Nebraska Monthly Economic Indicators: August 2, 2023

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

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Summary: *The Leading Economic Indicator-Nebraska rose by just 0.06% in June 2023. The increase in the leading indicator, which is designed to predict economic growth six months into the future, suggests that the pace of economic growth will slow in Nebraska at the end of 2023. Three components of the leading economic indicator improved during June. Business expectations were positive. Respondents to the June Survey of Nebraska Business reported plans to increase employment over the next six months. There also was an increase in manufacturing hours worked and airline passenger enplanements, The Nebraska manufacturing sector benefits from higher food prices while the airline industry has grown due to pent-up demand for personal travel. Despite these pockets of strength, the Nebraska labor market has softened. Initial claims for unemployment insurance rose for the second consecutive month during June.*

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during June 2023 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by just 0.06%.

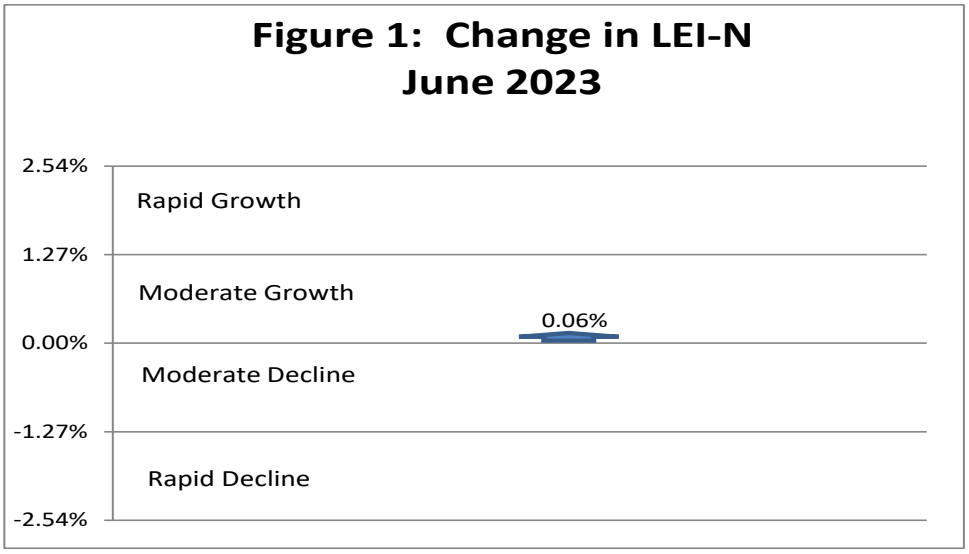


Figure 2 shows the change in the leading indicator over the last six months. The indicator has risen for six consecutive months, although the pace of growth has declined recently. This is consistent with continued but slowing economic growth in Nebraska.

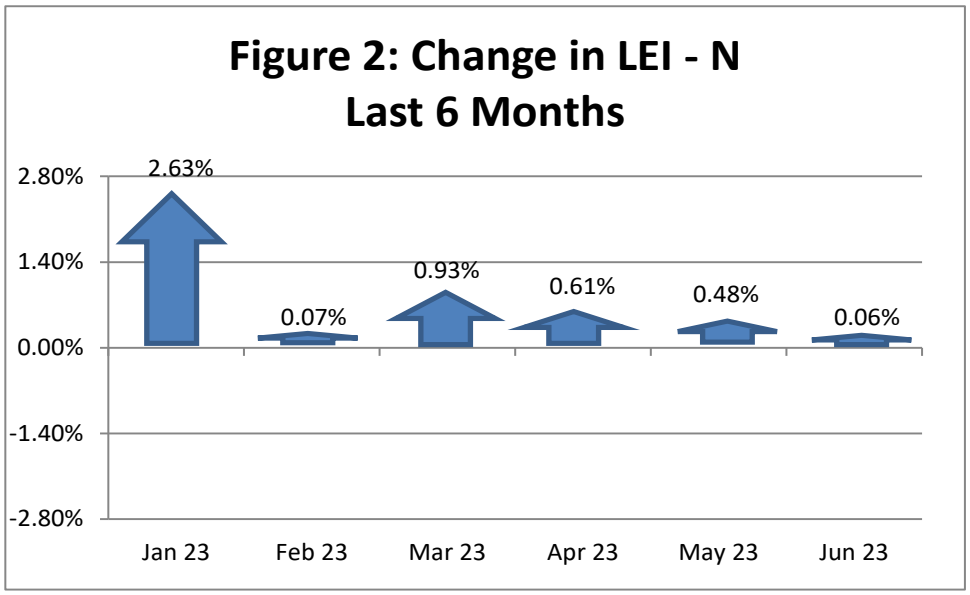
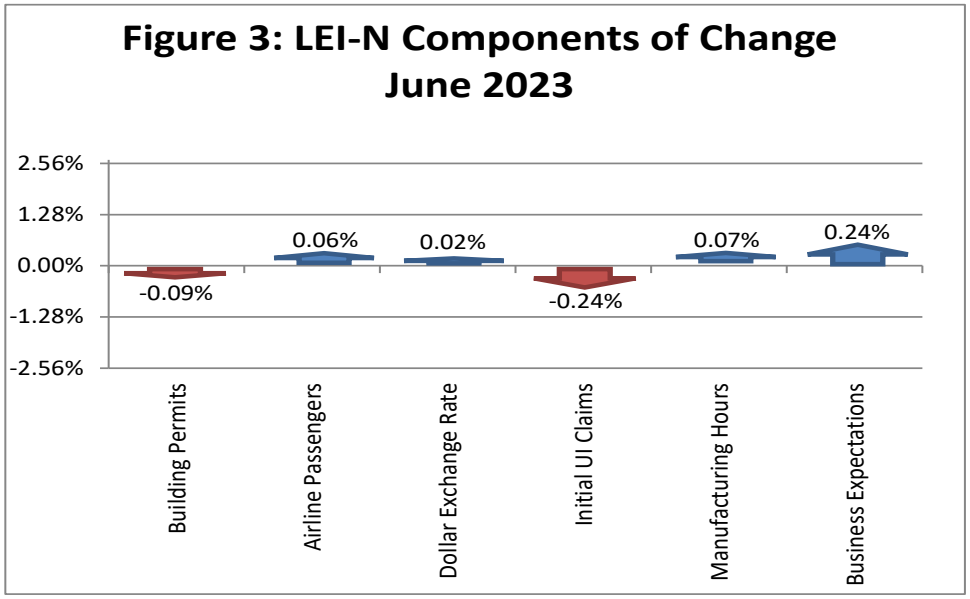


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during June. The change in the LEI–N is the weighted average of changes in each component (see page 5). There was an improvement in the three leading indicator components. Business expectations were positive. Respondents to the June *Survey of Nebraska Business* reported plans to increase employment over the next six months. There also was an increase in manufacturing hours worked and airline passenger enplanements. The Nebraska manufacturing industry benefits from high food prices and the airline industry is aided by pent-up demand for leisure travel. Despite these pockets of strength, labor market conditions are softening in Nebraska. Initial claims for unemployment insurance rose in June for the second consecutive month.



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 0.66% during June 2023, as seen in Figure 4.

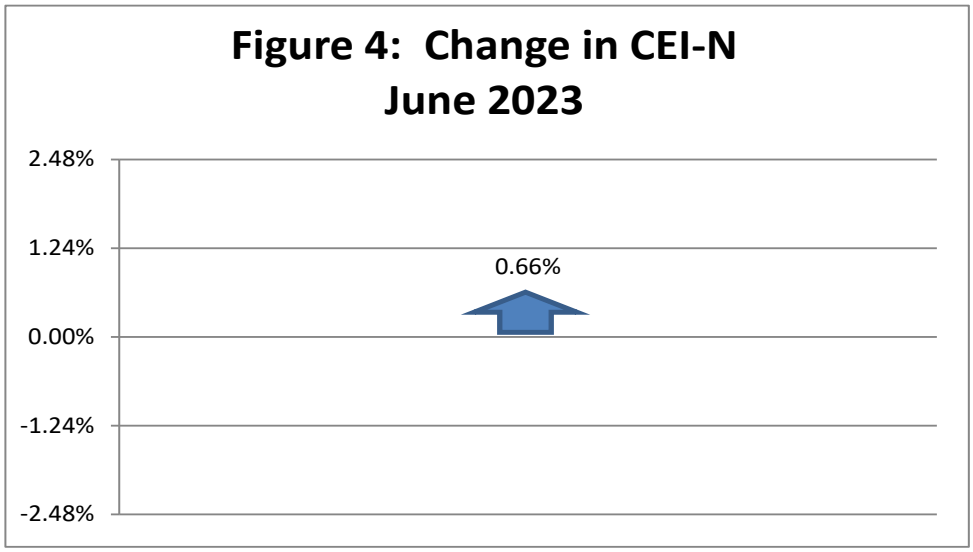
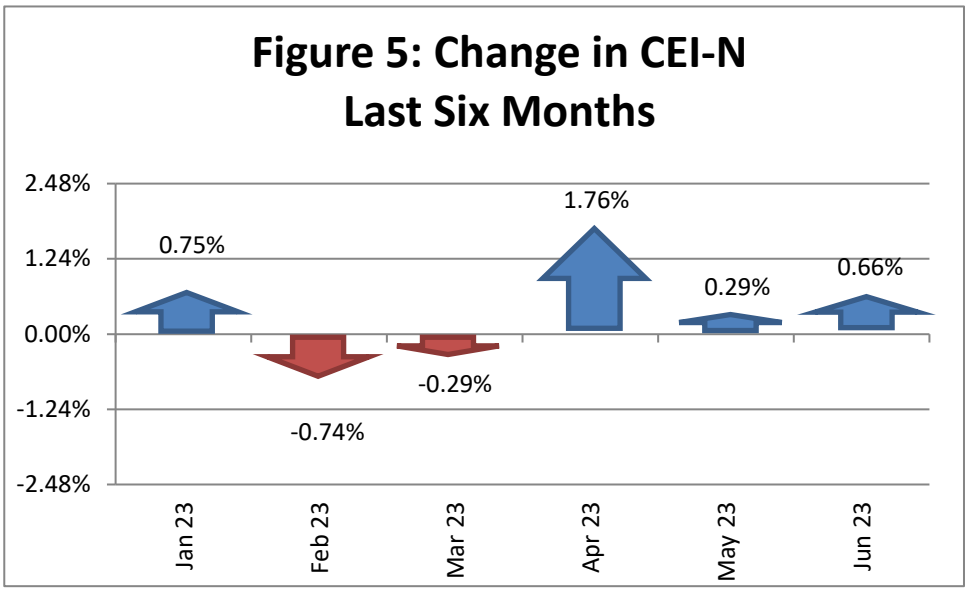


Figure 5 shows the change in the CEI-N over the last 6 months. The Nebraska economy did not grow during the first quarter of 2023 but grew at a solid pace in the second quarter.



Three components of the CEI-N improved during June. Electricity sales grew after adjusting for weather and other seasonal factors. There also was an increase in agricultural commodity prices as well as real private wages. Real private wages grew due to an increase in both employment and average hours worked per week. Business conditions were a negative component. Respondents to the June *Survey of Nebraska Business* reported a decrease in sales in recent months. 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.*

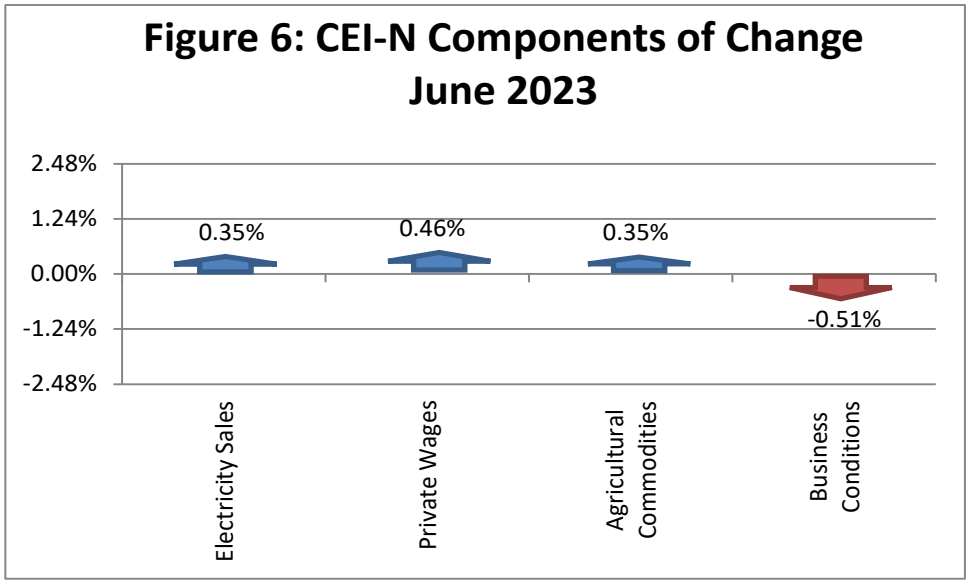
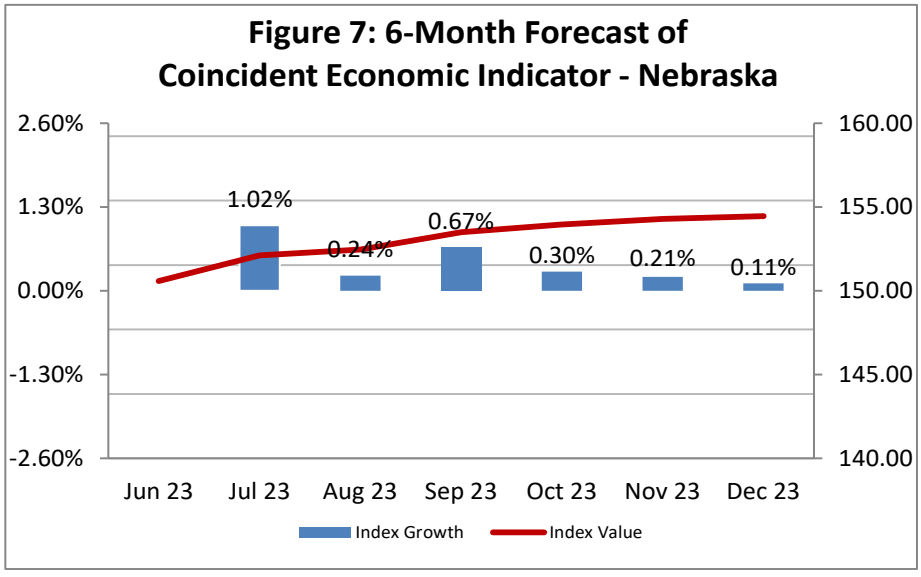


Figure 7 shows a forecast for the CEI-N over the next six months. The forecast calls for economic growth in Nebraska in the second half of 2023, but the rate of growth will slow in the fourth quarter. This expectation is consistent with the recent changes in the LEI-N reported in Figure 2.



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	13.8634	0.0721	0.0367	Electricity Sales	4.5339	0.2206	0.1754
Airline Passengers	6.2096	0.1610	0.0820	Private Wages	2.0184	0.4954	0.3940
Exchange Rate	1.1406	0.8768	0.4463	Agricultural Commodities	3.5322	0.2831	0.2251
Initial UI Claims	20.1148	0.0497	0.0253	Survey Business Conditions	3.8702	0.2584	0.2055
Manufacturing Hours	1.7666	0.5661	0.2882				
Survey Business Expectations	4.1885	0.2387	0.1215				

Tables 2 and 3 show the calculation for the change in LEI-N and CEI-N between May and June 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	65.71	70.42	-4.71	0.04	-0.17	-0.09%
Airline Passengers	114.29	113.01	1.28	0.08	0.11	0.06%
U.S. Dollar Exchange Rate (Inverse)	78.51	78.43	0.09	0.45	0.04	0.02%
Initial Unemployment Insurance Claims (Inverse)	185.13	202.51	-17.38	0.03	-0.44	-0.24%
Manufacturing Hours	94.33	93.86	0.47	0.29	0.14	0.07%
Survey Business Expectations[1]	53.65		3.65	0.12	0.44	0.24%
Total (weighted average)	187.18	187.07			0.11	0.06%

[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	185.71	182.71	3.00	0.18	0.53	0.35%
Private Wage	116.77	115.01	1.76	0.39	0.69	0.46%
Agricultural Commodities	188.40	186.07	2.33	0.23	0.53	0.35%
Survey Business Conditions[1]	46.28		-3.72	0.21	-0.76	-0.51%
Total (weighted average)	150.58	149.60			0.98	0.66%

[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.

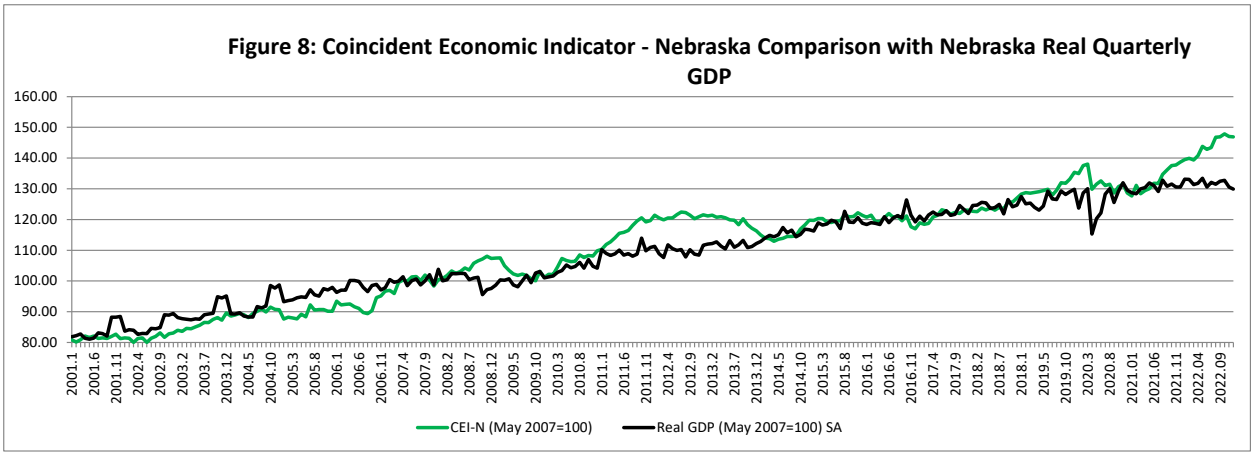


Figure 9 again shows the values for the CEI-N. It also graphs six-month forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months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