

# Nebraska Monthly Economic Indicators: September 27, 2024

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 fell by 0.69% in August 2024, after rising in both June and July. The decrease in the leading indicator, designed to predict economic growth six months into the future, implies that the Nebraska economy will grow at a moderate pace through the end of 2024 and in early 2025. There was a decrease in manufacturing hours worked in August, as weakness in the national manufacturing sector spread to Nebraska. There was also a drop in building permits for single-family homes, suggesting that state homebuilding activity remains subdued.*

## Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during August 2024 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N fell by 0.69%.

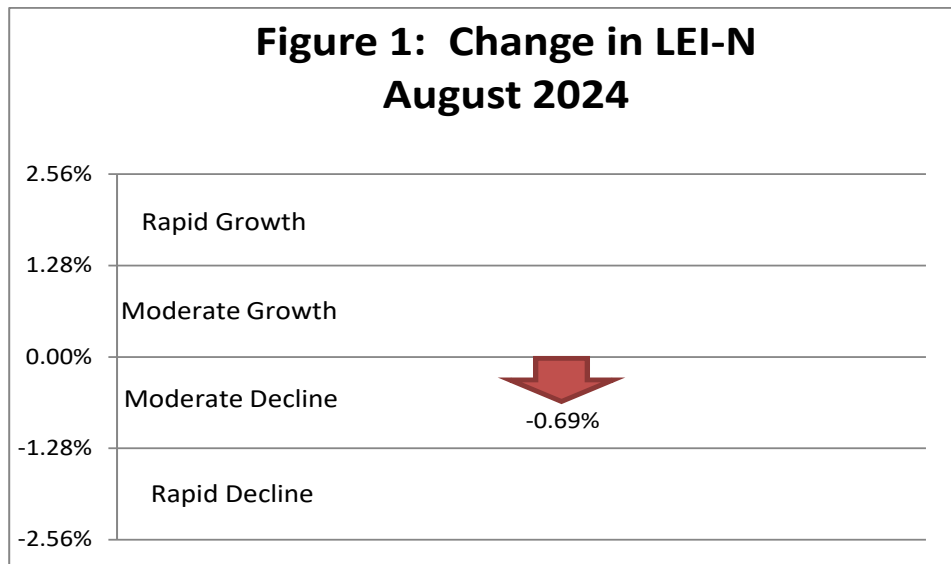


Figure 2 shows the change in the leading indicator over the last six months. The August decline followed an increase in recent months. Recent leading indicator values are consistent with moderate economic growth.

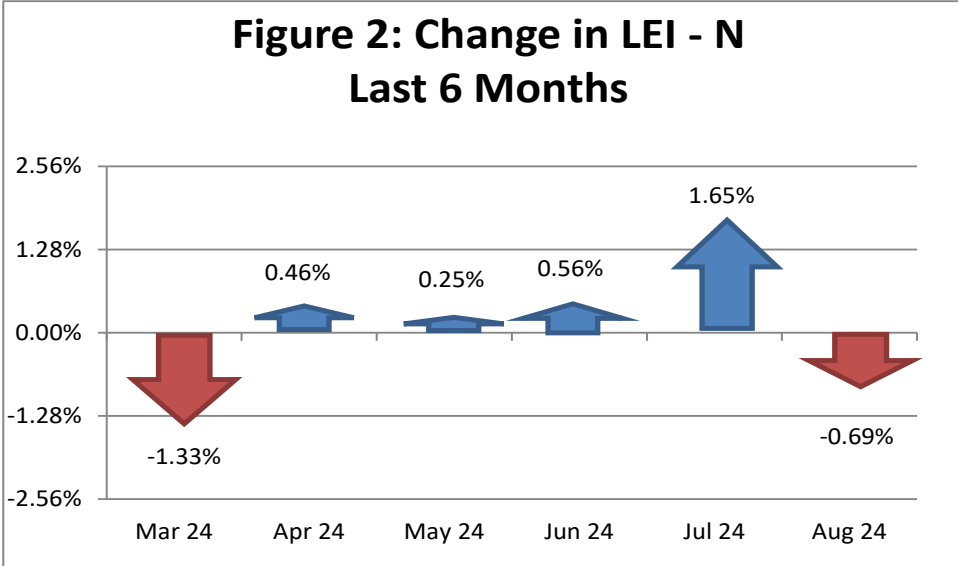
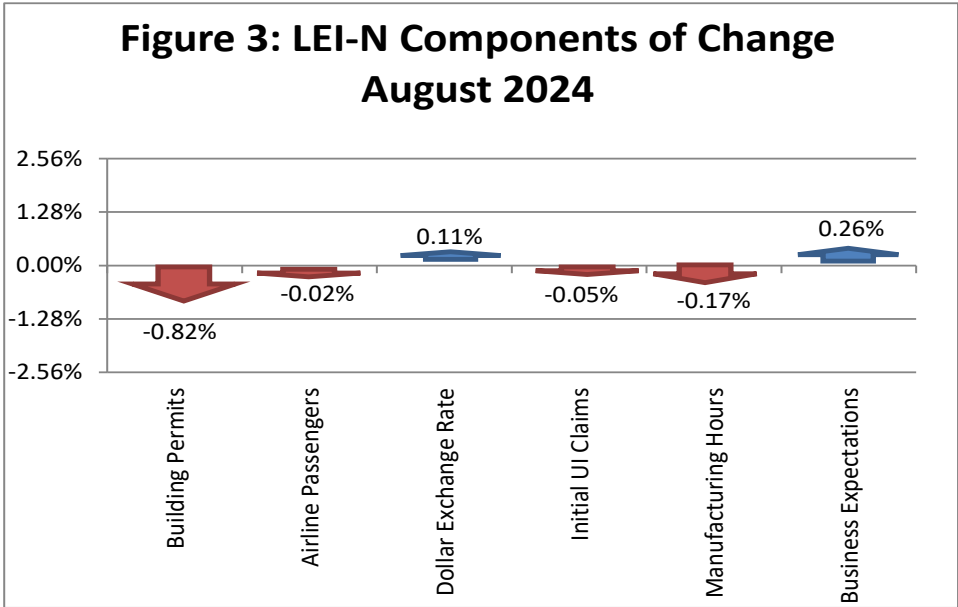


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during August. The change in the LEI-N is the weighted average of changes in each component (see page 5). Two leading indicator components declined notably in August. There was a decrease in manufacturing hours worked during the month, as national struggles with manufacturing activity spread to Nebraska. Building permits for single-family homes also dropped in August after a large July increase. This suggests that the July increase was not permanent, and that homebuilding activity remains subdued in Nebraska. On the positive side, business expectations were also positive. Respondents to the *August 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 rose by 0.12% in August 2024, as seen in Figure 4.

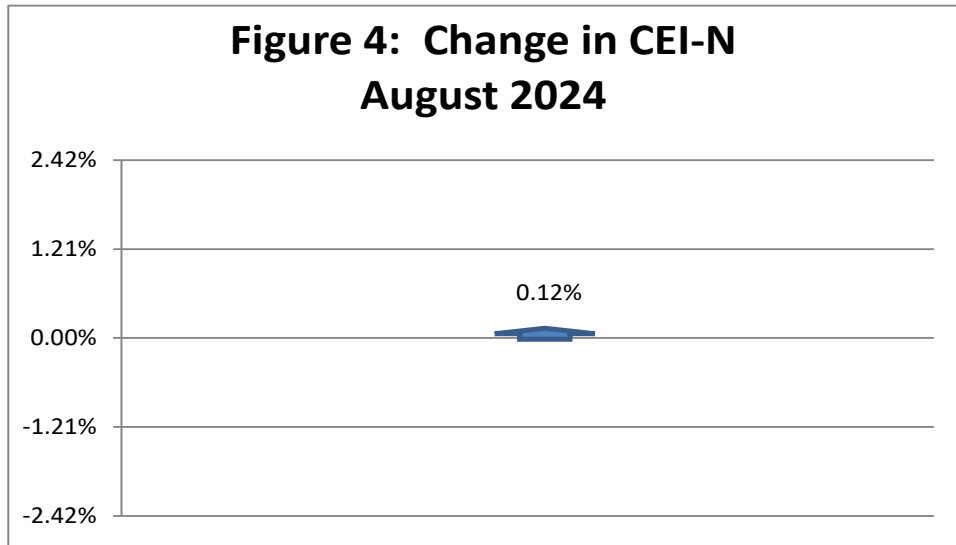
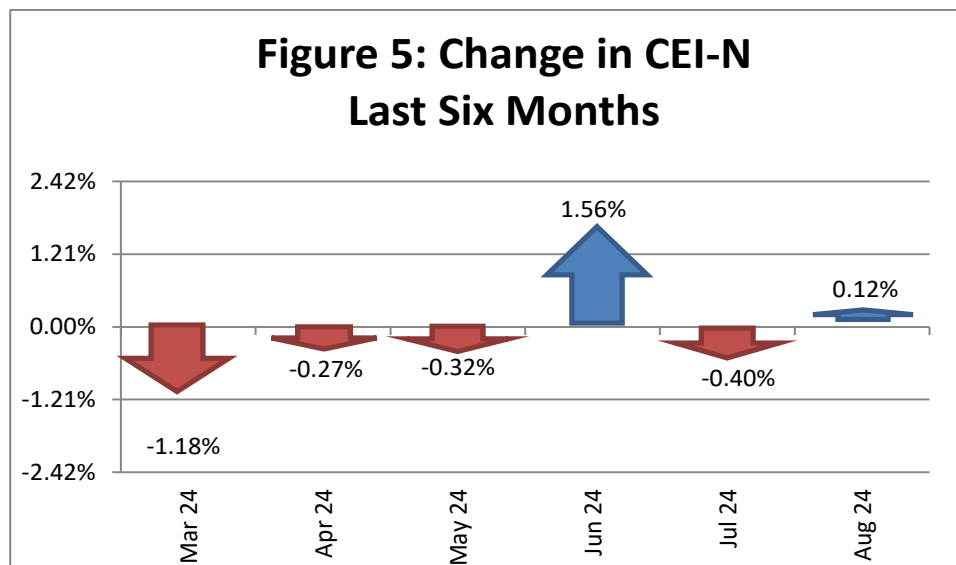


Figure 5 shows the change in the CEI-N over the last 6 months. The CEI-N declined from March through May of 2024. Weakening agricultural commodity prices put downward pressure on CEI-N over the period. The CEI-N has improved overall in the last three months, with the June increase much larger than the July decline.



Two components of the CEI-N rose by 0.12% during August 2024, as is seen in Figure 6. Real private wages rose, due to an increase in hours worked per week. Agricultural commodity prices also rose after adjusting for weather and other seasonal factors. 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*.

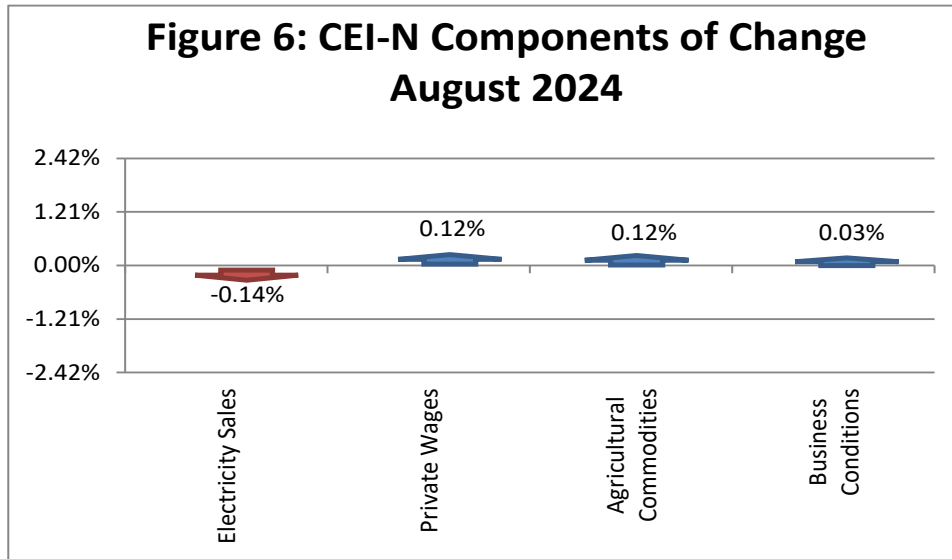
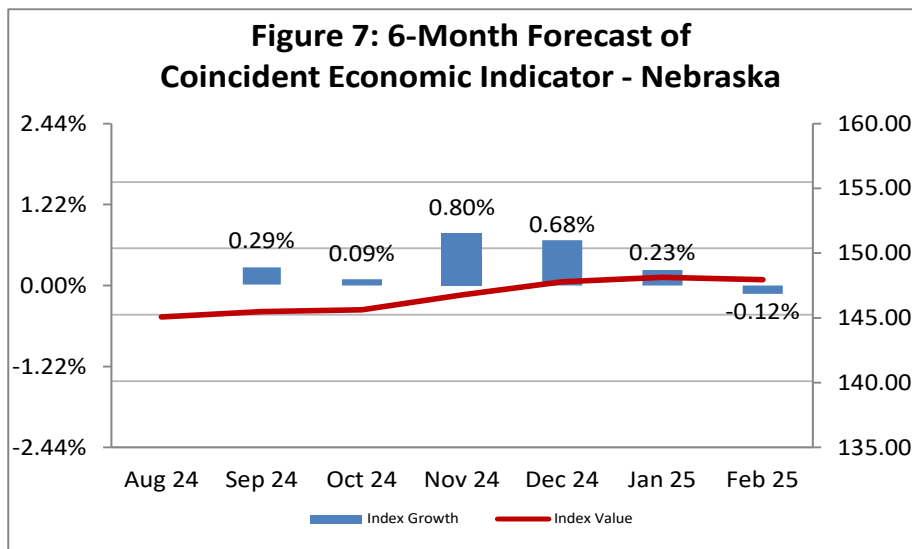


Figure 7 shows a forecast for the CEI-N over the next six months. The forecast calls for moderate economic growth in Nebraska through the end of 2024 and into early 2025. Growth will be limited in most months. This expectation is consistent with changes in the LEI-N reported in Figure 2.



## 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                                    | 14.4563            | 0.0692      | 0.0365                           | Electricity Sales                        | 4.6517             | 0.2150      | 0.1731                           |
| Airline Passengers                                    | 6.0728             | 0.1647      | 0.0870                           | Private Wages                            | 2.0588             | 0.4857      | 0.3911                           |
| Exchange Rate   | 1.1258             | 0.8882      | 0.4693                           | Agricultural Commodities                 | 3.5590             | 0.2810      | 0.2262                           |
| Initial UI Claims                                     | 19.1876            | 0.0521      | 0.0275                           | Survey Business Conditions               | 3.8421             | 0.2603      | 0.2096                           |
| Manufacturing Hours                                   | 2.0995             | 0.4763      | 0.2517                           |  |                    |             |                                  |
| Survey Business Expectations                          | 4.1304             | 0.2421      | 0.1279                           |  |                    |             |                                  |

Tables 2 and 3 show the calculation for the change in LEI-N and CEI-N between July and August of 2024. 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   | 77.10         | 122.97        | -45.87     | 0.04   | -1.68        | -0.82%   |
| Airline Passengers  | 115.21        | 115.65        | -0.44      | 0.09   | -0.04        | -0.02%   |
| U.S. Dollar Exchange Rate (Inverse)   | 76.69         | 76.22         | 0.47       | 0.47   | 0.22         | 0.11%  |
| Initial Unemployment Insurance Claims (Inverse)                                     | 178.86        | 182.36        | -3.50      | 0.03   | -0.10        | -0.05%   |
| Manufacturing Hours   | 102.21        | 103.61        | -1.39      | 0.25   | -0.35        | -0.17%   |
| Survey Business Expectations <sup>1</sup>   | 54.17         |               | 4.17       | 0.13   | 0.53         | 0.26%  |
| <b>Total (weighted average)</b>   | <b>203.86</b> | <b>205.27</b> |            |        | <b>-1.41</b> | <b>-0.69%</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  | 188.64        | 189.85        | -1.21      | 0.17   | -0.21        | -0.14%   |
| Private Wage   | 117.72        | 117.27        | 0.45       | 0.39   | 0.18         | 0.12%  |
| Agricultural Commodities   | 173.49        | 172.74        | 0.74       | 0.23   | 0.17         | 0.12%  |
| Survey Business Conditions <sup>1</sup>  | 50.19         |               | 0.19       | 0.21   | 0.04         | 0.03%  |
| <b>Total (weighted average)</b>  | <b>145.07</b> | <b>144.90</b> |            |        | <b>0.18</b>  | <b>0.12%</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 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.

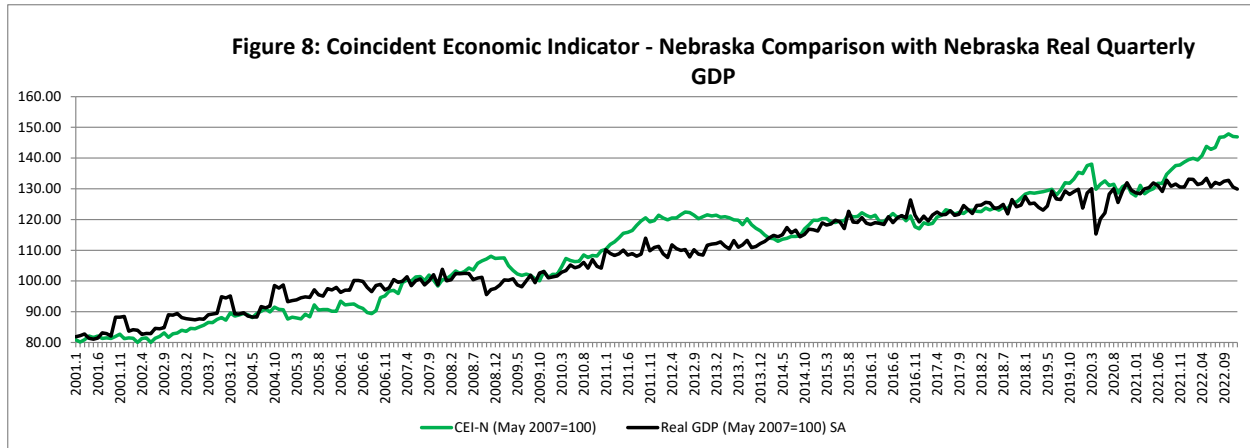


Figure 9 again shows the values for the CEI-N. It also graphs six-month forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 compares the predicted movement in CEI-N (predicted by LEI-N values six months 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 0.92. The two series, however, have deviated in recent months. The two series often deviate during periods when agricultural commodity prices are declining or rising rapidly.

