Nebraska Monthly Economic Indicators: April 24, 2024

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

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Summary: *The Leading Economic Indicator-Nebraska fell by 1.31% in March 2024. The increase in the leading indicator, which is designed to predict economic growth six months into the future, followed a very rapid 3.97% increase in February. Taken together, the February and March values continue to imply strong growth in the Nebraska economy in mid-2024. A decline in building permits for single-family homes contributed to the drop in the LEI-N during March. There also was a decline in manufacturing hours worked after a sharp February increase. On the positive side, business expectations remained strong in March. Respondents to the March Survey of Nebraska Business reported plans to increase sales and employment over the next six months.*

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during March 2024 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N fell by 1.31%.

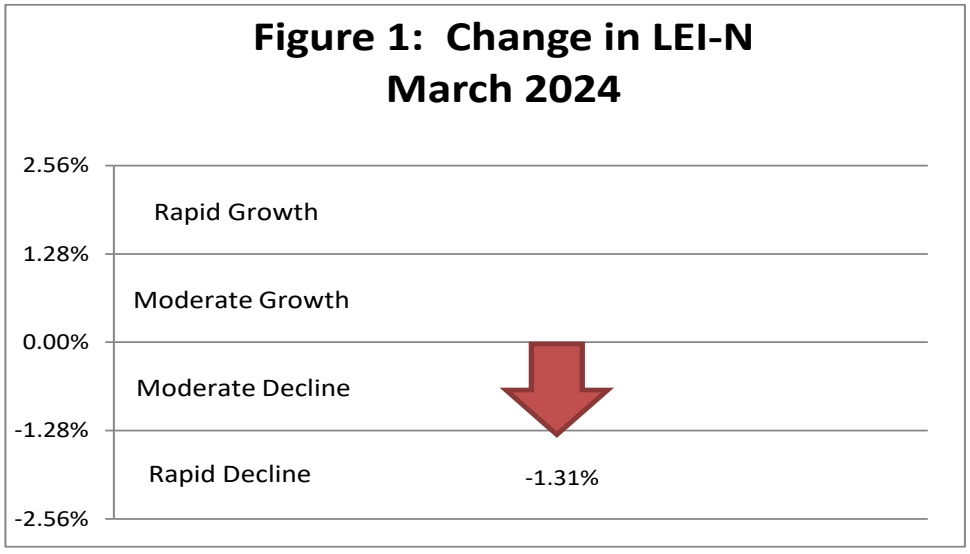


Figure 2 shows the change in the leading indicator over the last six months. The indicator shows an increase in December 2023, a very rapid rise during February, and a March decline. Collectively, the leading indicator has advanced significantly in recent months.

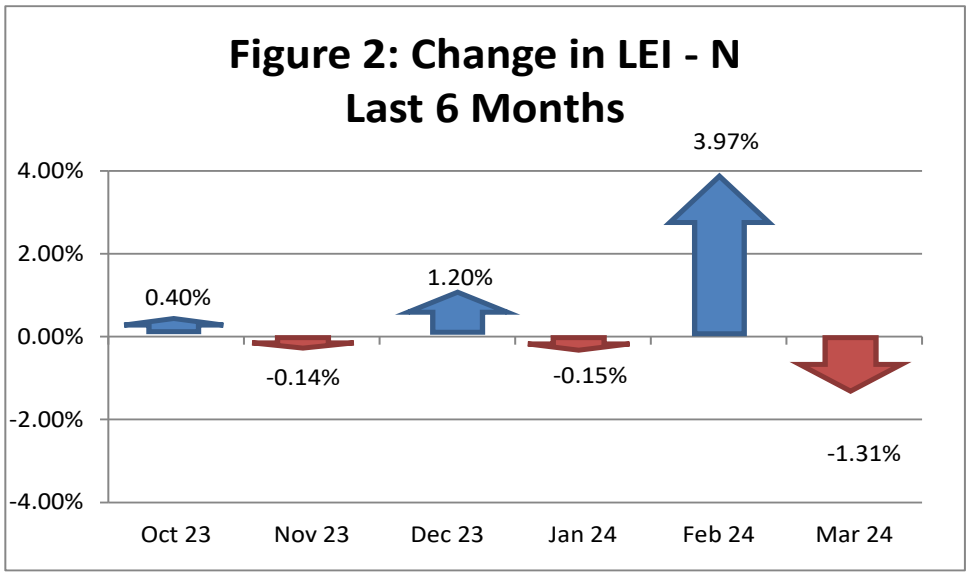
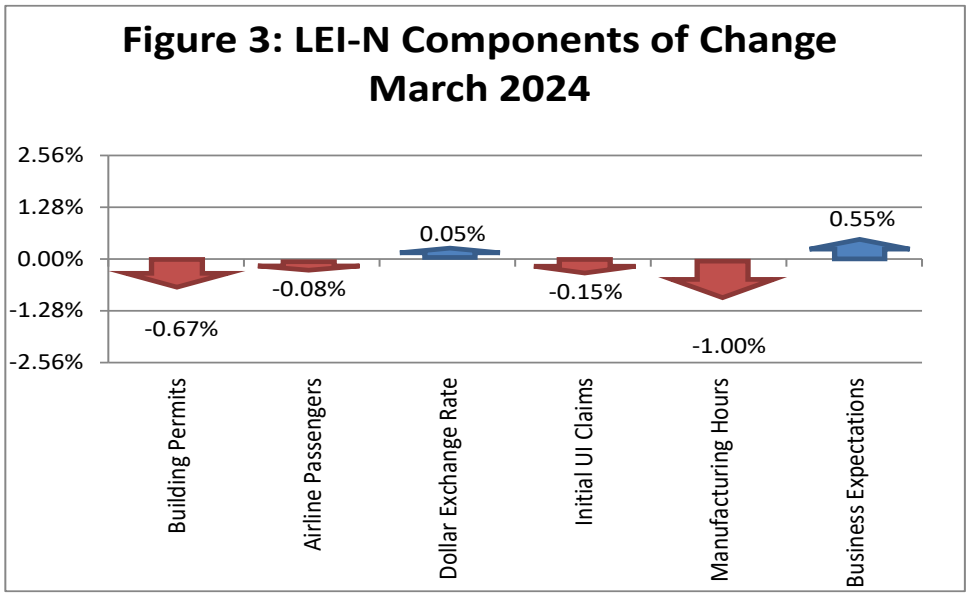


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during March. The change in the LEI–N is the weighted average of changes in each component (see page 5). Two leading indicator components dropped significantly during March. There was a drop in building permits for single-family homes during March, a period when interest rates were increasing. There also was a decline in manufacturing hours worked after a sharp increase during February. On the positive side, business expectations were strong in March. Respondents to the March *Survey of Nebraska Business* reported plans to increase both sales and 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 1.04% in March 2024, as seen in Figure 4.

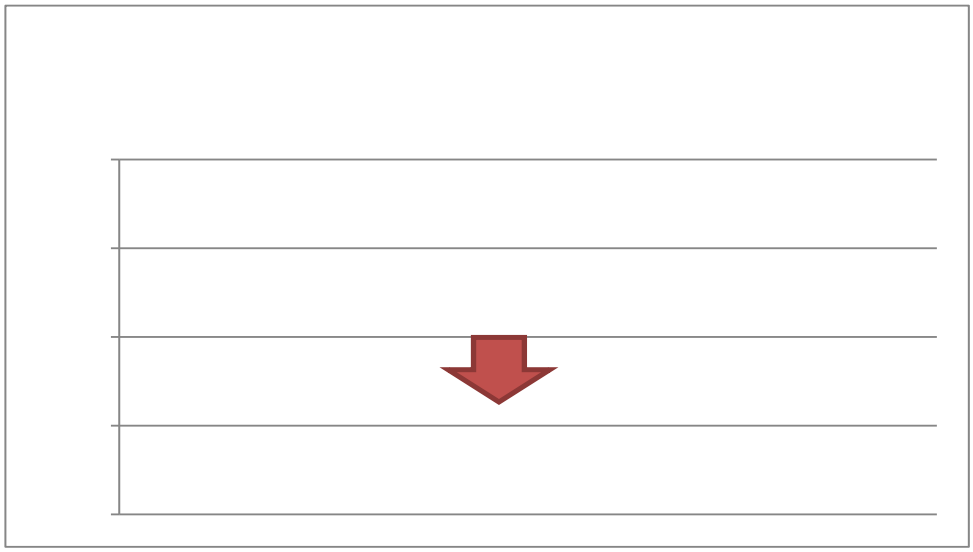
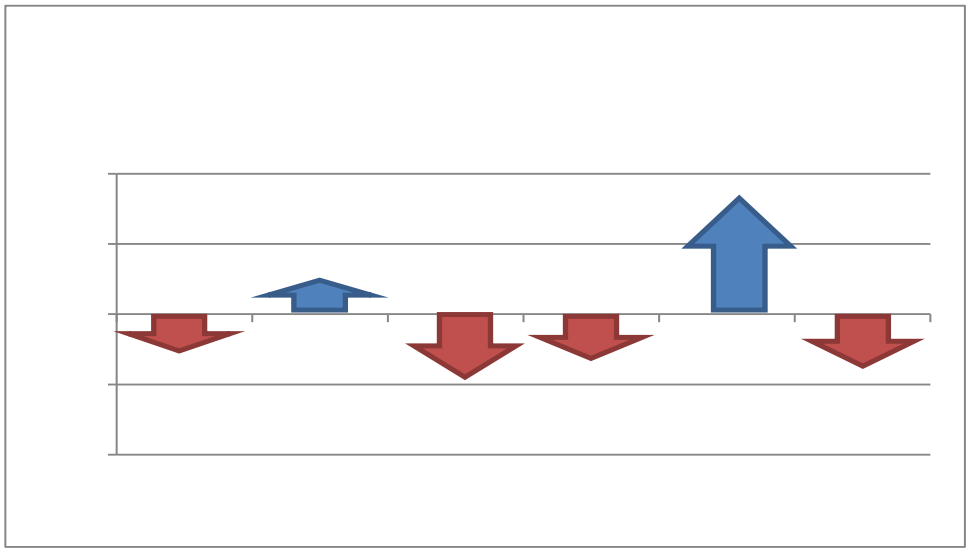


Figure 5 shows the change in the CEI-N over the last 6 months. The CEI-N declined during the fourth quarter of 2023 but improved during the first quarter of the current year. A sharp increase in February exceeded the decline in January and March. There has been downward pressure on CEI-N over the last six months due to a drop in agricultural commodity prices.



Two components of the CEI-N fell significantly during March 2024, as is seen in Figure 6. There was a drop in agricultural commodity prices during the month. Business conditions also were negative. Specifically, respondents to the March *Survey of Nebraska Business* reported a decline in sales and employment. 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.*

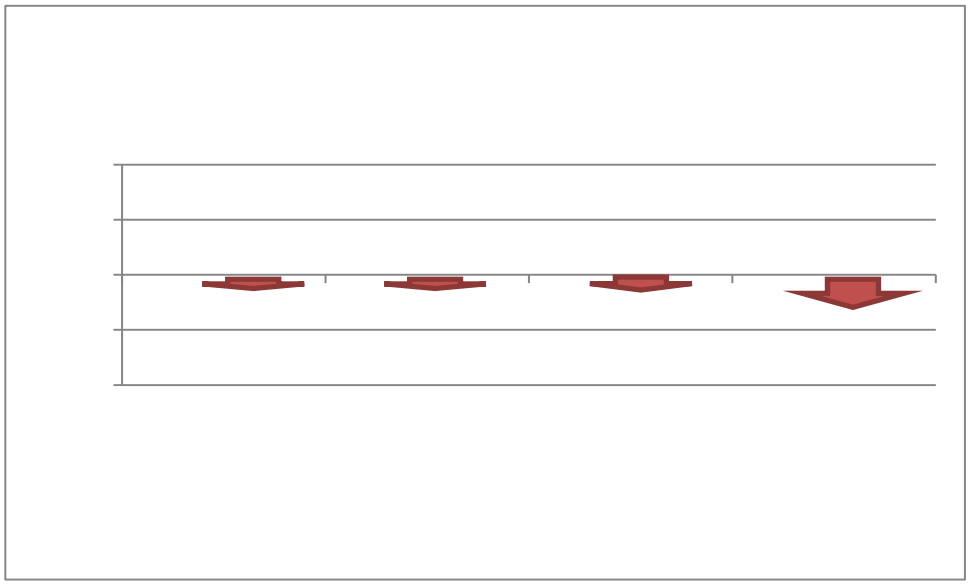
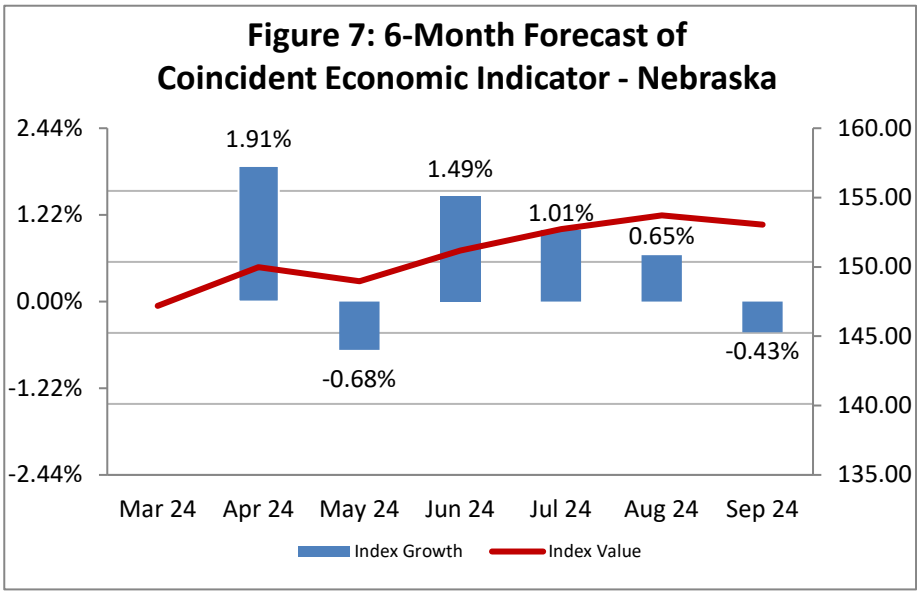


Figure 7 shows a forecast for the CEI-N over the next six months. The forecast calls for strong economic growth in Nebraska in mid-2024, including in the summer months. This expectation is consistent with changes in the LEI-N reported in Figure 2.



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.

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	14.0362	0.0712	0.0378	Electricity Sales	4.5919	0.2178	0.1671
Airline Passengers	6.1128	0.1636	0.0869	Private Wages	1.8260	0.5477	0.4201
Exchange Rate	1.1326	0.8829	0.4688	Agricultural Commodities	3.5848	0.2790	0.2140
Initial UI Claims	19.6033	0.0510	0.0271	Survey Business Conditions	3.8597	0.2591	0.1988
Manufacturing Hours	2.1082	0.4743	0.2518				
Survey Business Expectations	4.1595	0.2404	0.1276				

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

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	68.70	104.67	-35.96	0.04	-1.36	-0.67%
Airline Passengers	119.34	121.21	-1.87	0.09	-0.16	-0.08%
U.S. Dollar Exchange Rate (Inverse)	77.73	77.52	0.22	0.47	0.10	0.05%
Initial Unemployment Insurance Claims (Inverse)	173.36	184.51	-11.15	0.03	-0.30	-0.15%
Manufacturing Hours	97.05	105.07	-8.02	0.25	-2.02	-1.00%
Survey Business Expectations[1]	58.64		8.64	0.13	1.10	0.55%
Total (weighted average)	199.15	201.79			-2.64	-1.31%

[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	206.45	206.67	-0.22	0.17	-0.04	-0.03%
Private Wage	117.63	117.69	-0.05	0.42	-0.02	-0.01%
Agricultural Commodities	175.35	176.88	-1.53	0.21	-0.33	-0.22%
Survey Business Conditions[1]	44.17		-5.83	0.20	-1.16	-0.78%
Total (weighted average)	147.18	148.73			-1.55	-1.04%

[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.

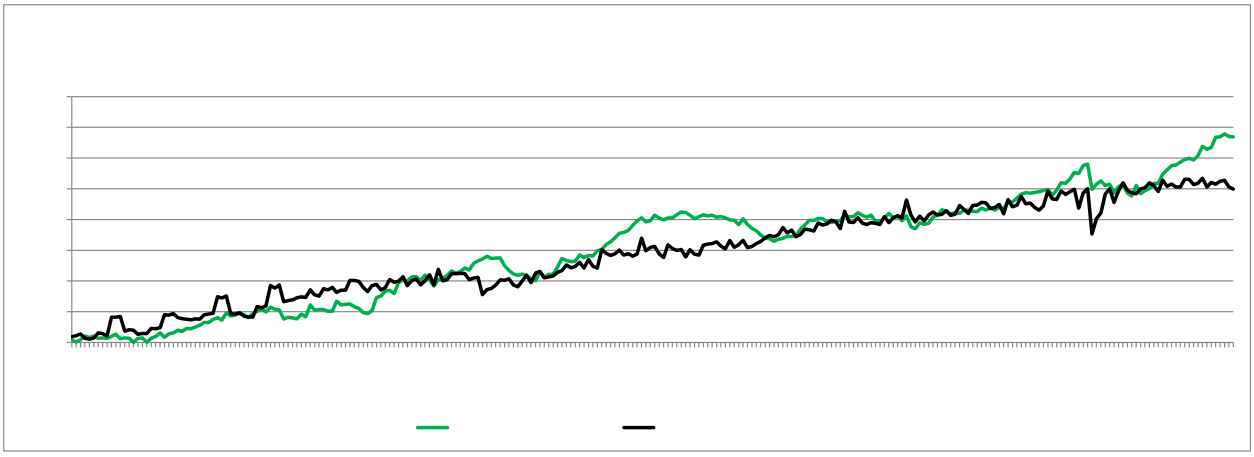


Figure 9 again shows the values for the CEI-N. It also graphs six-month forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 compares the predicted movement in CEI-N (predicted by LEI-N values six months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