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# Nebraska Monthly Economic Indicators: June 20, 2014

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## Nebraska Monthly Economic Indicators: June 20, 2014

Prepared by the UNL College of Business Administration, Department of Economics

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**Summary:** *The Leading Economic Indicator – Nebraska (LEI-N) rose by 0.13% during May 2014. The rise in the LEI-N, which predicts economic growth in the state six months in the future, is the fourth consecutive monthly increase and provides further reason to expect solid growth in the Nebraska economy in the second half of 2014. Among the growing components of the leading economic indicator, there was growth in manufacturing hours and airline passenger counts. There also was solid improvement in business expectations. Specifically, respondents to the Survey of Nebraska Business predicted an increase in sales at their business over the next six month. There also was a decline in the value of the U.S. Dollar during May, which is positive for Nebraska exporters. Among struggling components of the indicator, there was a decline in building permits for single-family homes in Nebraska in May and an increase in initial claims for unemployment insurance.*

### Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) in May 2014, compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 0.13% in May.

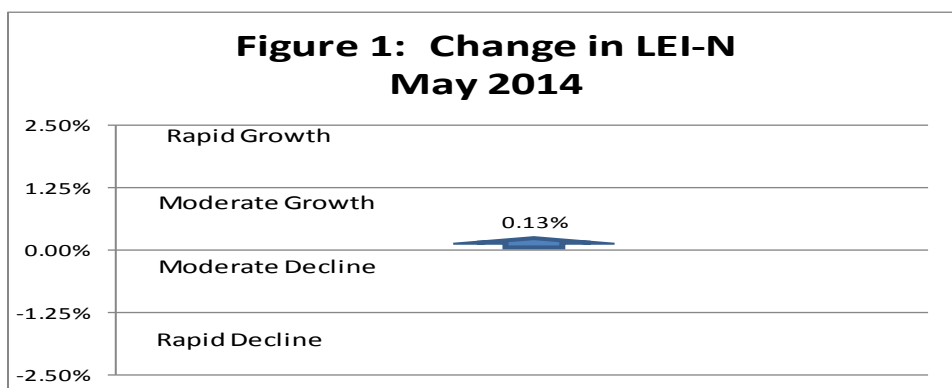


Figure 2 shows the change in the LEI-N over the last 6 months. The leading indicator has risen in each of the last four months, after volatility around the turn of the year. The four consecutive months of increase suggest that there will be solid growth in the Nebraska economy in the second half of 2014.

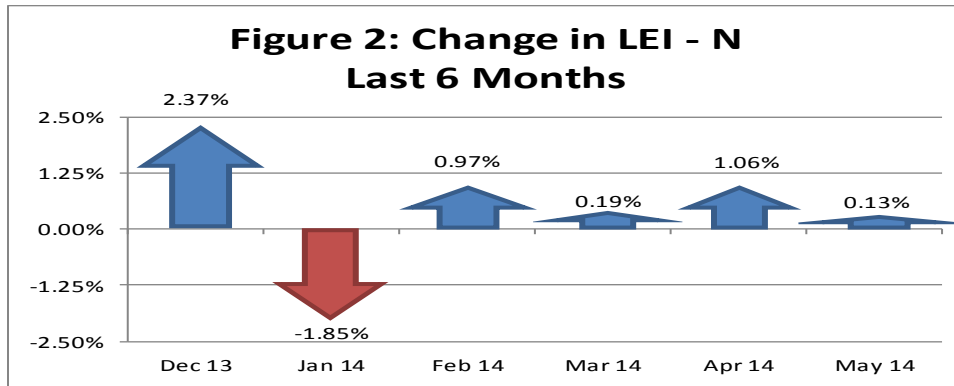
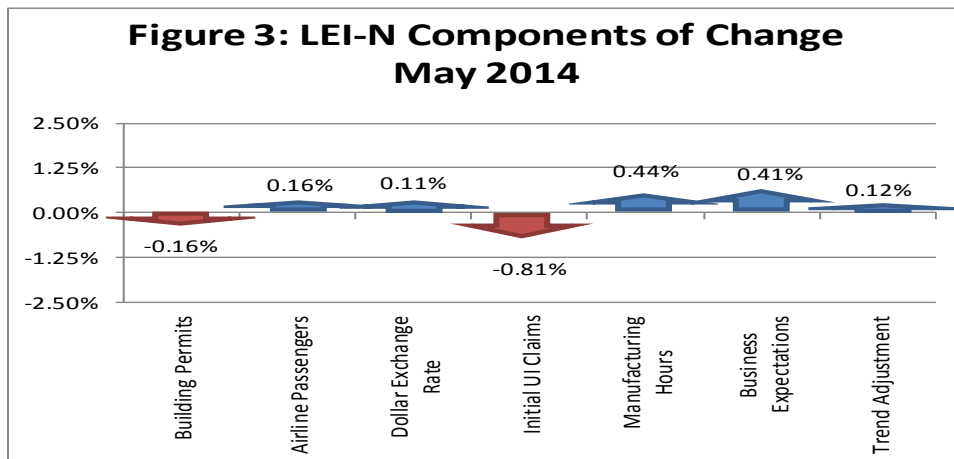
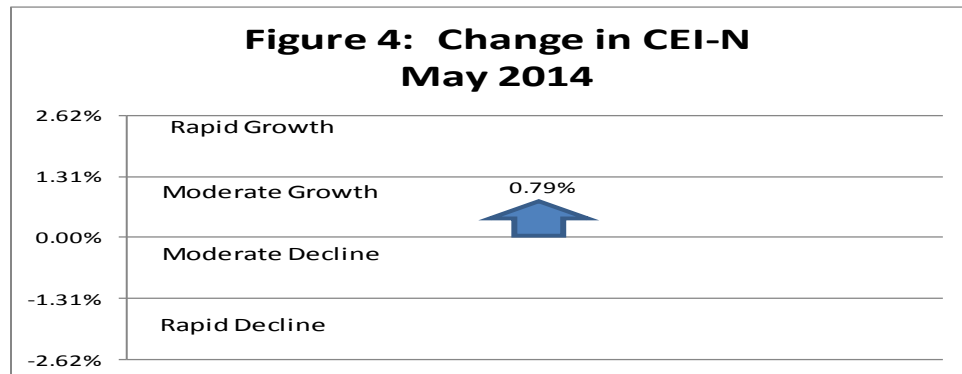


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during May 2014. The change in the overall LEI-N is the weighted average of changes in each component (see page 5). During May, four of the six components of the LEI-N rose. Business expectations improved in May as respondents to the *Survey of Nebraska Business* predicted an increase in sales over the next six months and a modest improvement in employment. There also was an increase in airline passenger counts during May, suggesting confidence on the part of both business and leisure travelers. Manufacturing hours rose during May, a sign of strength in this cyclically sensitive sector. Further, a decline in the value of the U.S. dollar suggests an improved competitive position for Nebraska exporters. Among declining components, there was a decrease in building permits for single-family homes in May and an increase in initial claims for unemployment insurance. The latter series has been quite volatile from month to month during 2014. Note that the trend adjustment component pictured in Figure 3 is discussed on page 5.

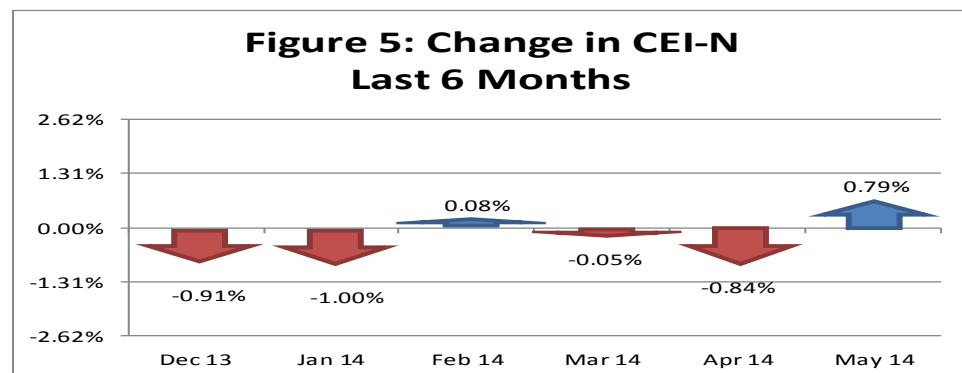


## Coincident Economic Indicator – Nebraska

The Coincident Economic Indicator - Nebraska (CEI-N) is a measure of the current size of the Nebraska economy. As seen in Figure 4, the CEI-N rose by 0.79% last month.



The increase in the CEI-N during May is another sign of stabilization in the Nebraska economy. The increase negates a decline in April of similar magnitude. Growth in April was originally forecast to be near zero, but a downward revision in real weekly wages lead to a decline in the overall CEI-N. As seen in Figure 5, the CEI-N dropped consistently around the turn of the year but then stabilized beginning in February, with subsequent declines in some months balanced with increases in others. Note that the CEI-N is expected to expand over the next 6 months (see Figure 7).



As seen in Figure 6, three components of the CEI-N rose during May while one declined. There was growth in real private wages, commodity prices and business conditions. Real weekly private wages bounced back during the month, suggesting growth in employment opportunities and stability in real hourly wages. Agricultural commodity prices also rose, due to sustained increases in corn and beef prices. Respondents to the *Survey of Nebraska Business* reported an increase in employment in recent months. Only one component of the CEI-N declined during May. There was a decline in electricity sales in May after accounting for weather and other seasonal adjustments. A detailed discussion of the components of the CEI-N, as well as the LEI-N, can be found at [www.cba.unl.edu](http://www.cba.unl.edu) in *Technical Report: Coincident and Leading Economic Indicators- Nebraska*.

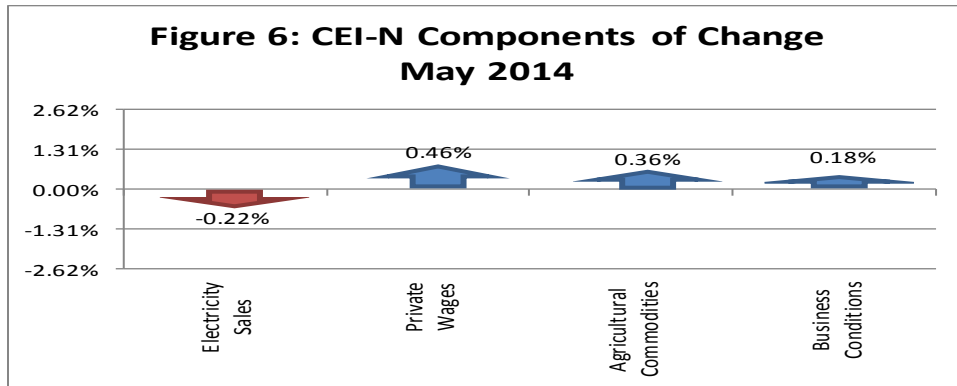
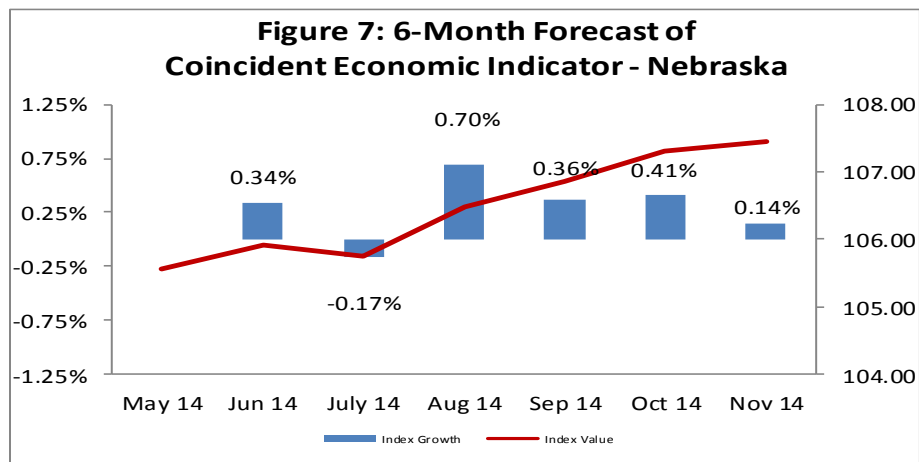


Figure 7 shows the forecast for the CEI-N over the next six months. The forecast suggests moderate growth in the CEI-N over the next few months and solid growth in the Nebraska economy beginning in August. This expectation is consistent with recent values for the LEI-N (see Figure 2).



## Weights and Component Shares

Table 1 shows the weights that were 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>							
<b>Leading Economic Indicator - Nebraska</b>				<b>Coincident Economic Indicator - Nebraska</b>			
<b>Variable</b>	<b>Standard Deviation</b>	<b>Inverse STD</b>	<b>Weight (Inverse STD Standardize)</b>	<b>Variable</b>	<b>Standard Deviation</b>	<b>Inverse STD</b>	<b>Weight (Inverse STD Standardize)</b>
SF Housing Permits	13.8758	0.0721	0.0331	Electricity Sales	4.8981	0.2042	0.1490
Airline Passengers	3.5386	0.2826	0.1298	Private Wages	1.7106	0.5846	0.4266
Exchange Rate	1.1977	0.8350	0.3834	Agricultural Commodities	3.1100	0.3215	0.2347
Initial UI Claims	10.3662	0.0965	0.0443	Survey Business Conditions	3.8463	0.2600	0.1897
Manufacturing Hours	1.4895	0.6714	0.3083				
Survey Business Expectations	4.5362	0.2204	0.1012				

Tables 2 and 3 show the calculation for the change in CEI-N and LEI-N between April and May of 2014. 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 0.12% 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>						
<b>Leading Economic Indicator - Nebraska</b>						
Component Index Value (May 2007=100)						
<b>Component</b>	<b>Current</b>	<b>Previous</b>	<b>Difference</b>	<b>Weight</b>	<b>Contribution</b>	<b>Percentage Contribution (Relative to Previous LEI-N)</b>
SF Building Permits	56.17	61.50	-5.33	0.03	-0.18	-0.16%
Airline Passengers	93.10	91.77	1.33	0.13	0.17	0.16%
U.S. Dollar Exchange Rate (Inverse)	102.09	101.76	0.33	0.38	0.13	0.11%
Initial Unemployment Insurance Claims (Inverse)	81.60	101.47	-19.86	0.04	-0.88	-0.81%
Manufacturing Hours	94.17	92.61	1.56	0.31	0.48	0.44%
Survey Business Expectations <sup>1</sup>	52.85		2.85	0.10	0.29	0.26%
Trend Adjustment					0.13	0.12%
Total (weighted average)	109.36	109.22			0.14	0.13%

<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>						
<b>Coincident Economic Indicator - Nebraska</b>						
Component Index Value (May 2007=100)						
<b>Component</b>	<b>Current</b>	<b>Previous</b>	<b>Difference</b>	<b>Weight</b>	<b>Contribution</b>	<b>Percentage Contribution (Relative to Previous CEI-N)</b>
Electricity Sales	118.15	119.73	-1.58	0.15	-0.24	-0.22%
Private Wage	96.44	95.30	1.14	0.43	0.49	0.46%
Agricultural Commodities	145.99	144.37	1.62	0.23	0.38	0.36%
Survey Business Conditions <sup>1</sup>	51.01		1.01	0.19	0.19	0.18%
Total (weighted average)	105.57	104.74			0.82	0.79%

<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.

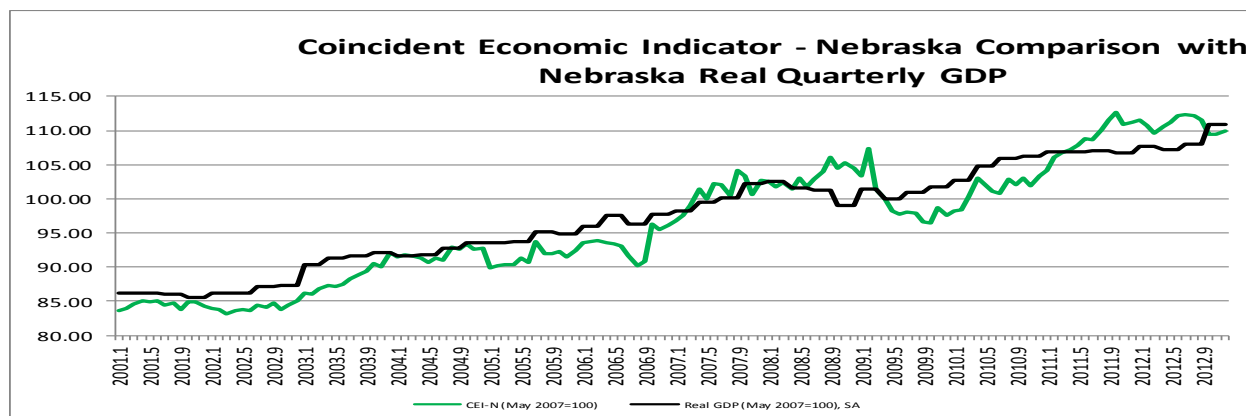


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months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

