Nebraska Monthly Economic Indicators: December 21, 2021

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

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Summary: The LEI-N rose by 0.96% during November 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 during the second quarter of 2022. There were positive business expectations in November and an increase in manufacturing hours-worked and building permits for single-family homes. There also was a decline in initial claims for unemployment insurance. However, there was another increase in the value of the U.S. dollar during November. A higher dollar is challenging 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 November 2021 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 0.96% during November.
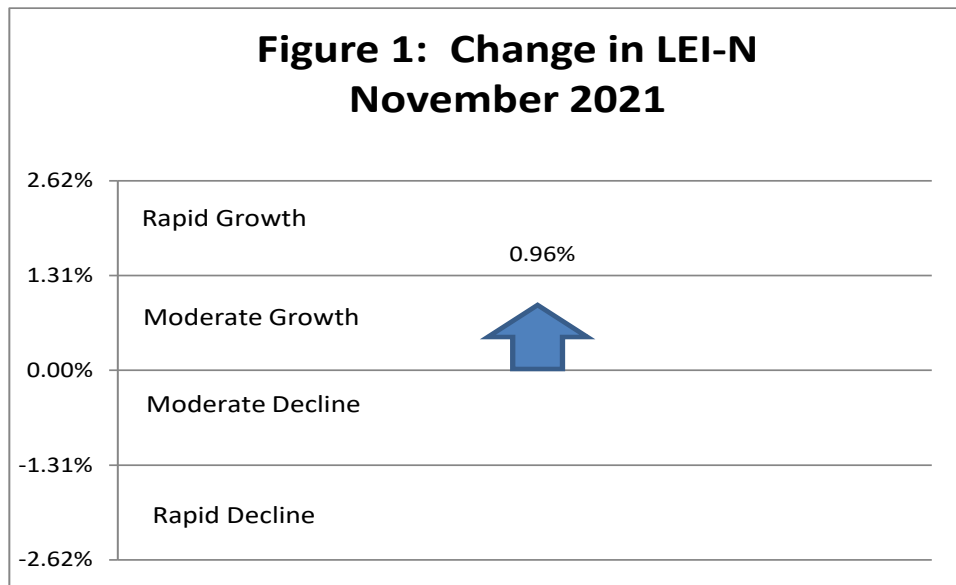

Figure 1: Change in LEI-N
November 2021

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

**Figure 2: Change in LEI - N
Last 6 Months**

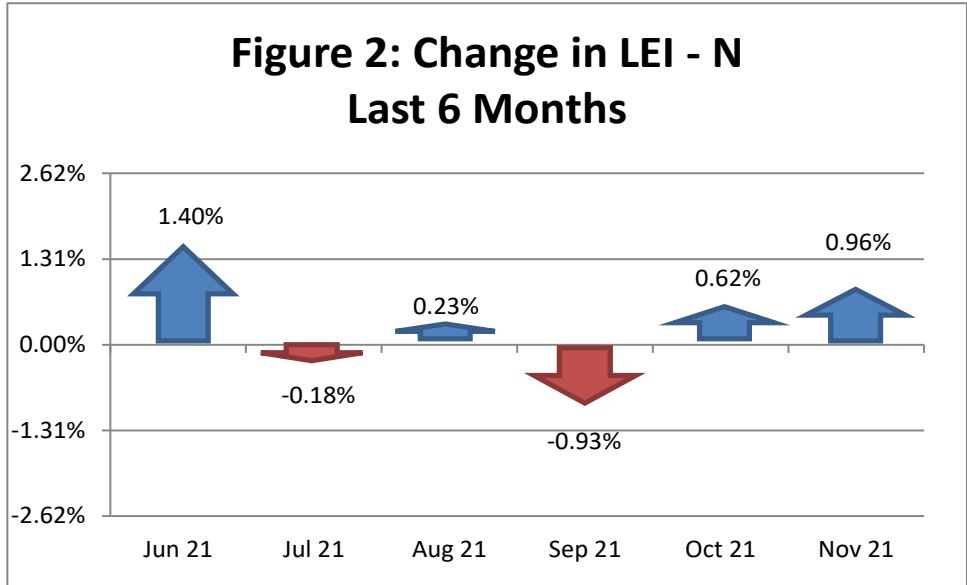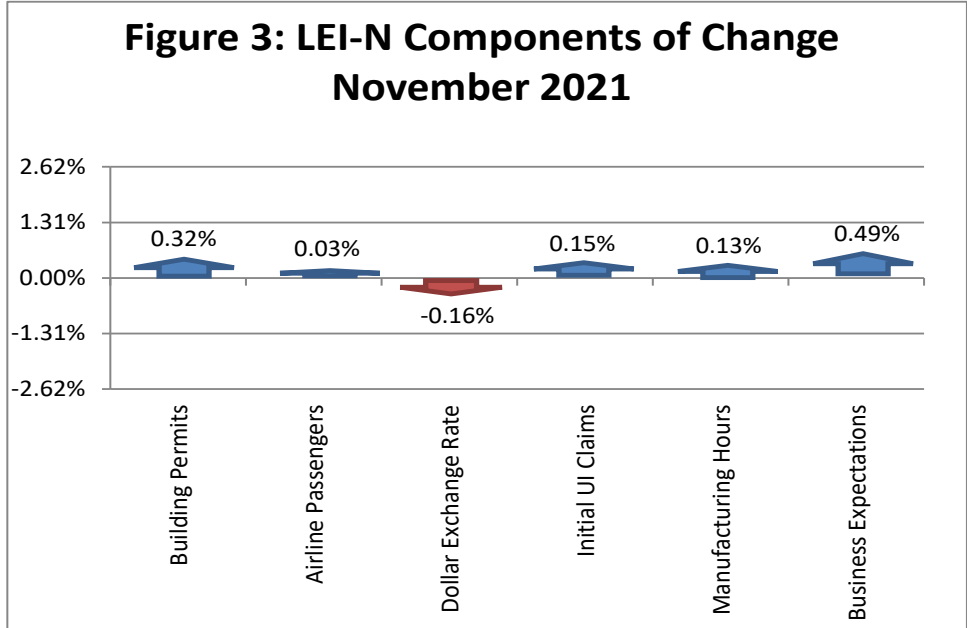|					
2.62%					
	1.40%				0.96%
1.31%				0.62%	
		0.23%			
0.00%					
	-0.18%				
-1.31%			-0.93%		
-2.62%					
Jun 21	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21

Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during November. The change in the LEI–N is the weighted average of changes in each component (see page 5). Five components of the LEI-N rose during November. Building permits for single-family homes and manufacturing hours worked rose while business expectations were positive. In particular, respondents to the November *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, the value of the U.S. dollar rose again in November. A higher U.S. dollar creates challenges for Nebraska businesses that compete in international markets.

**Figure 3: LEI-N Components of Change
November 2021**

2.62%					
1.31%					0.49%
0.32%	0.03%		0.15%	0.13%	
0.00%					
		-0.16%			
-1.31%					
-2.62%					
Building Permits	Airline Passengers	Dollar Exchange Rate	Initial UI Claims	Manufacturing Hours	Business Expectations

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 0.14% during November 2021, as seen in Figure 4.

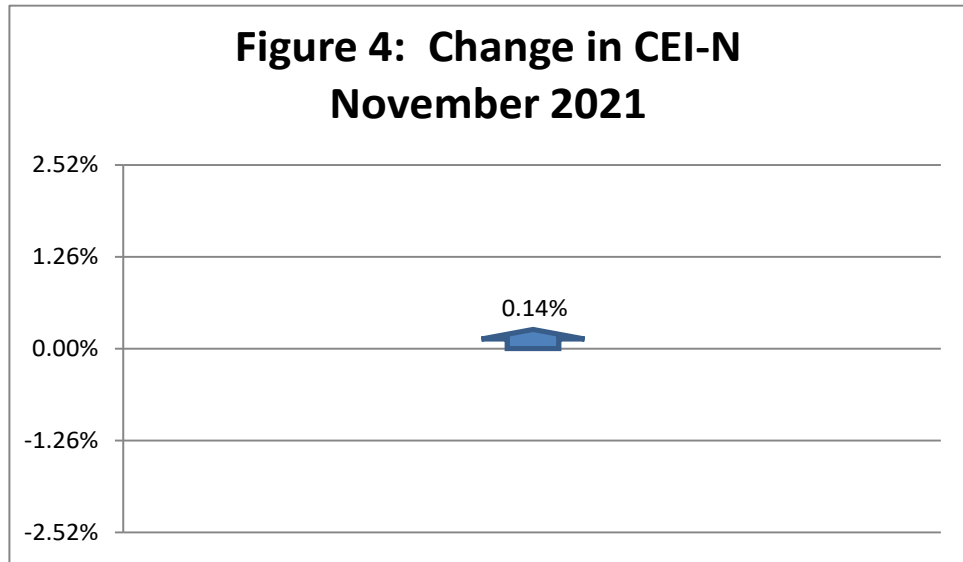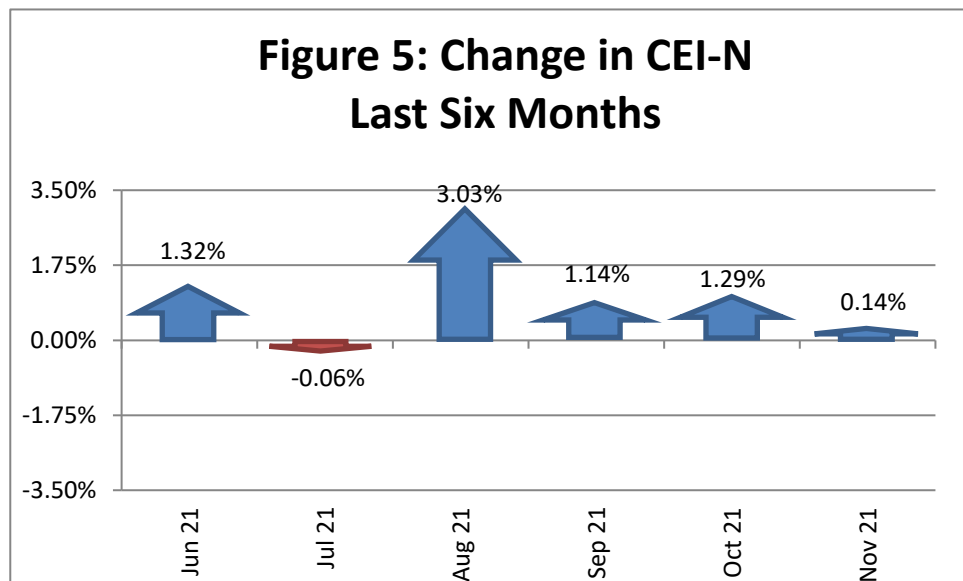## Figure 4: Change in CEI-N
November 2021

0.14%

Figure 5 shows the change in the CEI-N over the last 6 months. Economic growth has been strong in Nebraska. The CEI-N has grown for five of the last six months.

Figure 5: Change in CEI-N
Last Six Months

3.03%

1.32%

1.14%   1.29%

0.14%

-0.06%

Jun 21   Jul 21   Aug 21   Sep 21   Oct 21   Nov 21

Three components of the CEI-N rose during November. There was growth in agricultural commodity prices and a small increase in electricity sales. Business conditions also were positive as respondents to the November *Survey of Nebraska Business* reported an increase in sales during recent months. Among declining components, there was a drop in real private wages, due to a decrease in weekly hours worked. 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.*

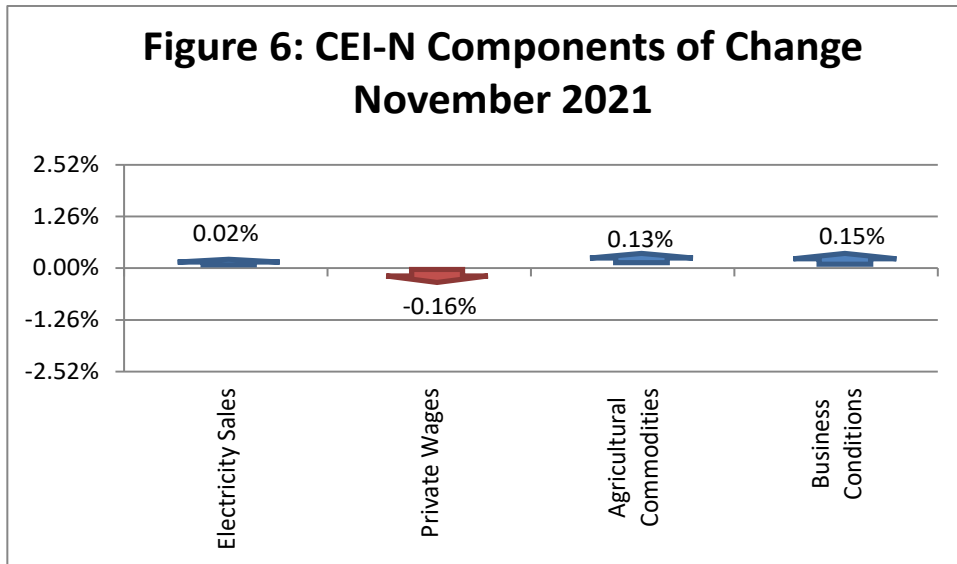**Figure 6: CEI-N Components of Change November 2021**

Figure 7 shows a forecast for the CEI-N over the next six months. The forecast calls for solid growth in December before growth slows significantly in the first quarter of 2022. However, growth is expected to rebound in April and May. 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
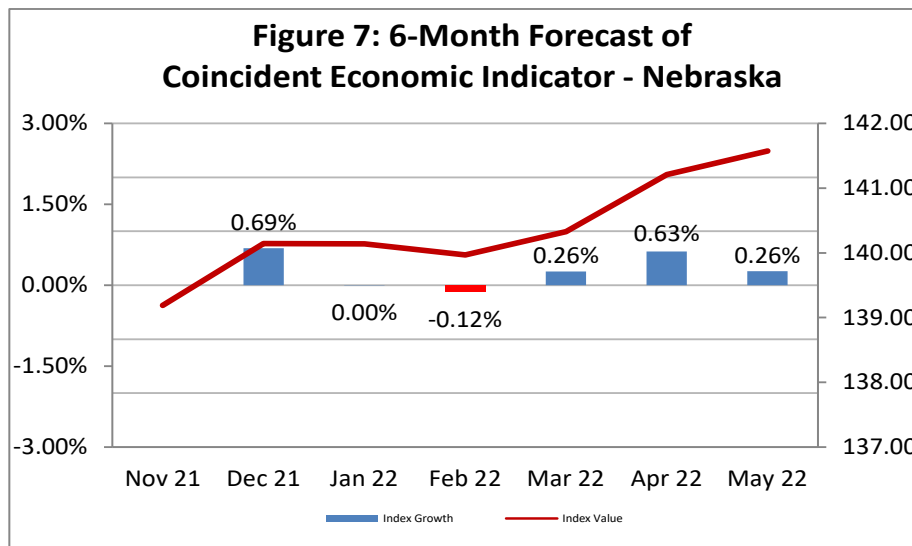
Weights and Component Shares

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	13.1457	0.0761	0.0386		Electricity Sales	4.7227	0.2117	0.1723
Airline Passengers	6.2720	0.1594	0.0808		Private Wages	2.0590	0.4857	0.3952
Exchange Rate	1.1535	0.8669	0.4395		Agricultural Commodities	3.5929	0.2783	0.2265
Initial UI Claims	18.4631	0.0542	0.0275		Survey Business Conditions	3.9504	0.2531	0.2060
Manufacturing Hours	1.7262	0.5793	0.2937					
Survey Business Expectations	4.2234	0.2368	0.1200					

Tables 2 and 3 show the calculation for the change in LEI-N and CEI-N between October and November 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	98.11	84.18	13.93	0.04	0.54	0.32%
Airline Passengers	85.22	84.58	0.64	0.08	0.05	0.03%
U.S. Dollar Exchange Rate (Inverse)	81.14	81.76	-0.62	0.44	-0.27	-0.16%
Initial Unemployment Insurance Claims (Inverse)	95.33	86.25	9.08	0.03	0.25	0.15%
Manufacturing Hours	96.61	95.85	0.76	0.29	0.22	0.13%
Survey Business Expectations[1]	56.95		6.95	0.12	0.83	0.49%
Total (weighted average)	171.48	169.86			1.62	0.96%

[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	167.21	167.06	0.15	0.17	0.03	0.02%
Private Wage	116.53	117.08	-0.55	0.40	-0.22	-0.16%
Agricultural Commodities	150.84	150.05	0.79	0.23	0.18	0.13%
Survey Business Conditions[1]	51.00		1.00	0.21	0.21	0.15%
Total (weighted average)	139.19	138.99			0.20	0.14%

[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.

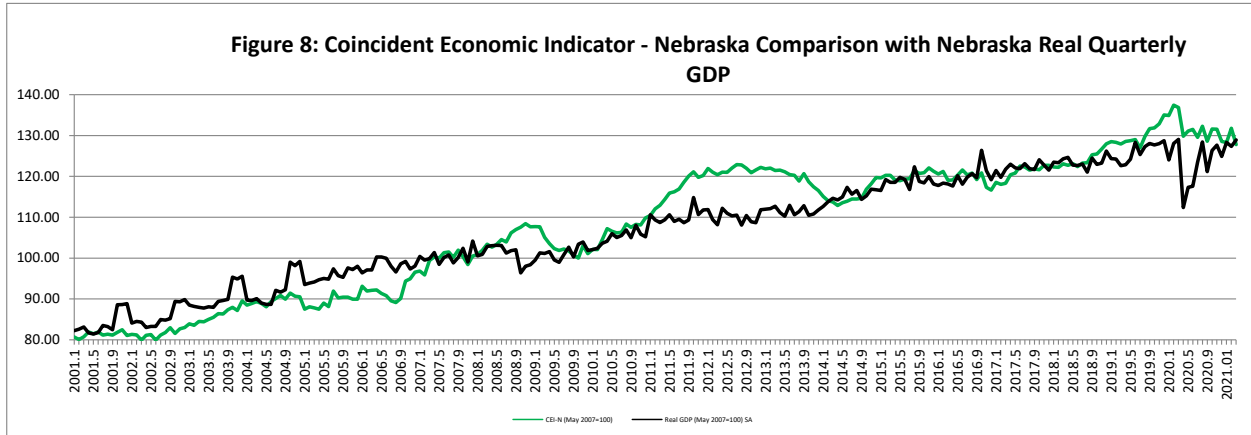Figure 8: Coincident Economic Indicator - Nebraska Comparison with Nebraska Real Quarterly GDP

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 0.87.

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