2870 | | | | |
| Survey Business Expectations | 4.1681 | 0.2399 | 0.1218 | | | | |

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

| 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 | 79.59 | 66.03 | 13.56 | 0.04 | 0.50 | 0.27% |
| Airline Passengers | 108.13 | 107.35 | 0.78 | 0.08 | 0.06 | 0.03% |
| U.S. Dollar Exchange Rate (Inverse) | 76.11 | 77.11 | -1.00 | 0.45 | -0.45 | -0.24% |
| Initial Unemployment Insurance Claims (Inverse) | 177.61 | 174.52 | 3.08 | 0.03 | 0.08 | 0.04% |
| Manufacturing Hours | 95.80 | 96.17 | -0.37 | 0.29 | -0.11 | -0.06% |
| Survey Business Expectations ¹ | 53.92 | | 3.92 | 0.12 | 0.48 | 0.25% |
| Total (weighted average) | 188.94 | 188.37 | | | 0.57 | 0.30% |

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 | 176.72 | 182.93 | -6.21 | 0.17 | -1.08 | -0.71% |
| Private Wage | 116.19 | 115.71 | 0.49 | 0.39 | 0.19 | 0.13% |
| Agricultural Commodities | 191.66 | 191.84 | -0.18 | 0.23 | -0.04 | -0.03% |
| Survey Business Conditions ¹ | 47.39 | | -2.61 | 0.21 | -0.54 | -0.36% |
| Total (weighted average) | 149.71 | 151.18 | | | -1.47 | -0.97% |

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 fourth 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.

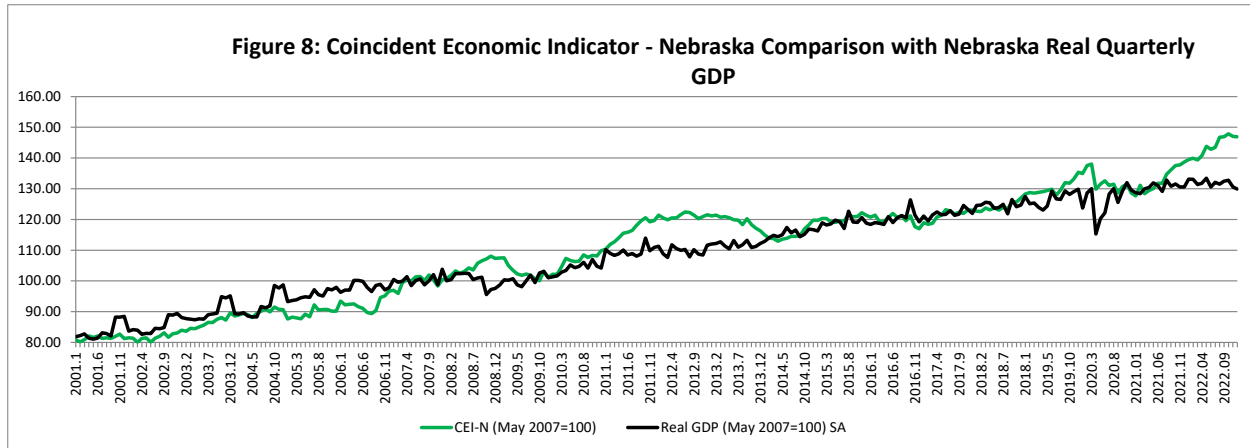


Figure 9 again shows the values for the CEI-N. It also graphs six-month forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months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

