

Nebraska Monthly Economic Indicators: September 18, 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 0.31% in August 2015, for a fifth consecutive monthly increase. The increase in the LEI-N, which predicts economic growth in the state six months in the future, indicates consistent economic growth in Nebraska through the end of 2015 and the first quarter of 2016. The LEI-N rose because of strength in business expectations and the labor market. Initial claims for unemployment insurance fell sharply in Nebraska during August, indicating strength in the labor market. Further respondents to the monthly Survey of Nebraska Business were positive about sales and employment growth over the next six months. Among other components of the leading indicator, there was a drop in building permits for single-family homes and a modest decline in manufacturing hours and passenger enplanements. There also was a sharp increase in the value of the U.S. dollar. A rising dollar discourages growth of agriculture and manufacturing businesses.*

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) in August 2015, compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 0.31% during August.

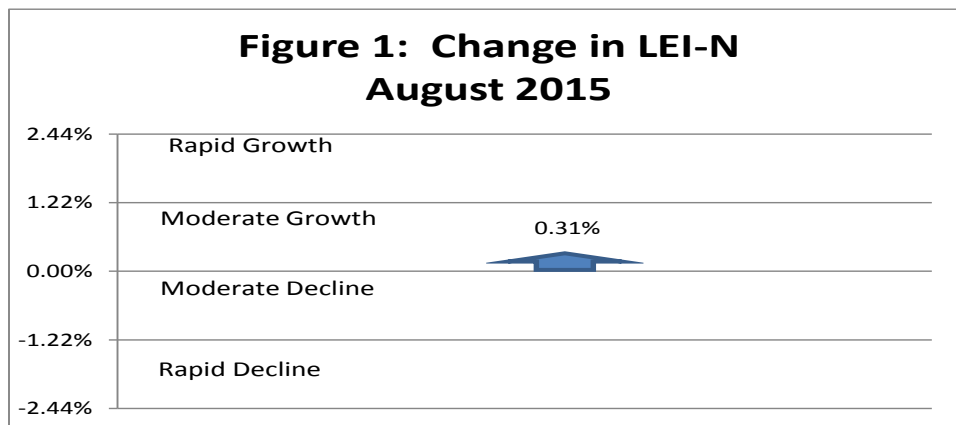


Figure 2 shows the change in the LEI-N over the last 6 months. The LEI-N has risen over the last five months, with a sharp increase in April and growth from May through August. The consistent increase in the LEI-N suggests that there will be solid growth in the Nebraska economy through the end of the year, with growth continuing into the first quarter of 2016.

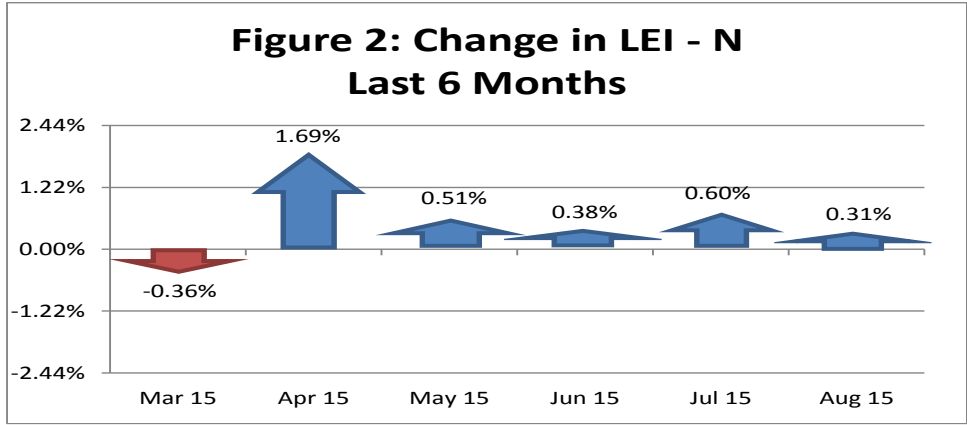
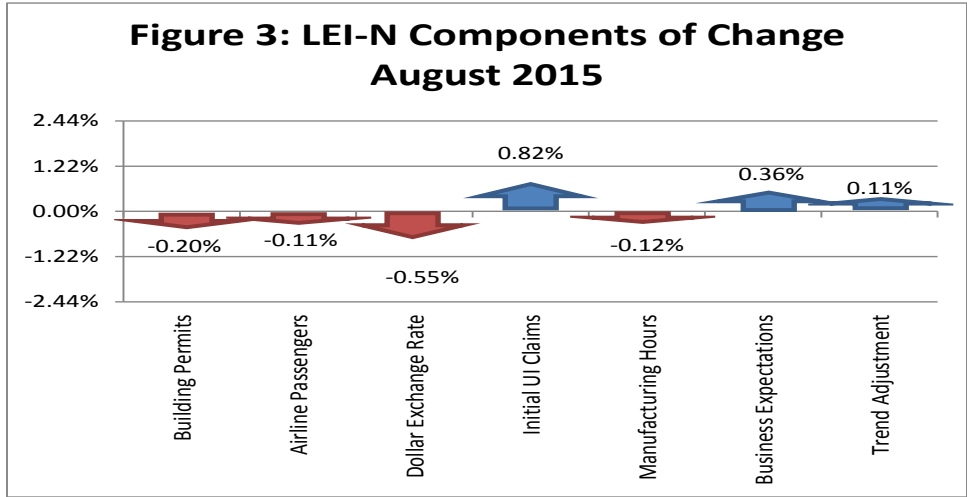
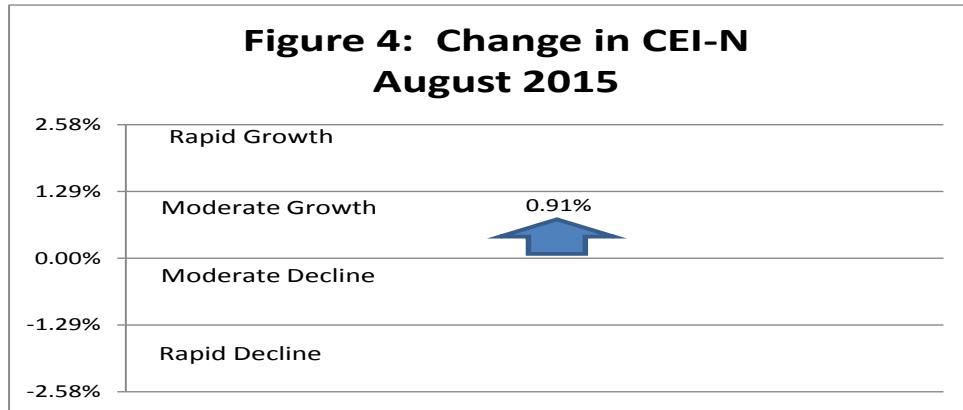


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during August 2015. The change in the overall LEI–N is the weighted average of changes in each component (see page 5). The leading indicator rose because of strong labor market conditions and positive business expectations. In particular, there was a sharp drop in initial claims for unemployment insurance in August, indicating strength in the labor market. Further, respondents to the *August Survey of Nebraska Business* reported that they expect to increase both sales and employment at their businesses over the next six months. Among other components of the indicator, there was a sharp increase in the value of the U.S. dollar during August. A rising dollar curtails growth in exported-oriented businesses, particularly in the agriculture and manufacturing. In addition, there was a drop in building permits for single-family homes during August after adjusting for seasonal factors, and a decline in manufacturing hours and passenger enplanements. Note that the trend adjustment component pictured in Figure 3 is discussed on page 5.

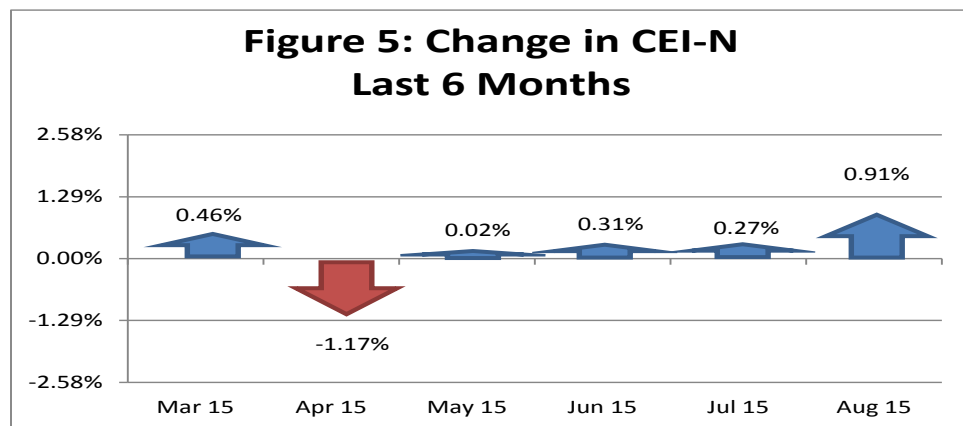


Coincident Economic Indicator – Nebraska

The Coincident Economic Indicator - Nebraska (CEI-N) is a measure of the current size of the Nebraska economy. The CEI-N rose by 0.91% during August, as seen in Figure 4.



The strong increase in the CEI-N shows that the Nebraska economy is strengthening during the second half of the year, as seen in Figure 5. The Nebraska economy struggled during the second quarter of 2015, but growth is accelerating in the state.



As seen in Figure 6, three of the four components of the CEI-N rose during August. Electricity sales rose in August after adjusting for weather and other seasonal factors. There also was an improvement in business conditions during the month. In particular, respondents to the *August Survey of Nebraska Business* reported growth in both sales and employment at their businesses. Further, there was a modest increase in real private wages during August, reflecting growth in employment, weekly hours-worked and real hourly wages. The only declining component was agricultural commodity prices. Falling corn prices, and in recent months falling beef prices, have been an ongoing problem for the Nebraska economy. 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*.

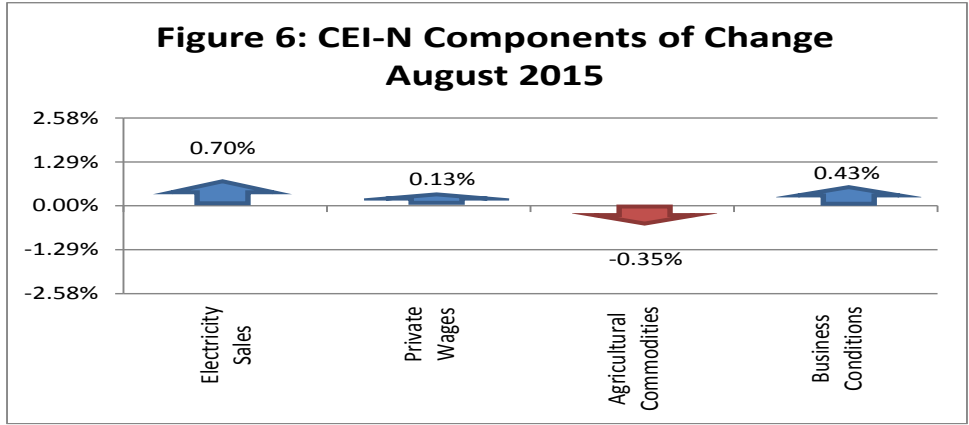
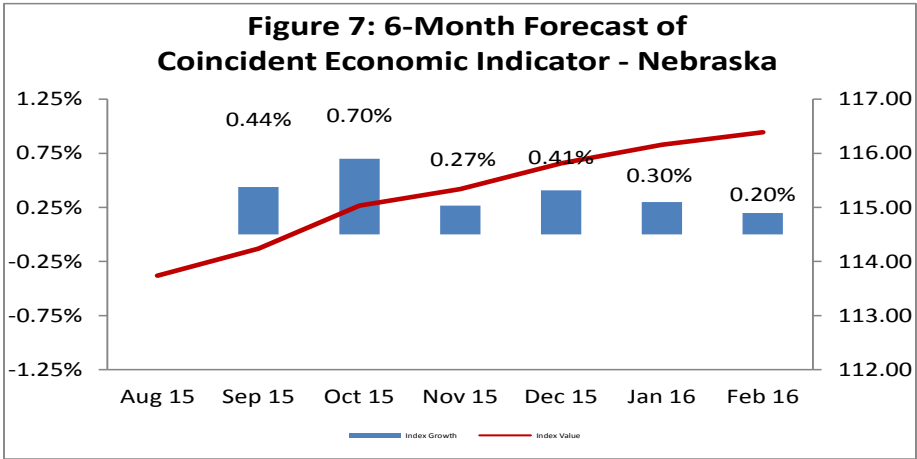


Figure 7 shows the forecast for the CEI-N over the next six months. The forecast calls for solid economic growth in Nebraska through the end of the year and the first quarter of 2016. Growth should be strongest over the next 2 months. Results are in line with improvements in the LEI-N during the last five months (see Figure 2), and in particular the sharp increase in the LEI-N during April.



Weights and Component Shares

Table 1 shows the weights 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	13.6585	0.0732	0.0335	Electricity Sales	4.7860	0.2089	0.1514
Airline Passengers	3.4316	0.2914	0.1332	Private Wages	1.6707	0.5985	0.4336
Exchange Rate	1.2133	0.8242	0.3766	Agricultural Commodities	3.2086	0.3117	0.2258
Initial UI Claims	10.4169	0.0960	0.0439	Survey Business Conditions	3.8283	0.2612	0.1892
Manufacturing Hours	1.4760	0.6775	0.3096				
Survey Business Expectations	4.4215	0.2262	0.1033				

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

Leading Economic Indicator - Nebraska						
Component	Component Index Value (May 2007=100)			Weight	Contribution	Percentage Contribution (Relative to Previous LEI-N)
	Current	Previous	Difference			
SF Building Permits	63.34	70.41	-7.07	0.03	-0.24	-0.20%
Airline Passengers	92.32	93.26	-0.94	0.13	-0.13	-0.11%
U.S. Dollar Exchange Rate (Inverse)	87.56	89.26	-1.71	0.38	-0.64	-0.55%
Initial Unemployment Insurance Claims (Inverse)	136.13	114.28	21.85	0.04	0.96	0.82%
Manufacturing Hours	95.81	96.26	-0.45	0.31	-0.14	-0.12%
Survey Business Expectations ¹	54.03		4.03	0.10	0.42	0.36%
Trend Adjustment					0.13	0.11%
Total (weighted average)	117.18	116.82			0.36	0.31%

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

Coincident Economic Indicator - Nebraska						
Component	Component Index Value (May 2007=100)			Weight	Contribution	Percentage Contribution (Relative to Previous CEI-N)
	Current	Previous	Difference			
Electricity Sales	128.34	123.13	5.21	0.15	0.79	0.70%
Private Wage	102.02	101.68	0.34	0.43	0.15	0.13%
Agricultural Commodities	146.38	148.11	-1.74	0.23	-0.39	-0.35%
Survey Business Conditions ¹	52.53		2.53	0.19	0.48	0.43%
Total (weighted average)	113.74	112.71			1.02	0.91%

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.

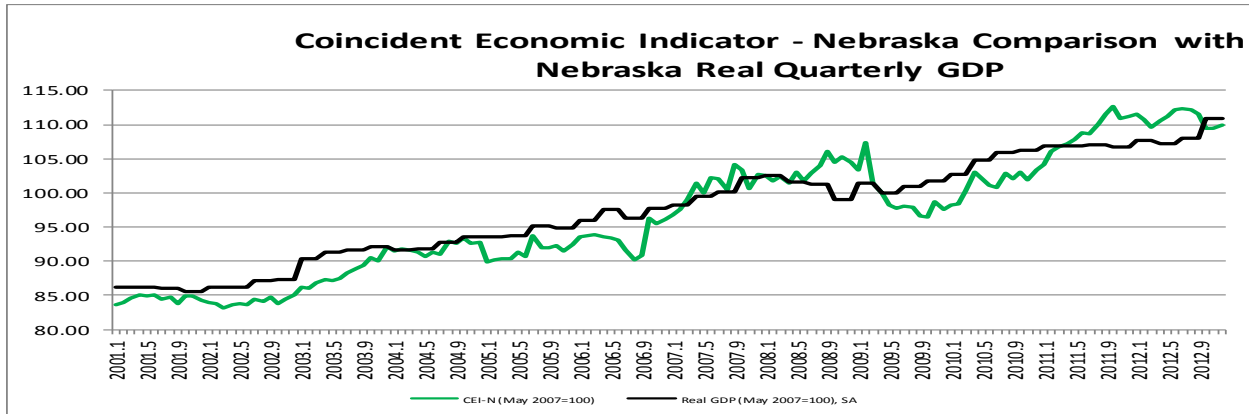


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months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

