

Nebraska Monthly Economic Indicators: June 17, 2016

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Summary: The Leading Economic Indicator – Nebraska (LEI-N) fell by 0.28% in May 2016. The decline in the LEI-N, which predicts economic growth in the state six months in the future, followed rapid increases during both March and April. Taken together, results suggest that economic growth will be strong in Nebraska during the summer and fall of 2016 before moderating late in the year. Four of the six components of the LEI-N declined during May. There was a decline in manufacturing hours during the month and a slight decline in airline passenger counts. There also was an increase in the value of the dollar, which will pressure export-oriented businesses such as manufacturing and agriculture. Lastly, there was a modest uptick in initial claims for unemployment insurance rose during May.

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) in May 2016 compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N declined by 0.28% during May.

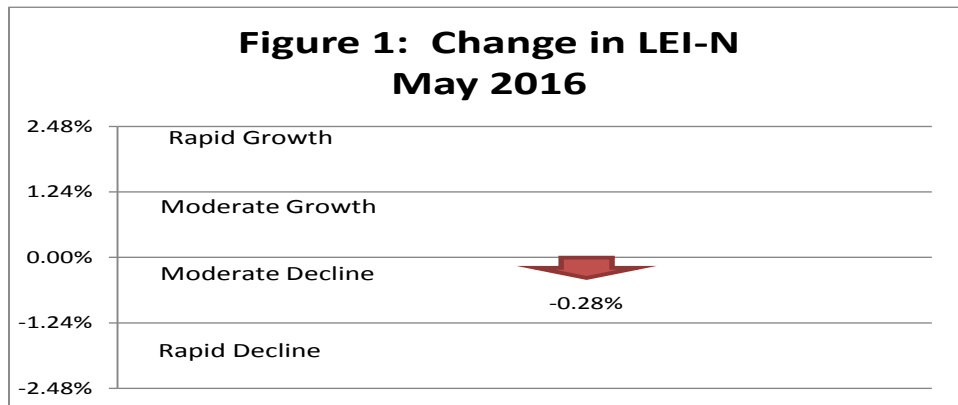


Figure 2 shows the change in the LEI-N over the last six months. The figure shows that there was a sharp increase in the LEI-N from January through April, before the modest decline in May. This portends strong growth in the Nebraska economy during the summer and fall of 2016.

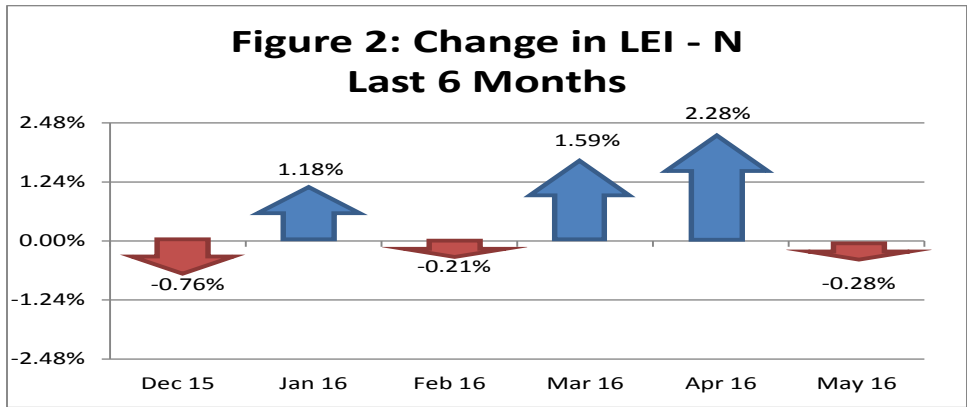
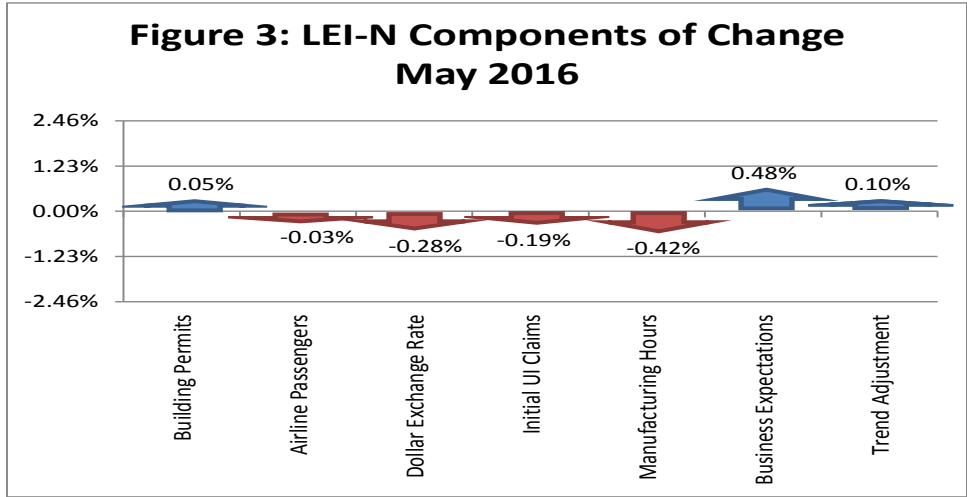
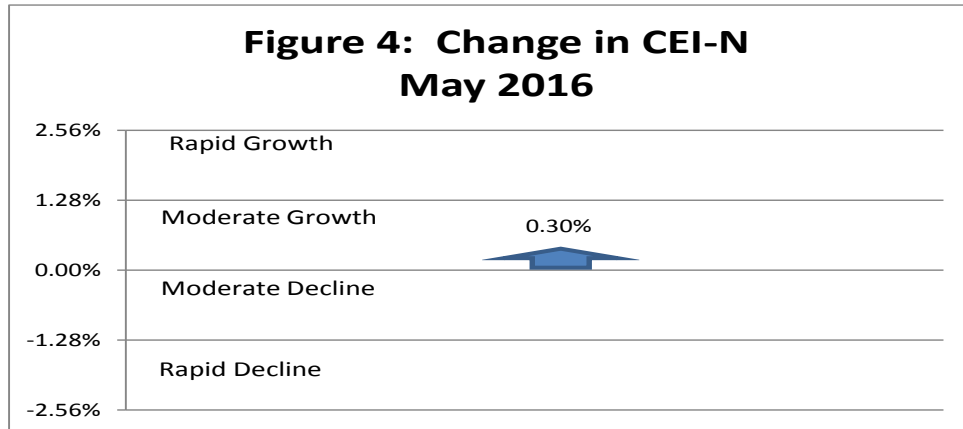


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during May 2016. The change in the overall LEI-N is the weighted average of changes in each component (see page 5). Looking at individual components, business expectations were strong. Respondents to the *May Survey of Nebraska Business* predicted strong growth in both sales and employment at their businesses over the next six months. However, most other components of the index declined. Manufacturing hours dropped during May and there also was a modest decline in airline passenger counts. At the same time, there was an increase in the value of the U.S. dollar, which is negative for Nebraska’s export-oriented businesses in manufacturing and agriculture. There also was an increase in initial claims for unemployment insurance during May, a sign that the Nebraska labor market may be softening. Note that the trend adjustment component pictured in Figure 3 is discussed on page 5.

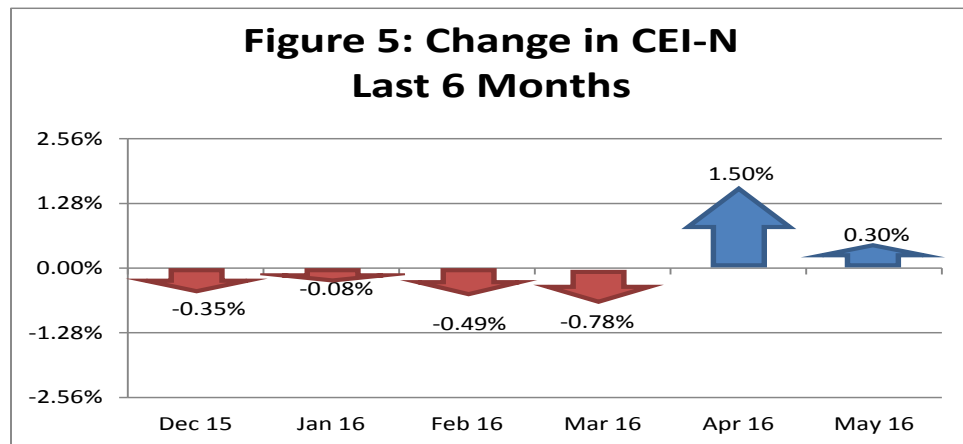


Coincident Economic Indicator – Nebraska

The Coincident Economic Indicator - Nebraska (CEI-N) is a measure of the current size of the Nebraska economy. The CEI-N rose by 0.30% during May, as seen in Figure 4.



As seen in Figure 5, the CEI-N declined in the first four months of the year, suggesting that the Nebraska economy was weak at the beginning of 2016. The economy, however, is beginning to improve. There was a strong increase in the CEI-N in April and a further increase in May. It will be critical to monitor whether this recent return to growth continues.



As seen in Figure 6, two of four components of the CEI-N rose during May. There was a solid expansion of real private wages, reflecting growth in employment, weekly hours worked, and real wages. Business conditions also were positive, as measured in the *May Survey of Nebraska Business*. Responding businesses reported a recent increase in sales and employment. Among declining components, electricity sales fell during May after adjusting for weather and seasonal factors. There also was a modest decline in agricultural commodity prices. 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*.

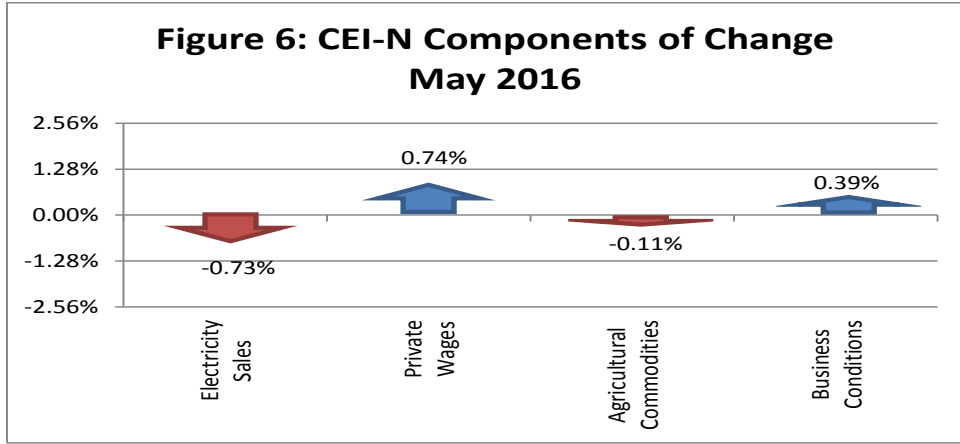
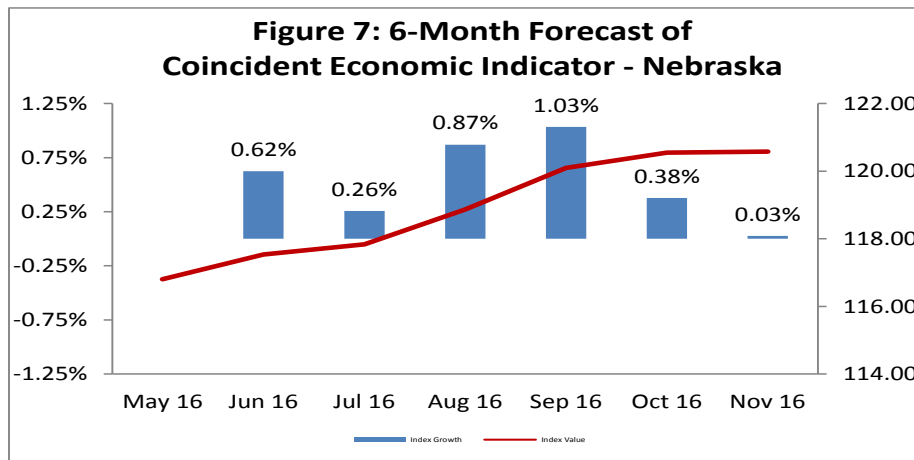


Figure 7 shows the forecast for the CEI-N over the next six months. The forecast calls for strong economic growth in Nebraska during the summer and fall of 2016. This outlook is consistent with recent values for the LEI-N, which rose sharply between January and April of 2016 (see Figure 2).



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 that regularly has large movements.

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	13.4658	0.0743	0.0349	Electricity Sales	4.7042	0.2126	0.1563
Airline Passengers	3.3646	0.2972	0.1398	Private Wages	1.7258	0.5794	0.4262
Exchange Rate	1.2146	0.8233	0.3873	Agricultural Commodities	3.2609	0.3067	0.2255
Initial UI Claims	10.0885	0.0991	0.0466	Survey Business Conditions	3.8314	0.2610	0.1920
Manufacturing Hours	1.6614	0.6019	0.2831				
Survey Business Expectations	4.3454	0.2301	0.1082				

Tables 2 and 3 show the calculation for the change in CEI-N and LEI-N between April and May of 2016. 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 0.10% 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	70.52	68.71	1.81	0.03	0.06	0.05%
Airline Passengers	94.94	95.18	-0.25	0.14	-0.03	-0.03%
U.S. Dollar Exchange Rate (Inverse)	86.57	87.46	-0.90	0.39	-0.35	-0.28%
Initial Unemployment Insurance Claims (Inverse)	130.91	136.00	-5.09	0.05	-0.24	-0.19%
Manufacturing Hours	99.92	101.78	-1.86	0.28	-0.53	-0.42%
Survey Business Expectations ¹	55.57		5.57	0.11	0.60	0.48%
Trend Adjustment					0.13	0.10%
Total (weighted average)	124.74	125.09			-0.35	-0.28%

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	136.31	141.67	-5.36	0.16	-0.84	-0.72%
Private Wage	110.15	108.14	2.01	0.43	0.86	0.74%
Agricultural Commodities	126.46	127.03	-0.57	0.23	-0.13	-0.11%
Survey Business Conditions ¹	52.37		2.37	0.19	0.45	0.39%
Total (weighted average)	116.81	116.46			0.35	0.30%

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 2012. The comparison ends in 2012 since this is the last year for which data on real gross state product is available. 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 0.96.

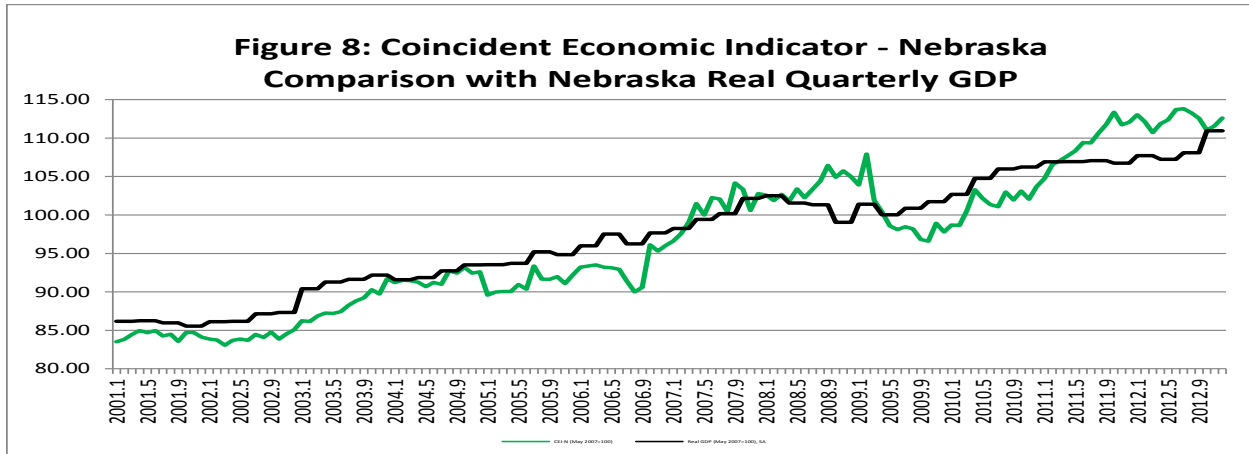


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months earlier) with the actual movement in CEI-N. In Figure 9, predicted values using the LEI-N closely track trends and movement in the CEI-N. The correlation coefficient between CEI-N and six-month forward values of LEI-N is 0.92.

