

Nebraska Monthly Economic Indicators: May 15, 2015

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Summary: The Leading Economic Indicator – Nebraska (LEI-N) rose by 1.99% in April 2015, marking its fourth increase in the last five months. The sharp increase in the LEI-N, which predicts economic growth in the state six months in the future, portends strong economic growth in Nebraska in the second half of 2015. Business expectations are one reason for the positive outlook. Respondents to the monthly Survey of Nebraska Business were very optimistic about sales and employment over the next six months. The business outlook, in fact, was the strongest recorded in the monthly survey, which began in September 2011. A stabilizing U.S. dollar also contributed to the positive outlook. After 8 months of increase, the value of the U.S. dollar fell in April. The rising U.S. dollar had created a significant challenge for Nebraska exporters. Initial claims for unemployment insurance also fell sharply in April, suggesting a strengthening labor market. There was little change in other components of the LEI-N, including building permits for single-family homes, airline passengers counts or manufacturing hours.

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) in April 2015, compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 1.99% during April.

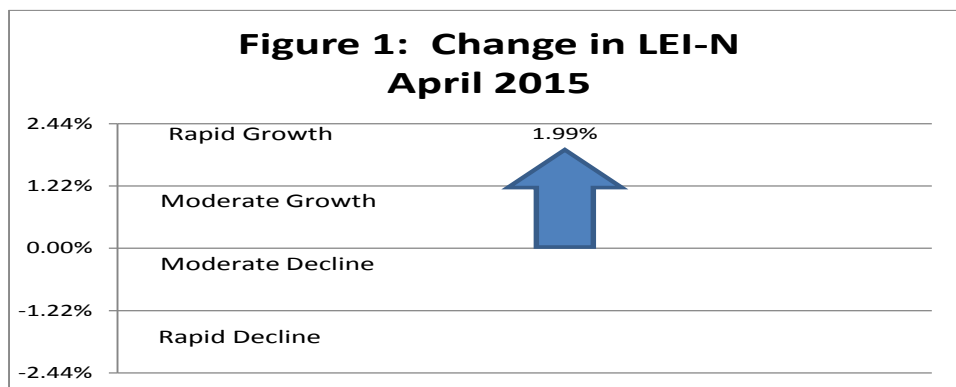


Figure 2 shows the change in the LEI-N over the last 6 months. The LEI-N declined sharply in November, 2014 but recovered in December. The LEI-N then improved in the first quarter of 2015, rising in January and February and remaining close to unchanged in March. The solid first quarter was followed by the sharp increase in the LEI-N during April.

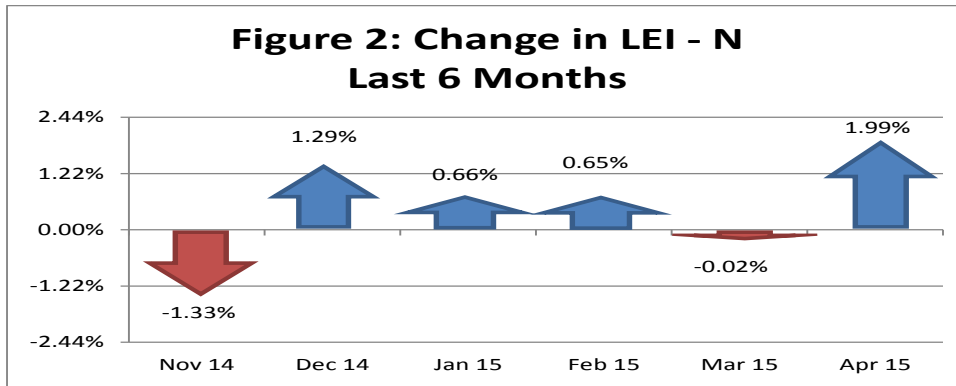
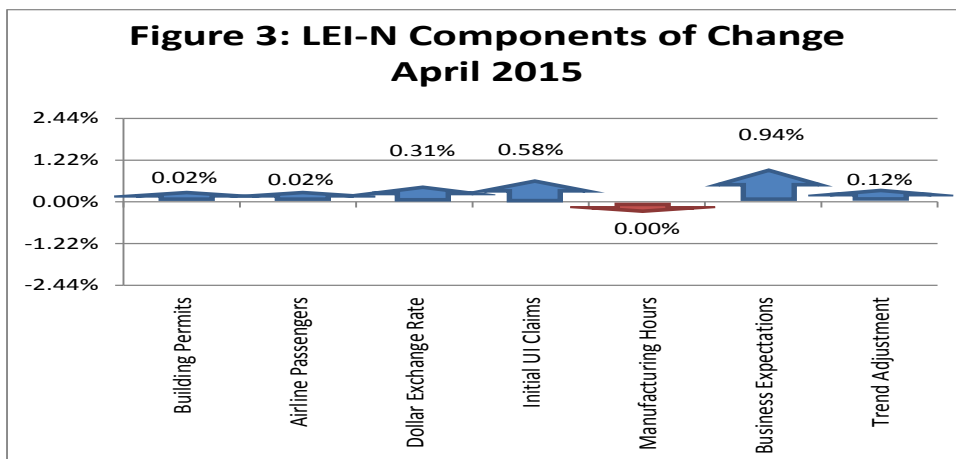
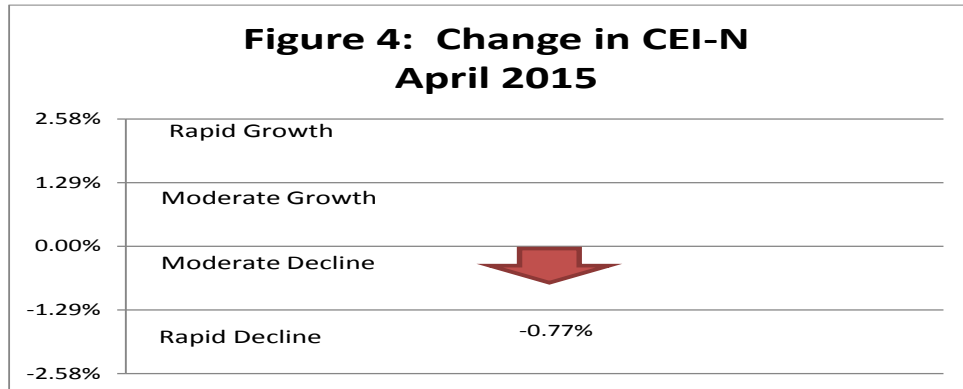


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during April 2015. The change in the overall LEI-N is the weighted average of changes in each component (see page 5). The LEI-N rose primarily because of three components: business expectations, the value of the U.S. dollar, and initial claims for unemployment insurance. Business expectations, as measured by the *April Survey of Nebraska Business*, were very strong. Expectations for sales and employment growth were the highest ever recorded in the monthly survey, which was first taken in September 2011. A stabilizing U.S. dollar also contributed to the positive outlook. After 8 months of increase, the value of the U.S. dollar fell in April. A stable or falling U.S. dollar is beneficial for Nebraska’s large export sector. There also was a sharp drop in initial claims for unemployment insurance, which suggests a strengthening labor market. Among other components of the leading indicator, there was little change in single-family home building permits, airline passengers counts or manufacturing hours. Note that the trend adjustment component pictured in Figure 3 is discussed on page 5.

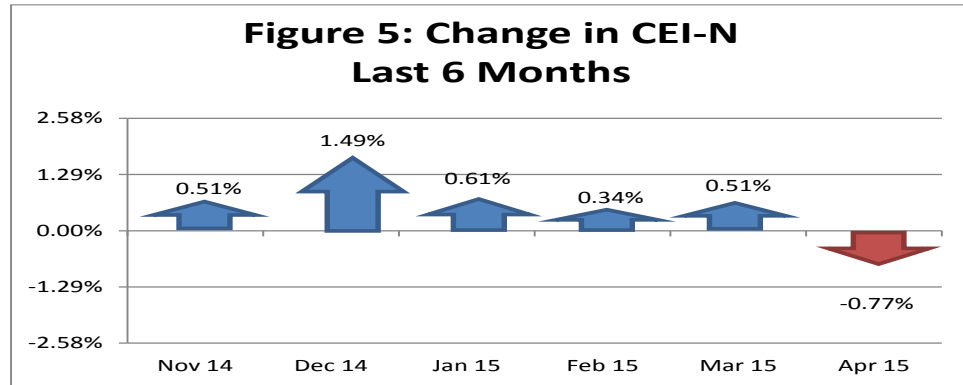


Coincident Economic Indicator – Nebraska

The Coincident Economic Indicator - Nebraska (CEI-N) is a measure of the current size of the Nebraska economy. The CEI-N fell by 0.77% during April, as seen in Figure 4.



The decline in the CEI-N followed a series of monthly increases, as seen in Figure 5. In fact, the CEI-N had grown for seven consecutive months before the April decline. Growth has moderated, however, in 2015. Looking at data for the January through April 2015 period, growth has been solid, but not rapid, so far this year.



As seen in Figure 6, the decline in the CEI-N was broad-based. All four components declined during April. There was a modest decline in real private wages during the month. There also was a modest decline in business conditions, as respondents to the April *Survey of Nebraska Business* reported some weakness in sales at their businesses in recent months. There was a larger decline in agricultural commodities in Nebraska in April. Corn prices remained low and beef prices began to moderate from recent highs. There also was a significant decline in electricity sales, even after adjusting for weather and other seasonal factors. 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*.

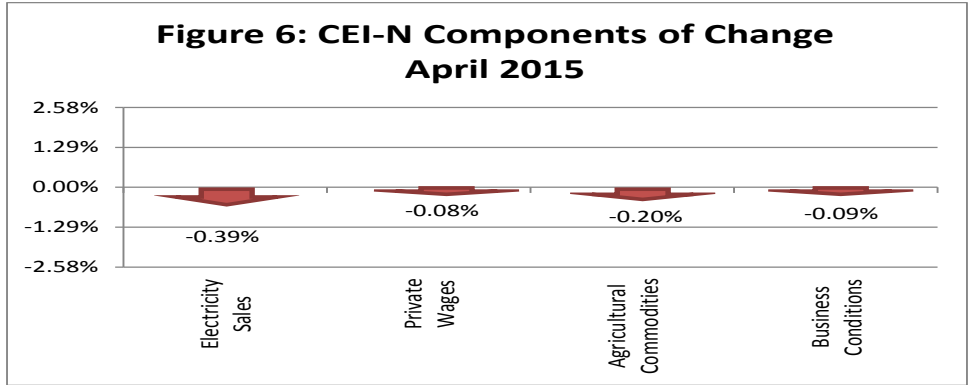
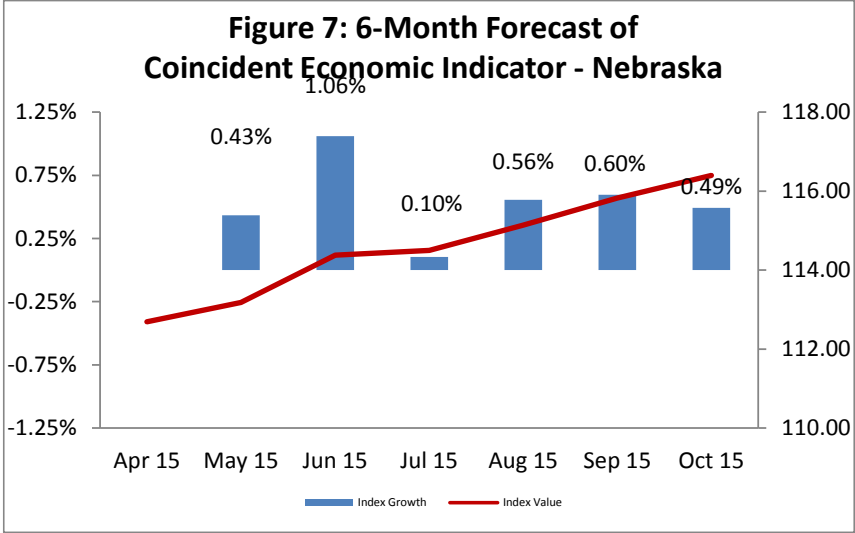


Figure 7 shows the forecast for the CEI-N over the next six months. The forecast calls for strong economic growth from May to October. Results are consistent with improvements in the LEI-N in four of the last five months (see Figure 2) and suggest a stronger Nebraska economy during the second half of 2015.



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	13.7147	0.0729	0.0334	Electricity Sales	4.7880	0.2089	0.1519
Airline Passengers	3.4623	0.2888	0.1324	Private Wages	1.6850	0.5935	0.4316
Exchange Rate	1.2127	0.8246	0.3781	Agricultural Commodities	3.2089	0.3116	0.2266
Initial UI Claims	10.3926	0.0962	0.0441	Survey Business Conditions	3.8294	0.2611	0.1899
Manufacturing Hours	1.4834	0.6741	0.3091				
Survey Business Expectations	4.4568	0.2244	0.1029				

Tables 2 and 3 show the calculation for the change in CEI-N and LEI-N between March and April 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 0.12% 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	79.55	78.88	0.67	0.03	0.02	0.02%
Airline Passengers	95.52	95.38	0.14	0.13	0.02	0.02%
U.S. Dollar Exchange Rate (Inverse)	90.85	89.90	0.95	0.38	0.36	0.31%
Initial Unemployment Insurance Claims (Inverse)	114.39	99.36	15.03	0.04	0.66	0.58%
Manufacturing Hours	97.01	97.02	-0.01	0.31	0.00	0.00%
Survey Business Expectations ¹	60.38		10.38	0.10	1.07	0.94%
Trend Adjustment					0.13	0.12%
Total (weighted average)	115.87	113.62			2.26	1.99%

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	117.76	120.71	-2.95	0.15	-0.45	-0.39%
Private Wage	102.69	102.88	-0.20	0.43	-0.09	-0.08%
Agricultural Commodities	153.44	154.47	-1.02	0.23	-0.23	-0.20%
Survey Business Conditions ¹	49.45		-0.55	0.19	-0.10	-0.09%
Total (weighted average)	112.69	113.56			-0.87	-0.77%

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.

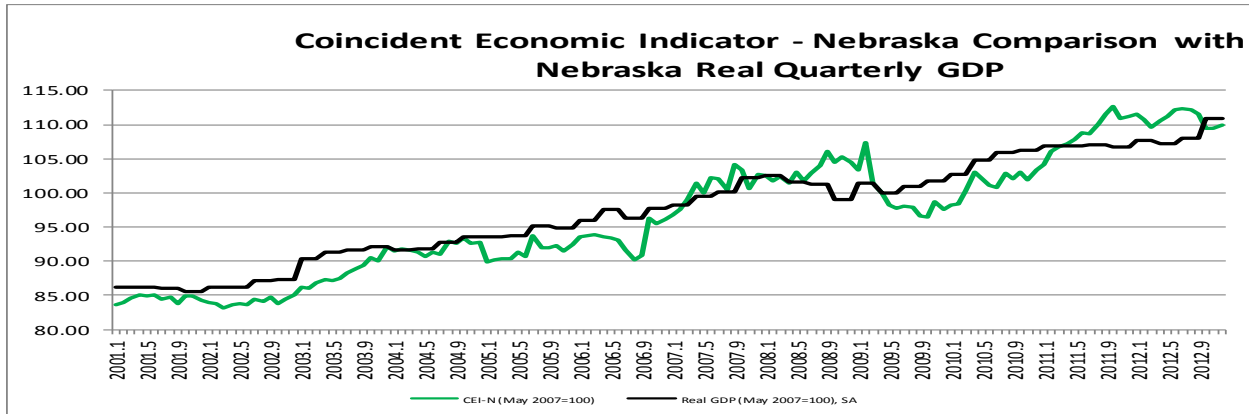


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months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

