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# Nebraska Monthly Economic Indicators: January 18, 2013

Eric Thompson

*University of Nebraska-Lincoln*, [ethompson2@unl.edu](mailto:ethompson2@unl.edu)

William Walstad

*University of Nebraska-Lincoln*, [wwalstad1@unl.edu](mailto:wwalstad1@unl.edu)

Adam George

*University of Nebraska-Lincoln*

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

**Authors:** Dr. Eric Thompson, Dr. William Walstad  
**Graduate Research Assistant:** Adam George

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**Summary:** The Leading Economic Indicator – Nebraska (LEI-N) rose modestly, by 0.11%, during December 2012. The increase in the LEI-N, which predicts economic growth in the state six months in the future, suggests modest economic growth in Nebraska in mid-2013. Looking at individual components of the LEI-N, two components improved in December. The value of the U.S.dollar fell during December, which may increase export activity over the next six months. There also was a decline in initial unemployment claims during the month that signals an improving labor market. Among other components, there was a modest decline in manufacturing hours, airline passenger counts, and building permits during December. Further, there was a significant decline in business expectations. Respondents to the Survey of Nebraska Business reported negative expectations for business sales and employment over the next six months. These negative expectations may have reflected concerns regarding stalled fiscal cliff negotiations during much of December. It will be interesting to monitor whether business expectations improve during January.

## Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) in December 2012, compared to the previous month. The LEI-N, which predicts economic growth six months into the future, rose by 0.11% in December.

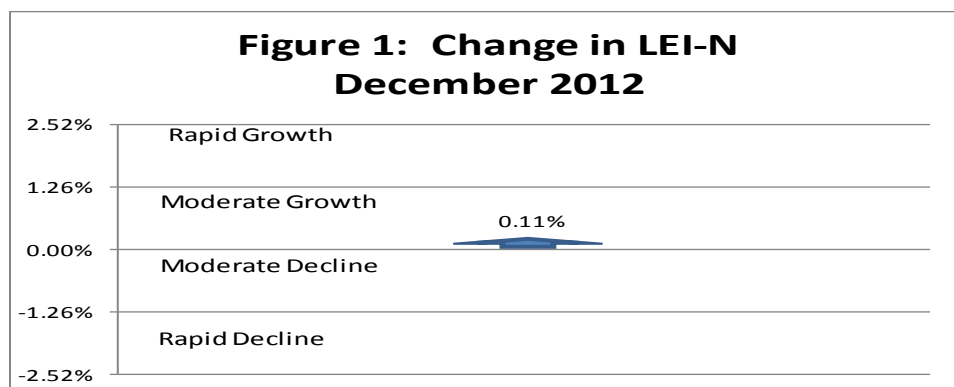


Figure 2 shows the growth in the LEI-N over the last 6 months. The figure shows that the leading indicator grew from solidly July through September, but growth was mixed over the last three months. This pattern suggests that the Nebraska economy will grow solidly during the first three months of 2013 but growth will be limited from April through June.

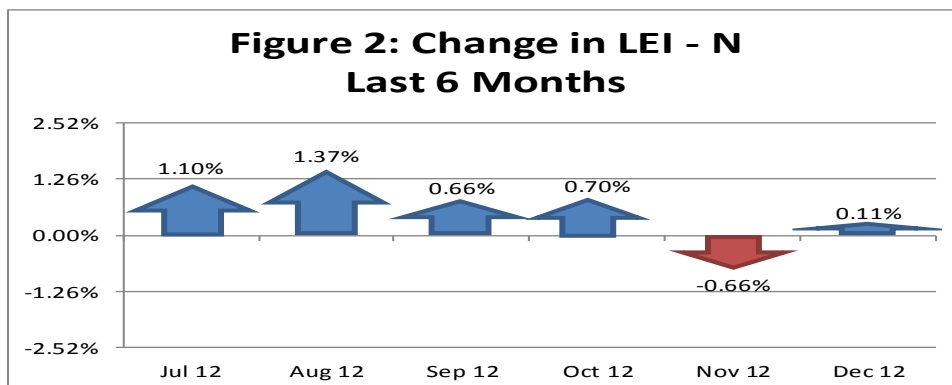
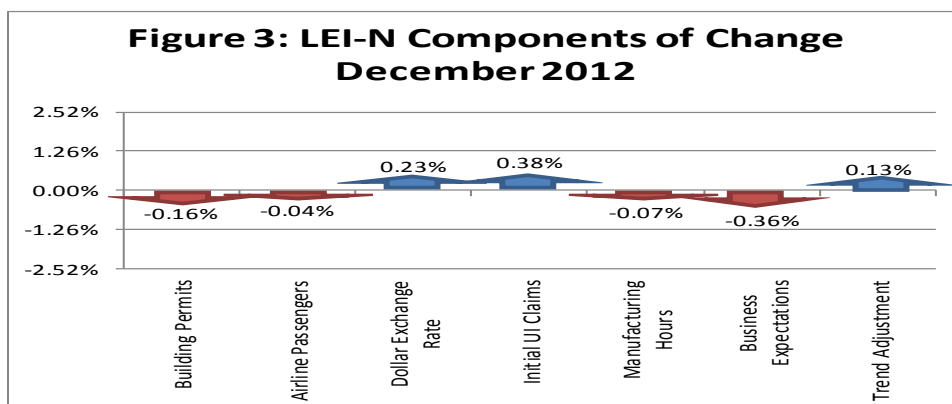


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during December 2012. The change in the overall LEI – N is the weighted average of changes in each component (see page 5). Two components contributed to the increase in the LEI-N. There was decrease in the value of the U.S. dollar during December, which may increase export activity in the state. Further, initial unemployment claims declined during the month. A decline in layoffs suggests that a growing share of employers expect to maintain their workforce in the months to come. All other components declined during the month. There was a modest decrease in seasonally adjusted airline passenger counts as well as a slight decline in manufacturing hours. Single-family building permits pulled back modestly in December after a sharp increase in November. Finally, there was a significant decline in business expectations. Respondents to the *Survey of Nebraska Businesses* reported that they expect a sharp decline in sales and a modest decline in employment in their business over the next six months. Business concerns over fiscal cliff negotiations may have harmed business confidence during December. Finally, note that the trend adjustment component pictured in Figure 3 is discussed on page 5.

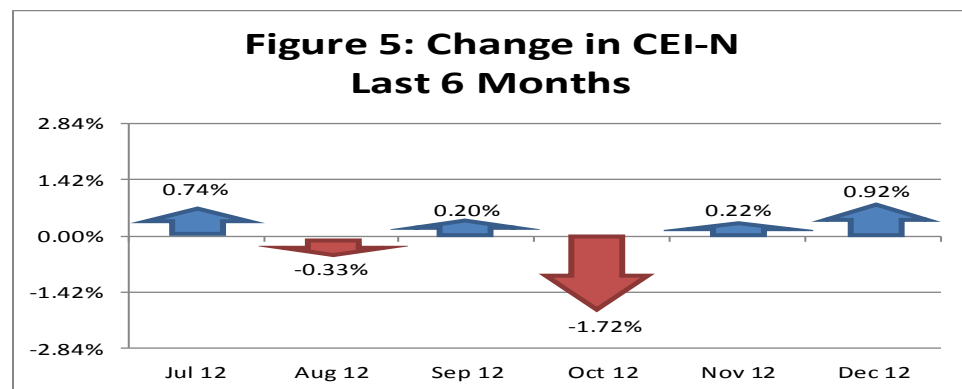


## Coincident Economic Indicator – Nebraska

The Coincident Economic Indicator - Nebraska (CEI-N) is a measure of the current size of the Nebraska economy. In Figure 4, the CEI-N rose solidly, by 0.92%, between November and December of 2012.



As seen in Figure 5, the solid growth in the CEI-N during December represents as acceleration in the Nebraska economy late in 2012, after months of uneven growth. Note that the improvement in the December CEI-N was predicted by growth in the LEI-N in July 2012 (see Figure 2).



As seen in Figure 6, a strong increase in private wages underpinned the solid improvement in the CEI-N during December. The improvement in private wages reflected an expansion in employment, hours, and real hourly wages. Higher prices for agricultural commodities also contributed to growth in the CEI-N during December. Among remaining components, electricity sales and business conditions contributed to the decline in the CEI-N. Weather adjusted electricity sales declined in December relative to November. Respondents to the *Survey of Nebraska Business* also reported a decline in sales and employment activity in recent months. 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*.

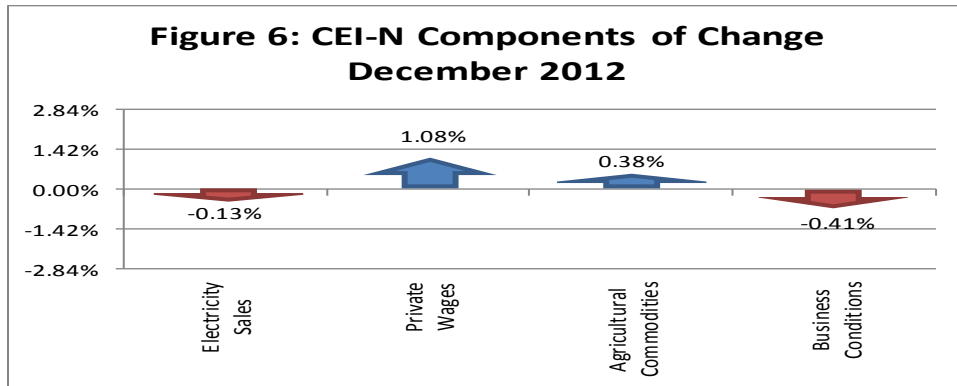
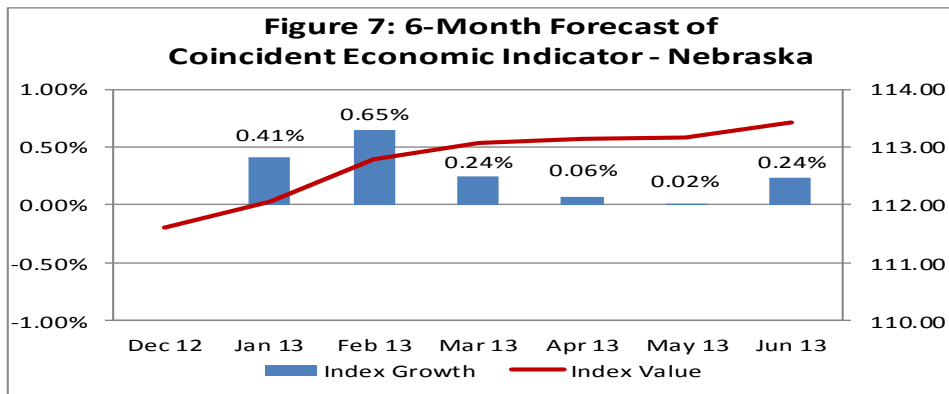


Figure 7 shows the forecast for the CEI-N over the next six months. The forecast reflects changes in the value of LEI-N between July and December of 2012 (see Figure 2). Recall that the LEI-N grew solidly during the third quarter of 2012 but growth was limited during the last three months of 2012. This pattern suggests the Nebraska economy should grow solidly but then the pace of growth will decline. These expectations are depicted in Figure 7. The CEI-N is forecast to achieve solid growth during the January through March 2013 period but growth will be limited from April through June of 2013.



## 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	14.3511	0.0697	0.0329	Electricity Sales	4.6821	0.2136	0.1687
Airline Passengers	3.6482	0.2741	0.1296	Private Wages	1.7832	0.5608	0.4431
Exchange Rate	1.2443	0.8037	0.3799	Agricultural Commodities	3.3157	0.3016	0.2383
Initial UI Claims	9.9779	0.1002	0.0474	Survey Business Conditions	5.2709	0.1897	0.1499
Manufacturing Hours	1.4376	0.6956	0.3288				
Survey Business Expectations	5.8116	0.1721	0.0813				

Tables 2 and 3 show the calculation for the change in CEI-N and LEI-N between November and December. 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 0.13% per month. The U.S. Leading Economic Indicator also has a trend adjacent factor.

<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)						
Component	Current	Previous	Difference	Weight	Contribution	Percentage Contribution (Relative to Previous LEI-N)
SF Building Permits	68.48	73.57	-5.08	0.03	-0.17	-0.16%
Airline Passengers	90.07	90.41	-0.34	0.13	-0.04	-0.04%
U.S. Dollar Exchange Rate (Inverse)	105.61	104.98	0.63	0.38	0.24	0.23%
Initial Unemployment Insurance Claims (Inverse)	73.46	65.05	8.41	0.05	0.40	0.38%
Manufacturing Hours	90.08	90.29	-0.21	0.33	-0.07	-0.07%
Survey Business Expectations <sup>1</sup>	45.37		-4.63	0.08	-0.38	-0.36%
Trend Adjustment					0.13	0.13%
Total (weighted average)	103.69	103.58			0.11	0.11%

<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)						
Component	Current	Previous	Difference	Weight	Contribution	Percentage Contribution (Relative to Previous CEI-N)
Electricity Sales	101.43	102.26	-0.83	0.17	-0.14	-0.13%
Private Wage	96.02	93.33	2.69	0.44	1.19	1.08%
Agricultural Commodities	157.25	155.47	1.78	0.24	0.43	0.38%
Survey Business Conditions <sup>1</sup>	46.94		-3.06	0.15	-0.46	-0.41%
Total (weighted average)	111.61	110.59			1.02	0.92%

<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 2011. The comparison ends in 2011 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 0.94.

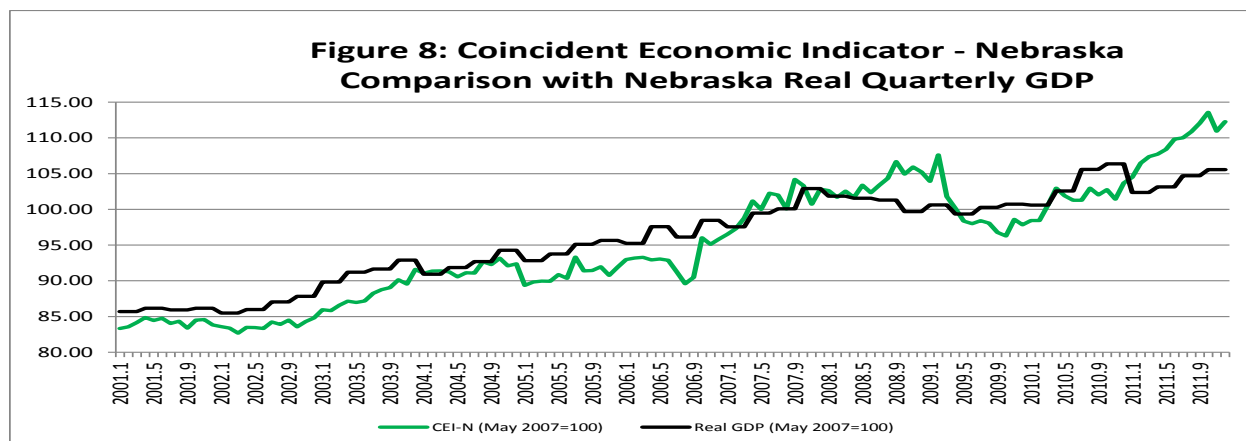


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months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

