

Nebraska Monthly Economic Indicators: January 24, 2024

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

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Summary: *The Leading Economic Indicator-Nebraska rose by 1.00% in December 2023. The increase in the leading indicator, which is designed to predict economic growth six months into the future, suggests that the Nebraska economy will grow during the first half of 2024. Three components of the leading indicator improved during December. To begin with, respondents to the December Survey of Nebraska Business reported plans to increase sales and employment over the next six months. There also was an increase in airline passenger counts during December and a decline in the value of the U.S. dollar. A lower value dollar improves competitive conditions for Nebraska businesses that compete in international markets.*

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during December 2023 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 1.00%.

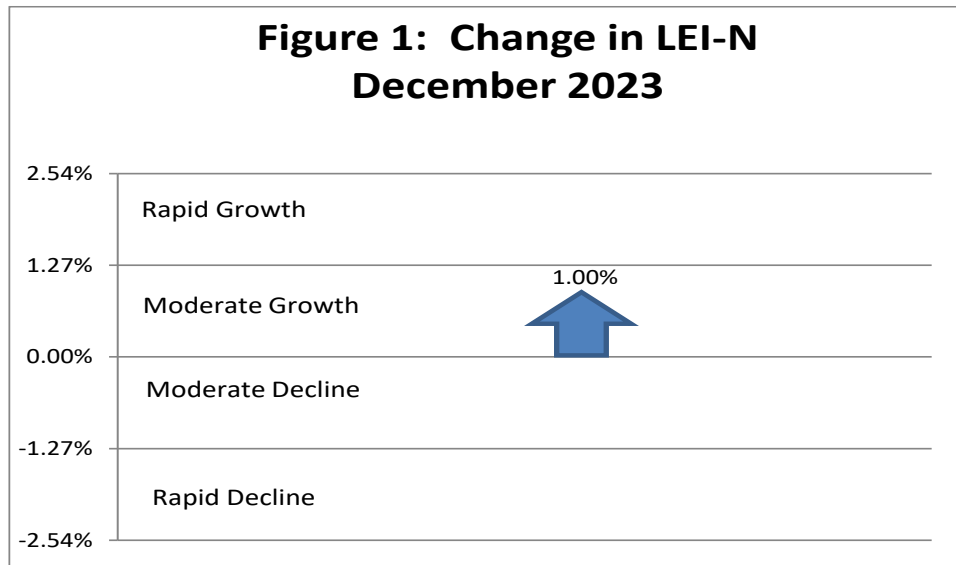


Figure 2 shows the change in the leading indicator over the last six months. The indicator rose in four of the last six months. Increases were larger than declines, which is consistent with future economic growth.

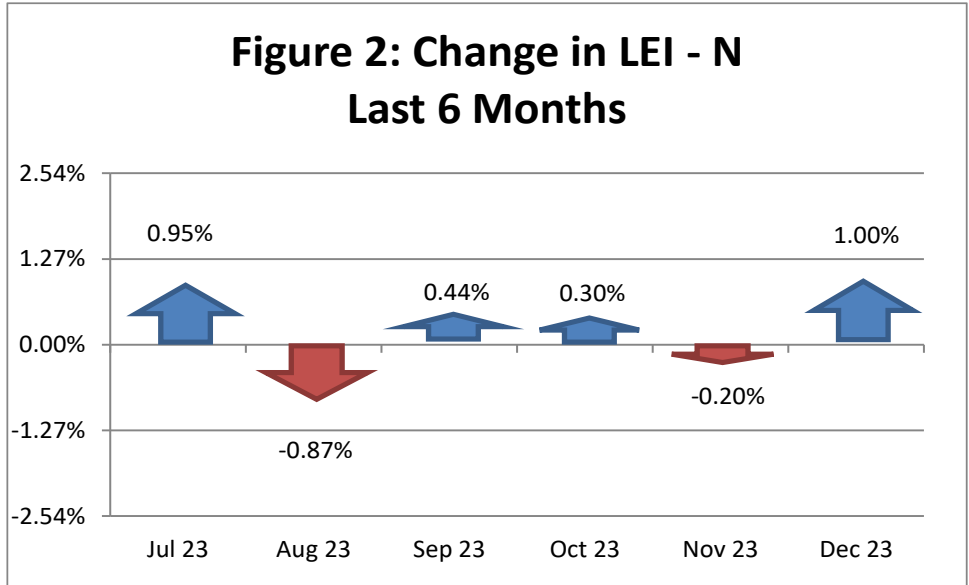
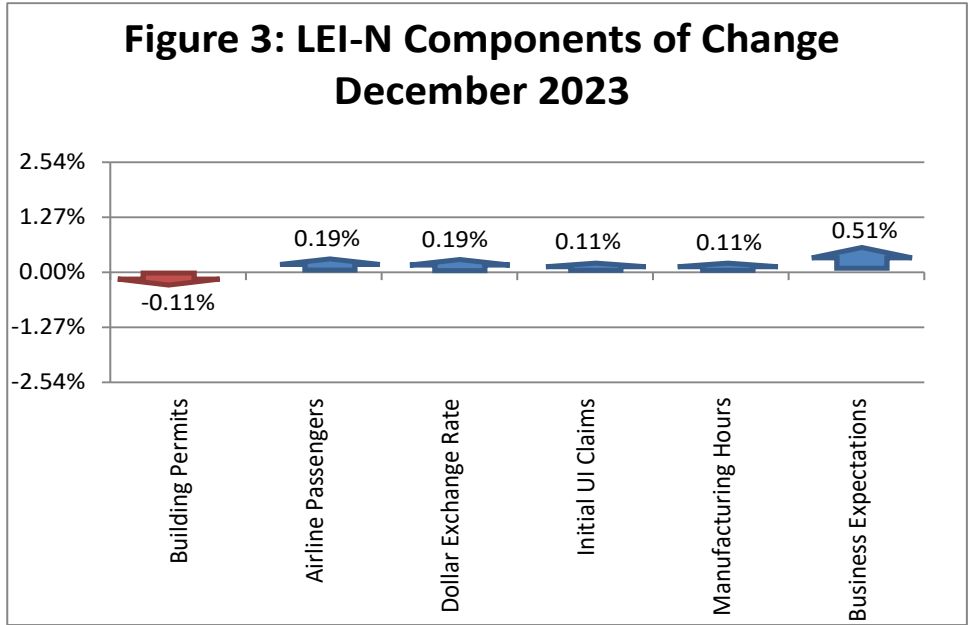


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during December. The change in the LEI–N is the weighted average of changes in each component (see page 5). Three leading indicator components improved most significantly. Respondents to the December *Survey of Nebraska Business* reported plans to increase both sales and employment over the next six months. Airline passenger counts also rose during December. Finally, the value of the U.S. dollar fell during the month, improving the position of Nebraska businesses that compete in international markets.



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 0.77% in December 2023, as seen in Figure 4.

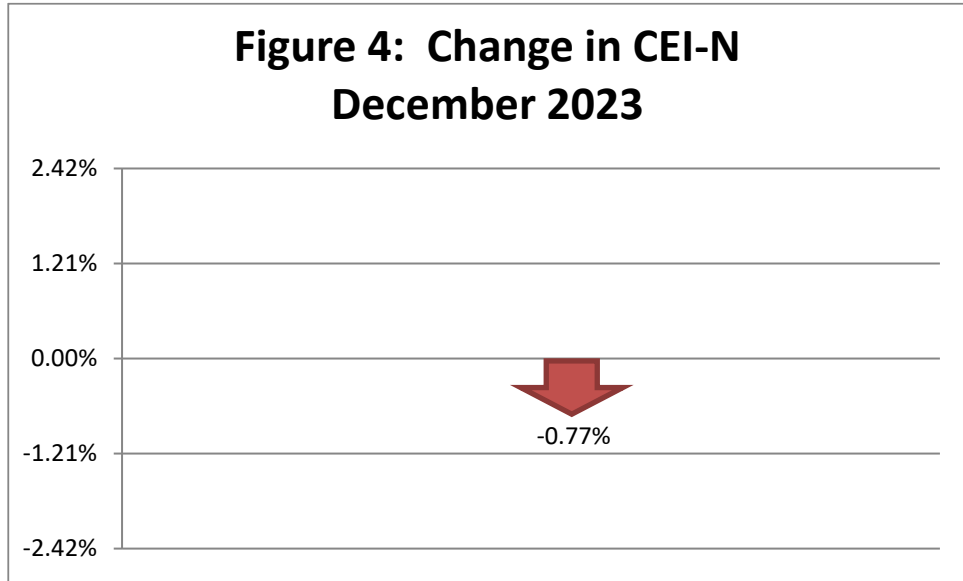
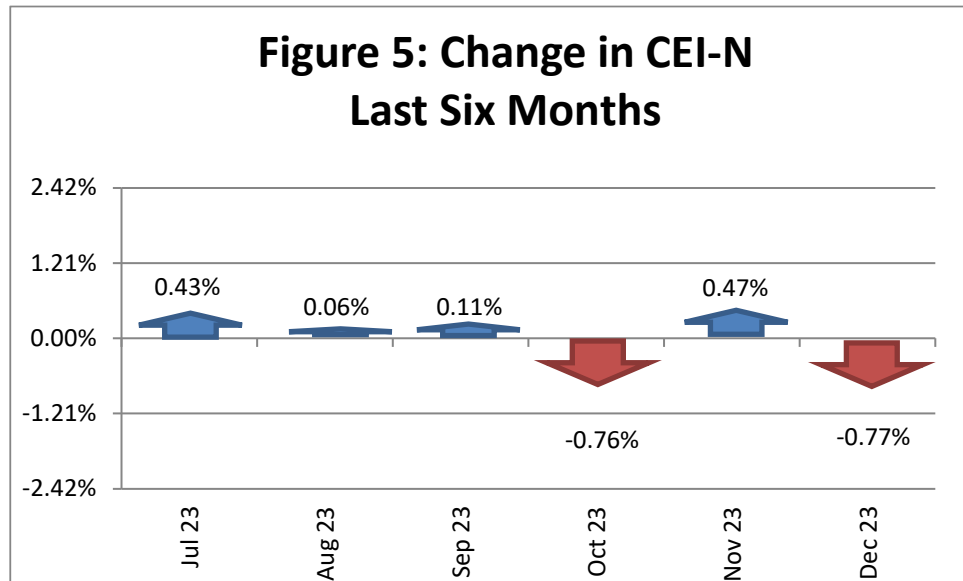


Figure 5 shows the change in the CEI-N over the last 6 months. The Nebraska economy grew during the third quarter of 2023 but declined during the fourth quarter.



Falling agricultural commodity prices were a primary reason for the drop in the CEI-N, as is seen in Figure 6. Two of the other three components of the CEI-N also declined during December. Business conditions were negative as respondents to the December *Survey of Nebraska Business* reported a decrease in sales in recent months. Electricity sales also fell on a seasonally adjusted basis. There was one growing component. There was a modest improvement in private wages during the month. 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*.

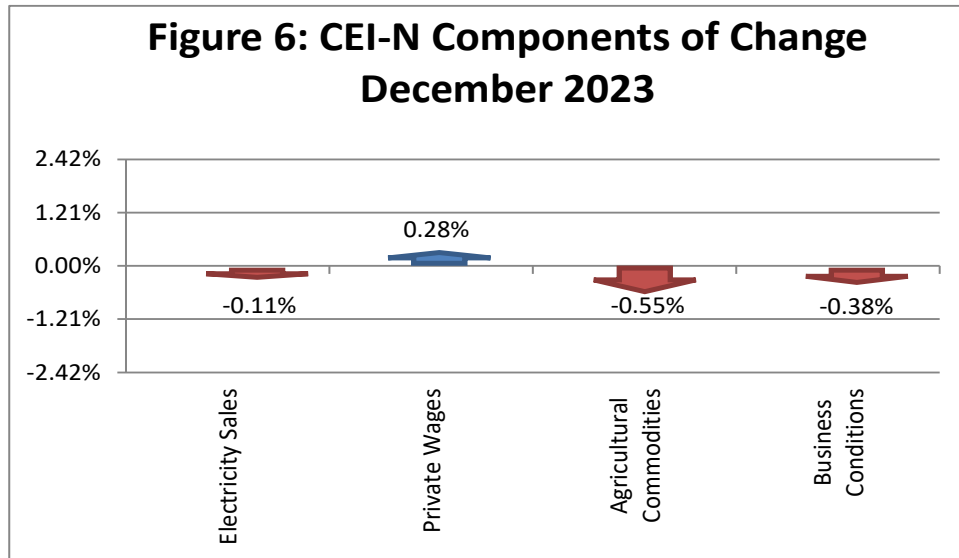
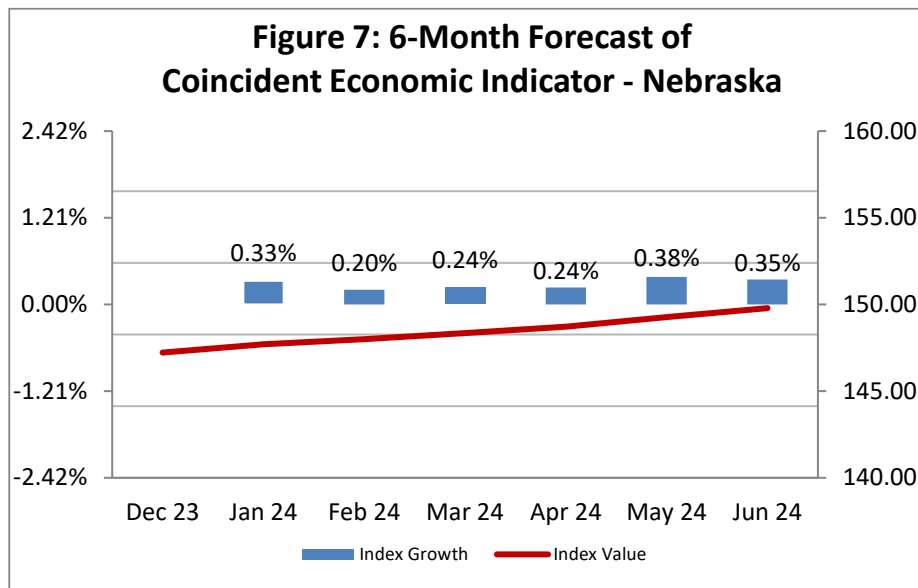


Figure 7 shows a forecast for the CEI-N over the next six months. The forecast calls for steady economic growth in Nebraska during the first half of 2024. This expectation is consistent with the changes in the LEI-N reported in Figure 2.



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	13.7251	0.0729	0.0369	Electricity Sales	4.5357	0.2205	0.1690
Airline Passengers	6.1291	0.1632	0.0827	Private Wages	1.8407	0.5433	0.4165
Exchange Rate	1.1381	0.8786	0.4451	Agricultural Commodities	3.5535	0.2814	0.2158
Initial UI Claims	19.6627	0.0509	0.0258	Survey Business Conditions	3.8589	0.2591	0.1987
Manufacturing Hours	1.7610	0.5679	0.2877				
Survey Business Expectations	4.1574	0.2405	0.1219				

Tables 2 and 3 show the calculation for the change in LEI-N and CEI-N between November and December 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	71.15	76.55	-5.40	0.04	-0.20	-0.11%
Airline Passengers	111.98	107.75	4.23	0.08	0.35	0.19%
U.S. Dollar Exchange Rate (Inverse)	78.25	77.45	0.80	0.45	0.36	0.19%
Initial Unemployment Insurance Claims (Inverse)	138.56	130.79	7.76	0.03	0.20	0.11%
Manufacturing Hours	96.11	95.40	0.71	0.29	0.20	0.11%
Survey Business Expectations ¹	57.93		7.93	0.12	0.97	0.51%
Total (weighted average)	190.37	188.50			1.88	1.00%

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	178.43	179.40	-0.97	0.17	-0.16	-0.11%
Private Wage	116.79	115.81	0.98	0.42	0.41	0.28%
Agricultural Commodities	184.45	188.26	-3.80	0.22	-0.82	-0.55%
Survey Business Conditions ¹	47.18		-2.82	0.20	-0.56	-0.38%
Total (weighted average)	147.22	148.36			-1.14	-0.77%

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.

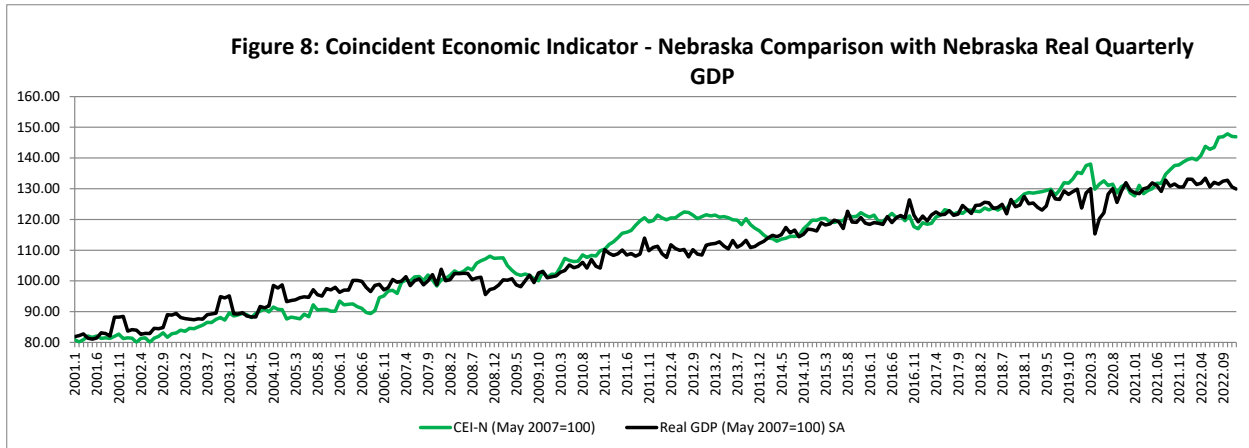


Figure 9 again shows the values for the CEI-N. It also graphs six-month forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months 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 0.92.

