

Nebraska Monthly Economic Indicators: October 26, 2022

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

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Summary: The LEI-N rose by 0.34% in September 2022, after a small decline in July and August. The leading indicator is designed to predict economic growth six months in the future. A flat value for the indicator over the last three months signals a stagnant economy in Nebraska at the end of 2022 and the beginning of 2023. Three components of the leading indicator improved during September. There was an increase in hours worked in the manufacturing industry. There was also a decline in initial claims for unemployment insurance and respondents to the September Survey of Nebraska Business reported plans to increase employment over the next six months. One headwind for the Nebraska economy is a rising U.S. Dollar. The value of the dollar rose in September, creating challenges for Nebraska businesses that compete in international markets.

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during September 2022 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose modestly by 0.34%.

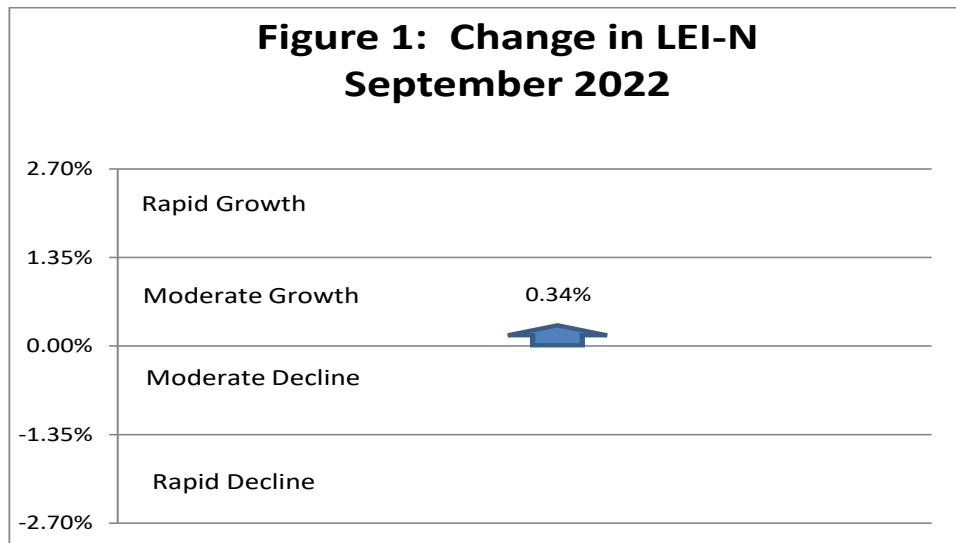


Figure 2 shows the change in the leading indicator over the last six months. The leading indicator is essentially flat over the last three months and improved little from April through June. This pattern is consistent with a stagnant economy in Nebraska over the next six months.

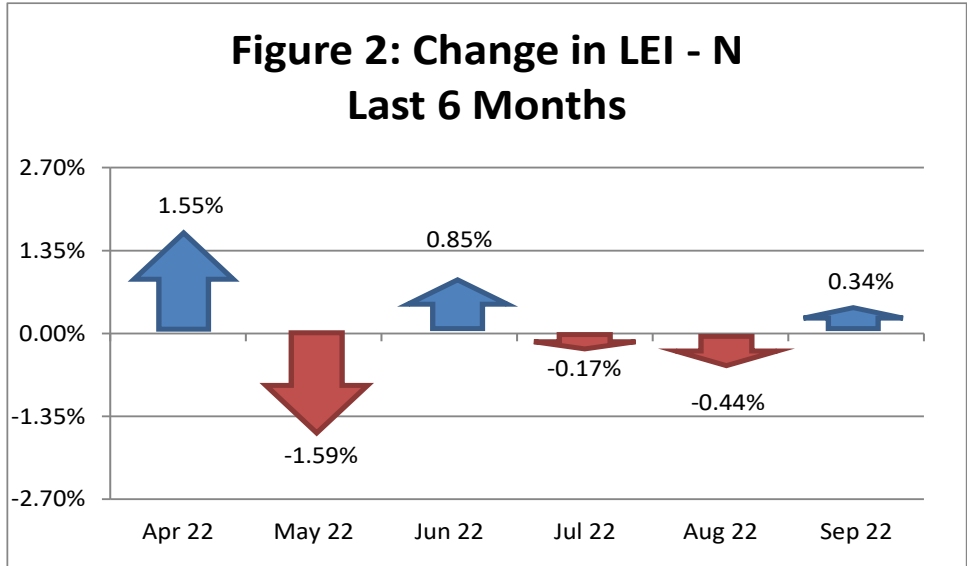
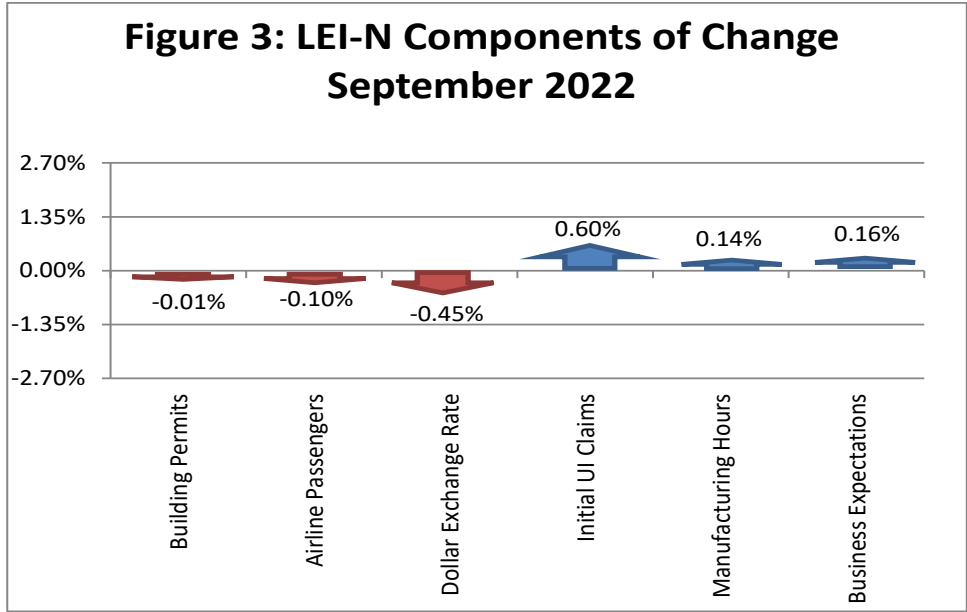


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during September. The change in the LEI–N is the weighted average of changes in each component (see page 5). Three indicator components improved during September. There was an increase in hours worked in the manufacturing industry. Labor market conditions also improved. There was a decline in initial claims for unemployment insurance and respondents to the September *Survey of Nebraska Business* reported plans to increase employment over the next six months. One concern was the sharp increase in the value of the U.S. dollar during September. A higher-valued dollar creates challenges for businesses, which 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 rose by 0.12% during September 2022, as seen in Figure 4.

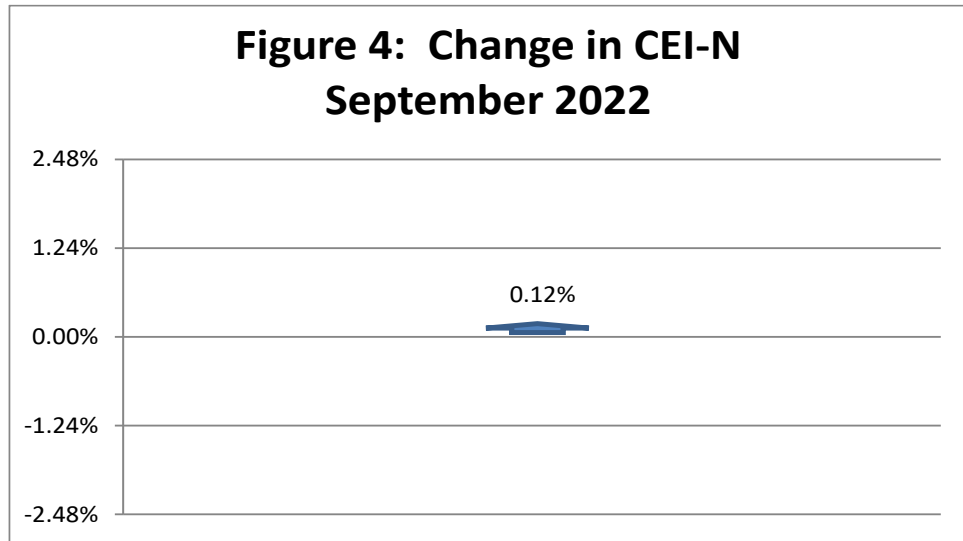
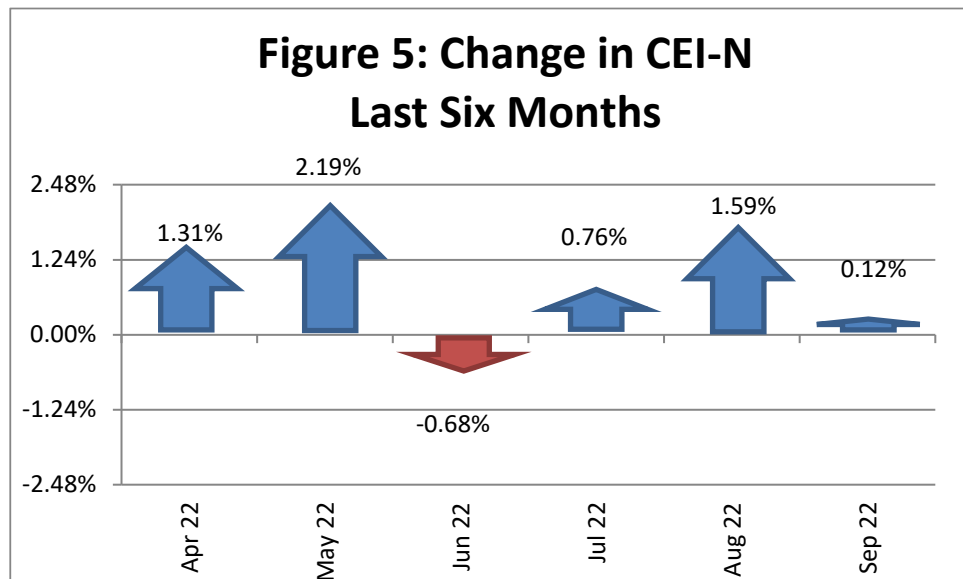


Figure 5 shows the change in the CEI-N over the last 6 months. While growth was modest in September, the Nebraska economy expanded rapidly during the April through August period.



Two components of the CEI-N rose during September. Private wages expanded faster than inflation during September, leading to a modest increase in real wages. There also was an increase in agricultural commodity prices. In terms of declining components, business conditions were negative according to respondents to the September *Survey of Nebraska Business*. Electricity sales also decreased in September after accounting for weather and seasonality. 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*.

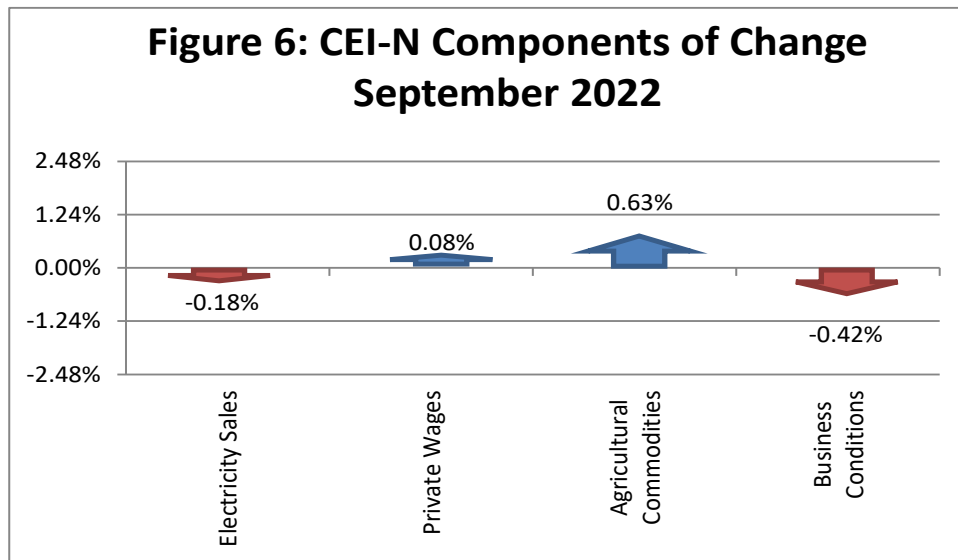
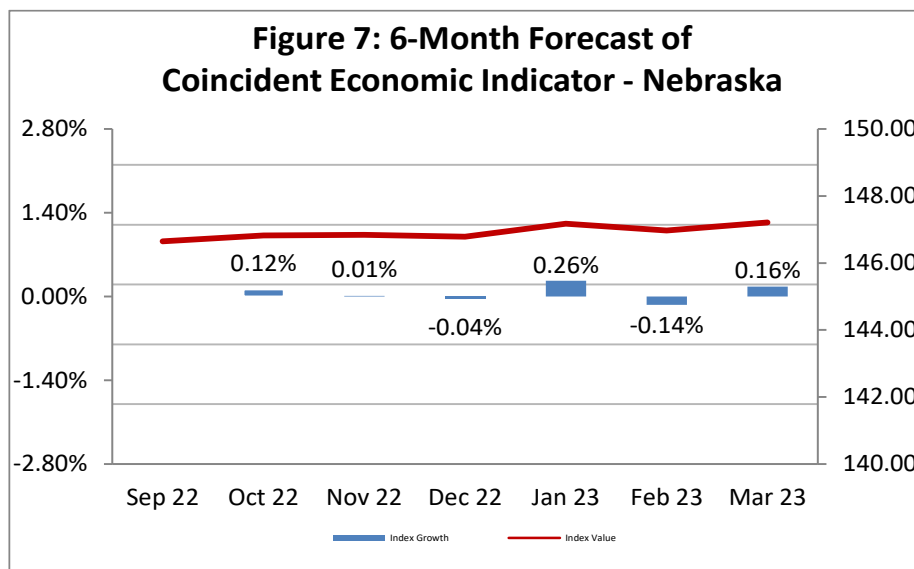


Figure 7 shows a forecast for the CEI-N over the next six months. The forecast calls for a stagnant Nebraska economy at the end of 2022 and the beginning of 2023. This expectation is consistent with the recent changes in the LEI-N reported in Figure 2.



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.

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	12.9649	0.0771	0.0388	Electricity Sales	4.5604	0.2193	0.1768
Airline Passengers	6.2738	0.1594	0.0802	Private Wages	2.0633	0.4847	0.3909
Exchange Rate	1.1464	0.8723	0.4389	Agricultural Commodities	3.5673	0.2803	0.2261
Initial UI Claims	14.3909	0.0695	0.0350	Survey Business Conditions	3.9112	0.2557	0.2062
Manufacturing Hours	1.7454	0.5729	0.2883				
Survey Business Expectations	4.2331	0.2362	0.1189				

Tables 2 and 3 show the calculation for the change in LEI-N and CEI-N between August and September 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.

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	69.32	69.86	-0.54	0.04	-0.02	-0.01%
Airline Passengers	95.25	97.47	-2.22	0.08	-0.18	-0.10%
U.S. Dollar Exchange Rate (Inverse)	75.11	76.94	-1.84	0.44	-0.81	-0.45%
Initial Unemployment Insurance Claims (Inverse)	221.96	191.49	30.47	0.03	1.07	0.60%
Manufacturing Hours	88.13	87.25	0.89	0.29	0.26	0.14%
Survey Business Expectations ¹	52.42		2.42	0.12	0.29	0.16%
Total (weighted average)	178.49	177.88			0.60	0.34%

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	169.96	171.43	-1.46	0.18	-0.26	-0.18%
Private Wage	112.21	111.90	0.31	0.39	0.12	0.08%
Agricultural Commodities	178.05	173.97	4.09	0.23	0.92	0.63%
Survey Business Conditions ¹	47.04		-2.96	0.21	-0.61	-0.42%
Total (weighted average)	146.82	146.65			0.18	0.12%

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 first quarter of 2021, using data provided by the Bureau of Economic Analysis, U.S. Department of Commerce. CEI-N closely tracks Nebraska's real GDP for the period. The correlation coefficient between the two-pictured series is 0.96.

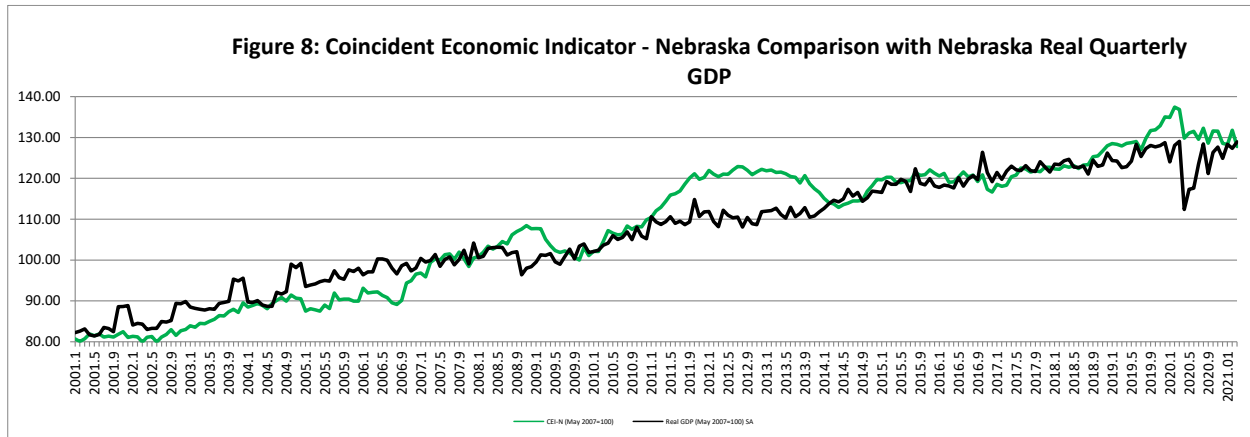


Figure 9 again shows the values for the CEI-N. It also graphs six-month forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months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

