Nebraska Monthly Economic Indicators: June 21, 2023

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

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Summary: *The Leading Economic Indicator-Nebraska rose by 0.56% in May 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 end of 2023. Three components of the leading economic indicator improved significantly during May. There was an increase in manufacturing hours worked, a sign of strength in the goods-producing sector. Business expectations also were positive. Respondents to the May Survey of Nebraska Business reported plans to increase sales and employment over the next six months. Finally, there was an increase in building permits for single-family homes on a seasonally adjusted basis. In terms of negative components, there was an increase in initial claims for unemployment insurance during May, suggesting there may be some weakening in Nebraska labor market conditions.*

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during May 2023 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 0.56%.

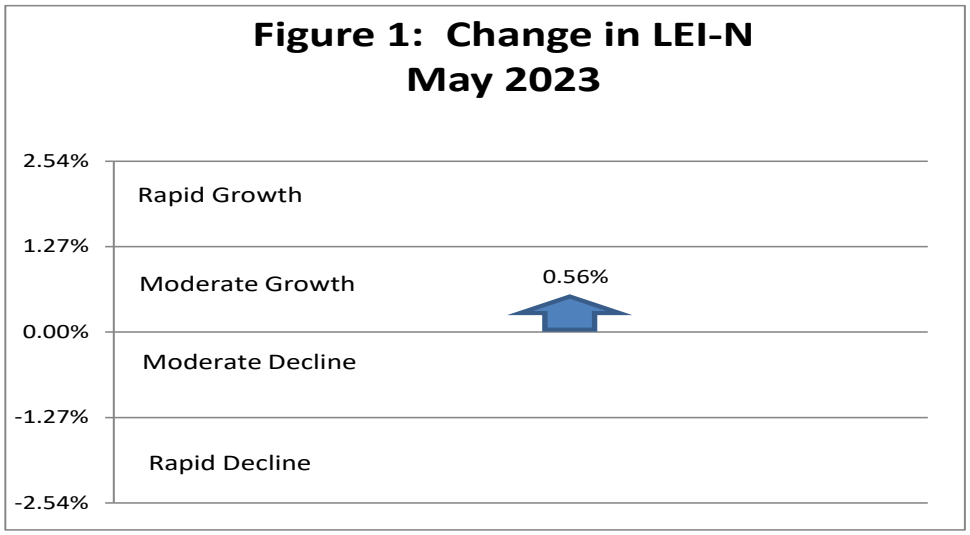


Figure 2 shows the change in the leading indicator over the last six months. The indicator has risen for six consecutive months. This is consistent with growth in the Nebraska economy through the end of 2023.

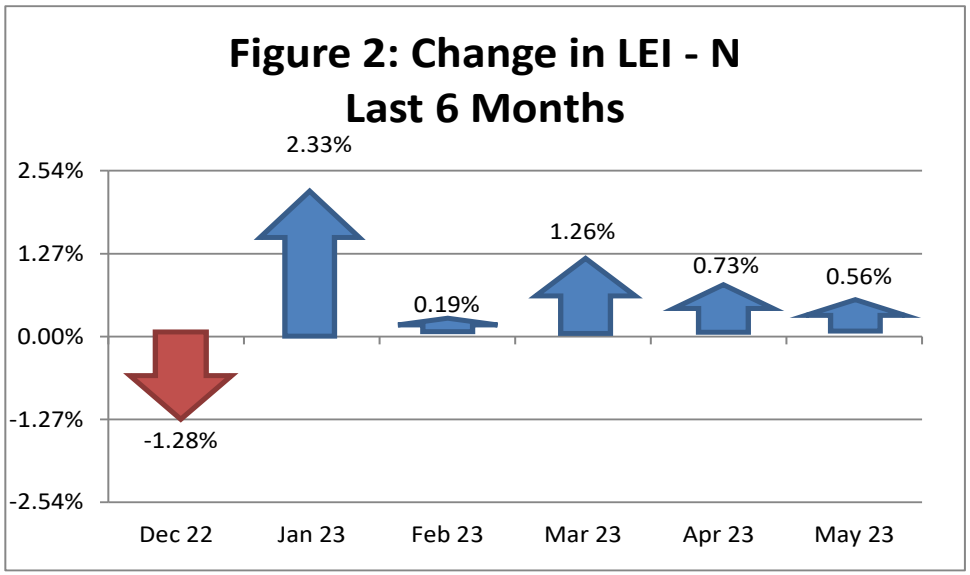
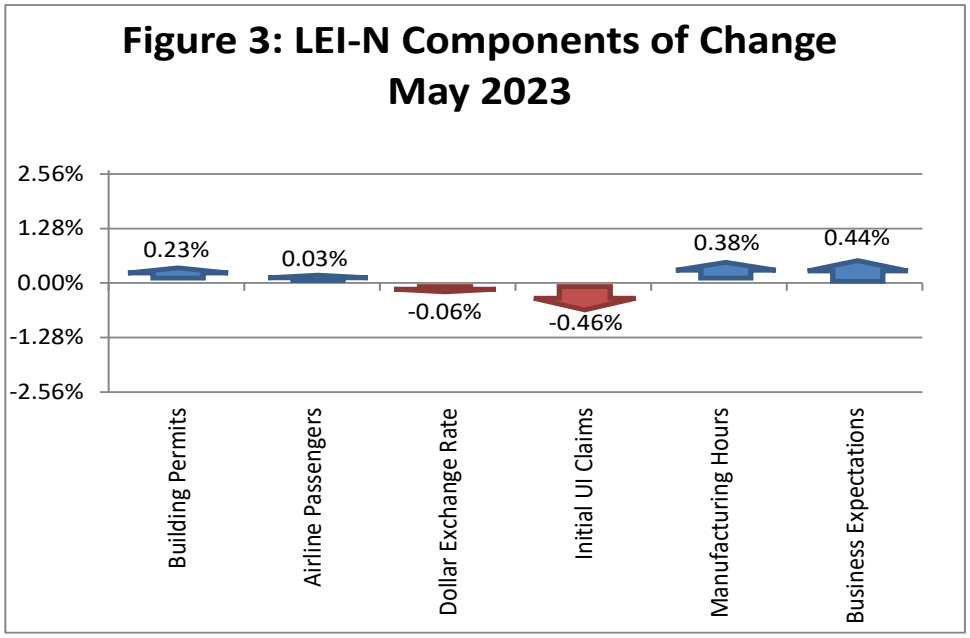


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during May. The change in the LEI–N is the weighted average of changes in each component (see page 5). There was a significant improvement in three leading indicator components. Business expectations were positive. Respondents to the May *Survey of Nebraska Business* reported plans to increase sales and employment over the next six months. There also was an increase in manufacturing hours worked, a sign of strength in the goods-producing sector. Finally, building permits for single-family homes increased in May on a seasonally adjusted basis. Among declining components, there was an increase in initial claims for unemployment insurance, suggesting there may be some weakening in the Nebraska labor market.



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 rose by 0.08% during May 2023, as seen in Figure 4.

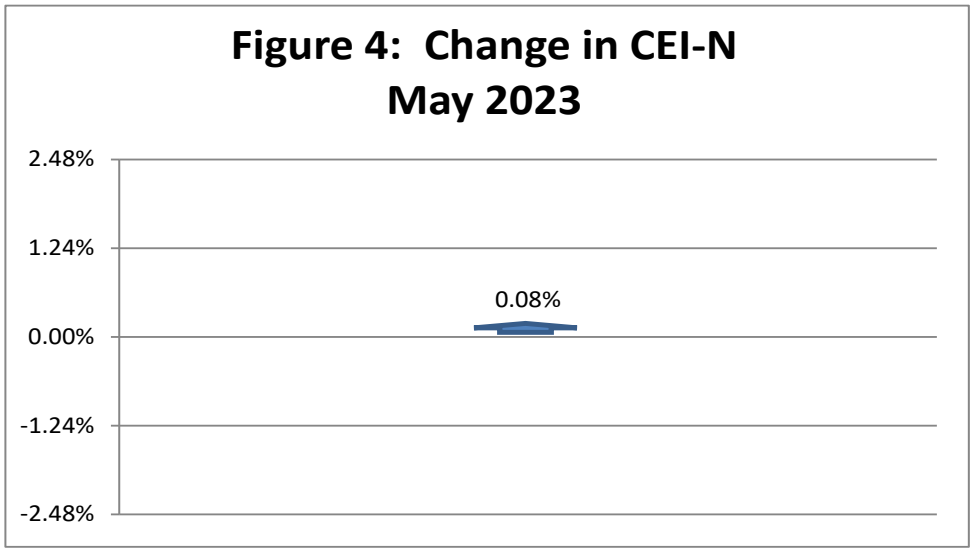
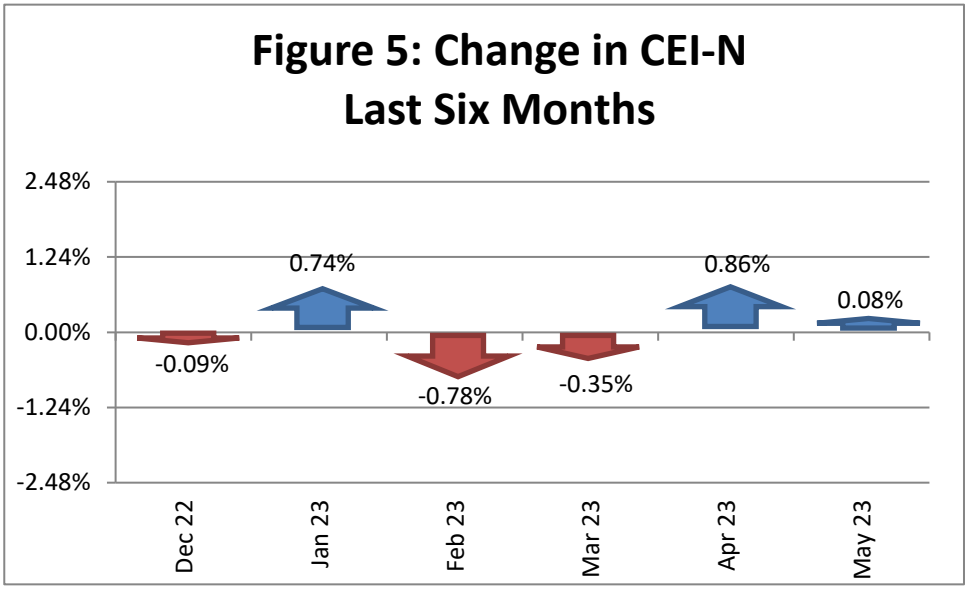


Figure 5 shows the change in the CEI-N over the last 6 months. The Nebraska economy has been up modestly over the period. Increases during select months, including April and May, were slightly larger than the declines in other months.



Two components of the CEI-N improved during May. Electricity sales grew after adjusting for weather and other seasonal factors. There also was a modest increase in agricultural commodity prices. Among declining components, business conditions were negative. Respondents to the May *Survey of Nebraska Business* reported a decrease in both sales and employment in recent months. Further, there was a modest decline in real private wages, as real hourly wages fell in May after a sharp April increase. 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.*

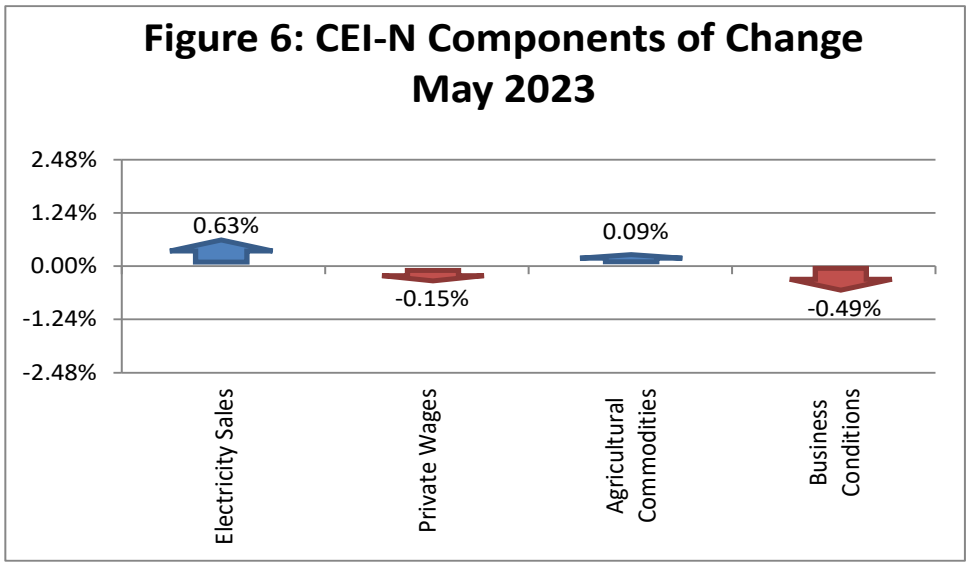
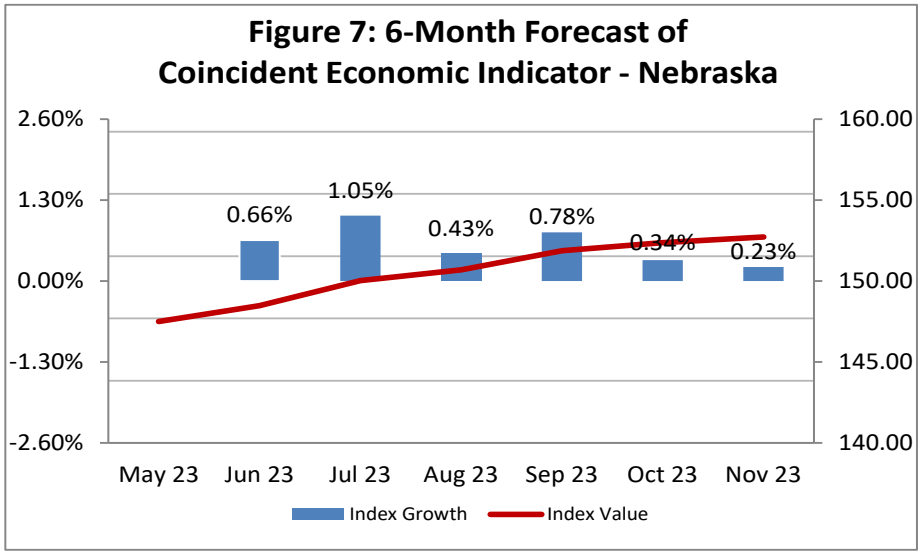


Figure 7 shows a forecast for the CEI-N over the next six months. The forecast calls for economic growth in Nebraska through November of 2023, although the rate of growth may slow in the fourth quarter. This expectation is consistent with the recent changes in the LEI-N reported in Figure 2.



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.

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	13.8610	0.0721	0.0368	Electricity Sales	4.5347	0.2205	0.1758
Airline Passengers	6.2347	0.1604	0.0818	Private Wages	2.0188	0.4953	0.3948
Exchange Rate	1.1426	0.8752	0.4465	Agricultural Commodities	3.5605	0.2809	0.2238
Initial UI Claims	20.1074	0.0497	0.0254	Survey Business Conditions	3.8759	0.2580	0.2056
Manufacturing Hours	1.7722	0.5643	0.2879				
Survey Business Expectations	4.1960	0.2383	0.1216				

Tables 2 and 3 show the calculation for the change in LEI-N and CEI-N between April and May 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	67.28	55.47	11.82	0.04	0.43	0.23%
Airline Passengers	113.86	113.27	0.59	0.08	0.05	0.03%
U.S. Dollar Exchange Rate (Inverse)	78.43	78.68	-0.26	0.45	-0.12	-0.06%
Initial Unemployment Insurance Claims (Inverse)	219.39	253.00	-33.61	0.03	-0.85	-0.46%
Manufacturing Hours	94.01	91.52	2.48	0.29	0.72	0.38%
Survey Business Expectations[1]	56.77		6.77	0.12	0.82	0.44%
Total (weighted average)	187.53	186.48			1.05	0.56%

[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	172.91	167.64	5.27	0.18	0.93	0.63%
Private Wage	115.18	115.73	-0.55	0.39	-0.22	-0.15%
Agricultural Commodities	184.48	183.85	0.62	0.22	0.14	0.09%
Survey Business Conditions[1]	46.48		-3.52	0.21	-0.72	-0.49%
Total (weighted average)	147.50	147.38			0.12	0.08%

[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 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.

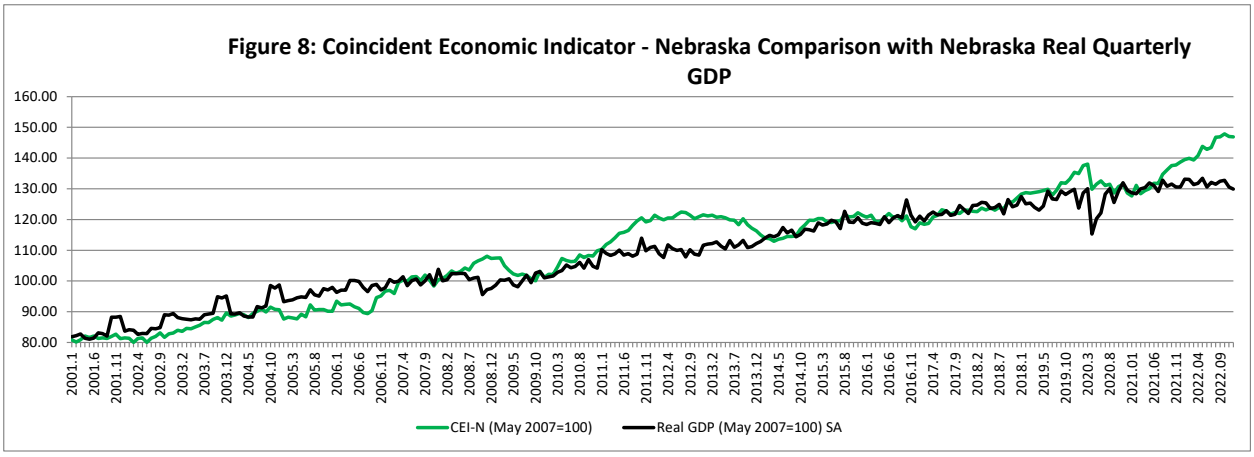


Figure 9 again shows the values for the CEI-N. It also graphs six-month forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months 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 0.91.