

Nebraska Monthly Economic Indicators: July 24, 2019

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

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Summary: *The Leading Economic Indicator – Nebraska (LEI-N)¹ fell by 0.29% during June of 2019. The decline in the LEI-N, which is designed to predict economic activity six months into the future, implies slowing economic growth in Nebraska towards the end of 2019. The leading indicator declined due to an increase in initial claims for unemployment insurance and a drop in both airport passenger enplanements and manufacturing hours. In addition, business expectations, which had been strong throughout the year, moderated during June. Respondents to the June Survey of Nebraska Business reported plans for only a modest increase in employment at their businesses over the next six months.*

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) during June 2019 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N fell by 0.29% in June.

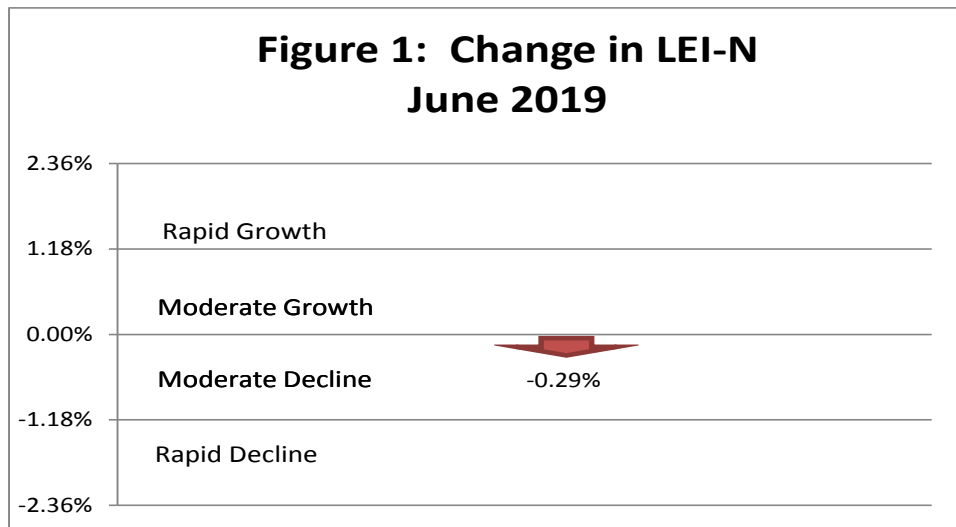


Figure 2 shows that the June decline was the first monthly drop in LEI-N during 2019. The drop in the indicator implies that economic growth will slow in Nebraska towards the end of the year.

¹ The author would like to thank Dr. William Walstad for helping to design the LEI-N.

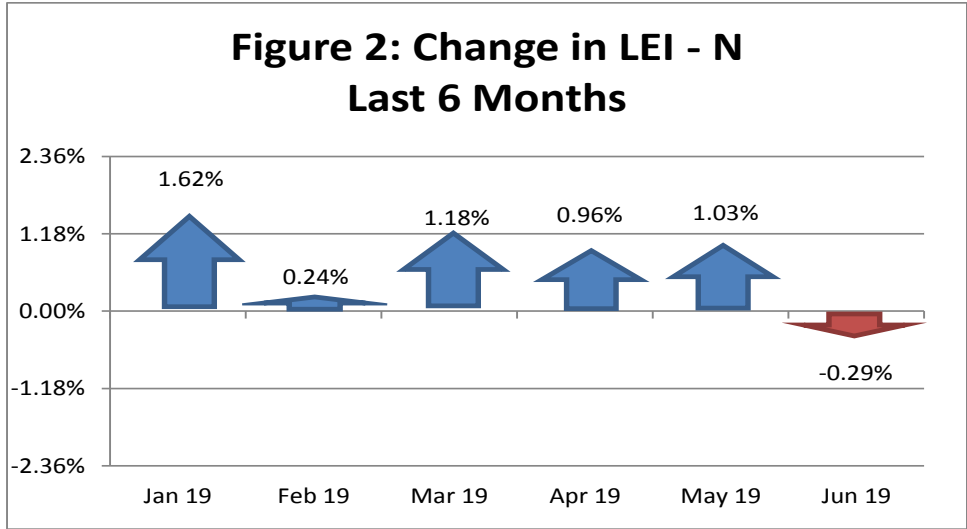
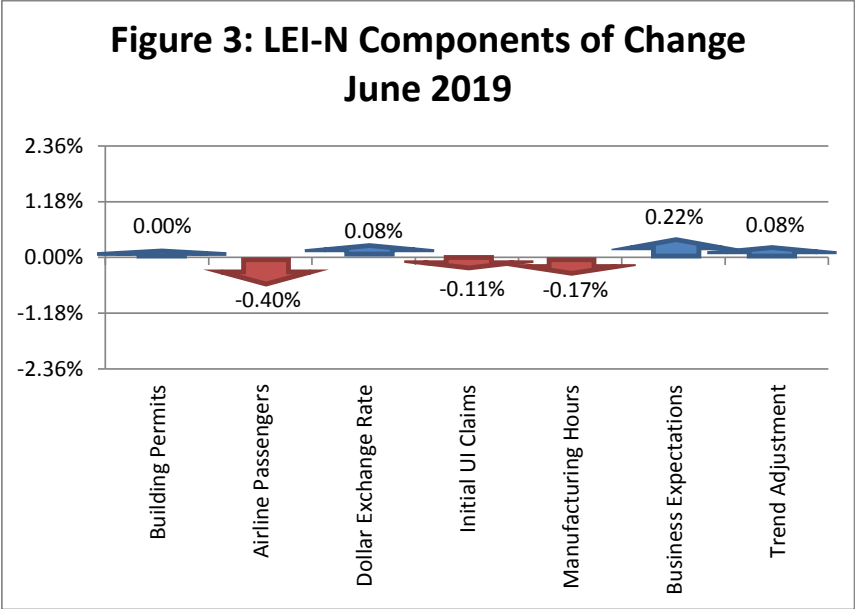


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during June of 2019. The change in the overall LEI–N is the weighted average of changes in each component (see page 5). Both manufacturing hours-worked and airport passenger enplanements declined during the month of June. Further, there was an increase in initial claims for unemployment insurance. Finally, business expectations, which had been strong during the first five months of the year, moderated during June. Respondents to the June *Survey of Nebraska Business* reported plans for only a modest increase in employment at their business over the next six months. Note that the trend adjustment component pictured in Figure 3 is discussed on page 5.



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 0.87% during June of 2019, as seen in Figure 4.

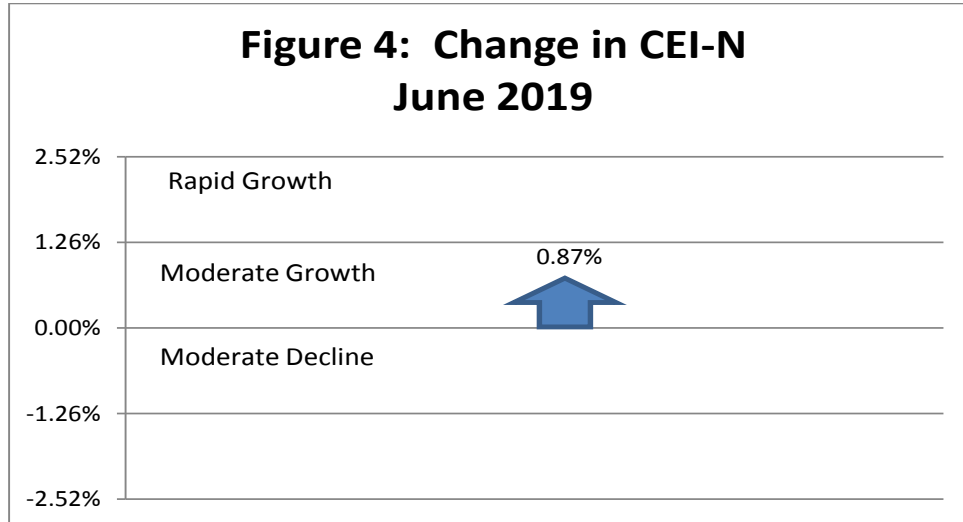
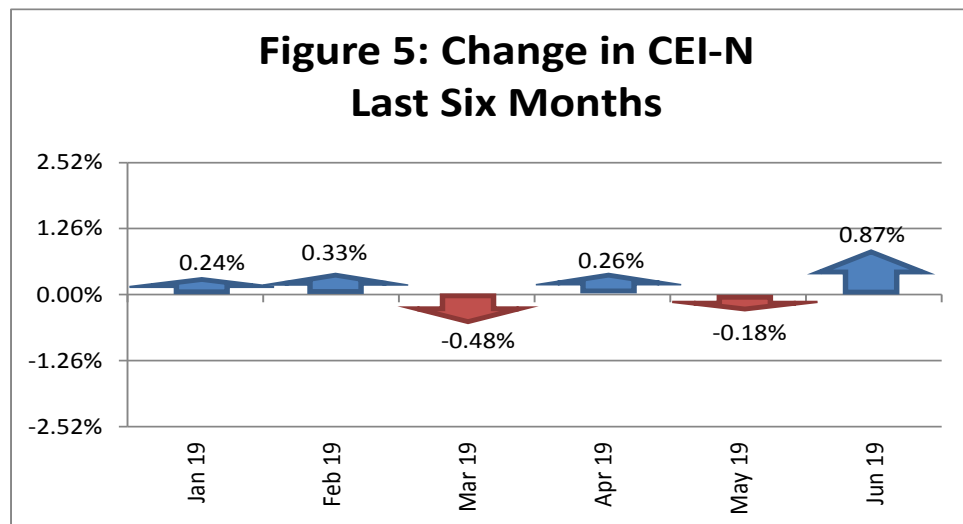


Figure 5 shows the change in the CEI-N over the last 6 months. The CEI-N rose during the first two months of 2019 but has been mixed over the last four months.



The CEI-N rose during June due to an increase in real private wages, reflecting higher private employment, weekly hours-worked and real hourly wages. Other components of the leading indicator fell. Electricity sales fell on a seasonally adjusted basis and there was a small drop in agricultural commodity prices. There also was a drop in business conditions as respondents to the *Survey of Nebraska Business* reported a decline in sales in recent months. A detailed discussion of the components of the CEI-N and LEI-N can be found at www.cba.unl.edu in *Technical Report: Coincident and Leading Economic Indicators- Nebraska*.

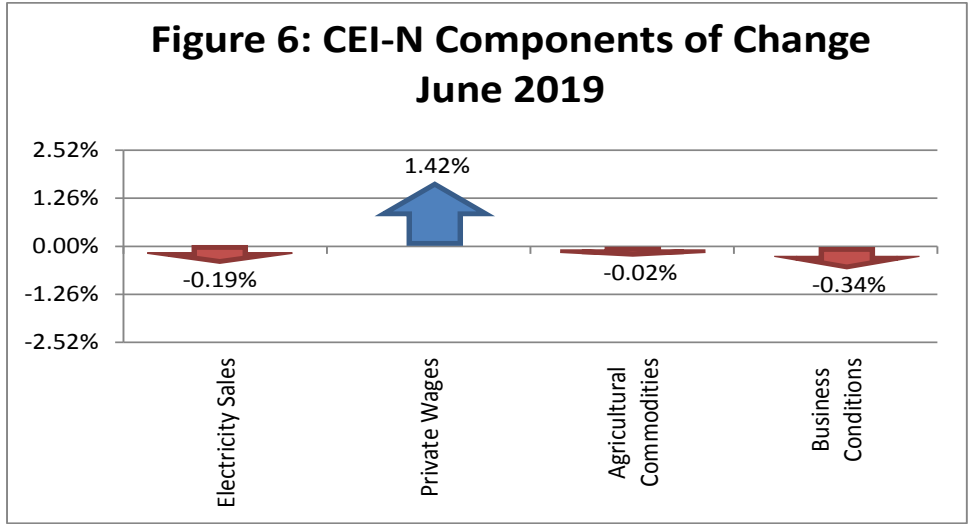
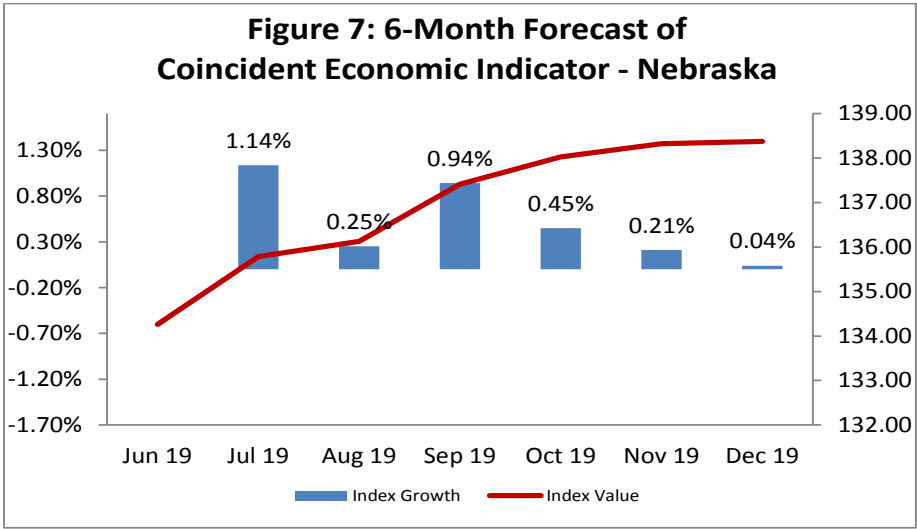


Figure 7 shows the forecast for the CEI-N over the next six months. The pace of economic growth is expected to slow in Nebraska during the last few months of the year. Forecast growth in the CEI-N is consistent with changes in the LEI-N over the last six months (Figure 2).



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 smaller standard deviations, 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	13.4012	0.0746	0.0346	Electricity Sales	4.5227	0.2211	0.1652
Airline Passengers	3.2578	0.3070	0.1425	Private Wages	1.8389	0.5438	0.4063
Exchange Rate	1.1791	0.8481	0.3937	Agricultural Commodities	3.2547	0.3073	0.2295
Initial UI Claims	10.7178	0.0933	0.0433	Survey Business Conditions	3.7541	0.2664	0.1990
Manufacturing Hours	1.6793	0.5955	0.2764				
Survey Business Expectations	4.2417	0.2358	0.1094				

Tables 2 and 3 show the calculation for the change in LEI-N and CEI-N between May and June of 2019. Weights (from Table 1) are multiplied by the change to calculate the contribution of each component. Contributions are converted to percentage terms and summed. Note that in Table 2 a trend adjustment factor is utilized in calculating LEI-N. This is done because LEI-N historically under-predicts CEI-N by 0.08% per month. The U.S. Leading Economic Indicator also has a trend adjustment.

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	52.41	52.40	0.01	0.03	0.00	0.00%
Airline Passengers	110.03	114.38	-4.36	0.14	-0.62	-0.40%
U.S. Dollar Exchange Rate (Inverse)	81.51	81.21	0.30	0.39	0.12	0.08%
Initial Unemployment Insurance Claims (Inverse)	151.73	155.59	-3.86	0.04	-0.17	-0.11%
Manufacturing Hours	96.62	97.58	-0.96	0.28	-0.27	-0.17%
Survey Business Expectations ¹	53.13		3.13	0.11	0.34	0.22%
Trend Adjustment					0.13	0.08%
Total (weighted average)	155.66	156.12			-0.46	-0.29%

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	198.99	200.49	-1.50	0.17	-0.25	-0.19%
Private Wage	116.49	111.85	4.64	0.41	1.89	1.42%
Agricultural Commodities	118.53	118.65	-0.12	0.23	-0.03	-0.02%
Survey Business Conditions ¹	47.71		-2.29	0.20	-0.46	-0.34%
Total (weighted average)	134.26	133.11			1.16	0.87%

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 2017. Annual real gross state product data is provided by the Bureau of Economic Analysis, U.S. Department of Commerce, and quarterly values were estimated using quarterly earnings data. CEI-N closely tracks Nebraska real GDP for the period. The correlation coefficient between the two-pictured series is 0.95.

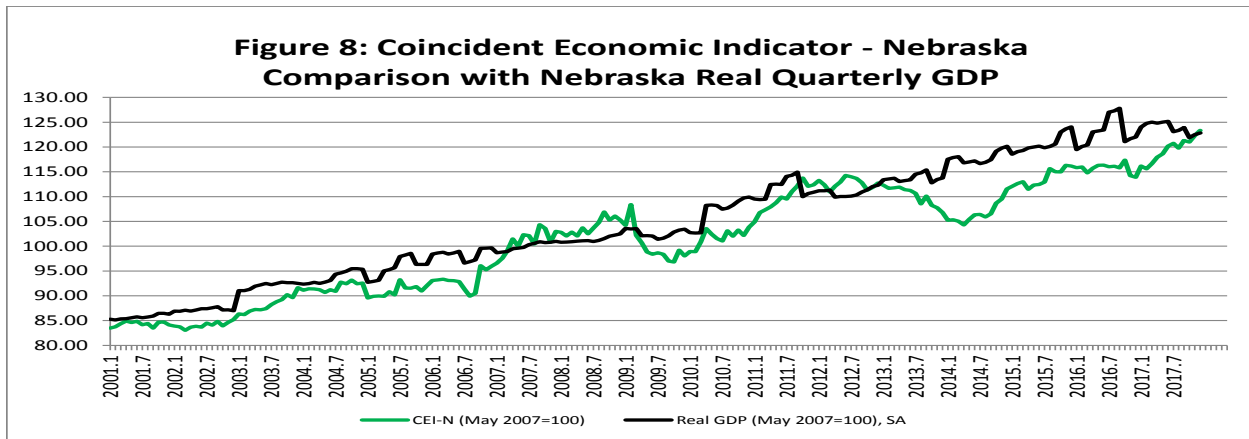


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months earlier) with the actual movement in CEI-N. In Figure 9, predicted values using the LEI-N closely track trends and movement in the CEI-N. The correlation coefficient between CEI-N and six-month forward values of LEI-N is 0.93.

