

# Nebraska Monthly Economic Indicators: April 26, 2023

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**Summary:** *The Leading Economic Indicator-Nebraska rose by 1.24% in March 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 through the third quarter of 2023. Two components of the leading economic indicator improved significantly during March. There was a sharp decline in initial claims for unemployment insurance, suggesting future strength in the state labor market. Businesses also reported positive expectations. In particular, respondents to the March Survey of Nebraska Business reported plans to increase sales and employment over the next six months. There was also an increase in manufacturing hours-worked and modest growth in airline passenger counts.*

## Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during March 2023 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 1.24%.

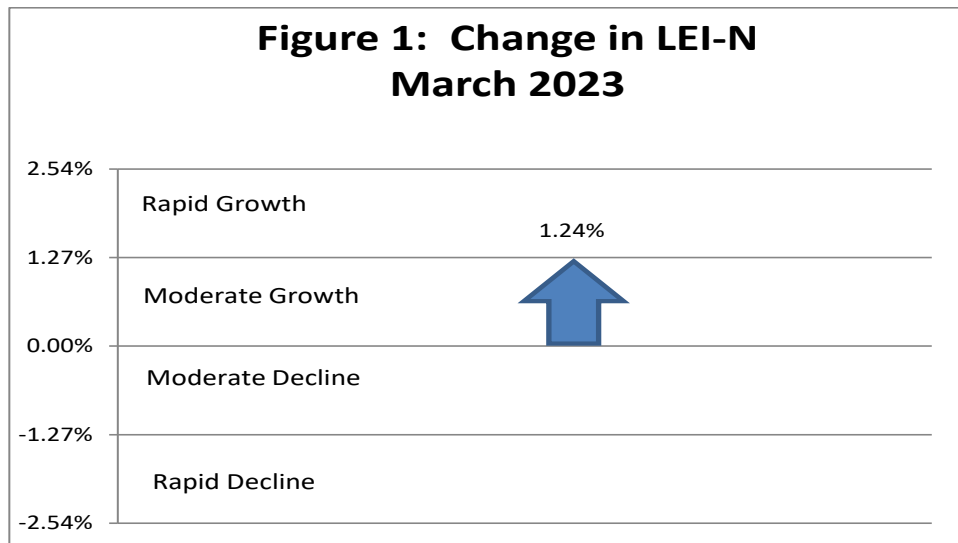


Figure 2 shows the change in the leading indicator over the last six months. The leading indicator rose in each of the last three months. This is consistent with growth in the Nebraska economy through the third quarter of 2023.

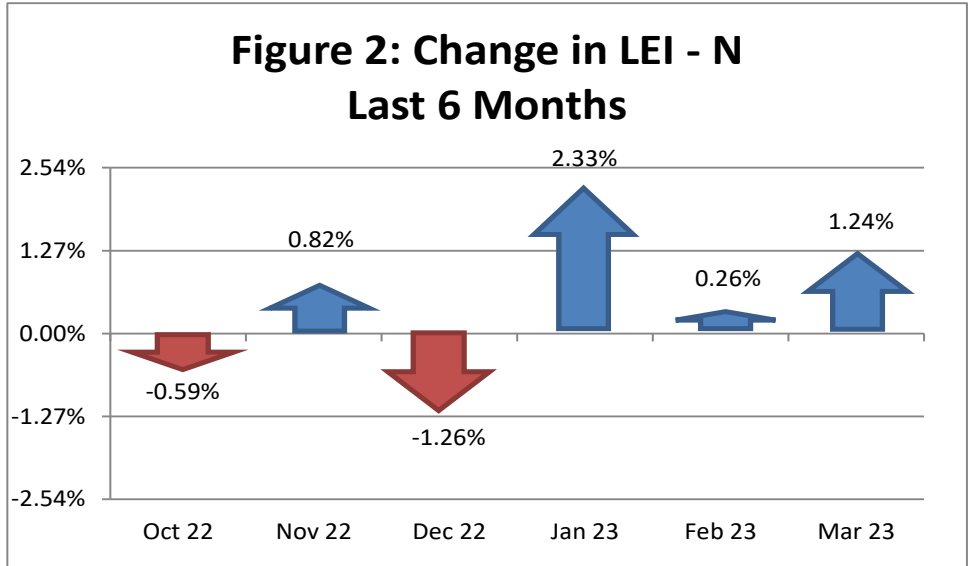
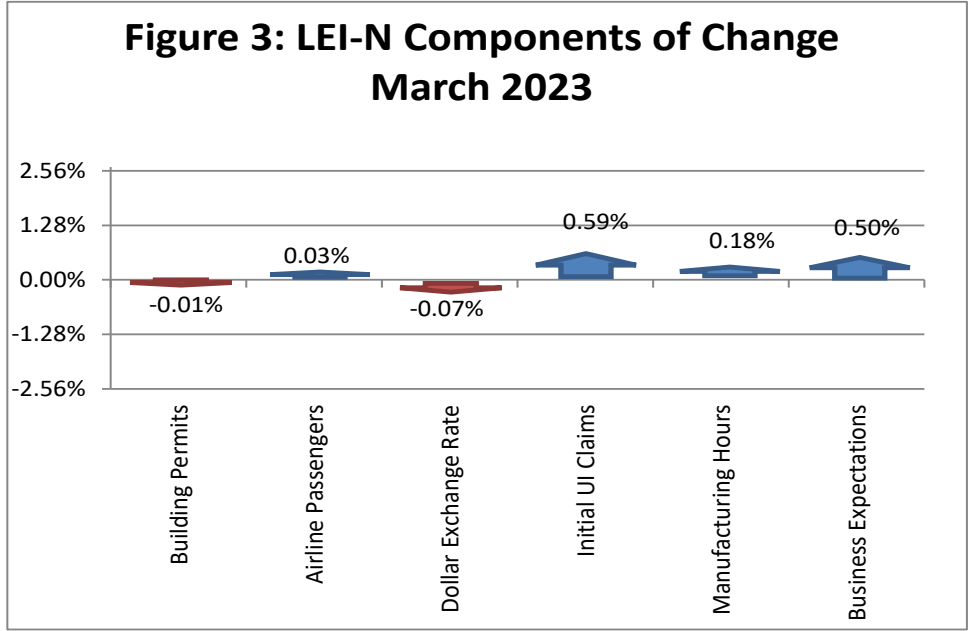


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during March. The change in the LEI–N is the weighted average of changes in each component (see page 5). There was an improvement in four leading indicator components, including business expectations. Respondents to the March *Survey of Nebraska Business* reported plans to increase sales and employment over the next six months. There also was a significant decline in initial claims for unemployment insurance, a sign of strength in the Nebraska labor market. Further, manufacturing hours worked rose during March and there was a modest improvement in airline passenger counts.



## 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 0.43% during March 2023, as seen in Figure 4.

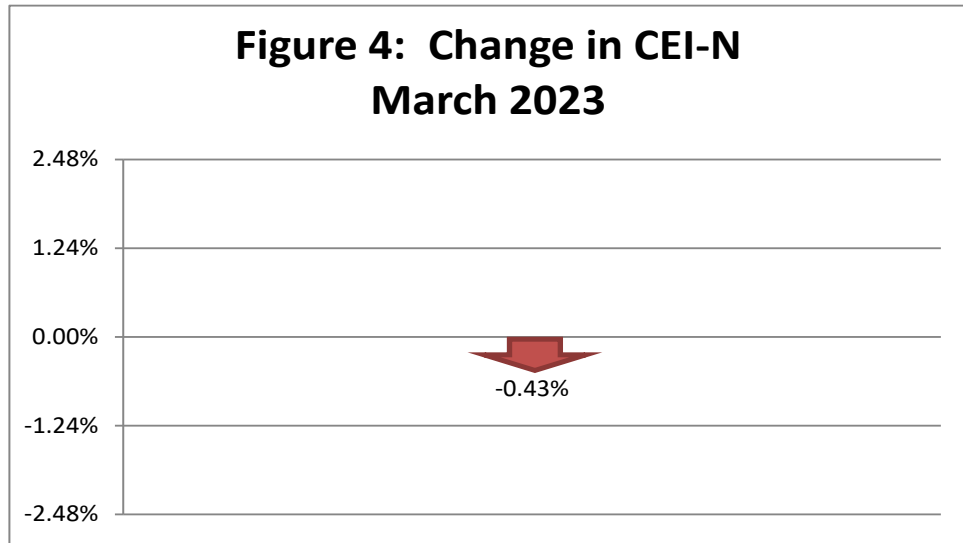
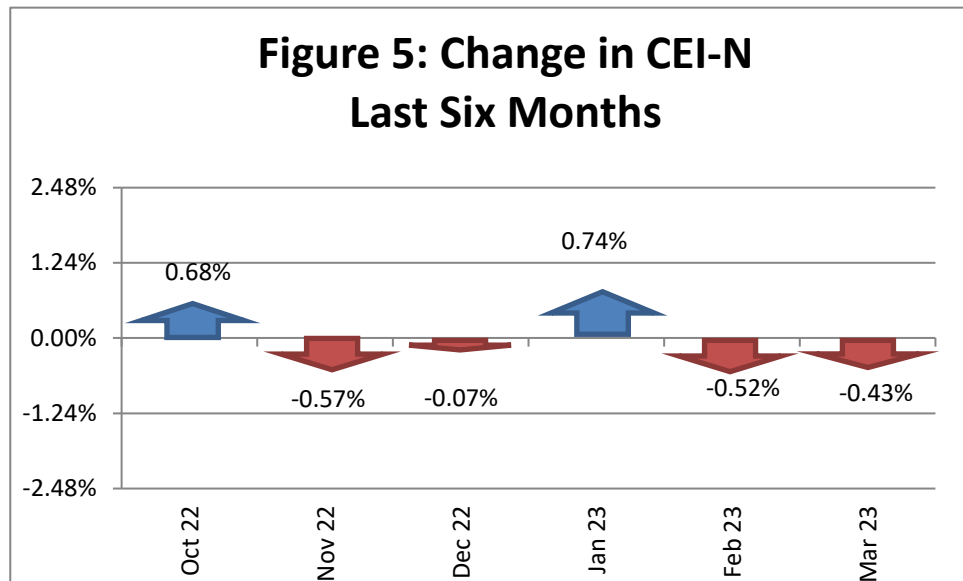


Figure 5 shows the change in the CEI-N over the last 6 months. The Nebraska economy has been flat over the period. In both the fourth quarter of 2022 and the first quarter of 2023, increases in select months were negated by declines in other months.



Two components of the CEI-N improved during March while two worsened. Electricity sales fell after accounting for weather and seasonality. There was also a decline in business conditions. Respondents to the March *Survey of Nebraska Business* reported a decline in sales over the last 6 months. Real private wages, however, improved in March due to an increase in employment and average hours worked per week. There also was an increase 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*.

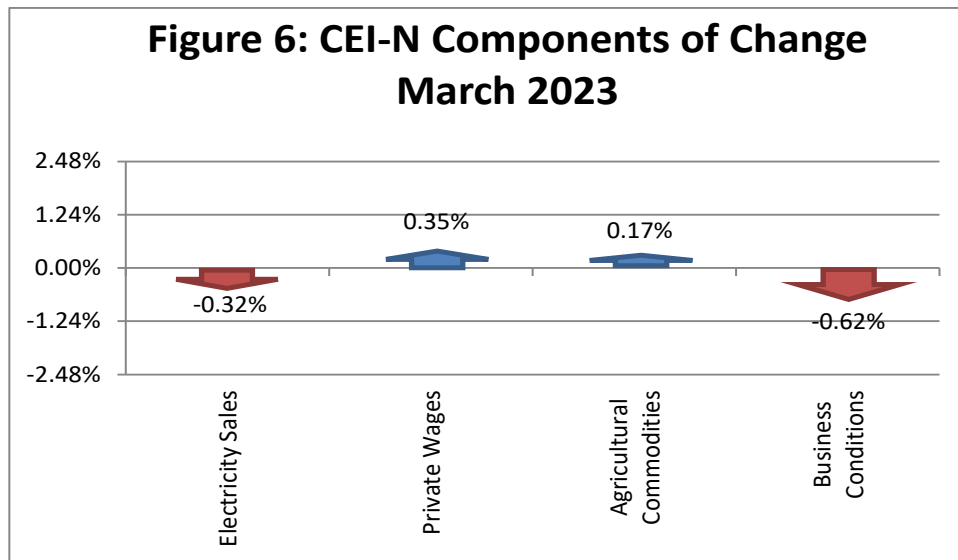
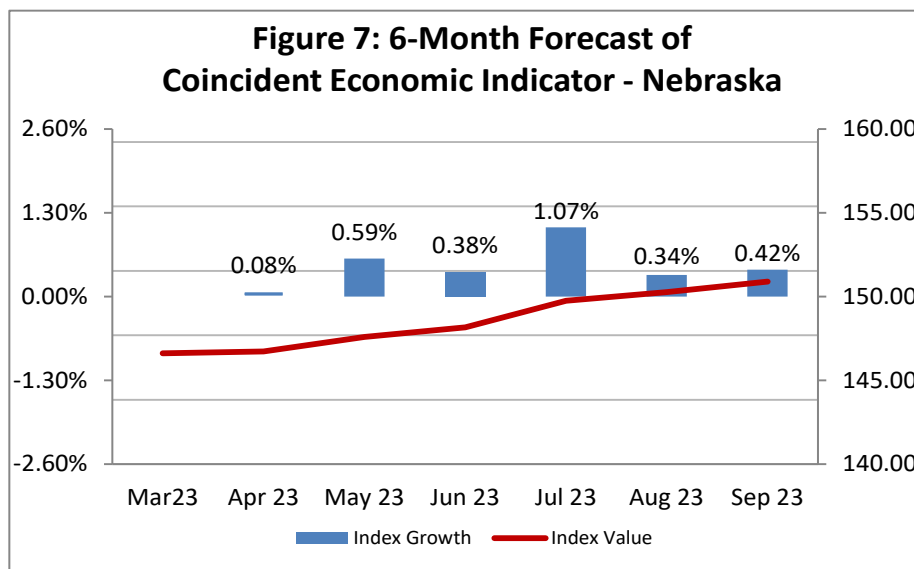


Figure 7 shows a forecast for the CEI-N over the next six months. The forecast calls for growth of the Nebraska economy during the second and third quarters of 2023. This expectation is consistent with the recent changes in the LEI-N reported in Figure 2.



## 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	13.8420	0.0722	0.0369	Electricity Sales	4.5218	0.2211	0.1760
Airline Passengers	6.2750	0.1594	0.0815	Private Wages	2.0208	0.4948	0.3938
Exchange Rate	1.1455	0.8730	0.4464	Agricultural Commodities	3.5324	0.2831	0.2253
Initial UI Claims	20.8516	0.0480	0.0245	Survey Business Conditions	3.8822	0.2576	0.2050
Manufacturing Hours	1.7693	0.5652	0.2890				
Survey Business Expectations	4.2077	0.2377	0.1215				

Tables 2 and 3 show the calculation for the change in LEI-N and CEI-N between February and March 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	48.79	49.12	-0.33	0.04	-0.01	-0.01%
Airline Passengers	112.32	111.57	0.75	0.08	0.06	0.03%
U.S. Dollar Exchange Rate (Inverse)	77.87	78.16	-0.29	0.45	-0.13	-0.07%
Initial Unemployment Insurance Claims (Inverse)	230.93	186.63	44.30	0.02	1.09	0.59%
Manufacturing Hours	94.34	93.18	1.15	0.29	0.33	0.18%
Survey Business Expectations <sup>1</sup>	57.56		7.56	0.12	0.92	0.50%
<b>Total (weighted average)</b>	<b>185.02</b>	<b>182.76</b>			<b>2.26</b>	<b>1.24%</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	169.18	171.84	-2.66	0.18	-0.47	-0.32%
Private Wage	114.62	113.31	1.31	0.39	0.52	0.35%
Agricultural Commodities	182.10	181.02	1.08	0.23	0.24	0.17%
Survey Business Conditions <sup>1</sup>	45.52		-4.48	0.20	-0.92	-0.62%
<b>Total (weighted average)</b>	<b>146.61</b>	<b>147.23</b>			<b>-0.63</b>	<b>-0.43%</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.

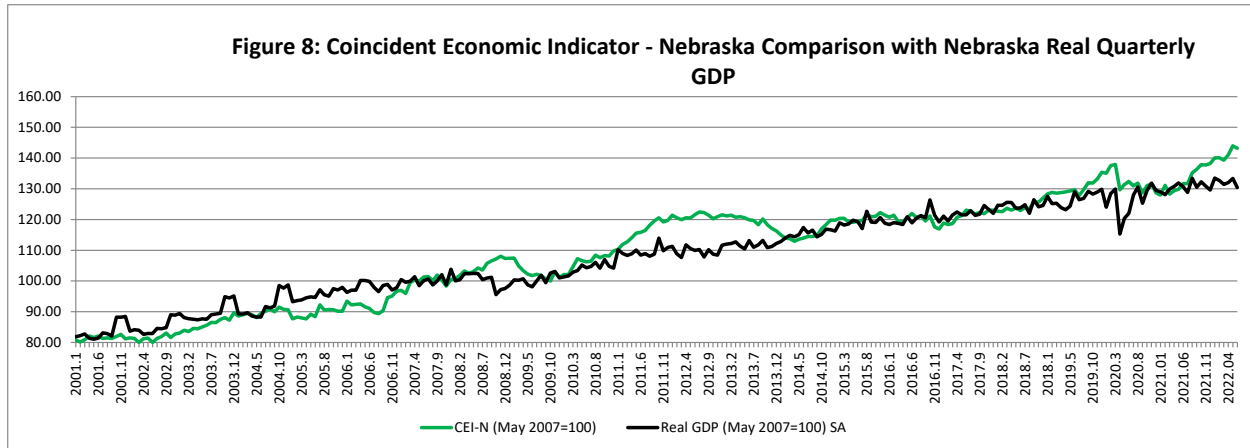


Figure 9 again shows the values for the CEI-N. It also graphs six-month forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months 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 0.90.

