

# Nebraska Monthly Economic Indicators: March 31, 2023

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**Summary:** *The Leading Economic Indicator-Nebraska was little changed in February 2023, rising by just 0.05%. The rising value for the leading indicator, which is designed to predict economic growth six months into the future, suggests that the Nebraska economy will grow slowly and continue to avoid a recession through the third quarter of 2023. Three components of the leading economic indicator improved during February. Businesses reported positive expectations. In particular, respondents to the February Survey of Nebraska Business reported plans to increase sales and employment over the next six months. There also was modest growth in airline passenger counts and manufacturing hours worked. However, there was a decline in building permits for single-family homes in February, on a seasonally-adjusted basis.*

## Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during February 2023 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 0.05%.

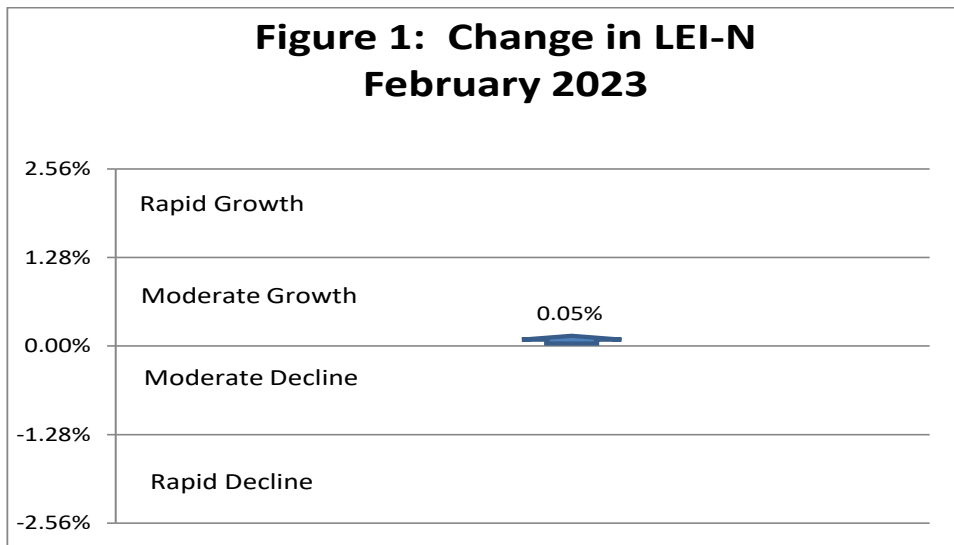


Figure 2 shows the change in the leading indicator over the last six months. The leading indicator rose in January and February but exhibited an uneven pattern over the last six months. Monthly increases exceeded monthly declines, suggesting the state economy can achieve slow growth and avoid recession.

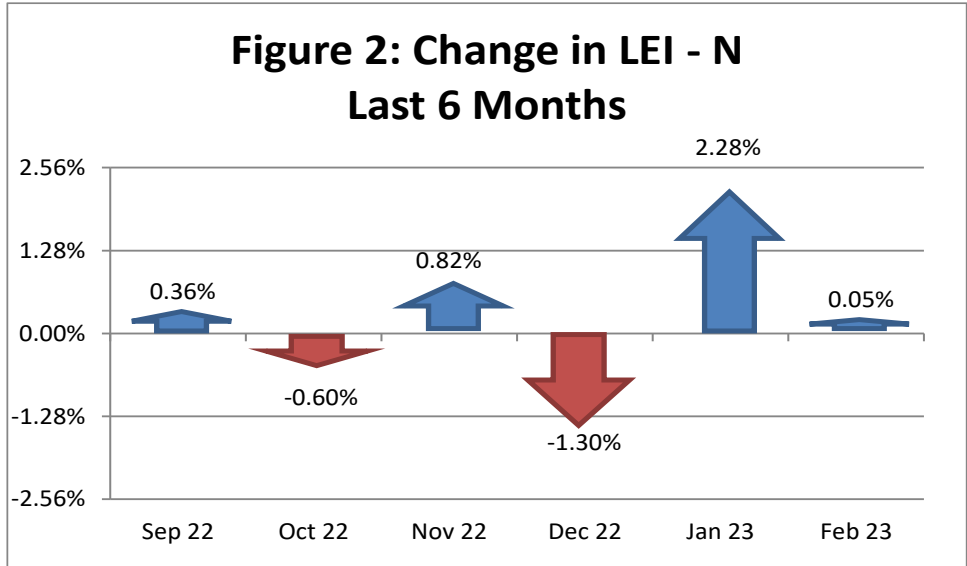
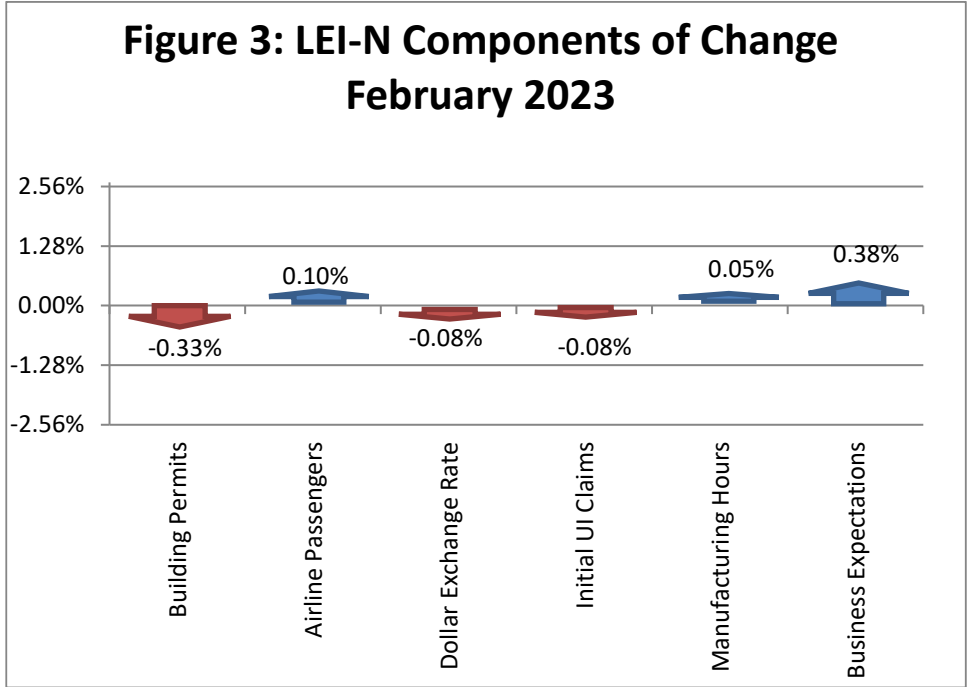


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during February. The change in the LEI–N is the weighted average of changes in each component (see page 5). There was an improvement in three leading indicator components, including business expectations. Respondents to the February *Survey of Nebraska Business* reported plans to increase sales and employment over the next six months. There also was a modest improvement in airline passenger counts and manufacturing hours worked during the month. However, there was a decline in building permits for single-family homes on a seasonally adjusted basis.



## 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 0.07% during February 2023, as seen in Figure 4.

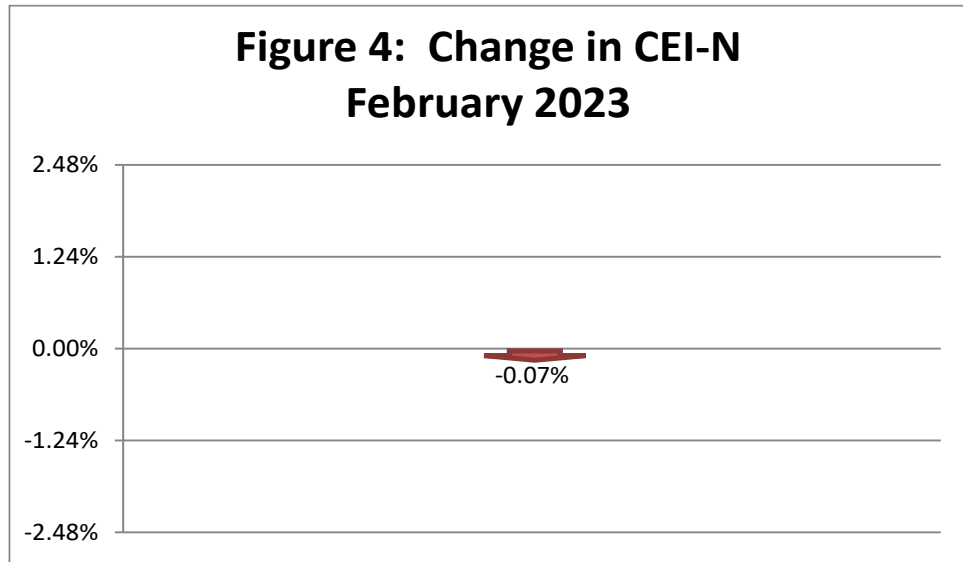
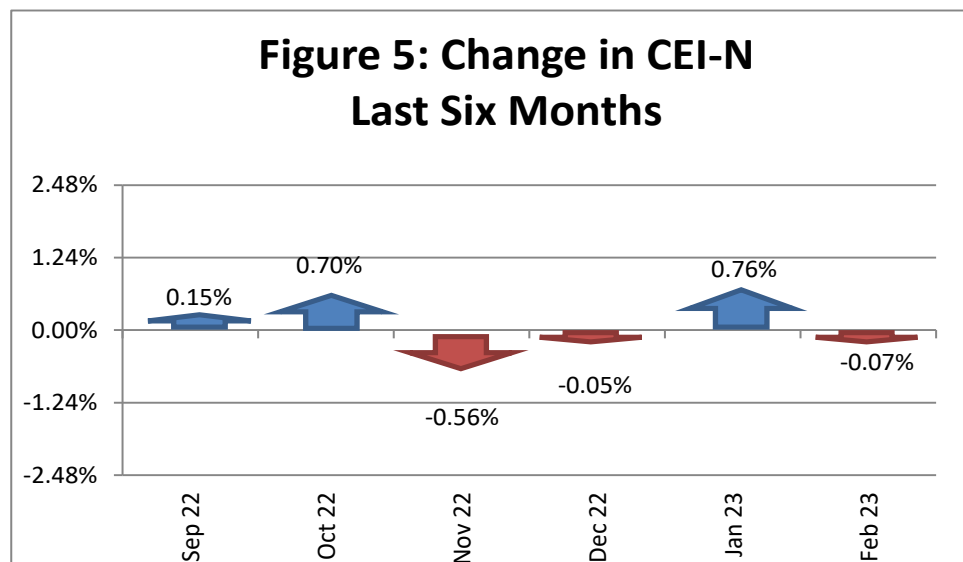


Figure 5 shows the change in the CEI-N over the last 6 months. The Nebraska economy expanded in three of the six months. Monthly increases generally were larger than monthly declines, suggesting slow overall economic growth at the end of 2022 and the beginning of 2023.



Two components of the CEI-N improved during February while two worsened. Electricity sales rose after accounting for weather and seasonality and there was a small increase in agricultural commodity prices. Real private wages, however, declined due to a drop in average hours worked per week and average hourly wages. Business conditions also were slightly negative, according to respondents to the February *Survey of Nebraska Business*. 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*.

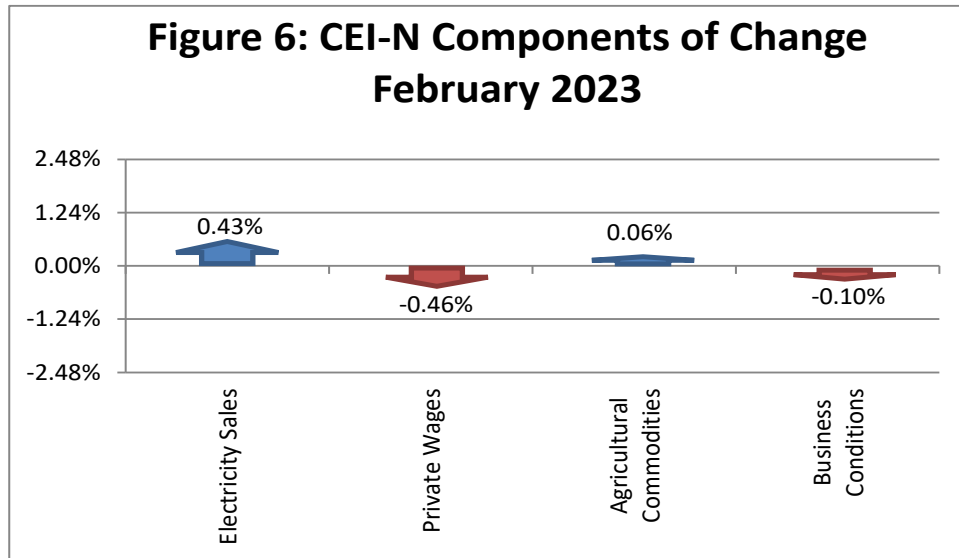
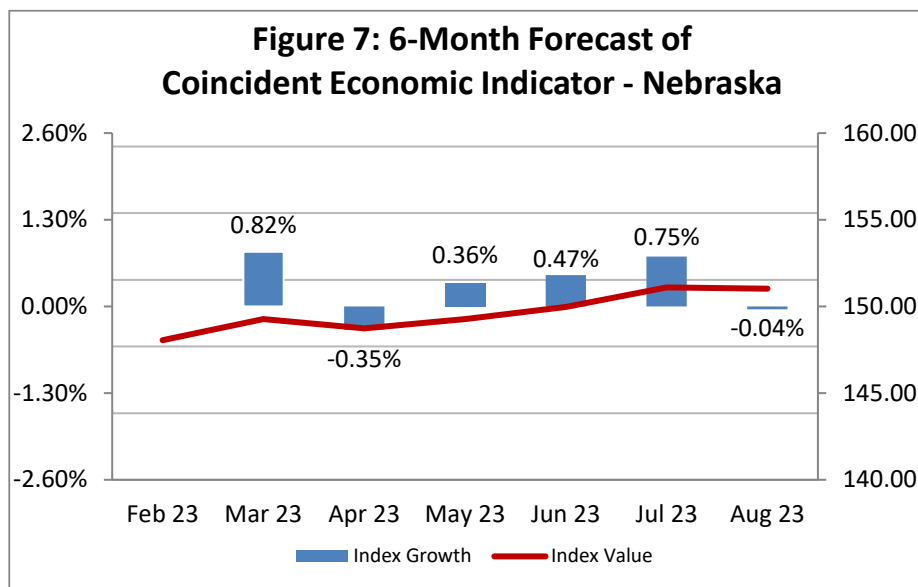


Figure 7 shows a forecast for the CEI-N over the next six months. The forecast calls for slow growth in the size of the Nebraska economy during the first three quarters of 2023. The state economy should avoid recession. This expectation is consistent with the recent changes in the LEI-N reported in Figure 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>							
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	13.8747	0.0721	0.0369	Electricity Sales	4.5164	0.2214	0.1764
Airline Passengers	6.2855	0.1591	0.0815	Private Wages	2.0262	0.4935	0.3933
Exchange Rate	1.1475	0.8715	0.4463	Agricultural Commodities	3.5380	0.2826	0.2252
Initial UI Claims	20.6806	0.0484	0.0248	Survey Business Conditions	3.8849	0.2574	0.2051
Manufacturing Hours	1.7722	0.5643	0.2890				
Survey Business Expectations	4.2118	0.2374	0.1216				

Tables 2 and 3 show the calculation for the change in LEI-N and CEI-N between January and February 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>						
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	49.23	65.57	-16.35	0.04	-0.60	-0.33%
Airline Passengers	111.51	109.23	2.28	0.08	0.19	0.10%
U.S. Dollar Exchange Rate (Inverse)	78.16	78.47	-0.32	0.45	-0.14	-0.08%
Initial Unemployment Insurance Claims (Inverse)	179.77	185.71	-5.94	0.02	-0.15	-0.08%
Manufacturing Hours	91.87	91.54	0.34	0.29	0.10	0.05%
Survey Business Expectations <sup>1</sup>	55.71		5.71	0.12	0.69	0.38%
<b>Total (weighted average)</b>	<b>182.27</b>	<b>182.18</b>			<b>0.09</b>	<b>0.05%</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	175.87	172.23	3.64	0.18	0.64	0.43%
Private Wage	113.35	115.10	-1.75	0.39	-0.69	-0.46%
Agricultural Commodities	181.30	180.91	0.39	0.23	0.09	0.06%
Survey Business Conditions <sup>1</sup>	49.29		-0.71	0.21	-0.15	-0.10%
<b>Total (weighted average)</b>	<b>148.05</b>	<b>148.16</b>			<b>-0.10</b>	<b>-0.07%</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.

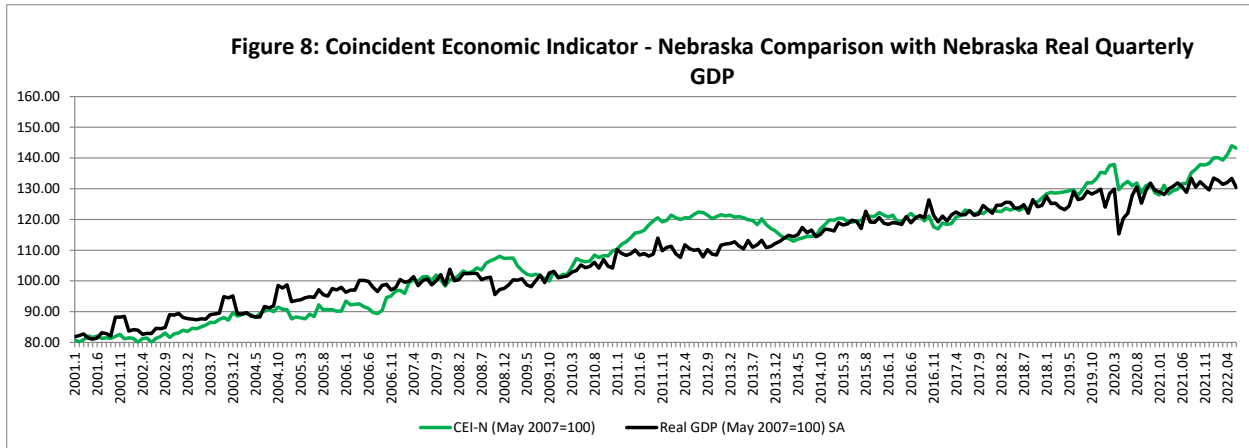


Figure 9 again shows the values for the CEI-N. It also graphs six-month forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months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

