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Nebraska Monthly Economic Indicators: November 20, 2015

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

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Summary: The Leading Economic Indicator – Nebraska (LEI-N) rose by 1.06% in October 2015. The increase in the LEI-N, which predicts economic growth in the state six months in the future, followed a decline during September. Taken together, results for the two months suggest that economic growth will be modest in Nebraska at the beginning of 2016. Most components of the LEI-N improved during October. There was an increase in manufacturing hours and airline passenger counts. There also was a drop in initial claims for unemployment insurance and the value of the U.S. dollar. The decline in the value of the dollar will support Nebraska's export businesses in agriculture and manufacturing. There was just one LEI-N component which worsened during October. Specifically, there was a decline in building permits for single-family homes during the month.

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) in October 2015, compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N rose by 1.06% during October.

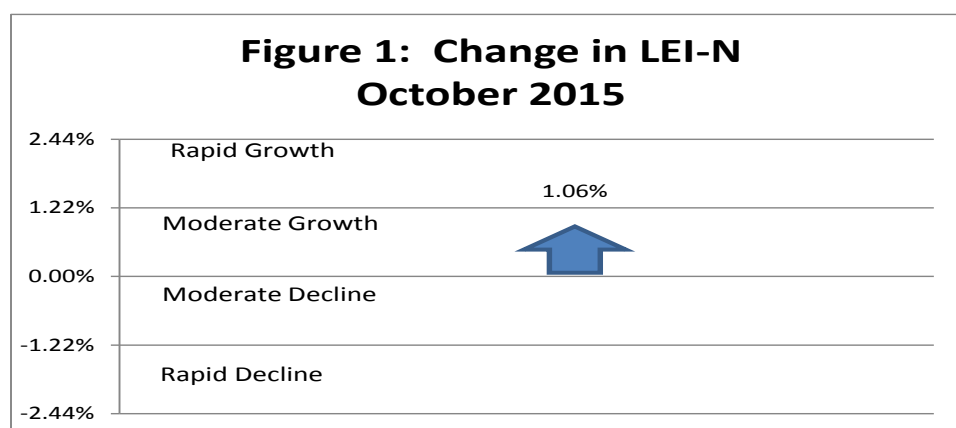


Figure 2 shows the change in the LEI-N over the last 6 months. The figure shows that the LEI-N has risen five out of the last six months. The improvement in the LEI-N during October, however, represents a rebound after a sharp drop during September. The drop during September resulted from a significant downward revision in manufacturing hours during the month. Taken together, changes in the LEI-N during September and October suggest modest growth in the Nebraska economy in the beginning of 2016.

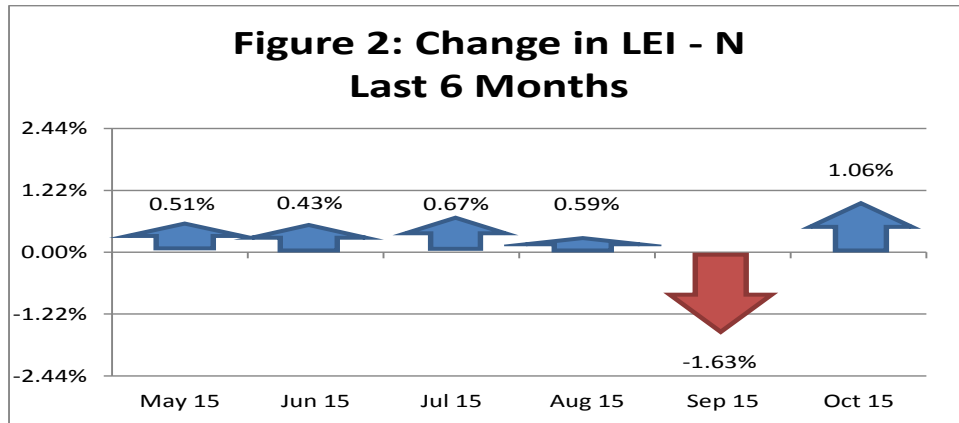
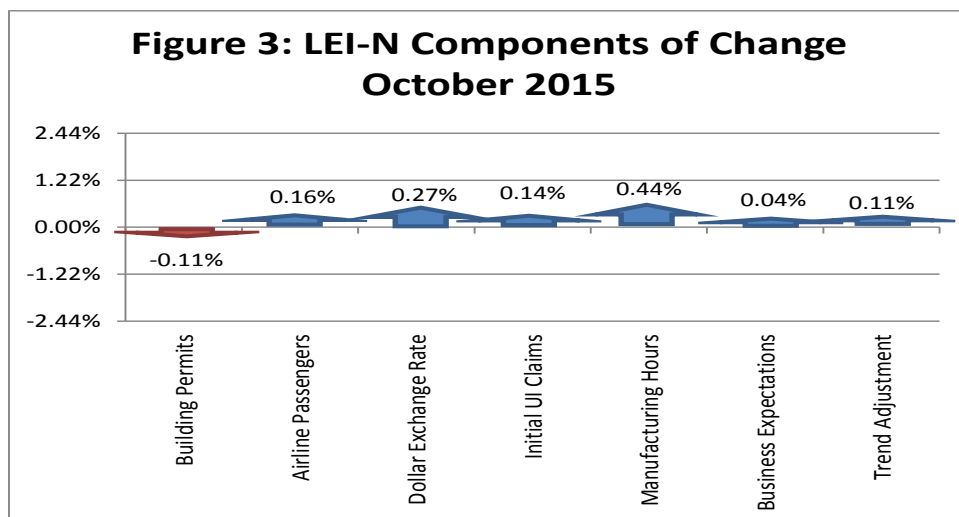
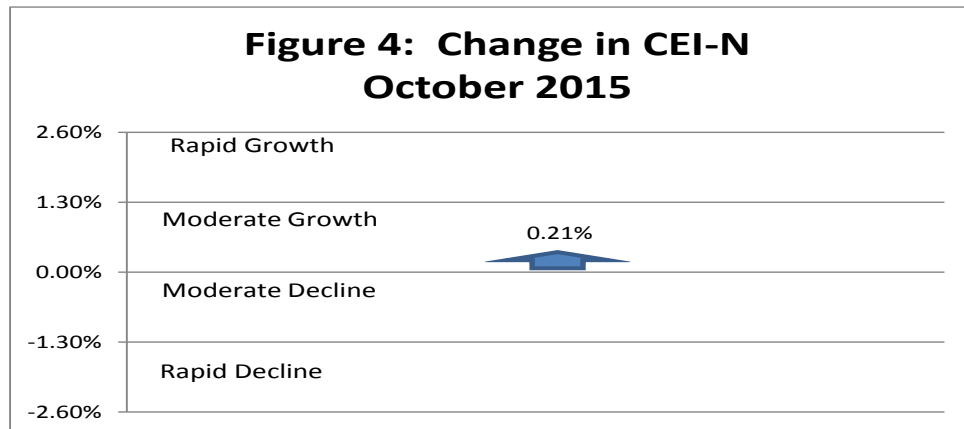


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during October 2015. The change in the overall LEI-N is the weighted average of changes in each component (see page 5). Five of six components improved during October. There was a rebound in manufacturing hours in Nebraska during the month. There also was an improvement in airline passenger counts and a decline in initial claims for unemployment insurance. Business expectations also were modestly positive, according to respondents to the *October Survey of Nebraska Business*. Finally, there was a decline in the value of the U.S. dollar during October, a positive development for Nebraska's export businesses. There only was one component of the LEI-N which worsened during October. Specifically, there was a modest decline in building permits for single-family homes during the month. Note that the trend adjustment component pictured in Figure 3 is discussed on page 5.

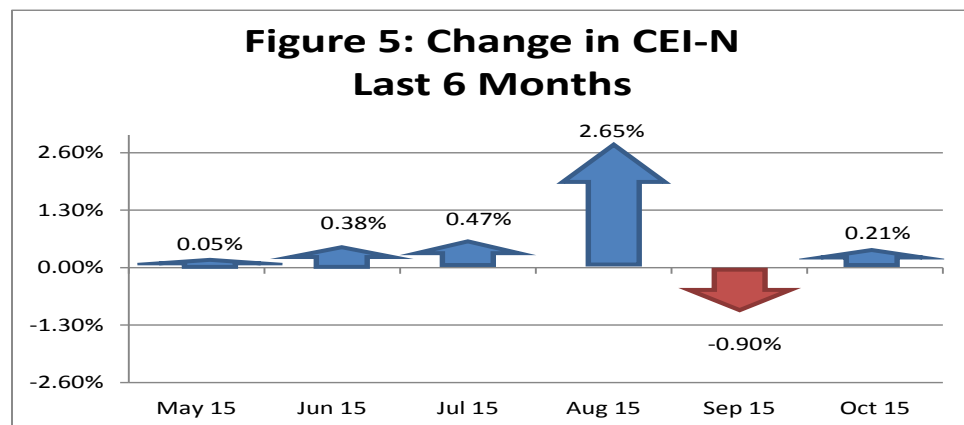


Coincident Economic Indicator – Nebraska

The Coincident Economic Indicator - Nebraska (CEI-N) is a measure of the current size of the Nebraska economy. The CEI-N rose by 0.21% during October, as seen in Figure 4.



The CEI-N has strengthened during the second half of the year, as seen in Figure 5. The CEI-N declined only during one month: September. This decline in September, however, followed a sharp increase during August. Taking all months together, there was significant growth in the LEI-N during the July to October 2015 period.



As seen in Figure 6, three of four components of the CEI-N rose during October. There was a solid increase in real private wages, reflecting growth in employment, weekly hours-worked and real hourly wages. Electricity sales also grew during October, after adjusting for weather and other seasonal factors. There also was an improvement in business conditions, as measured in the October *Survey of Nebraska Business*. Respondents reported growth in both sales and employment at their businesses. The only declining component was agricultural commodity prices. In particular, beef prices have fallen sharply in recent months. 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*.

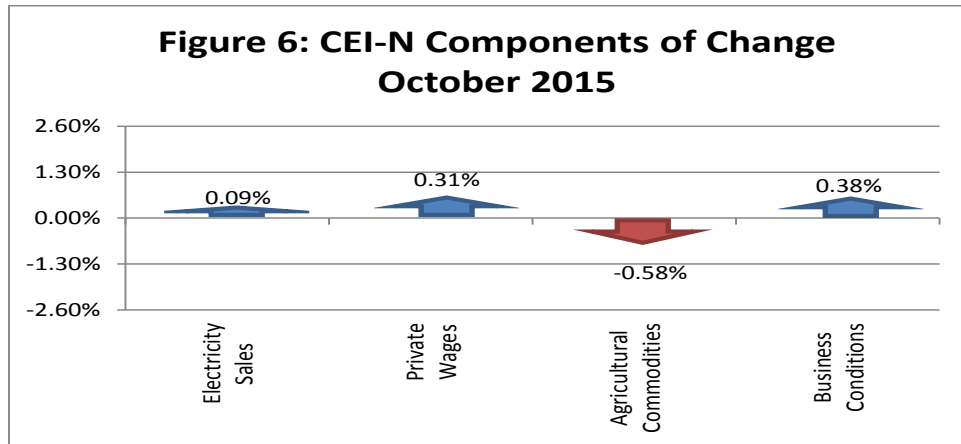
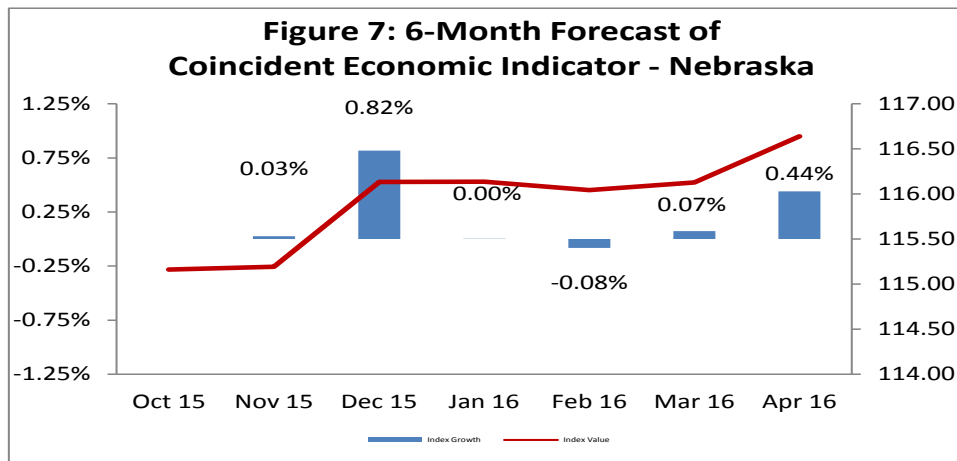


Figure 7 shows the forecast for the CEI-N over the next six months. The forecast calls for solid economic growth in Nebraska through the end of 2015, particularly during December. Growth will then slow during the first four months of 2016. Results are in line with improvements in the LEI-N during the last six months (see Figure 2).



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.

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	13.6150	0.0734	0.0341	Electricity Sales	4.7445	0.2108	0.1562
Airline Passengers	3.4172	0.2926	0.1357	Private Wages	1.7516	0.5709	0.4231
Exchange Rate	1.2096	0.8267	0.3834	Agricultural Commodities	3.2639	0.3064	0.2271
Initial UI Claims	10.2681	0.0974	0.0452	Survey Business Conditions	3.8276	0.2613	0.1936
Manufacturing Hours	1.5639	0.6394	0.2965				
Survey Business Expectations	4.4086	0.2268	0.1052				

Tables 2 and 3 show the calculation for the change in CEI-N and LEI-N between September and October 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	62.64	66.34	-3.70	0.03	-0.13	-0.11%
Airline Passengers	94.36	93.01	1.35	0.14	0.18	0.16%
U.S. Dollar Exchange Rate (Inverse)	87.67	86.85	0.82	0.38	0.32	0.27%
Initial Unemployment Insurance Claims (Inverse)	115.06	111.44	3.62	0.05	0.16	0.14%
Manufacturing Hours	94.99	93.26	1.74	0.30	0.51	0.44%
Survey Business Expectations ¹	50.46		0.46	0.11	0.05	0.04%
Trend Adjustment					0.13	0.11%
Total (weighted average)	117.07	115.84			1.23	1.06%

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	134.09	133.40	0.70	0.16	0.11	0.09%
Private Wage	103.40	102.55	0.85	0.42	0.36	0.31%
Agricultural Commodities	140.79	143.70	-2.91	0.23	-0.66	-0.58%
Survey Business Conditions ¹	52.25		2.25	0.19	0.44	0.38%
Total (weighted average)	115.16	114.92			0.24	0.21%

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.

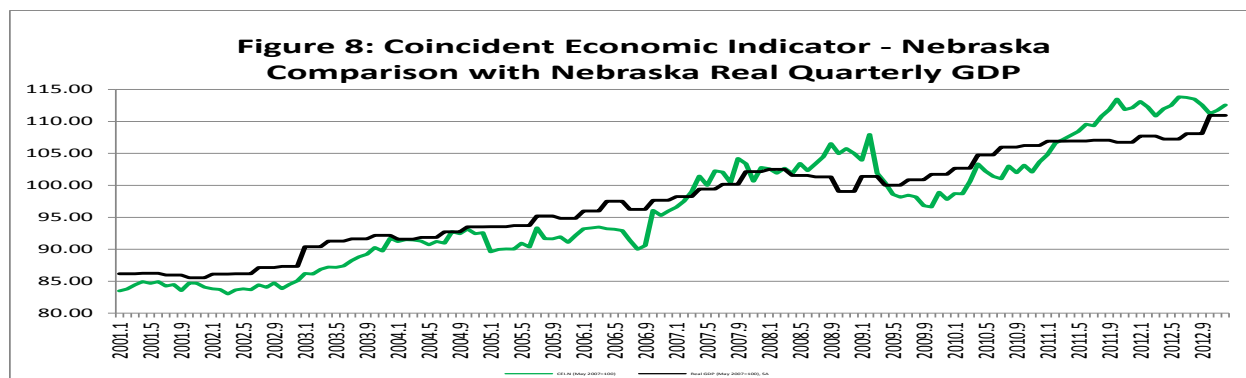


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months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

