

2015

Nebraska Monthly Economic Indicators: April 17, 2015

Eric Thompson

University of Nebraska-Lincoln, ethompson2@unl.edu

William Walstad

University of Nebraska-Lincoln, wwalstad1@unl.edu

Follow this and additional works at: <http://digitalcommons.unl.edu/bbrleir>



Part of the [Business Commons](#)

Thompson, Eric and Walstad, William, "Nebraska Monthly Economic Indicators: April 17, 2015" (2015). *Leading Economic Indicator Reports*. 55.

<http://digitalcommons.unl.edu/bbrleir/55>

This Article is brought to you for free and open access by the Bureau of Business Research at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Leading Economic Indicator Reports by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

Nebraska Monthly Economic Indicators: April 17, 2015

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

Authors: Dr. Eric Thompson, Dr. William Walstad

Leading Economic Indicator.....	1
Coincident Economic Indicator.....	3
Weights and Component Shares.....	5
Performance of the LEI-N and CEI-N.....	6

Summary: The Leading Economic Indicator – Nebraska (LEI-N) rose by 0.08% in March 2015, marking its fourth consecutive monthly increase. The increase in the LEI-N, which predicts economic growth in the state six months in the future, suggests that growth will be solid in Nebraska in the second half of 2015. Three of six components of the leading economic indicator rose during March. Respondents to the Survey of Nebraska Business were optimistic about sales and especially optimistic about employment over the next six months. There also was a solid increase in building permits in March, on a seasonally-adjusted basis, and a slight increase in airline passenger counts. Among declining components of the indicator, there was a fall in manufacturing hours during March. There also were diminished expectations for export activity. Specifically, a rising value for the U.S. dollar increases international competition for the state's exporting businesses in agriculture and manufacturing. March was the eighth consecutive month in which the value of the U.S. dollar increased.

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) in March 2015, compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 0.08% during March.

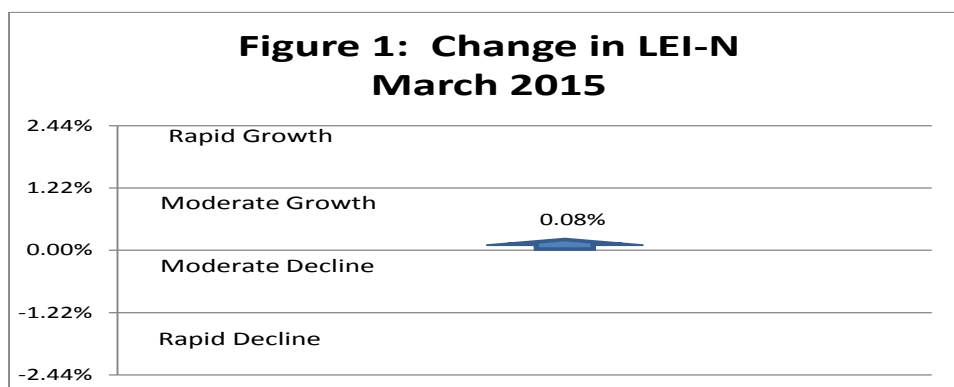


Figure 2 shows the change in the LEI-N over the last 6 months. The LEI-N declined sharply in November, 2014 but recovered in December. The LEI-N then rose consistently during 2015. Note that the LEI-N value for February was revised upward from a 0.01% increase, in last month's report, to a solid increase of 0.69% in the current report. This was due to upward revisions in building permits and manufacturing hours.

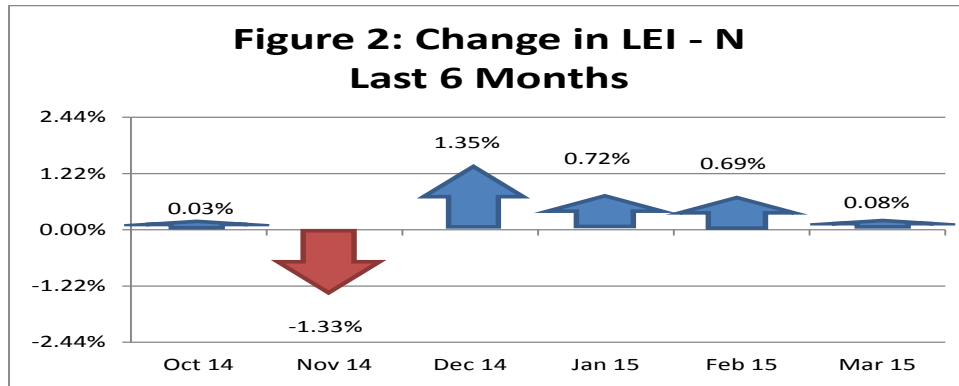
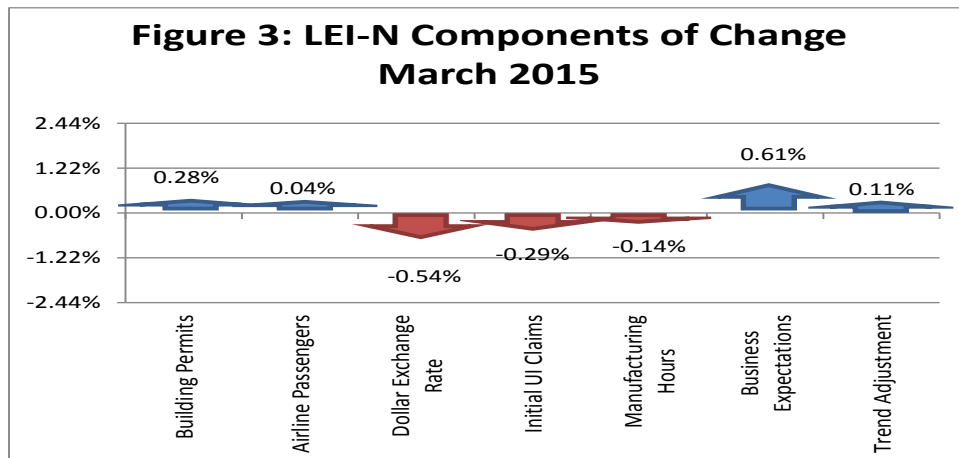
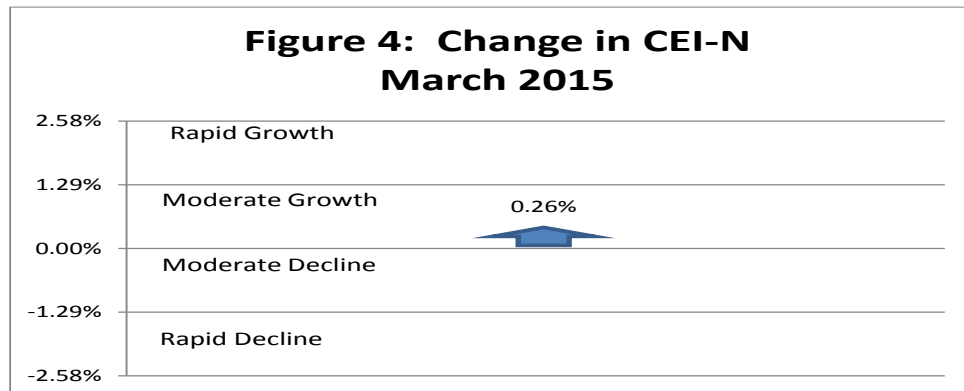


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during March 2015. The change in the overall LEI-N is the weighted average of changes in each component (see page 5). Rising components included building permits and business expectations. Strong business expectations included a solid outlook for sales growth and a strong outlook for employment growth, among the respondents to the March Survey of Nebraska Business. There also was a modest increase in airline passenger counts. There were three declining components of the LEI-N. The value of the dollar rose during March, which is a negative for export-oriented businesses in the state. This is because a rising dollar hurts the competitive position of U.S. businesses relative to foreign competitors. There also was a decline in manufacturing hours during the month, and an increase in initial claims for unemployment insurance. Note that the trend adjustment component pictured in Figure 3 is discussed on page 5.

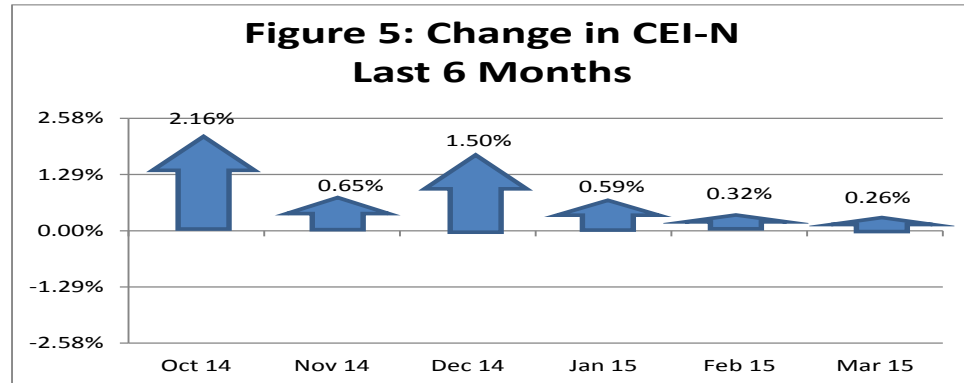


Coincident Economic Indicator – Nebraska

The Coincident Economic Indicator - Nebraska (CEI-N) is a measure of the current size of the Nebraska economy. The CEI-N rose by 0.26% during March, as seen in Figure 4.



As seen in Figure 5, the economic growth rate moderated in Nebraska in early 2015. The CEI-N grew rapidly during the fourth quarter of 2014, particularly during October and December. However, the growth rate declined during the first quarter of 2015. This trend suggests solid, but not rapid growth in the Nebraska economy during 2015.



As seen in Figure 6, two of four components of the CEI-N rose solidly during March. First, there was an increase in electricity sales during March, even after adjusting for weather and other seasonal factors. Second, respondents to the March *Survey of Nebraska Business* reported improving business conditions, in particular a solid increase in employment at their businesses in recent months. Among declining components, there was a modest decrease in real private wages in Nebraska during March. Private wages reflects real hourly wages and hours worked, as well as employment. This weak performance is consistent with the poor national jobs report for March. There also was a slight decline in the value of agricultural commodities in Nebraska in March, as both corn and beef prices dropped modestly during the month. A detailed discussion of the components of the CEI-N and LEI-N can be found at www.cba.unl.edu in *Technical Report: Coincident and Leading Economic Indicators- Nebraska*.

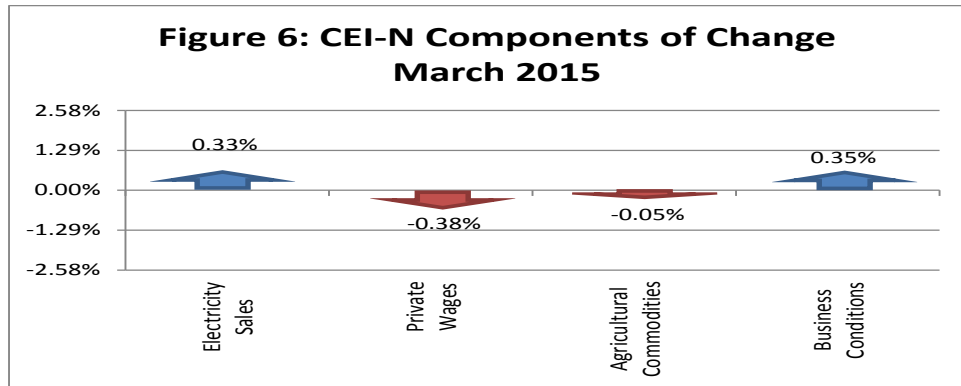
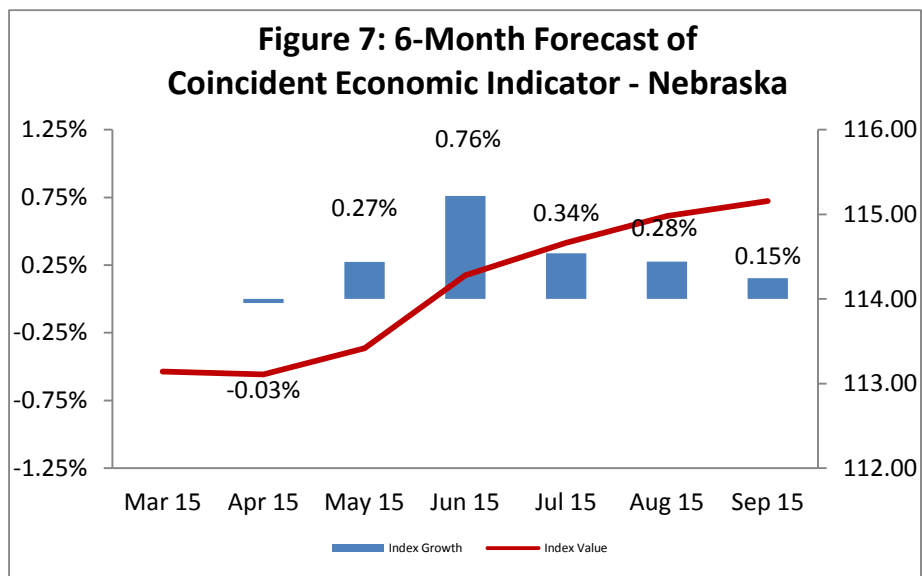


Figure 7 shows the forecast for the CEI-N over the next six months. The forecast calls for consistent economic growth beginning in May, with monthly growth rates which are similar to those seen during the first three months of 2015. Results therefore suggest modest growth for the Nebraska economy during 2015. Results also are consistent with growth in the LEI-N over the last four months (see Figure 2). Consistent growth in the LEI-N portends solid growth in the LEI-N later in the year.



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.

Table 1: Component Weights for LEI-N and CEI-N							
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	13.7948	0.0725	0.0332	Electricity Sales	4.8088	0.2080	0.1520
Airline Passengers	3.4645	0.2886	0.1321	Private Wages	1.6993	0.5885	0.4302
Exchange Rate	1.2140	0.8237	0.3771	Agricultural Commodities	3.2159	0.3110	0.2273
Initial UI Claims	10.4029	0.0961	0.0440	Survey Business Conditions	3.8392	0.2605	0.1904
Manufacturing Hours	1.4743	0.6783	0.3105				
Survey Business Expectations	4.4425	0.2251	0.1031				

Tables 2 and 3 show the calculation for the change in CEI-N and LEI-N between February and March 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.

Table 2: Component Contributions to the Change in Leading Economic Indicator						
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	85.95	76.23	9.72	0.03	0.32	0.28%
Airline Passengers	91.66	91.34	0.32	0.13	0.04	0.04%
U.S. Dollar Exchange Rate (Inverse)	89.90	91.52	-1.62	0.38	-0.61	-0.54%
Initial Unemployment Insurance Claims (Inverse)	98.34	105.92	-7.58	0.04	-0.33	-0.29%
Manufacturing Hours	98.99	99.50	-0.51	0.31	-0.16	-0.14%
Survey Business Expectations ¹	56.79		6.79	0.10	0.70	0.61%
Trend Adjustment					0.13	0.11%
Total (weighted average)	113.96	113.87			0.09	0.08%

¹ Survey results are a diffusion Index, which is always compared to 50

Table 3: Component Contributions to the Change in Coincident Economic Indicator						
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	120.67	118.20	2.47	0.15	0.38	0.33%
Private Wage	101.83	102.82	-0.99	0.43	-0.42	-0.38%
Agricultural Commodities	154.47	154.72	-0.25	0.23	-0.06	-0.05%
Survey Business Conditions ¹	52.10		2.10	0.19	0.40	0.35%
Total (weighted average)	113.14	112.85			0.29	0.26%

¹ 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.

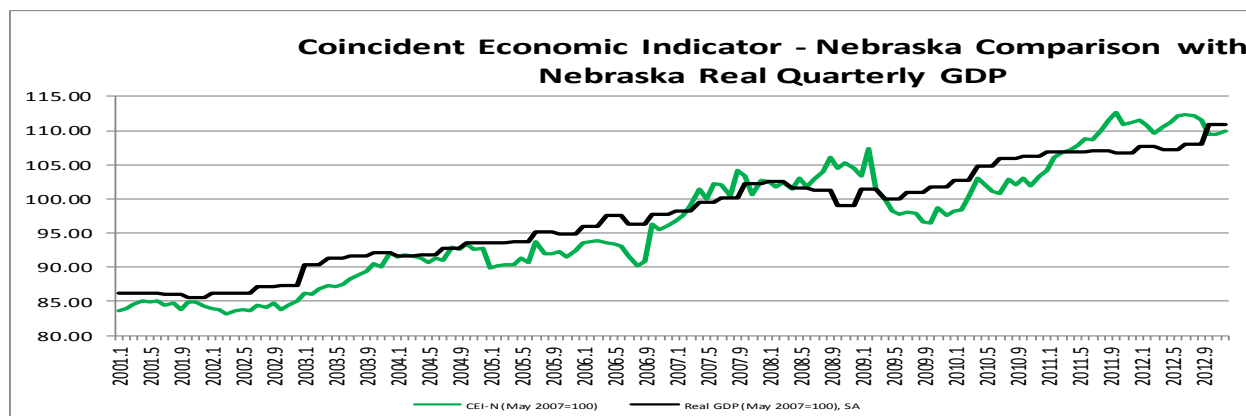


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months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

