

# Nebraska Monthly Economic Indicators: January 6, 2023

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

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**Summary:** *The LEI-N fell by 0.16% in November 2022. The leading indicator, which is designed to predict economic growth six months in the future, has fallen in four of the last six months. Such a decline implies that the Nebraska economy will stagnate during the first half of 2023. Two components of the leading indicator worsened significantly during November. There was an increase in initial claims for unemployment insurance, signaling softening in the Nebraska labor market. There was also a drop in manufacturing hours worked during the month. It will be important to monitor whether these two trends continue since a decline in manufacturing activity and an increase in unemployment claims are often key characteristics of a recession.*

## Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during November 2022 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N fell by 0.16%.



Figure 2 shows the change in the leading indicator over the last six months. The leading indicator is essentially flat over the last six months. This pattern is consistent with a stagnant economy in Nebraska in the first half of 2023.

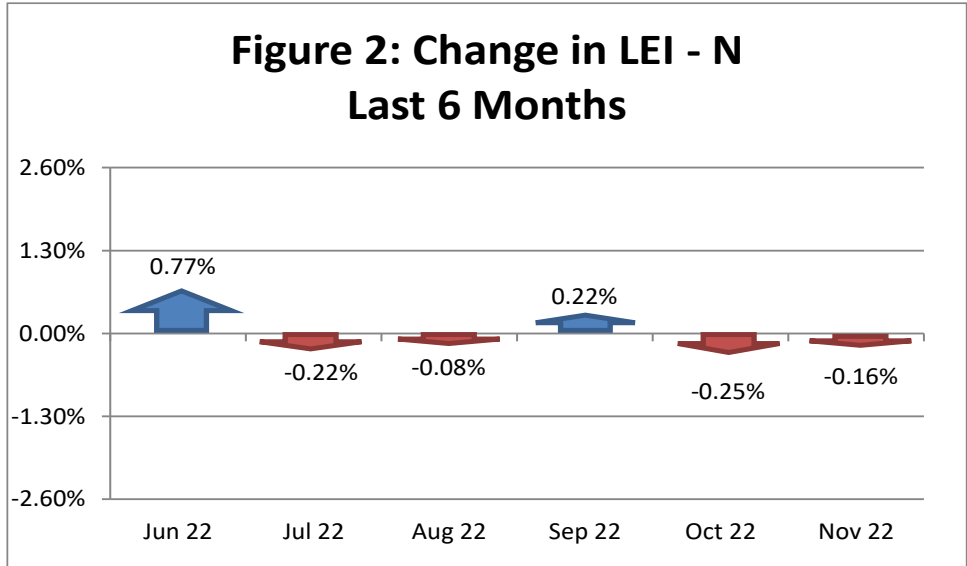
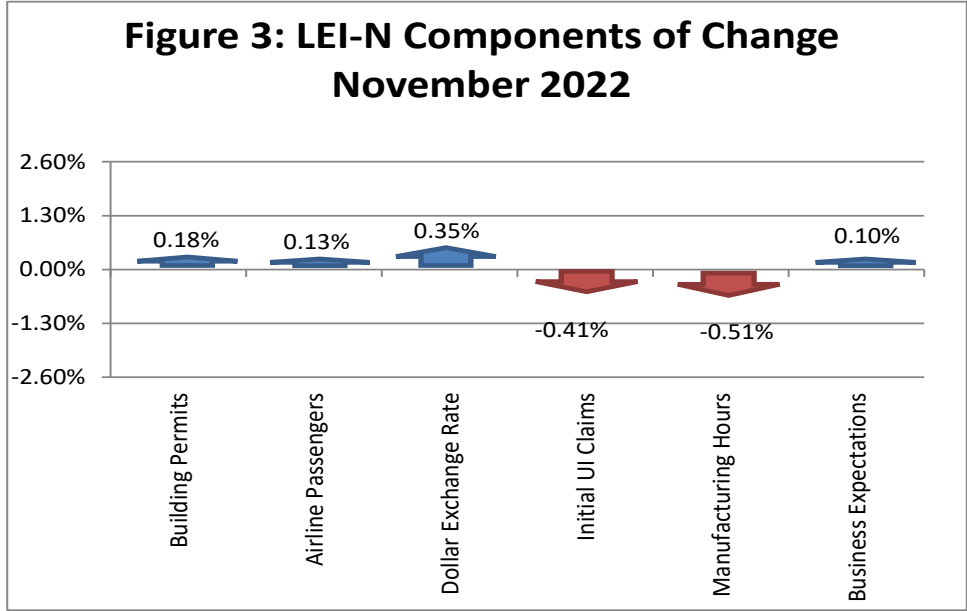


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during November. The change in the LEI-N is the weighted average of changes in each component (see page 5). Two indicator components worsened significantly during November. There was an increase in initial claims for unemployment insurance during the month, consistent with a softening in the Nebraska labor market. There also was a decline in manufacturing hours worked. One positive component is the value of the U.S. dollar. The U.S. dollar fell during the month, which improves 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 0.61% during November 2022, as seen in Figure 4.

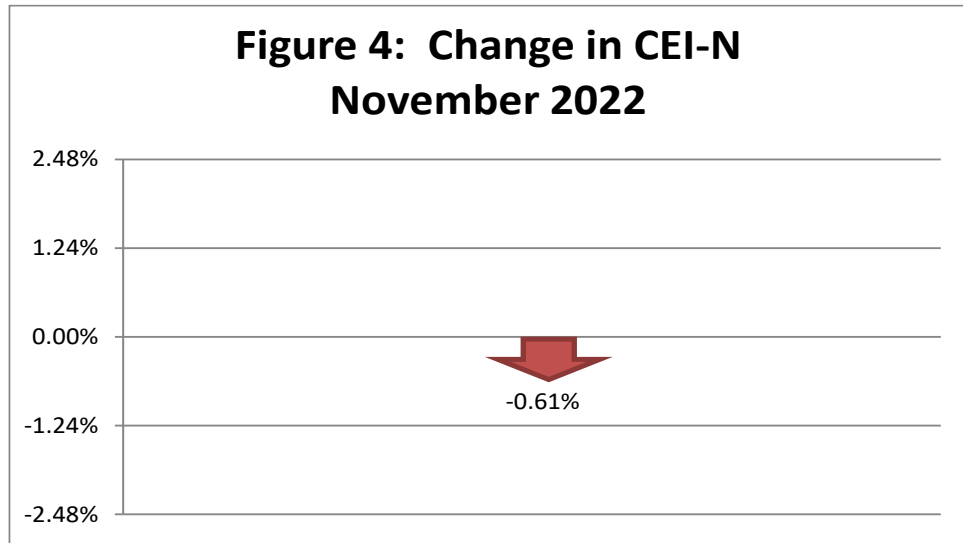
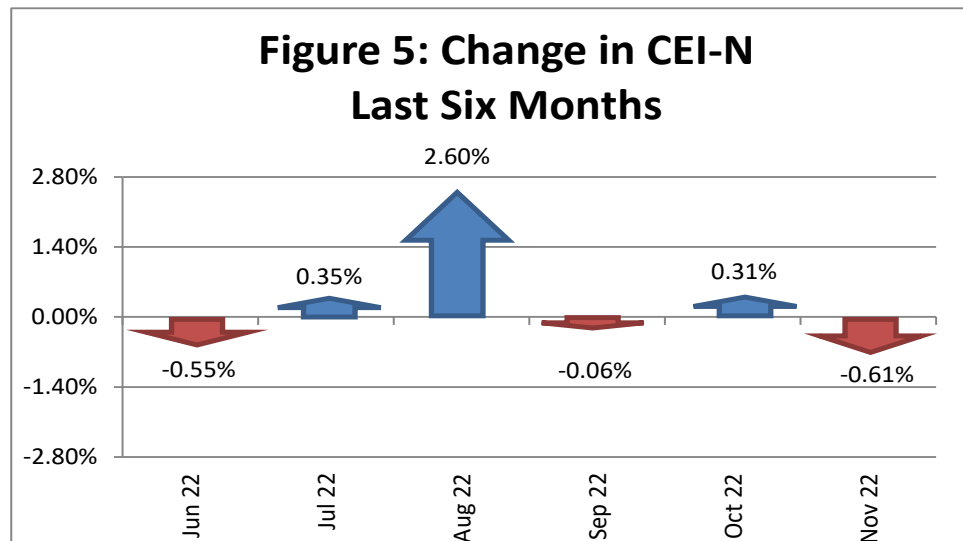


Figure 5 shows the change in the CEI-N over the last 6 months. The Nebraska economy has expanded over the last six months, but growth is beginning to stagnate at the end of 2022.



Two components of the CEI-N declined during November. Private wages fell with a decline in average hourly wage rates in the private sector. Electricity sales dropped in November after accounting for weather and seasonality. There was a modest increase in agricultural commodity prices. Business conditions also were positive according to respondents to the November *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*.

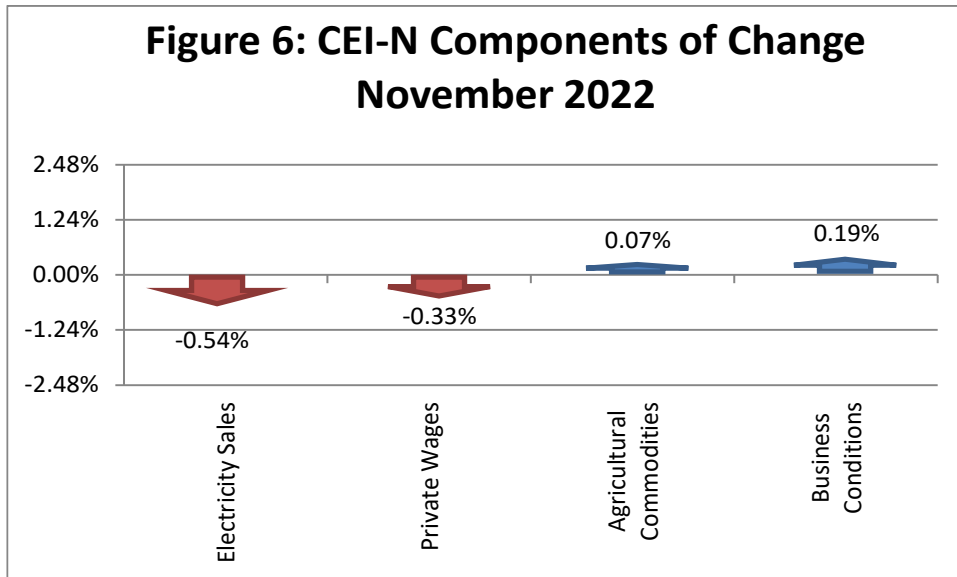
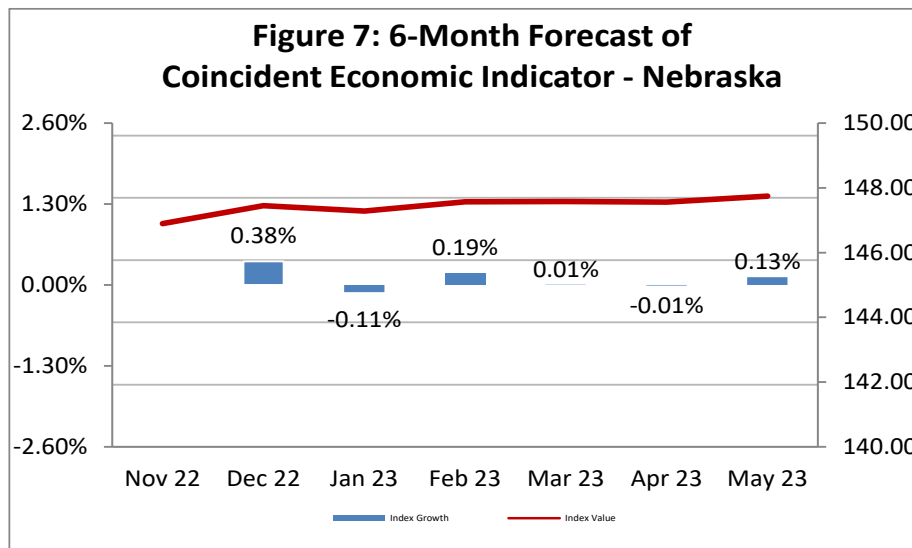


Figure 7 shows a forecast for the CEI-N over the next six months. The forecast calls for little change- in the size of the Nebraska economy during the first half of 2023. This expectation is consistent with the recent changes in the LEI-N reported in Figure 2.



## 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>							
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	12.9358	0.0773	0.0393	Electricity Sales	4.6324	0.2159	0.1742
Airline Passengers	6.2034	0.1612	0.0820	Private Wages	2.0607	0.4853	0.3916
Exchange Rate	1.1471	0.8718	0.4437	Agricultural Commodities	3.5488	0.2818	0.2274
Initial UI Claims	19.5130	0.0512	0.0261	Survey Business Conditions	3.9029	0.2562	0.2068
Manufacturing Hours	1.7652	0.5665	0.2883				
Survey Business Expectations	4.2217	0.2369	0.1206				

Tables 2 and 3 show the calculation for the change in LEI-N and CEI-N between October and November of 2022. 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	68.81	60.61	8.21	0.04	0.32	0.18%
Airline Passengers	97.66	94.94	2.72	0.08	0.22	0.13%
U.S. Dollar Exchange Rate (Inverse)	75.50	74.10	1.41	0.44	0.62	0.35%
Initial Unemployment Insurance Claims (Inverse)	137.38	165.23	-27.85	0.03	-0.73	-0.41%
Manufacturing Hours	90.46	93.58	-3.13	0.29	-0.90	-0.51%
Survey Business Expectations <sup>1</sup>	51.42		1.42	0.12	0.17	0.10%
<b>Total (weighted average)</b>	<b>177.81</b>	<b>178.10</b>			<b>-0.29</b>	<b>-0.16%</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	162.22	166.82	-4.60	0.17	-0.80	-0.54%
Private Wage	113.86	115.09	-1.23	0.39	-0.48	-0.33%
Agricultural Commodities	178.84	178.40	0.44	0.23	0.10	0.07%
Survey Business Conditions <sup>1</sup>	51.35		1.35	0.21	0.28	0.19%
<b>Total (weighted average)</b>	<b>146.89</b>	<b>147.79</b>			<b>-0.90</b>	<b>-0.61%</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 year or two, typically when agricultural commodity prices are higher. The correlation coefficient between the two-pictured series is 0.96.

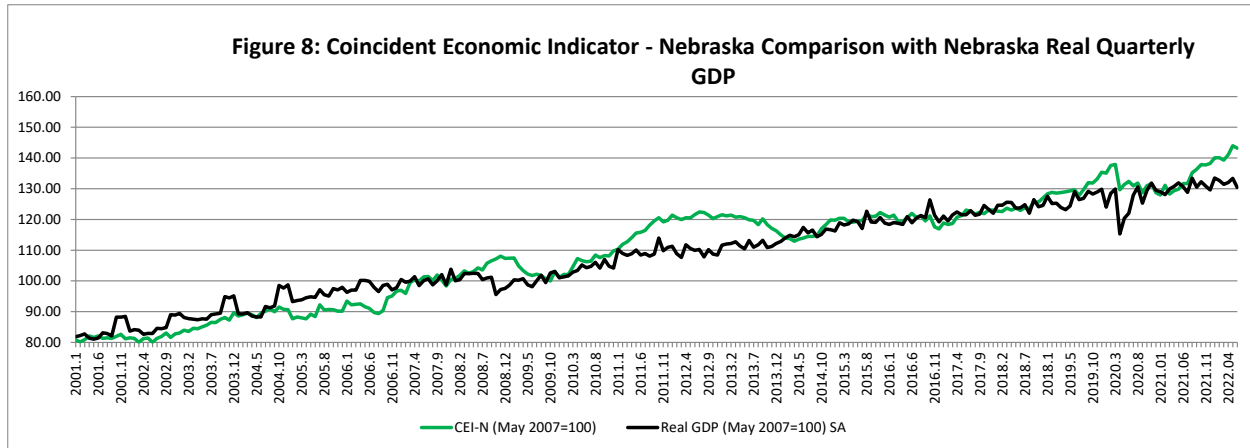


Figure 9 again shows the values for the CEI-N. It also graphs six-month forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months 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 0.89.

