Nebraska Monthly Economic Indicators: February 2, 2022

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

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Summary: *The LEI-N rose by 0.73% during December 2021. The increase in the leading indicator, which is designed to predict economic activity six months in the future, signals moderate economic growth in Nebraska through June 2022. There were positive business expectations in December and an increase in building permits for single-family homes. Initial claims for unemployment insurance also fell during the month. Among declining indicators, there was a drop in manufacturing hours worked and airline passenger counts during December.*

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during December 2021 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 0.73% during December.

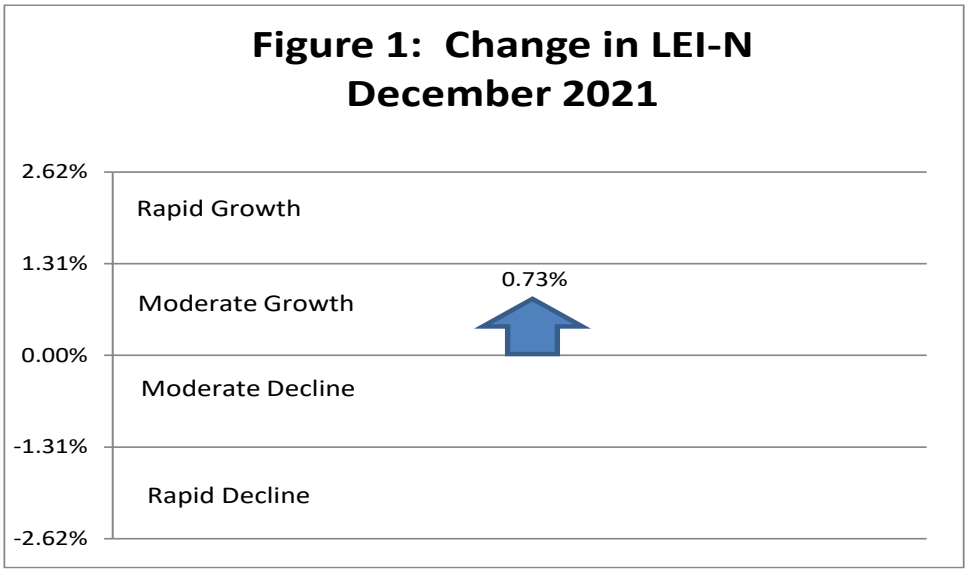


Figure 2 shows the change in the leading indicator over the last six months. The leading indicator was mixed during the July through September period but rose steadily in the 4th quarter. This pattern suggests that economic growth will slow significantly in Nebraska during the first few months of 2022 but will improve in the second quarter.

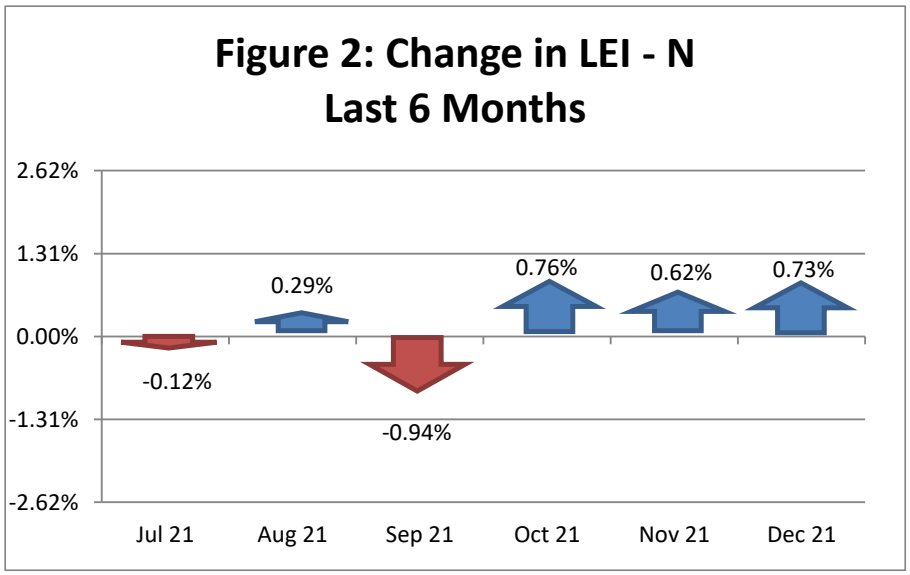
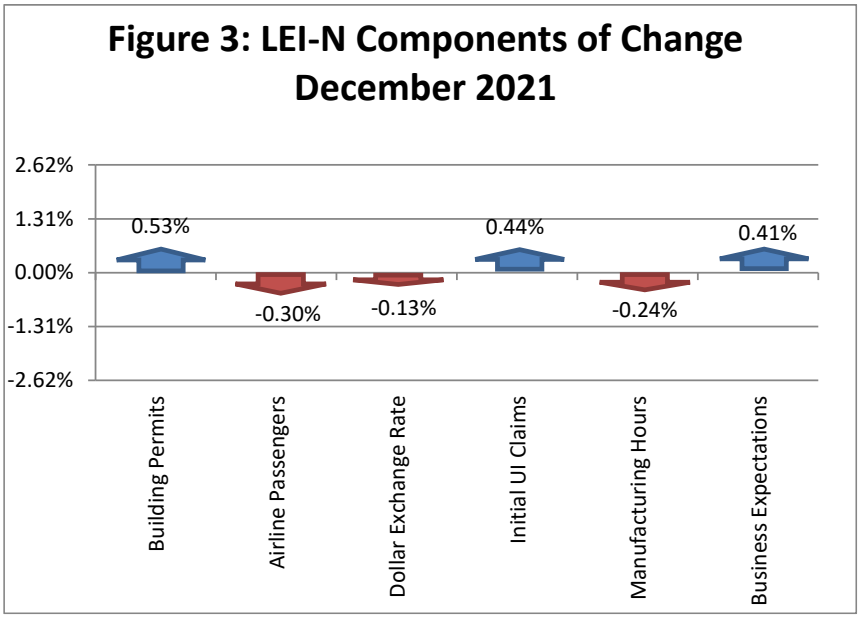


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during December. The change in the LEI–N is the weighted average of changes in each component (see page 5). Three components of the LEI-N improved during December. Building permits for single-family homes rose while business expectations were positive. In particular, respondents to the December *Survey of Nebraska Business* reported plans to increase employment and sales over the next six months. There also was a decline in initial claims for unemployment insurance. Among other components, airline enplanements and manufacturing hours worked fell in December. The value of the U.S. dollar also rose, creating challenges for 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 rose by 0.43% during December 2021, as seen in Figure 4.

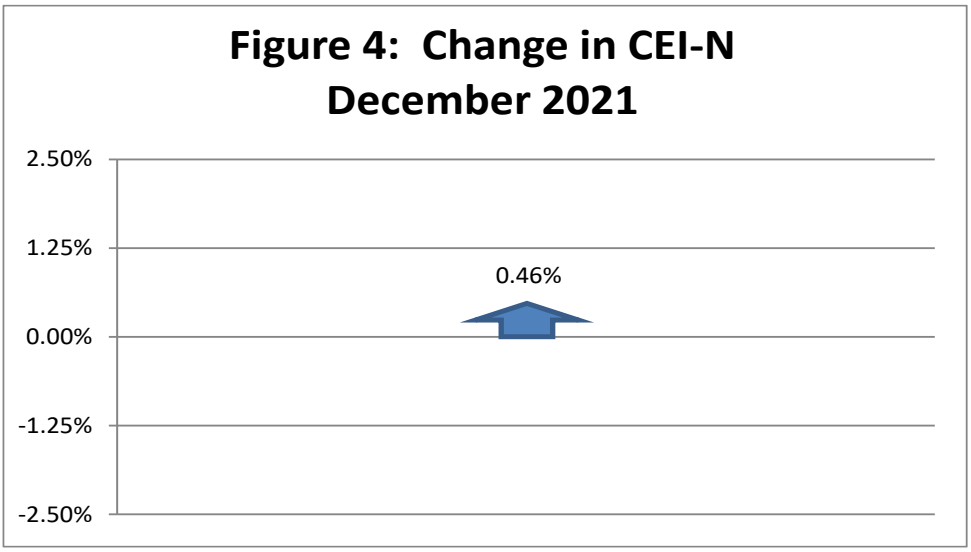
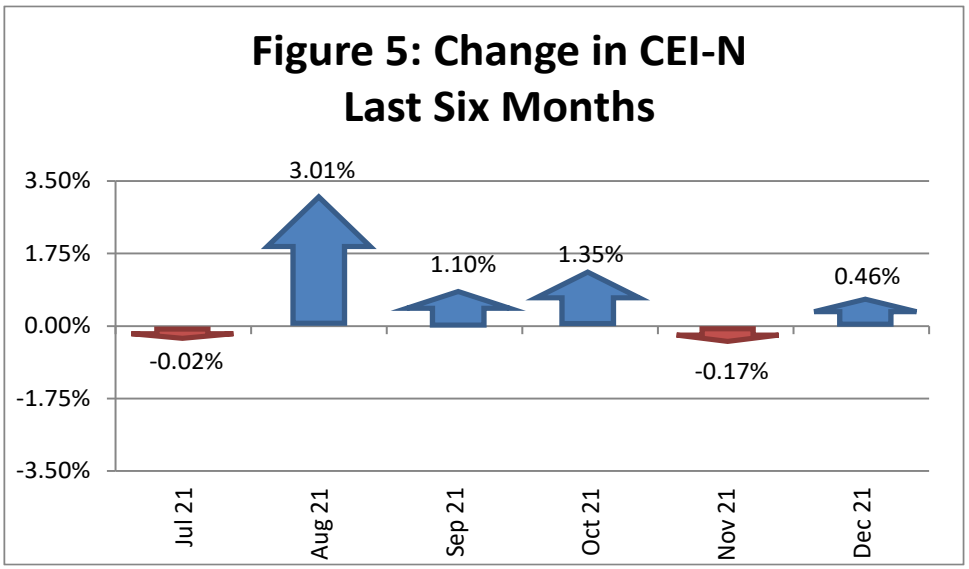


Figure 5 shows the change in the CEI-N over the last 6 months. The Nebraska economy grew rapidly from August to October of 2021, but growth slowed significantly at the end of the year.



Three components of the CEI-N rose during December. There was an increase in electricity sales after adjusting for weather and other seasonal conditions. Business conditions also were positive as respondents to the December *Survey of Nebraska Business* reported an increase in sales during recent months. Real private wages dropped during December due to a decline in employment. 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.*

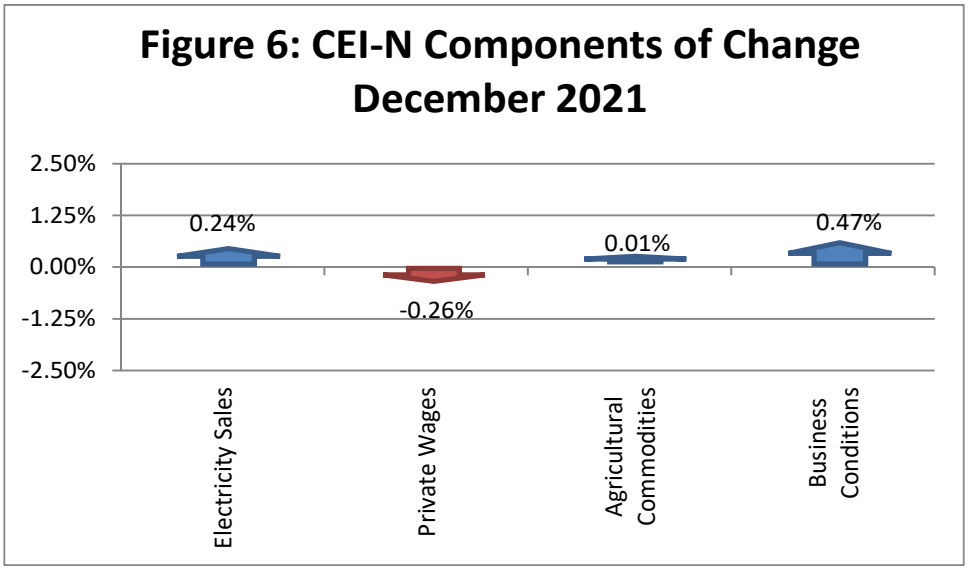
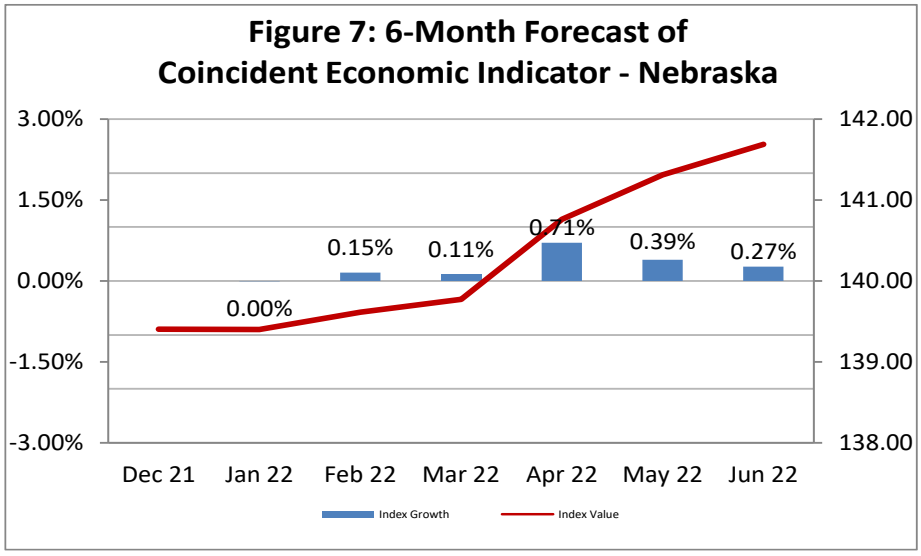


Figure 7 shows a forecast for the CEI-N over the next six months. The forecast calls for slow growth in the first quarter of 2022 before improving. Economic growth will be moderate in the second quarter. These expectations are consistent with the recent changes in the LEI-N reported in Figure 2.



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	13.1539	0.0760	0.0386	Electricity Sales	4.7381	0.2111	0.1717
Airline Passengers	6.3447	0.1576	0.0800	Private Wages	2.0561	0.4864	0.3957
Exchange Rate	1.1514	0.8685	0.4407	Agricultural Commodities	3.5943	0.2782	0.2264
Initial UI Claims	18.6570	0.0536	0.0272	Survey Business Conditions	3.9461	0.2534	0.2062
Manufacturing Hours	1.7307	0.5778	0.2932				
Survey Business Expectations	4.2170	0.2371	0.1203				

Tables 2 and 3 show the calculation for the change in LEI-N and CEI-N between November and December of 2021. 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	100.29	76.65	23.64	0.04	0.91	0.53%
Airline Passengers	83.88	90.25	-6.37	0.08	-0.51	-0.30%
U.S. Dollar Exchange Rate (Inverse)	80.87	81.37	-0.50	0.44	-0.22	-0.13%
Initial Unemployment Insurance Claims (Inverse)	129.34	101.44	27.91	0.03	0.76	0.44%
Manufacturing Hours	94.89	96.28	-1.39	0.29	-0.41	-0.24%
Survey Business Expectations[1]	55.90		5.90	0.12	0.71	0.41%
Total (weighted average)	172.62	171.38			1.24	0.73%

[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	169.82	167.90	1.92	0.17	0.33	0.24%
Private Wage	114.13	115.04	-0.91	0.40	-0.36	-0.26%
Agricultural Commodities	151.11	151.02	0.08	0.23	0.02	0.01%
Survey Business Conditions[1]	53.13		3.13	0.21	0.65	0.47%
Total (weighted average)	139.40	138.77			0.64	0.46%

[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.

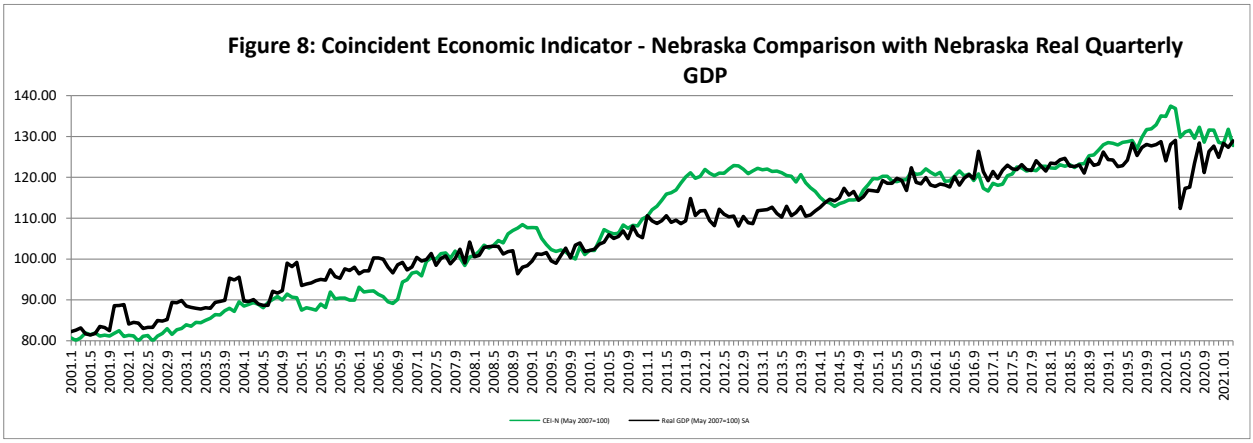


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months 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.