Nebraska Monthly Economic Indicators: March 30, 2022

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

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Summary: *The LEI-N rose by 2.41% during February 2022. The increase in the leading indicator, which is designed to predict economic activity six months in the future, signals continued economic growth in Nebraska through August 2022. The indicator improved for two primary reasons. First, respondents to the February Survey of Nebraska Business reported plans to increase sales and employment. Second, initial claims for unemployment insurance fell sharply during the month. Airline passenger counts and manufacturing hours-worked also rose during February, while there was a modest increase in building permits for single-family homes.*

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during February 2022 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 2.41% during February.

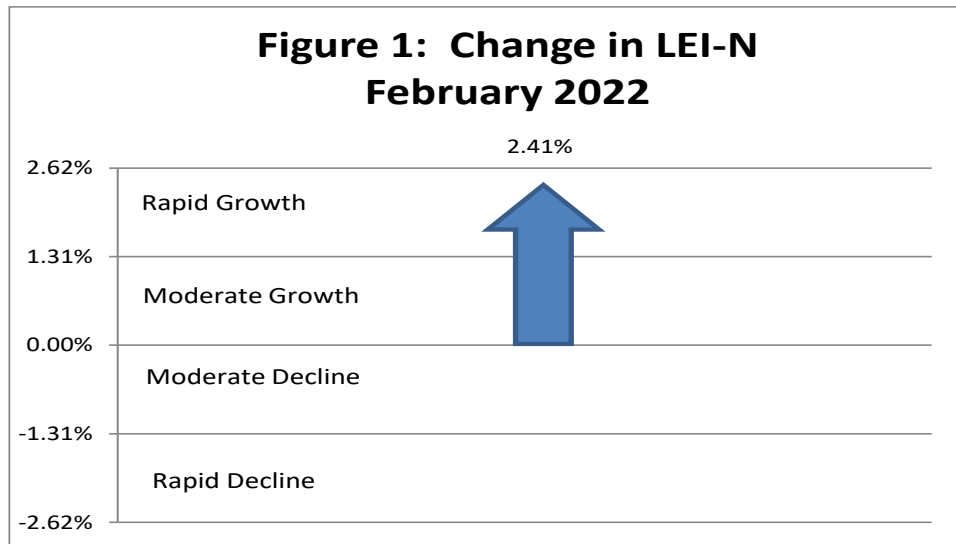

Figure 1: Change in LEI-N February 2022

Figure 2 shows the change in the leading indicator over the last six months. The leading indicator has risen four of the last six months. This pattern suggests that the Nebraska economy will continue to grow through mid-2022.
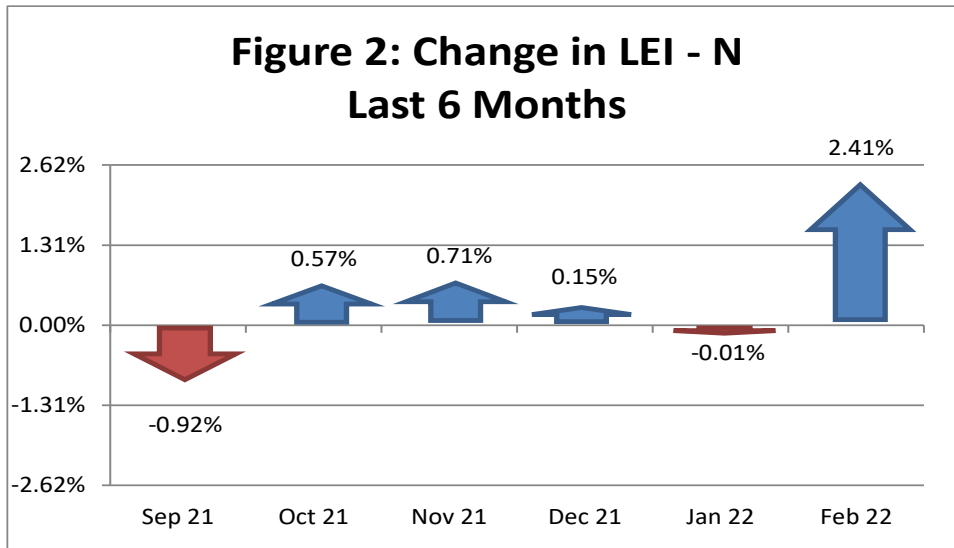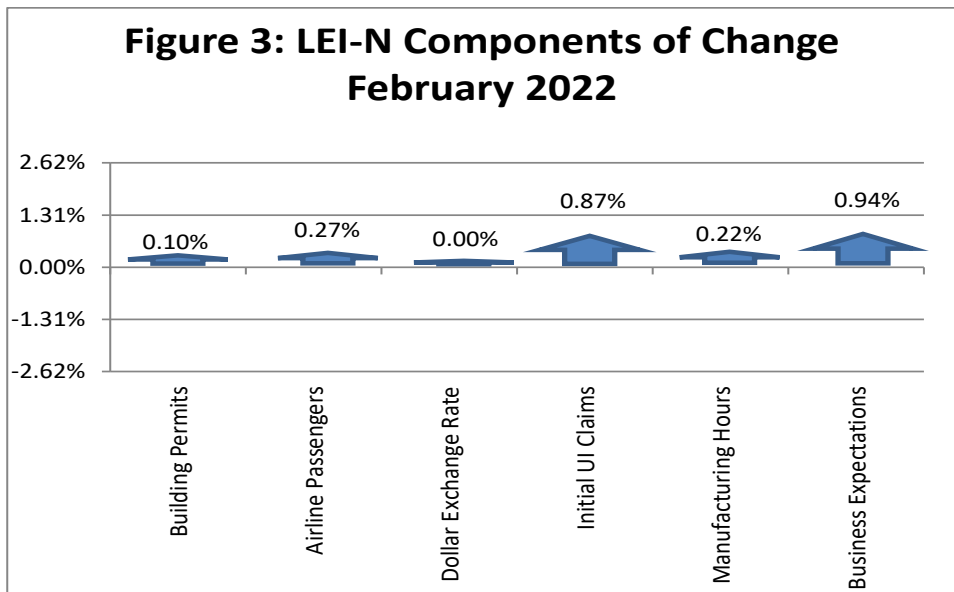
Figure 2: Change in LEI - N
Last 6 Months

	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22
	-0.92%	0.57%	0.71%	0.15%	-0.01%	2.41%

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). The February rise in the LEI-N was primarily due to two components. The first was business expectations. In particular, respondents to the February *Survey of Nebraska Business* reported plans to increase employment and sales over the next six months. There also was another decline in initial claims for unemployment insurance, suggesting continued strength in Nebraska's labor market. Airline passenger counts and manufacturing hours-worked also rose during February. There also was a modest increase in building permits for single-family homes on a seasonally adjusted basis.

Figure 3: LEI-N Components of Change
February 2022

Building Permits	Airline Passengers	Dollar Exchange Rate	Initial UI Claims	Manufacturing Hours	Business Expectations
0.10%	0.27%	0.00%	0.87%	0.22%	0.94%

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 0.31% during February 2022, as seen in Figure 4.
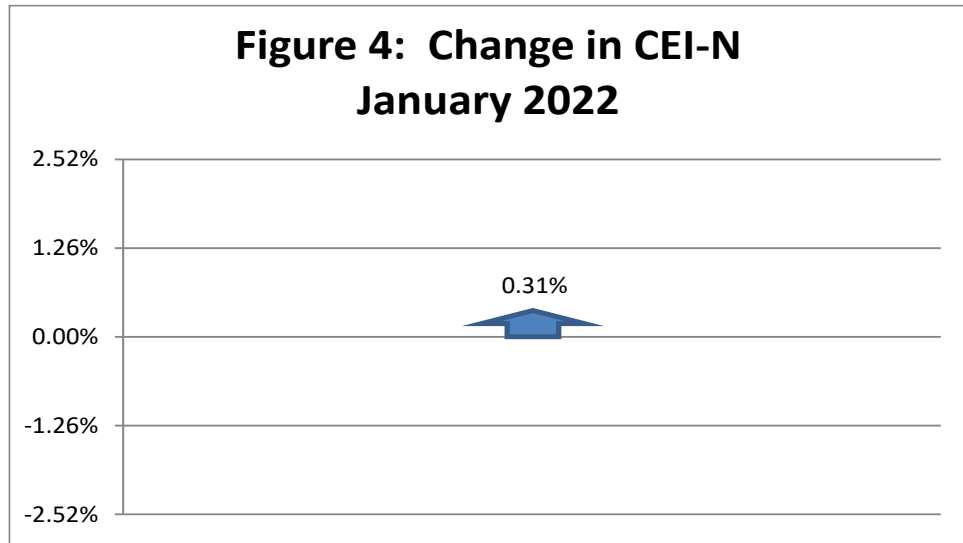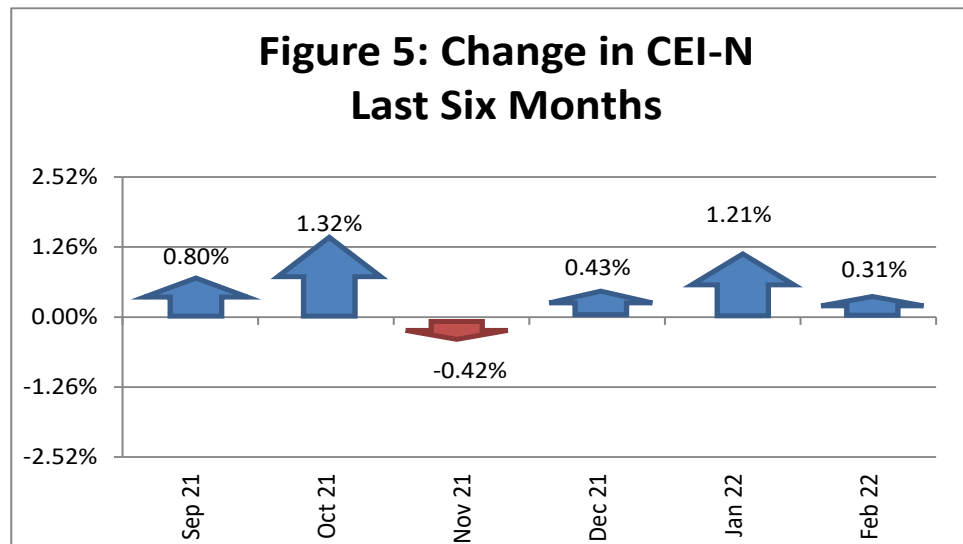

Figure 4: Change in CEI-N January 2022

Figure 5 shows the change in the CEI-N over the last 6 months. The Nebraska economy has grown during five of the last six months, including rapid growth in October 2021.

Figure 5: Change in CEI-N Last Six Months

One component of the CEI-N, electricity prices, rose during February. There were three falling components. First, there was a modest decline in real private wages, as the rate of inflation exceeded hourly wage growth. Second, there was a modest drop in agricultural commodity prices. Finally, business conditions deteriorated some during February according to respondents to the monthly 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 6: CEI-N Components of Change February 2022

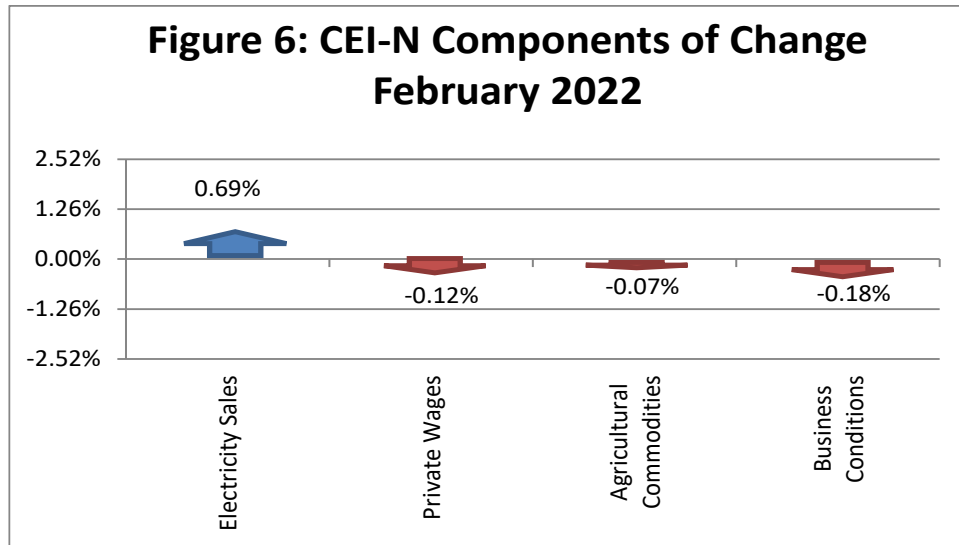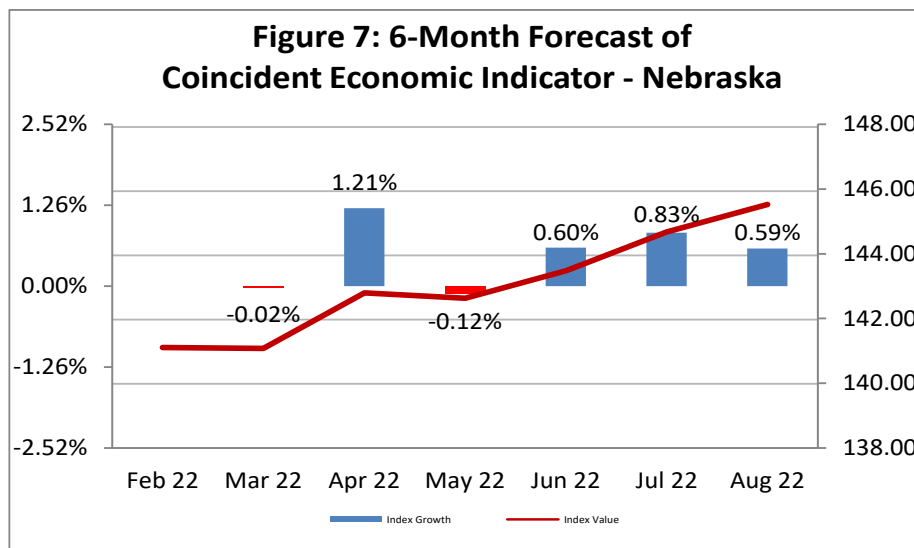|	Electricity Sales	Private Wages	Agricultural Commodities	Business Conditions
	0.69%	-0.12%	-0.07%	-0.18%

Figure 7 shows a forecast for the CEI-N over the next six months. The forecast calls for modest growth in the first months of 2022 and consistent growth later in the year. In particular, economic growth will be moderate in the summer of 2022. These expectations are consistent with the recent changes in the LEI-N reported in Figure 2.

Figure 7: 6-Month Forecast of Coincident Economic Indicator - Nebraska

	Feb 22	Mar 22	Apr 22	May 22	Jun 22	Jul 22	Aug 22
Index Growth		-0.02%	1.21%	-0.12%	0.60%	0.83%	0.59%

Legend: Index Growth (bar), Index Value (line)

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	13.0898	0.0764	0.0388	Electricity Sales	4.5980	0.2175	0.1779
Airline Passengers	6.1948	0.1614	0.0819	Private Wages	2.1167	0.4724	0.3865
Exchange Rate	1.1475	0.8715	0.4424	Agricultural Commodities	3.5954	0.2781	0.2275
Initial UI Claims	19.1990	0.0521	0.0264	Survey Business Conditions	3.9329	0.2543	0.2080
Manufacturing Hours	1.7432	0.5737	0.2912				
Survey Business Expectations	4.2598	0.2348	0.1192				

Tables 2 and 3 show the calculation for the change in LEI-N and CEI-N between January and February 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	85.73	81.42	4.31	0.04	0.17	0.10%
Airline Passengers	88.24	82.62	5.62	0.08	0.46	0.27%
U.S. Dollar Exchange Rate (Inverse)	81.36	81.34	0.02	0.44	0.01	0.00%
Initial Unemployment Insurance Claims (Inverse)	210.88	154.57	56.31	0.03	1.49	0.87%
Manufacturing Hours	86.87	85.60	1.27	0.29	0.37	0.22%
Survey Business Expectations[1]	63.48		13.48	0.12	1.61	0.94%
Total (weighted average)	174.44	170.34			4.10	2.41%

[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	169.51	164.03	5.49	0.18	0.98	0.69%
Private Wage	116.72	117.17	-0.45	0.39	-0.17	-0.12%
Agricultural Commodities	150.45	150.92	-0.46	0.23	-0.10	-0.07%
Survey Business Conditions[1]	48.77		-1.23	0.21	-0.26	-0.18%
Total (weighted average)	141.11	140.67			0.44	0.31%

[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 for 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.

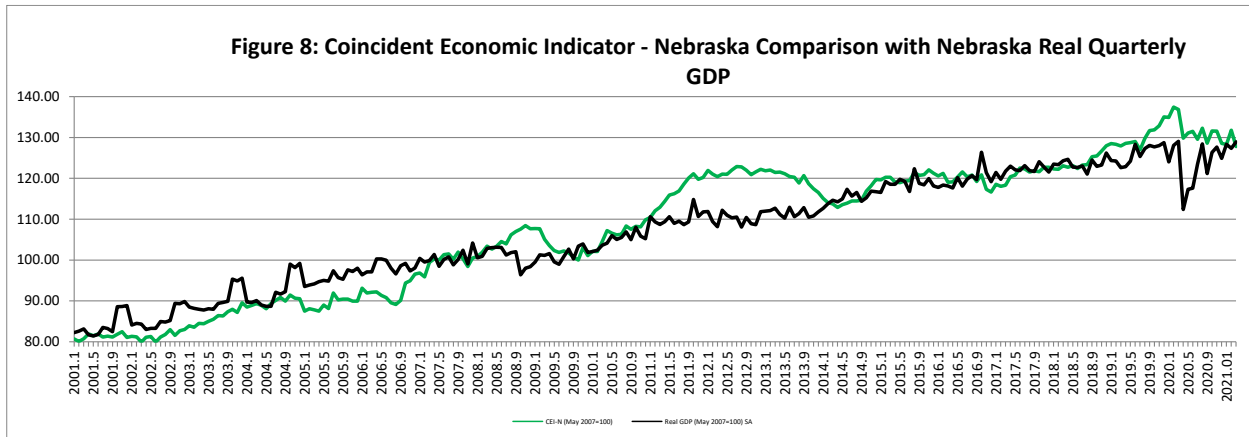Figure 8: Coincident Economic Indicator - Nebraska Comparison with Nebraska Real Quarterly GDP

Figure 9 again shows the values for the CEI-N. It also graphs 6-months 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 0.88.

Figure 9: 6-Month Forward Value of Leading Economic Indicator - Nebraska Comparison with Coincident Economic Indicator - Nebraska