

# Nebraska Monthly Economic Indicators: February 15, 2013

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**Summary:** *The Leading Economic Indicator – Nebraska (LEI-N) rose by 0.36% during January 2013. The increase in the LEI-N, which predicts economic growth in the state six months in the future, suggests moderate economic growth in Nebraska in the summer of 2013. Looking at individual components of the LEI-N, four improved in January. There was strong growth in single-family building permits during January, reflecting significant improvement in the outlook for the housing sector over the last year. There also was modest improvement in airline passengers counts, a drop in initial claims for unemployment insurance, and a drop the value of the U.S.dollar during January. A drop in initial claims portends improvement in the labor market while a drop in the value of the dollar should lead to improved export activity. Among other components, there was a modest decline in manufacturing hours. Further, respondents to the Survey of Nebraska Business reported negative expectations for business sales and employment over the next six months. Business expectations have been negative for the past five months. Business expectations must improve in order to see strong growth in the Leading Economic Indicator – Nebraska.*

## Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) in January 2013, compared to the previous month. The LEI-N, which predicts economic growth six months into the future, rose by 0.36% in December.

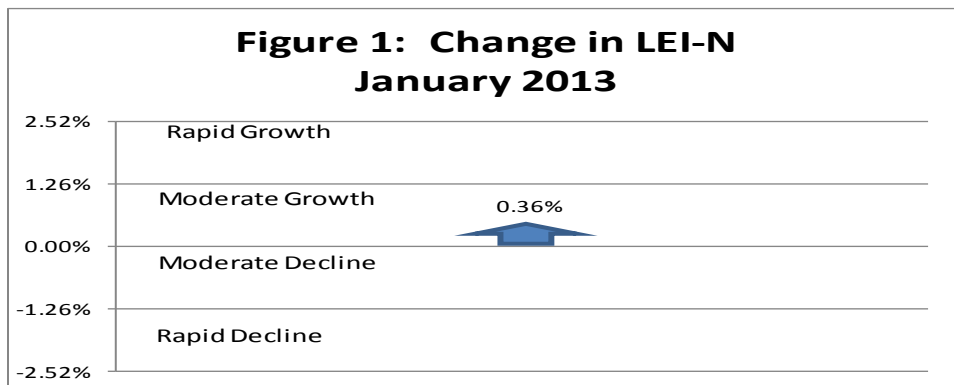


Figure 2 shows the growth in the LEI-N over the last 6 months. The figure shows that the leading indicator grew strongly in August, continued to rise in September and October but at a moderate pace, and declined in November. Since then the indicator again pointed to moderate growth. This six-month pattern suggests that the Nebraska economy will grow solidly in early 2013, but that growth will moderate in the middle of the year.

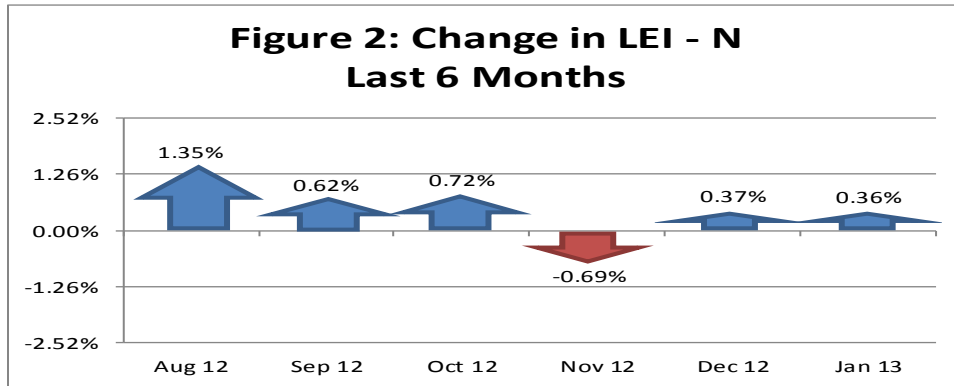
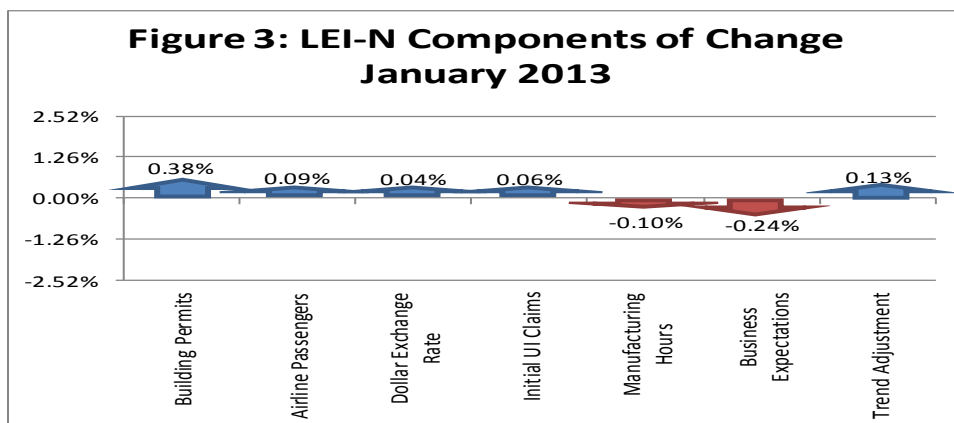
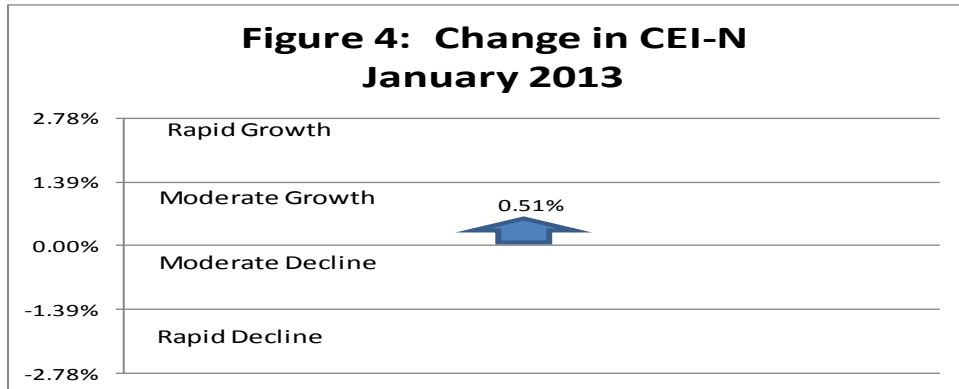


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during January 2013. The change in the overall LEI – N is the weighted average of changes in each component (see page 5). Four components contributed to the increase in the LEI-N. There was a strong increase in single-family home building permits. This increase suggests solid growth in home construction and related industries in mid-2013. There also was a modest increase in airline passenger counts and a decrease in initial unemployment insurance claims. A decline in jobless claims suggests that a growing share of employers expect to maintain their workforce in the months to come. There also was a modest decrease in the value of the U.S. dollar which should encourage future export activity. Two components of the LEI-N declined in January. There was a modest decline in manufacturing hours. More significantly, business expectations were negative in January. Specifically, respondents to the *Survey of Nebraska Businesses* reported that they expect a decline in sales and employment in their business over the next six months. Business expectations have been negative for the past 5 months. Finally, note that the trend adjustment component pictured in Figure 3 is discussed on page 5.

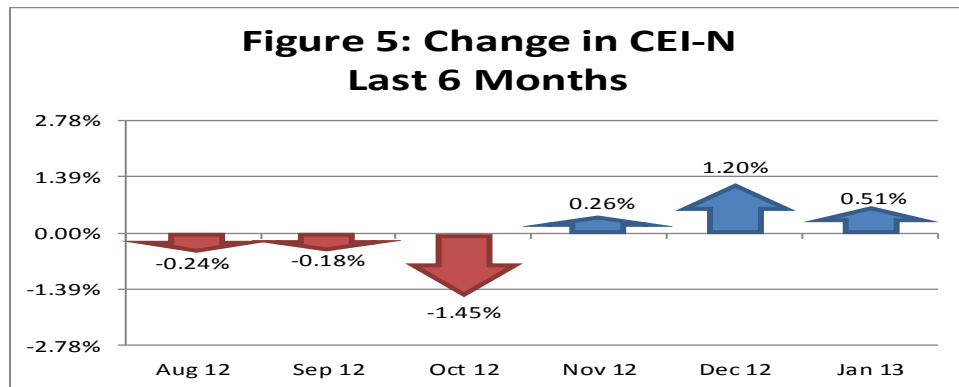


## Coincident Economic Indicator – Nebraska

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 by 0.51% between December of 2012 and January of 2013.



As seen in Figure 5, the growth in the CEI-N during January represents continued improvement in the Nebraska economy late in 2012 and early 2013. Note that the improvement in the January CEI-N was predicted by growth in the LEI-N in August 2012 (see Figure 2).



As seen in Figure 6, a solid improvement in electricity sales made a significant contribution to the improvement in the CEI-N during January. Electricity sales were up even after adjusting for weather and other seasonal factors in January. Higher prices for agricultural commodities also contributed to growth in the CEI-N during January. Among remaining components, there was a slight improvement in private wages. However, respondents to the *Survey of Nebraska Business* reported a slight 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*.

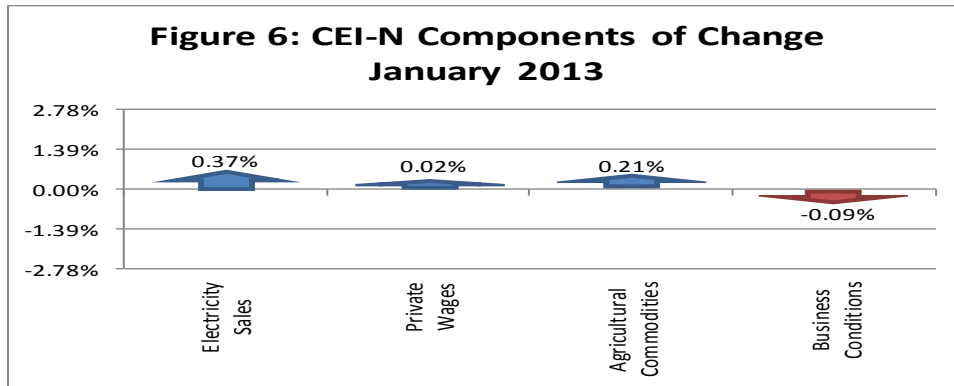
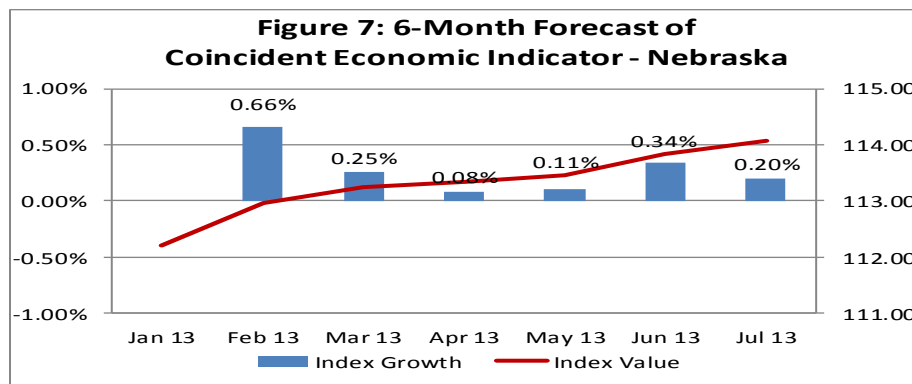


Figure 7 shows the forecast for the CEI-N over the next six months. The forecast reflects changes in the value of LEI-N between August of 2012 and January of 2013 (see Figure 2). Recall that the LEI-N grew rapidly during August 2012 but the rate of growth slowed in the months that followed. This pattern suggests the Nebraska economy should continue to grow solidly at the beginning of 2013 but then growth will moderate in mid-2013. These expectations are depicted in Figure 7.



## 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.

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	14.3430	0.0697	0.0328	Electricity Sales	4.8204	0.2075	0.1634
Airline Passengers	3.6368	0.2750	0.1293	Private Wages	1.7889	0.5590	0.4404
Exchange Rate	1.2443	0.8037	0.3779	Agricultural Commodities	3.3186	0.3013	0.2374
Initial UI Claims	9.9471	0.1005	0.0473	Survey Business Conditions	4.9605	0.2016	0.1588
Manufacturing Hours	1.4365	0.6961	0.3273				
Survey Business Expectations	5.5084	0.1815	0.0854				

Tables 2 and 3 show the calculation for the change in CEI-N and LEI-N between December 2012 and January 2013. 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.

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	81.35	69.20	12.14	0.03	0.40	0.38%
Airline Passengers	90.77	90.07	0.70	0.13	0.09	0.09%
U.S. Dollar Exchange Rate (Inverse)	105.71	105.59	0.12	0.38	0.04	0.04%
Initial Unemployment Insurance Claims (Inverse)	75.39	74.06	1.33	0.05	0.06	0.06%
Manufacturing Hours	90.47	90.80	-0.33	0.33	-0.11	-0.10%
Survey Business Expectations <sup>1</sup>	47.10		-2.90	0.09	-0.25	-0.24%
Trend Adjustment					0.13	0.13%
<b>Total (weighted average)</b>	<b>104.34</b>	<b>103.97</b>			<b>0.37</b>	<b>0.36%</b>

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

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	103.58	101.05	2.53	0.16	0.41	0.37%
Private Wage	96.62	96.57	0.06	0.44	0.02	0.02%
Agricultural Commodities	158.27	157.30	0.97	0.24	0.23	0.21%
Survey Business Conditions <sup>1</sup>	49.37		-0.63	0.16	-0.10	-0.09%
<b>Total (weighted average)</b>	<b>112.22</b>	<b>111.65</b>			<b>0.57</b>	<b>0.51%</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 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.

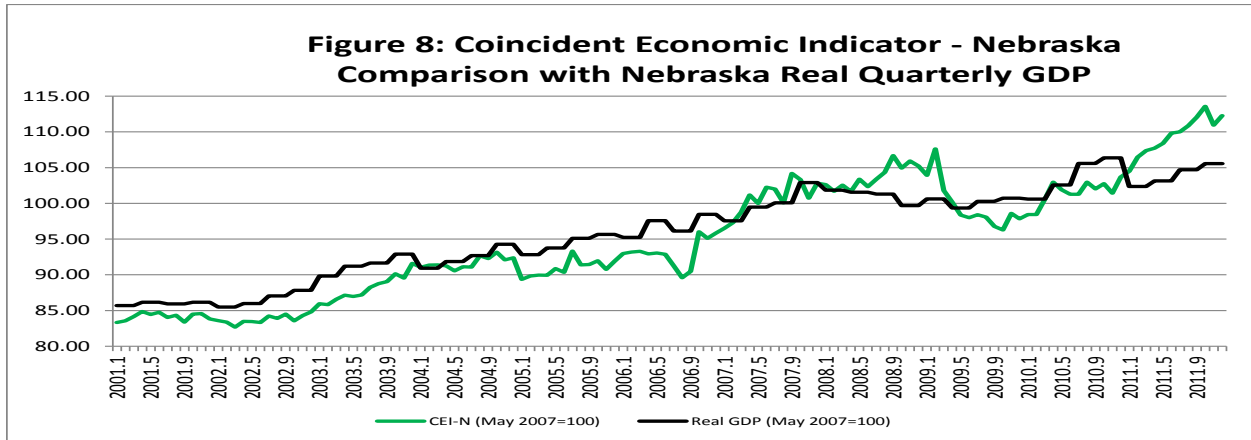


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months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

