Nebraska Monthly Economic Indicators: April 28, 2021

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

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Summary: *The LEI-N rose by 1.49% during March 2021. The indicator has risen during each of the last six months, suggesting that the Nebraska economy will expand at a robust pace through the summer of 2021. In March, the leading indicator primarily rose due to strong business expectations and rising airline activity. The pace of recovery in airline passenger enplanments improved during March. In addition, March respondents to the Survey of Nebraska Business reported plans to increase sales and employment over the next six months. Manufacturing hours worked also rose in March while there was a small decline in initial claims for unemployment insurance. The value of the U.S. dollar, however, rose during March, creating a more challenging environment 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 March of 2021 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 1.49% during March.

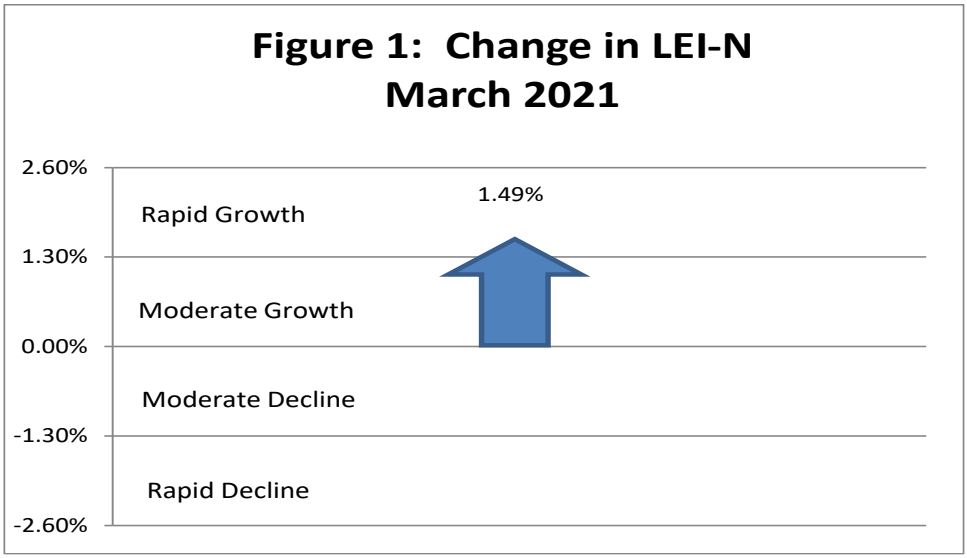


Figure 2 shows the change in the leading indicator over the last six months. The leading indicator has risen for six consecutive months. This pattern is consistent with robust economic growth in Nebraska through the summer of 2021.

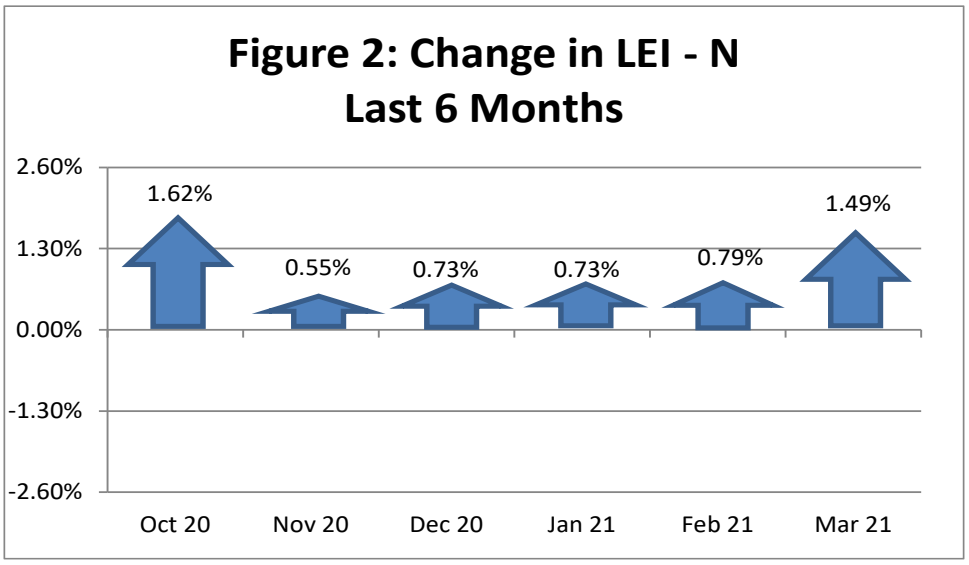
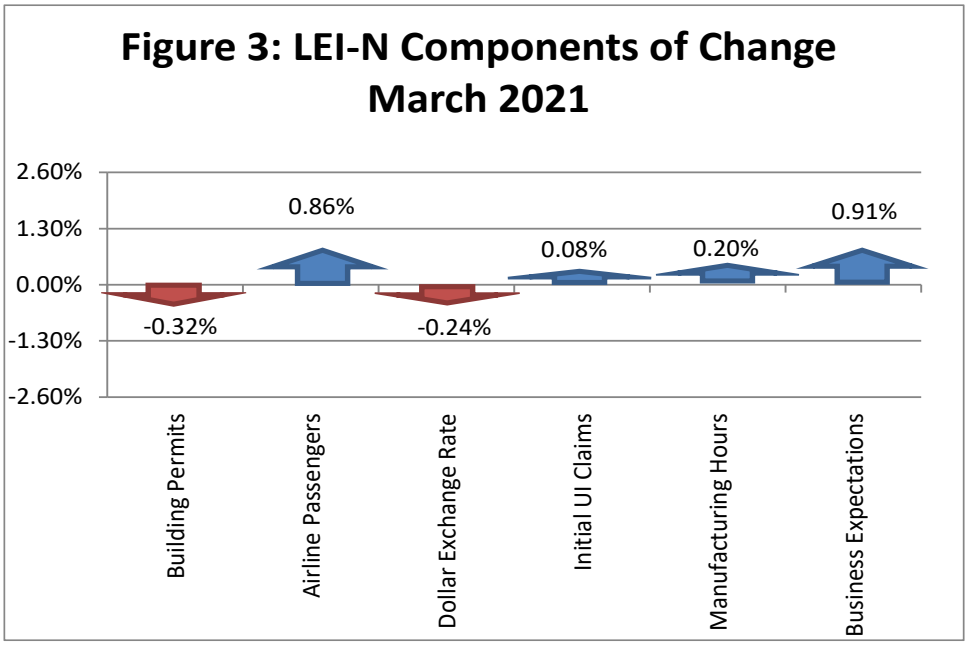


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during March of 2021. The change in the LEI–N is the weighted average of changes in each component (see page 5). Four of six LEI-N components improved during March. Airline passenger counts rose sharply, as the recovery of the airline industry began to gather pace. Further, respondents to the March *Survey of Nebraska Business* reported plans to increase employment and sales over the next six months. There also was a modest increase in manufacturing hours worked and a small decline in initial claims for unemployment insurance. In terms of negative components, the value of the U.S. dollar rose during March. A stronger dollar creates a more challenging environment for agricultural producers, manufacturers, and other 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 fell modestly, by 0.31%, during March 2021, as seen in Figure 4.

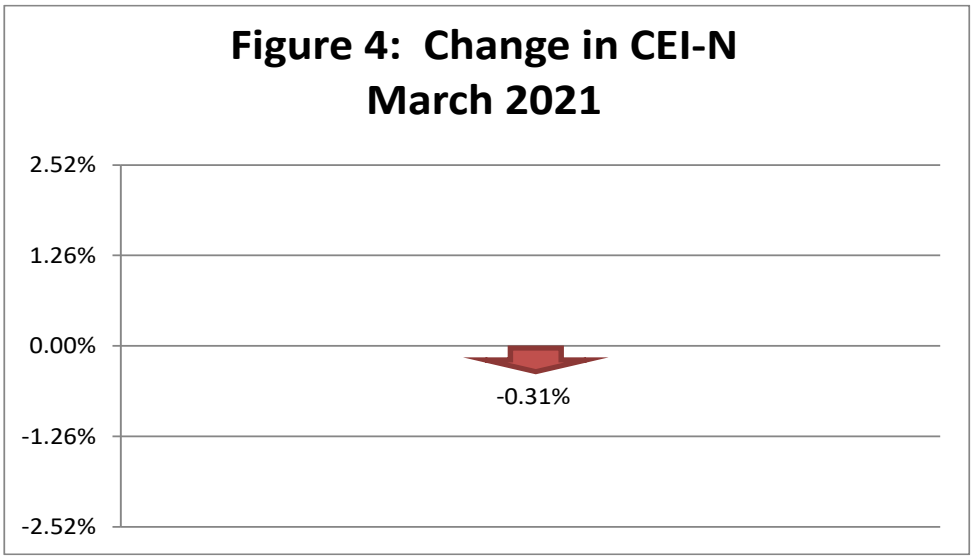
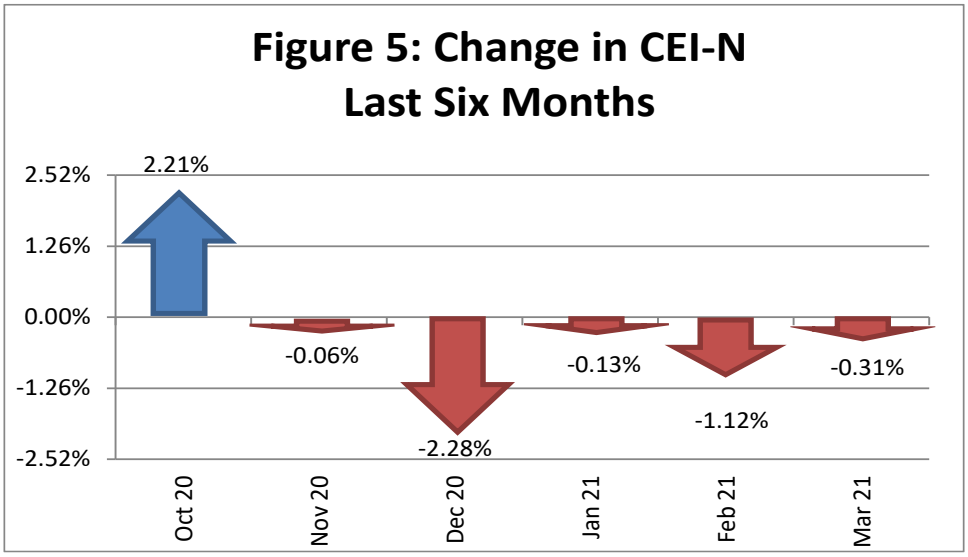


Figure 5 shows the change in the CEI-N over the last 6 months. The CEI-N has declined for 5 consecutive months, although the rate of decline was modest in three cases. Results reflect a slowing in the Nebraska economy, which is evident in other indicators, such as poor employment growth, during the same period. It will be useful to monitor whether this CEI-N trend continues.



Poor business conditions contributed to the CEI-N decline. Respondents to the March *Survey of Nebraska Business* reported a decline in both sales and employment in recent months. The other three components of the CEI-N were mixed during March. Electricity sales fell on a seasonally adjusted basis but private wages grew, in part due to an increase in the number of hours worked per week. The also was an increase in agricultural commodity prices. 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.*

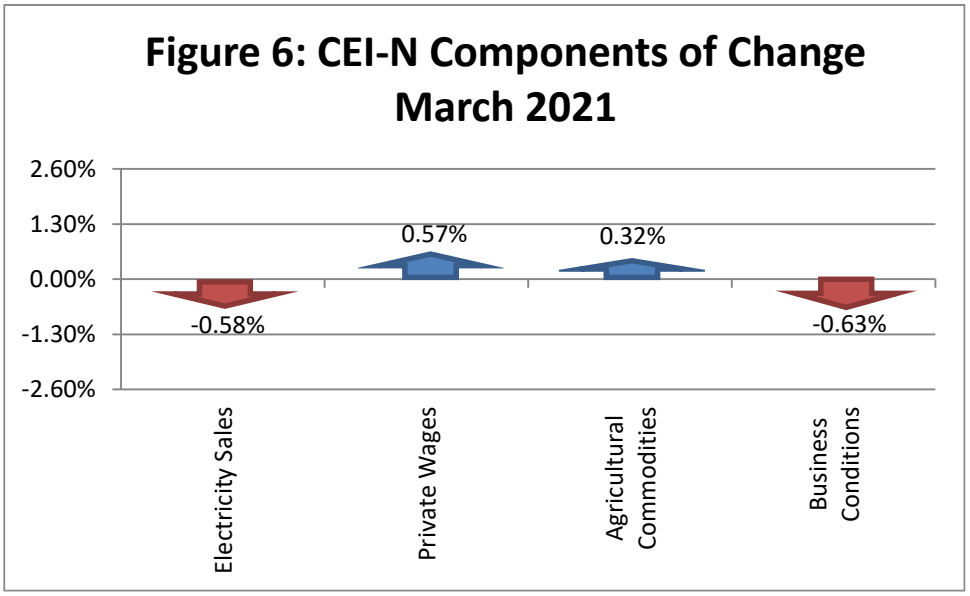
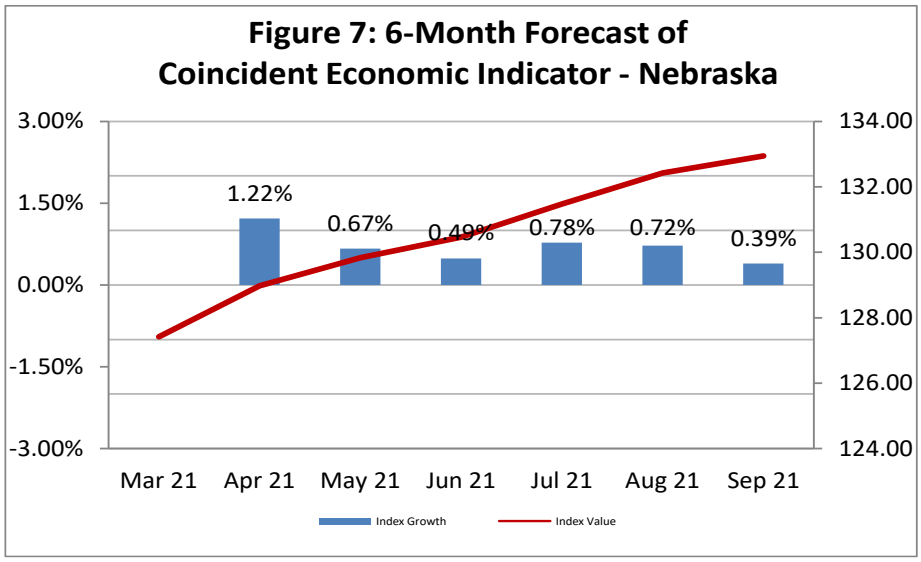


Figure 7 shows a forecast for the CEI-N over the next six months. The forecast calls for robust growth in the CEI-N through September 2021. This finding is consistent with the recent increase in the LEI-N reported in Figure 2.



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	13.7369	0.0728	0.0371	Electricity Sales	4.1507	0.2409	0.1912
Airline Passengers	6.0787	0.1645	0.0837	Private Wages	2.1173	0.4723	0.3748
Exchange Rate	1.1670	0.8569	0.4361	Agricultural Commodities	3.3748	0.2963	0.2352
Initial UI Claims	18.8241	0.0531	0.0270	Survey Business Conditions	3.9909	0.2506	0.1988
Manufacturing Hours	1.7276	0.5788	0.2946				
Survey Business Expectations	4.1912	0.2386	0.1214				

Tables 2 and 3 show the calculation for the change in LEI-N and CEI-N between February and March 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	86.36	99.95	-13.58	0.04	-0.50	-0.32%
Airline Passengers	63.11	46.85	16.26	0.08	1.36	0.86%
U.S. Dollar Exchange Rate (Inverse)	82.27	83.15	-0.88	0.44	-0.38	-0.24%
Initial Unemployment Insurance Claims (Inverse)	100.90	96.17	4.73	0.03	0.13	0.08%
Manufacturing Hours	95.33	94.26	1.07	0.29	0.32	0.20%
Survey Business Expectations[1]	61.91		11.91	0.12	1.45	0.91%
Total (weighted average)	161.58	159.21			2.37	1.49%

[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	147.88	151.73	-3.85	0.19	-0.74	-0.58%
Private Wage	115.00	113.06	1.94	0.37	0.73	0.57%
Agricultural Commodities	118.16	116.41	1.76	0.24	0.41	0.32%
Survey Business Conditions[1]	45.95		-4.05	0.20	-0.81	-0.63%
Total (weighted average)	127.42	127.82			-0.40	-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 2018, 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 0.95.

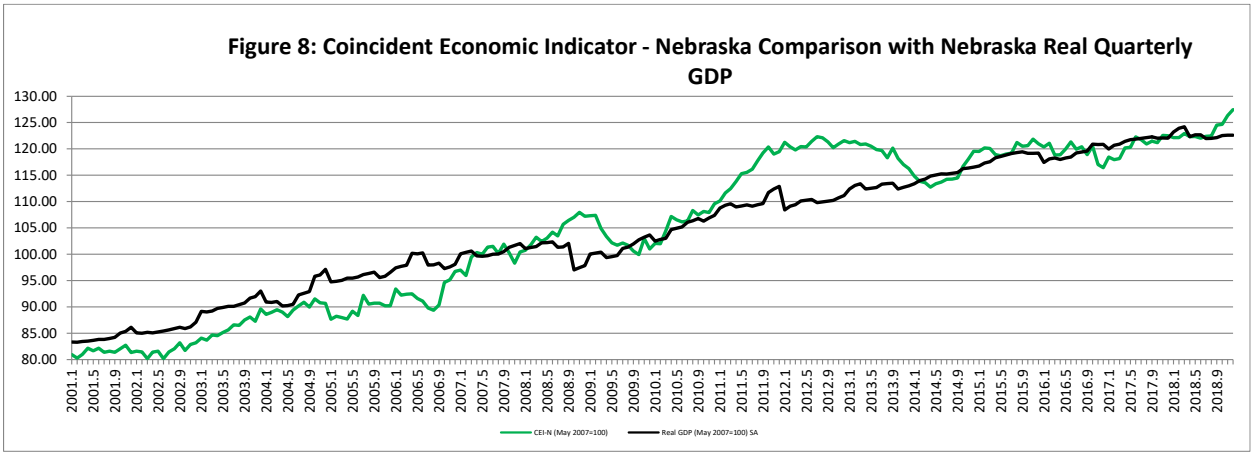


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months 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. However, while the long-run the correlation coefficient between CEI-N and six-month forward values of LEI-N is 0.85, the strength of the correlation appears to have weakened over the last year.