

# Nebraska Monthly Economic Indicators: February 17, 2012

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

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

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**Summary:** *The Leading Economic Indicator – Nebraska (LEI-N) grew for the second consecutive month in January 2012, posting a moderate 0.51% increase. The increase in the LEI-N, which predicts state economic growth 6 months in the future, suggests that the Nebraska economy will grow at a moderate pace in mid-2012. A declining U.S. dollar, a rise in the number of airline passengers, and improving business expectations all contributed to the increase in the LEI-N in January 2012. Manufacturing hours and building permits were essentially unchanged and rising initial unemployment claims detracted from growth in the leading indicator. Looking at earlier months, the LEI-N declined in September, October, and November 2011, suggesting a weak economy in Nebraska from February through April 2012.*

## Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) in January 2012, compared to the previous month of December 2011. The LEI-N, which predicts state economic growth 6 months in the future, grew by 0.51% in January 2012. This moderate increase suggests solid economic growth in Nebraska six months from now, in mid-2012.

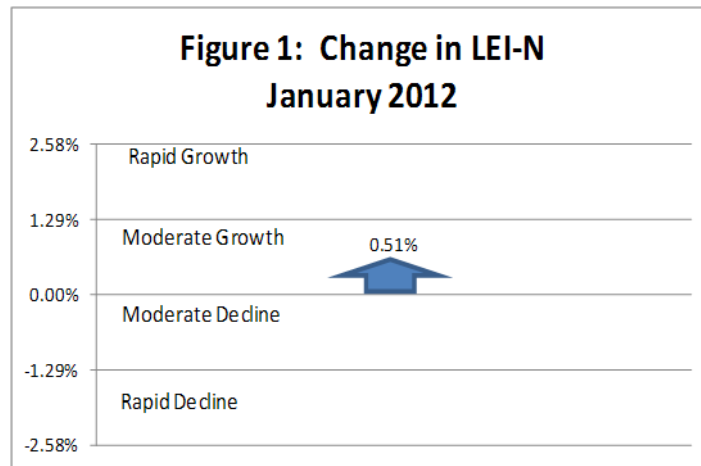
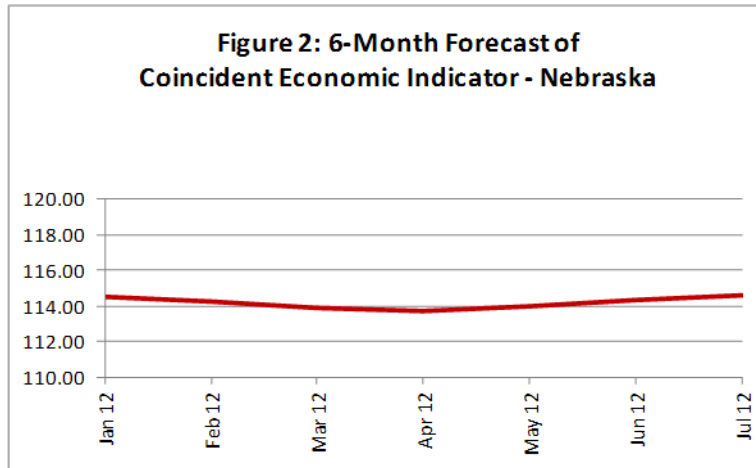


Figure 2 shows the forecast for the Coincident Economic Indicator – Nebraska (CEI-N) over the next 6 months. The CEI-N is a measure of the size of the Nebraska economy, and is explained in more detail on page 4. The LEI-N forecasts the CEI-N 6 months in the future. Therefore, the forecast for CEI-N in Figure 2 is based on values for LEI-N in late 2011 and early 2012.



As seen in Figure 3, LEI-N declined during September, October, and November 2011 before rebounding in December and January. This pattern is reflected in the forecast for CEI-N. A small decline in CEI-N is expected from February to April 2012, with growth in CEI-N returning in May 2012. As noted earlier, these increases suggest moderate growth in the Nebraska economy during mid-2012. Note that all data in Figure 1 through 4 are seasonally adjusted.

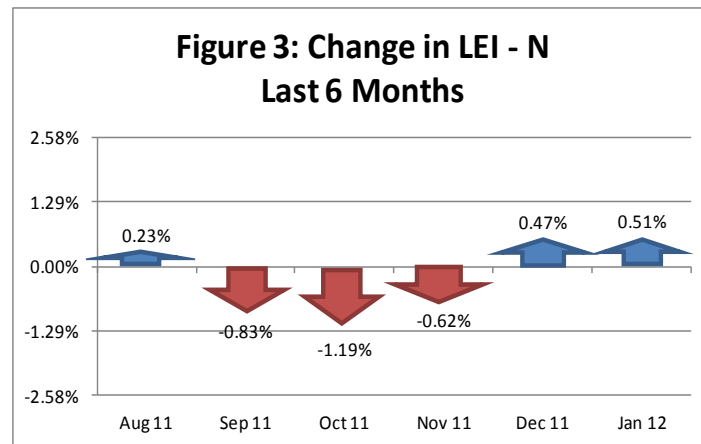
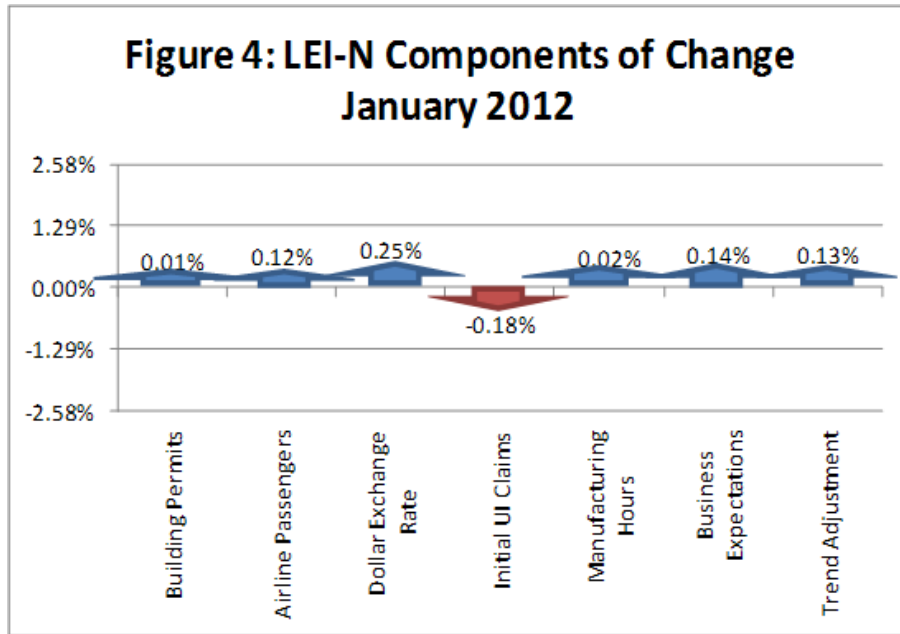


Figure 4 shows the components of change in the Leading Economic Indicator – Nebraska during January 2012. The change in the overall LEI – N is the weighted average of changes in each component (see page 4). Most components of the LEI-N rose, or at least remained flat, during January 2012. The trade-weighted value of the U.S. Dollar declined during January 2012, encouraging exports and contributing to growth in the LEI-N. An increase in airline passengers also contributed to an increase in LEI-N. The LEI-N also increased because business responding to the monthly *Survey of Nebraska Business* reported an expectation of rising sales and employment in their business over the next six months. Among other components, building permits and manufacturing hours changed little during January, with little effect on the LEI-N. However, initial claims for unemployment insurance rose during January 2012 on a seasonally adjusted basis, detracting from growth in the LEI-N during January. Lastly, given that LEI-N historically under-predicts CEI-N, the measure of the size of the Nebraska economy, by 0.13% per month, a trend adjustment is made to the LEI-N. That trend adjustment factor is also seen in Figure 4.



## Coincident Economic Indicator – Nebraska

The Coincident Economic Indicator - Nebraska (CEI-N) is a measure of the current size of the Nebraska economy. CEI-N increased at a moderate 0.60% in January 2012, as seen in Figure 5. This represents the second month of gain after a surprising drop in November 2011.

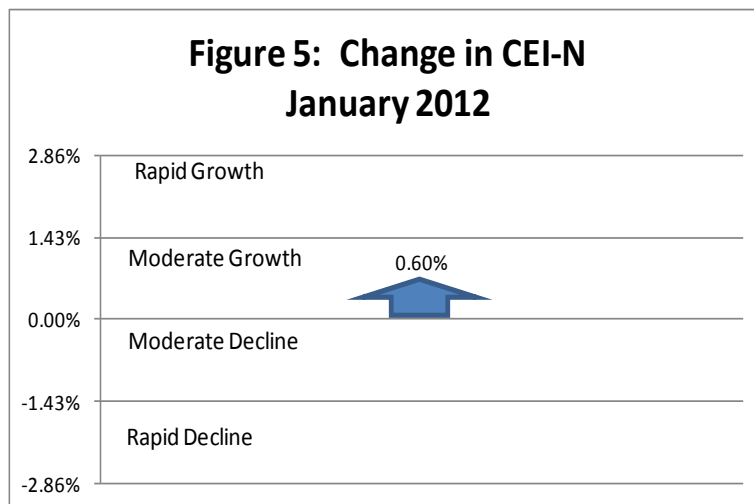


Figure 6 shows growth in the CEI-N over the past 6 months. Expansion of the CEI-N in December 2011 and January 2012 reversed the drop during November. After several months of growth it is now clear that the decline in CEI-N represented a short-term event rather than the beginning of a sustained decline in the Nebraska economy. The rapid decline in November also followed a sustained streak of moderate growth in CEI-N from August through October 2011.

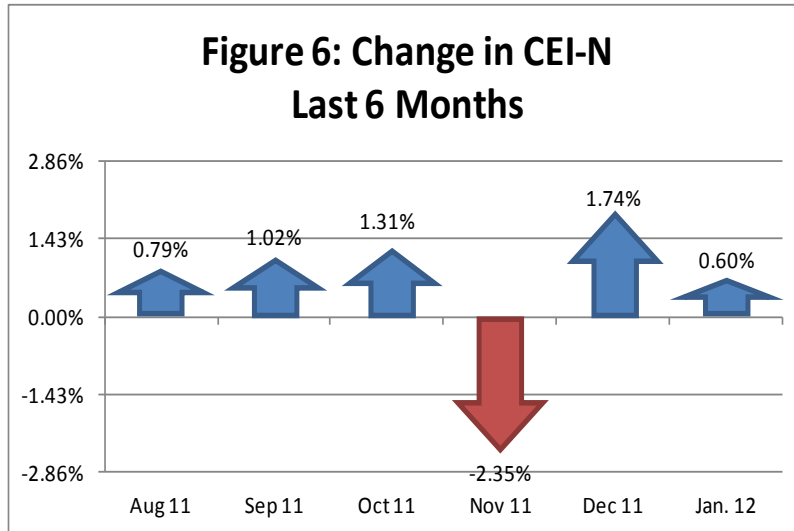
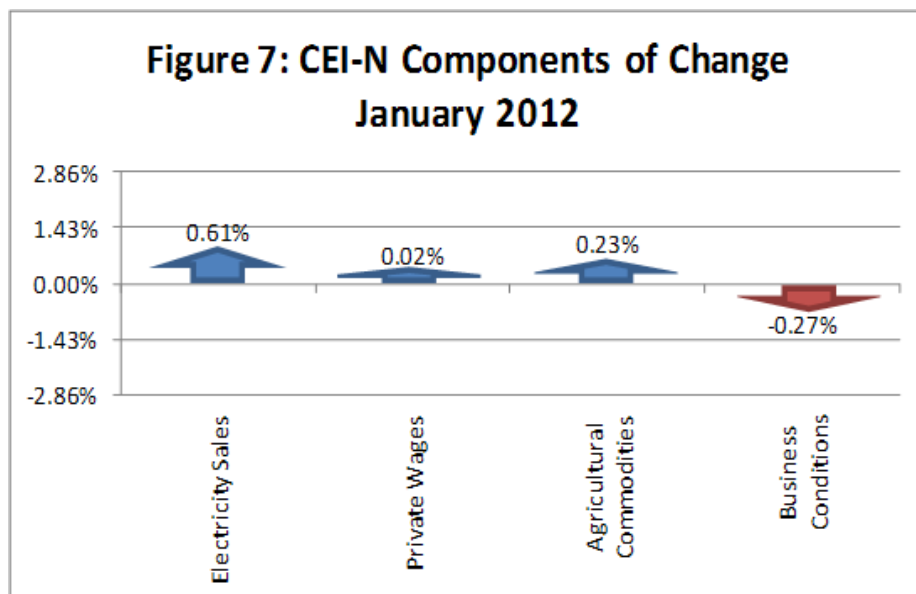


Figure 7 shows growth in the four components of the CEI-N during January 2012. There was a substantial increase in electricity sales in Nebraska, even after adjusting for weather and other seasonal factors. The increase accounted for the entire rise in CEI-N. Agricultural commodity prices, which reflect price trends for corn and beef, also expanded during January 2012. Private wages (a measure of average weekly wage and salary earnings during the month) was essentially flat during January 2012, contributing little to growth. Finally, businesses responding to the monthly *Survey of Nebraska Business* reported a small decline in business activity. The modest decline detracted from growth in the CEI-N. A detailed discussion of the components of the CEI-N and 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*.



## 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 weight that is utilized is 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 be 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	14.6530	0.0682	0.0339	Electricity Sales	4.9994	0.2000	0.1707
Airline Passengers	3.7738	0.2650	0.1315	Private Wages	1.8567	0.5386	0.4595
Exchange Rate	1.2543	0.7972	0.3956	Agricultural Commodities	3.1992	0.3126	0.2667
Initial UI Claims	9.9212	0.1008	0.0500	Survey Business Conditions	8.2757	0.1208	0.1031
Manufacturing Hours	1.4906	0.6709	0.3329				
Survey Business Expectations	8.8351	0.1132	0.0562				

Tables 2 and 3 show the precise calculation of the change in the CEI-N and LEI-N. We first calculate the change in each component between the current month and the previous month. Weights (from Table 1) are then multiplied by the change to calculate the contribution of each component. Contributions are summed to calculate the total change in CEI-N or LEI-N. Changes then are put in percentage terms relative to the aggregate value of LEI-N or CEI-N in previous month. Percentage change contributions were presented in Figure 4 (LEI-N) and Figure 7 (CEI-N).

<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	58.18	57.91	0.28	0.03	0.01	0.01%
Airline Passengers	93.65	92.69	0.96	0.13	0.13	0.12%
U.S. Dollar Exchange Rate (Inverse)	104.71	104.07	0.65	0.40	0.26	0.25%
Initial Unemployment Insurance Claims (Inverse)	70.03	73.60	-3.58	0.05	-0.18	-0.18%
Manufacturing Hours	88.17	88.10	0.07	0.33	0.02	0.02%
Survey Business Expectations <sup>1</sup>	52.52		2.52	0.06	0.14	0.14%
Trend Adjustment					0.13	0.13%
<b>Total (weighted average)</b>	<b>101.29</b>	<b>100.78</b>			<b>0.51</b>	<b>0.51%</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	108.58	104.48	4.10	0.17	0.70	0.61%
Monthly Wage	97.23	97.17	0.06	0.46	0.03	0.02%
Agricultural Commodities	147.76	146.80	0.96	0.27	0.26	0.23%
Survey Business Conditions <sup>1</sup>	47.07		-2.93	0.10	-0.30	-0.27%
<b>Total (weighted average)</b>	<b>114.54</b>	<b>113.86</b>			<b>0.68</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 values of the CEI-N and the real gross state product (real GDP) in Nebraska for the 2001-2010 period. The comparison ends in 2010 since this is the last year for which data on real gross state product is available, at this time. 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.

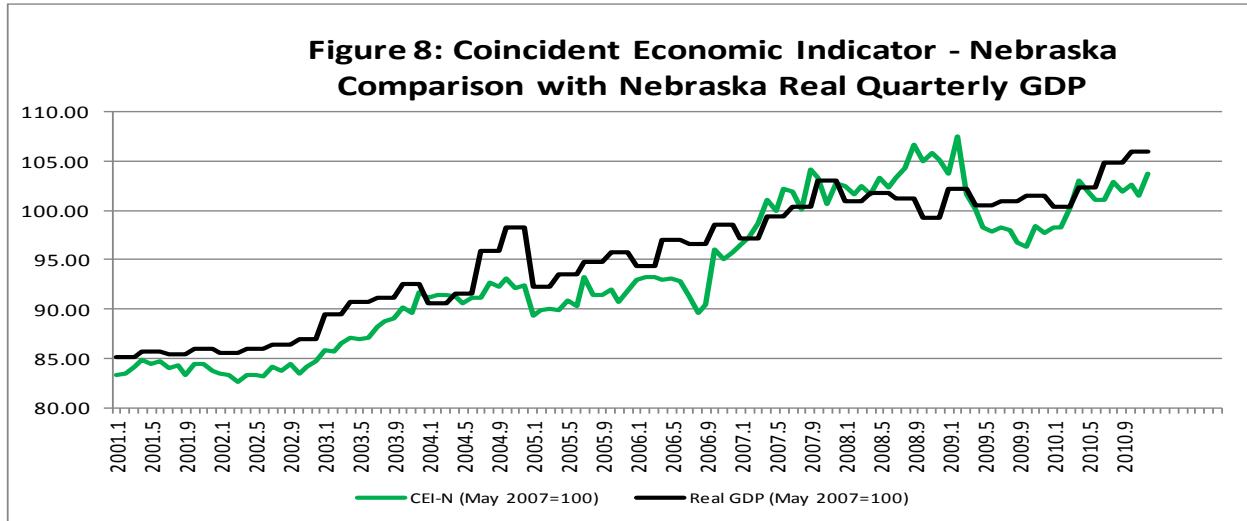


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months in the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months 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 correlations coefficient between CEI-N and six-month forward values of LEI-N is 0.90.

