

# Nebraska Monthly Economic Indicators: July 24, 2015

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**Summary:** The Leading Economic Indicator – Nebraska (LEI-N) rose by 0.40% in June 2015, its fifth increase in the last six months. The rise in the LEI-N, which predicts economic growth in the state six months in the future, indicates strong economic growth in Nebraska through the end of 2015. The leading economic indicator rose because of positive business expectations for sales and employment and an improving labor market. Respondents to the monthly Survey of Nebraska Business were optimistic about sales growth over the next six months. Businesses also had positive expectations for employment growth and there was a decline in initial claims for unemployment insurance. Among other components of the leading indicator, there was little change in building permits for single-family homes and passenger airplanes. There was a decline in manufacturing hours and an increase in the value of the U.S. dollar. A rising dollar creates headwinds for the state economy by weakening the competitive position of Nebraska export businesses in manufacturing and agriculture.

## Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) in June 2015, compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 0.40% during June.

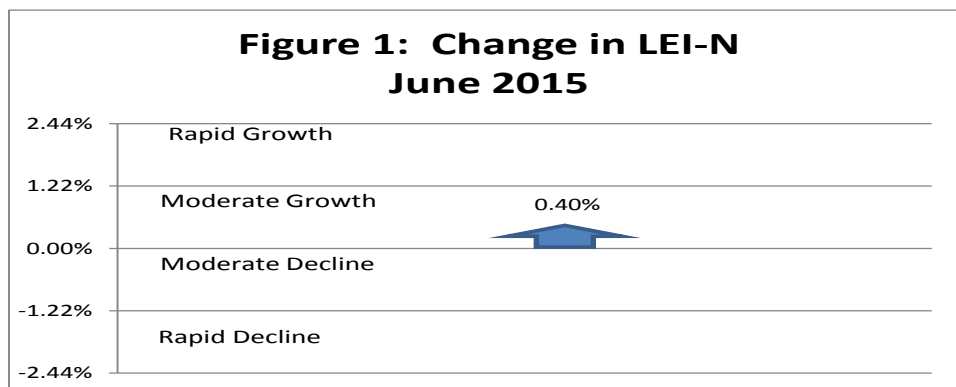


Figure 2 shows the change in the LEI-N over the last 6 months. The LEI-N has risen five of the last six months. The modest drop in March is more than outweighed by increases in the other months. The consistent increase in the LEI-N suggests that there will be strong growth in the Nebraska economy through the end of the year.

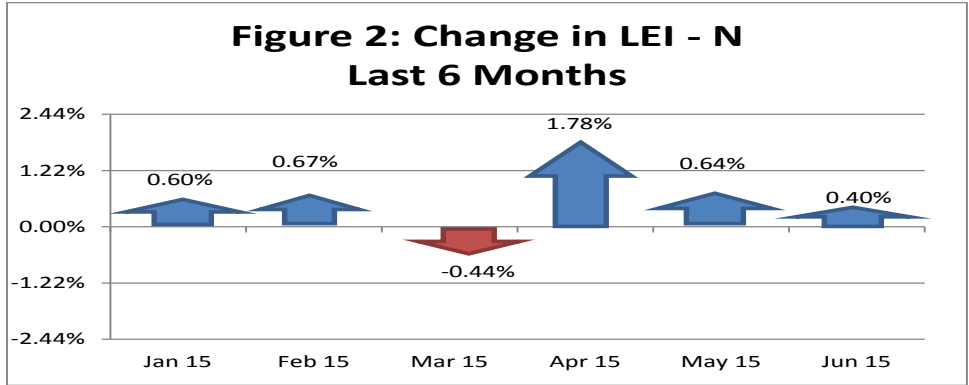
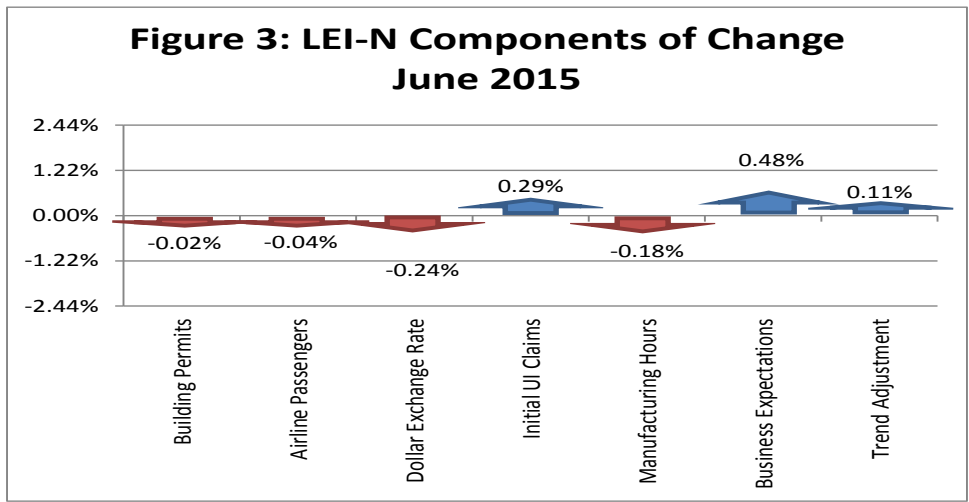
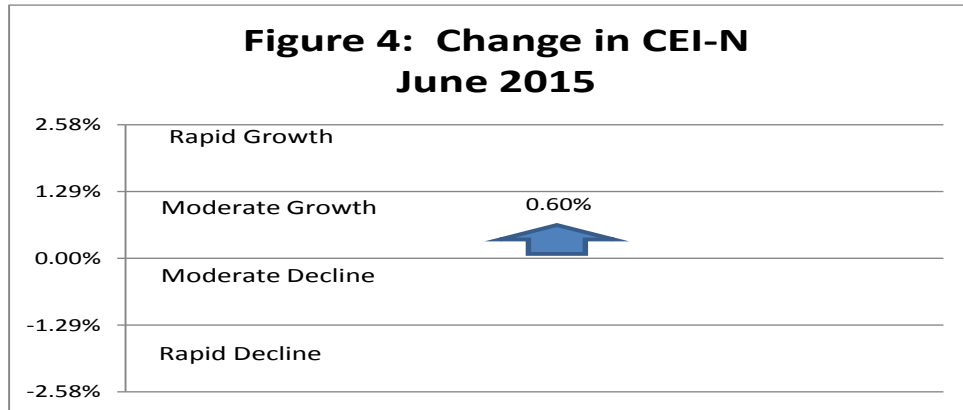


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during June 2015. The change in the overall LEI-N is the weighted average of changes in each component (see page 5). The leading indicator rose because businesses were optimistic about sales growth for the next six months and also positive about job growth. Respondents to the June *Survey of Nebraska Business* had optimistic expectations for sales growth and positive expectations for job growth. There also was a drop in initial claims for unemployment insurance during June, another sign of strength in the Nebraska labor market. Among declining components of the LEI-N, there was a drop in manufacturing hours during June. Further, there was an increase in the value of the U.S. dollar. A rising U.S. dollar creates competitive pressure for Nebraska exporters in agricultural, manufacturing and other industries. There was little change in the count of passenger enplanements and building permits for single-family homes during June. Note that the trend adjustment component pictured in Figure 3 is discussed on page 5.

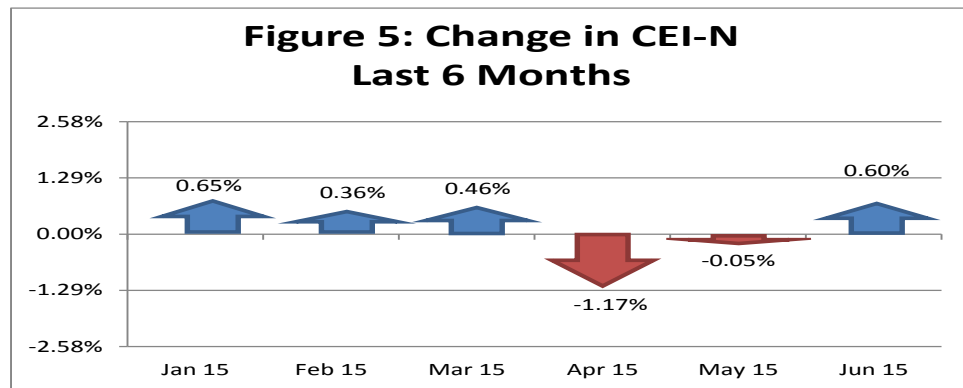


## Coincident Economic Indicator – Nebraska

The Coincident Economic Indicator - Nebraska (CEI-N) is a measure of the current size of the Nebraska economy. The CEI-N rose by 0.60% during June, as seen in Figure 4.



The increase in the CEI-N followed a decline in April and a slight drop in May, as seen in Figure 5. Overall, results show modest growth in the Nebraska economy in the first half of 2015, with increases in January through March largely reversed by the drop in April and May. The increase in June, however, suggests that economic growth is beginning to improve in Nebraska.



As seen in Figure 6, two of the four components of the CEI-N rose during June while two others declined. Among rising components, there was an increase in electricity sales in June, after adjusting for weather and other seasonal factors. There also was an improvement in business conditions, according to respondents to the June *Survey of Nebraska Business*, who reported an increase in employment at their businesses. Among falling components, there was a slight decline in real private wages in June. There also was a decline in agricultural commodity prices in Nebraska, due a sharp drop in beef prices. A detailed discussion of the components of the CEI-N and LEI-N can be found at [www.cba.unl.edu](http://www.cba.unl.edu) in *Technical Report: Coincident and Leading Economic Indicators- Nebraska*.

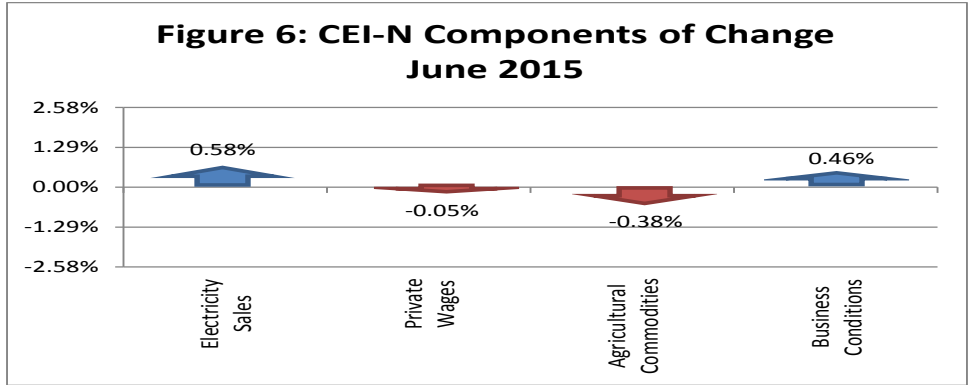
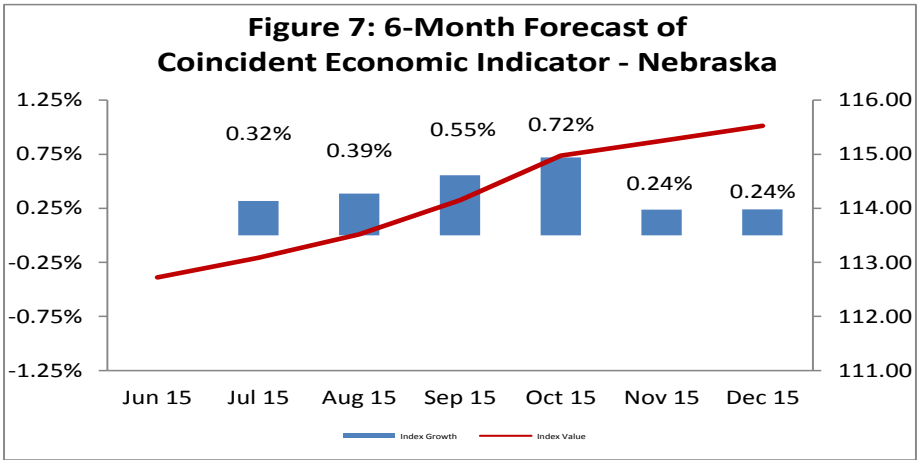


Figure 7 shows the forecast for the CEI-N over the next six months. The forecast calls for strong, consistent economic growth through the end of the year. Results are in line with improvements in the LEI-N in five of the last six months (see Figure 2) and suggest a strong Nebraska economy during the second half of 2015.



## 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.

<b>Table 1: Component Weights for LEI-N and CEI-N</b>							
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	13.6839	0.0731	0.0334	Electricity Sales	4.7763	0.2094	0.1516
Airline Passengers	3.4479	0.2900	0.1327	Private Wages	1.6687	0.5993	0.4339
Exchange Rate	1.2083	0.8276	0.3786	Agricultural Commodities	3.2085	0.3117	0.2257
Initial UI Claims	10.3807	0.0963	0.0441	Survey Business Conditions	3.8357	0.2607	0.1888
Manufacturing Hours	1.4838	0.6740	0.3083				
Survey Business Expectations	4.4446	0.2250	0.1029				

Tables 2 and 3 show the calculation for the change in CEI-N and LEI-N between May and June of 2015. 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 0.11% per month. The U.S. Leading Economic Indicator also has a trend adjustment.

<b>Table 2: Component Contributions to the Change in Leading Economic Indicator</b>						
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	57.73	58.58	-0.85	0.03	-0.03	-0.02%
Airline Passengers	91.96	92.31	-0.35	0.13	-0.05	-0.04%
U.S. Dollar Exchange Rate (Inverse)	90.78	91.52	-0.74	0.38	-0.28	-0.24%
Initial Unemployment Insurance Claims (Inverse)	110.54	102.85	7.69	0.04	0.34	0.29%
Manufacturing Hours	97.50	98.19	-0.68	0.31	-0.21	-0.18%
Survey Business Expectations <sup>1</sup>	55.43		5.43	0.10	0.56	0.48%
Trend Adjustment					0.13	0.11%
<b>Total (weighted average)</b>	<b>116.28</b>	<b>115.82</b>			<b>0.46</b>	<b>0.40%</b>

<sup>1</sup> Survey results are a diffusion Index, which is always compared to 50

<b>Table 3: Component Contributions to the Change in Coincident Economic Indicator</b>						
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	120.79	116.52	4.27	0.15	0.65	0.58%
Private Wage	101.52	101.66	-0.14	0.43	-0.06	-0.05%
Agricultural Commodities	150.00	151.88	-1.88	0.23	-0.42	-0.38%
Survey Business Conditions <sup>1</sup>	52.70		2.70	0.19	0.51	0.46%
<b>Total (weighted average)</b>	<b>112.72</b>	<b>112.05</b>			<b>0.67</b>	<b>0.60%</b>

<sup>1</sup> 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.

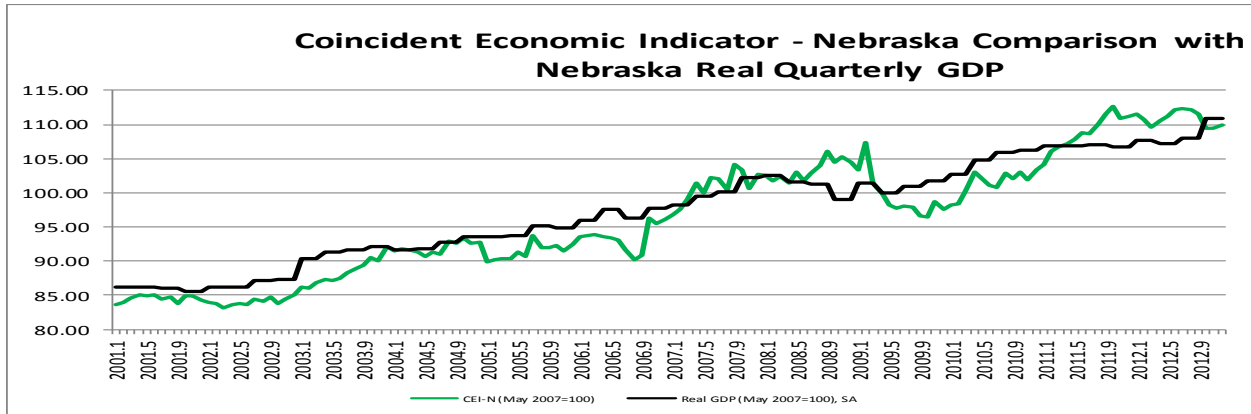


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months 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 0.91.

