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Nebraska Monthly Economic Indicators: January 15, 2016

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Summary: *The Leading Economic Indicator – Nebraska (LEI-N) fell by 0.12% in December 2015. The slight decline in the LEI-N, which predicts economic growth in the state six months in the future, suggests that economic growth in Nebraska will be solid, rather than strong, during the first half of 2016. The decline follows significant increases in the LEI-N in both October and November. Among components of the indicator, the value of the U.S. dollar rose during December. A higher U.S. dollar reduces the competitiveness of Nebraska exporters in manufacturing and agriculture. There also was a decline in airline passenger counts and manufacturing hours during December, as well as a slight decrease in building permits for single-family homes. Initial claims for unemployment insurance changed little during December on a seasonally-adjusted basis. Finally, business expectations were a positive factor during December. Respondents to the Survey of Nebraska Business predicted growth in employment over the next 6 months.*

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) in December 2015, compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N fell by 0.12% during December.

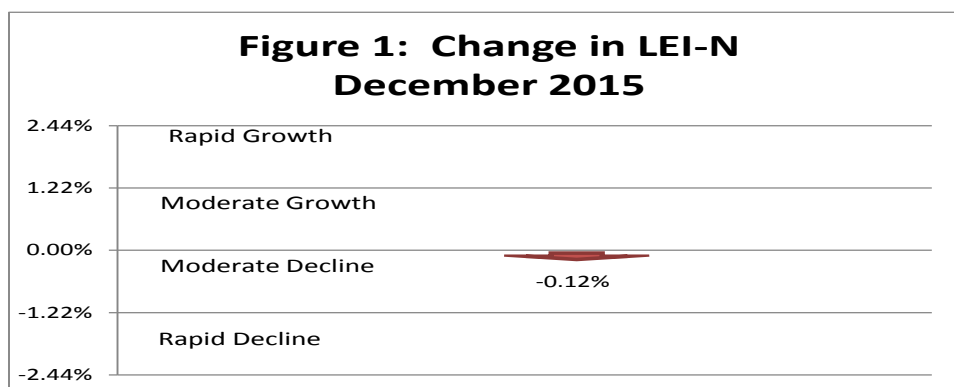


Figure 2 shows the change in the LEI-N over the last 6 months. The figure shows that the LEI-N has risen four out of the last six months. The LEI-N was mixed during the July through September period with growth in July and August reversed during September. Growth was stronger during the 4th quarter, with the modest decline in December following strong growth in October and November.

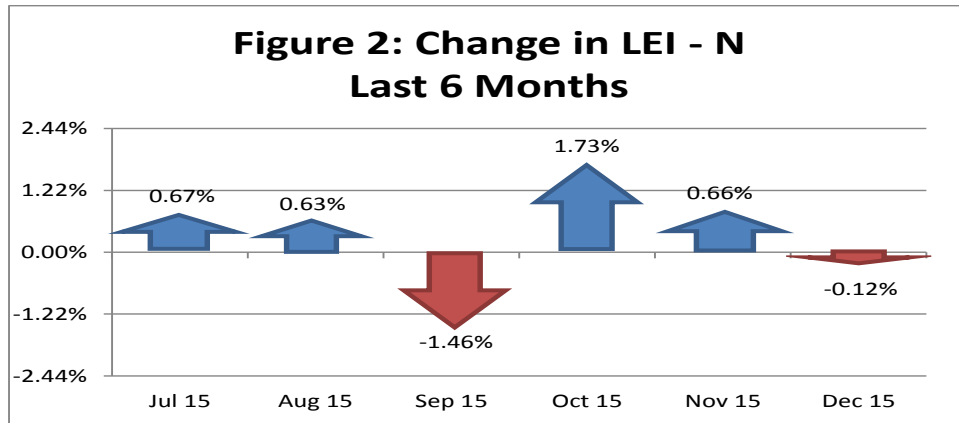
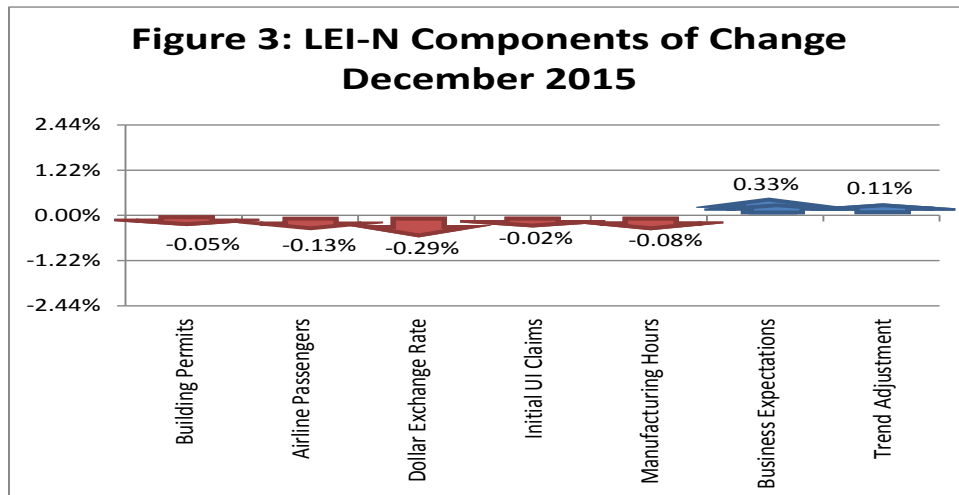
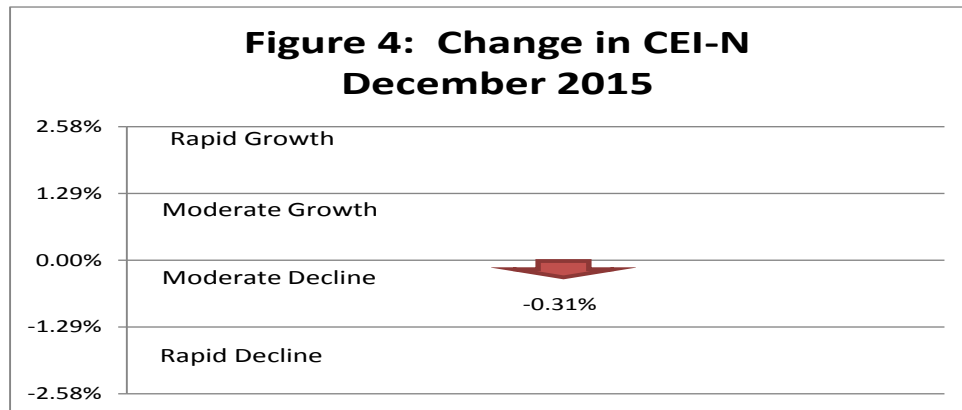


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during December 2015. The change in the overall LEI-N is the weighted average of changes in each component (see page 5). Among individual components, there was another significant increase in the value of the U.S. dollar during December. This is a negative for Nebraska's export-oriented businesses in manufacturing and agricultural. Most other components of the LEI-N declined modestly during December. There was a decline in both airline passenger counts and manufacturing hours. There also was a slight decrease in building permits for single-family homes, on a seasonally-adjusted basis. There was little change in initial claims for unemployment insurance during the month. Business expectations were a positive factor for the LEI-N. Specifically, respondents to the December *Survey of Nebraska Business* predicted solid increases in employment at their businesses over the next six months. Note that the trend adjustment component pictured in Figure 3 is discussed on page 5.

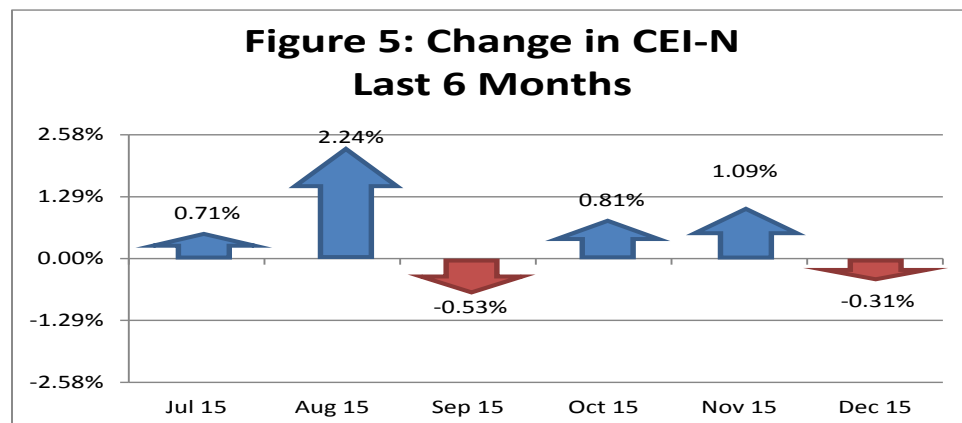


Coincident Economic Indicator – Nebraska

The Coincident Economic Indicator - Nebraska (CEI-N) is a measure of the current size of the Nebraska economy. The CEI-N fell by 0.31% during December, as seen in Figure 4.



The CEI-N has strengthened during the second half of 2015, as seen in Figure 5. Specifically, declines in the CEI-N during September and December following strong growth in the previous months, particularly during the month of August. Taking all months together, there was significant growth in the LEI-N during both the 3rd and 4th quarters of 2015.



As seen in Figure 6, two of four components of the CEI-N rose during December. Business conditions, as measured in the *December Survey of Nebraska Business*, were solid. Responding businesses reported growth in both sales and employment. Electricity sales also grew during December, after adjusting for weather and other seasonal factors. There was a decline in real private wages. Wages fell after a strong increase during in previous months. Agricultural commodity prices continued their decline during December. 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*.

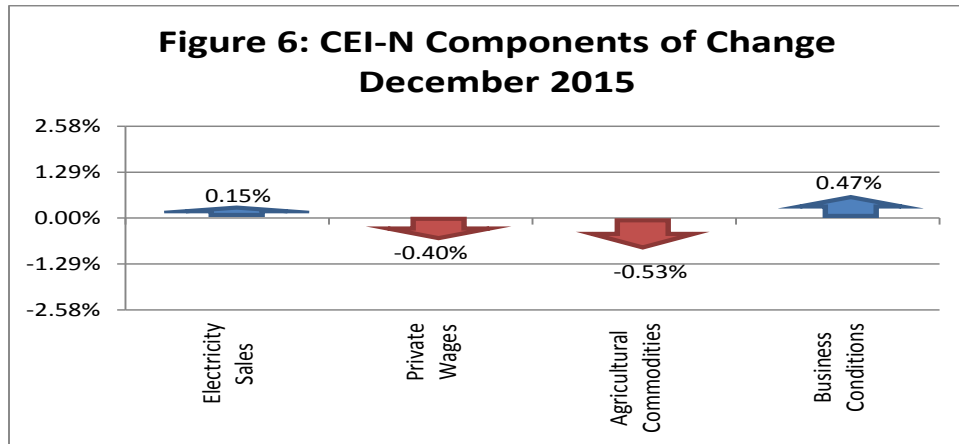
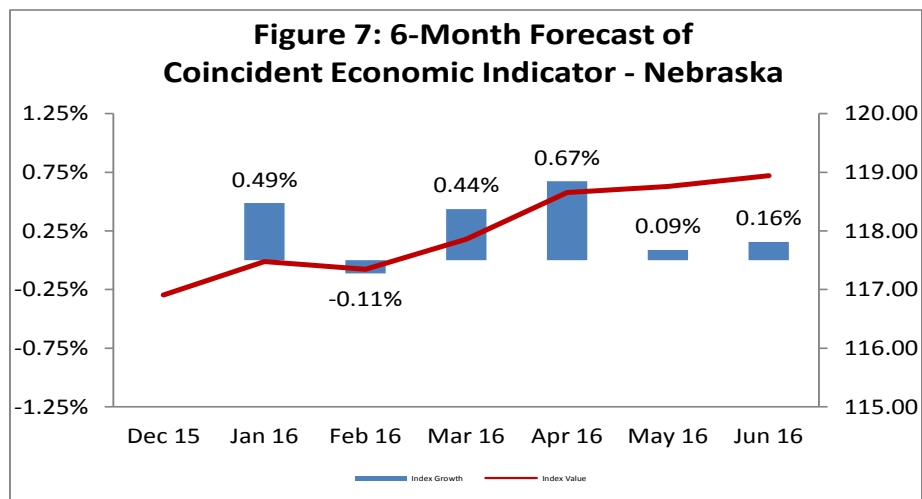


Figure 7 shows the forecast for the CEI-N over the next six months. The forecast calls for solid economic growth in Nebraska during the first half of 2016, as would be expected given trends in the LEI-N during the last six months (see Figure 2). A modest decline, however, is expected in February 2016.



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	13.5770	0.0737	0.0342	Electricity Sales	4.7433	0.2108	0.1558
Airline Passengers	3.4099	0.2933	0.1364	Private Wages	1.7316	0.5775	0.4269
Exchange Rate	1.2085	0.8275	0.3848	Agricultural Commodities	3.2723	0.3056	0.2259
Initial UI Claims	10.2056	0.0980	0.0456	Survey Business Conditions	3.8632	0.2589	0.1913
Manufacturing Hours	1.5862	0.6304	0.2931				
Survey Business Expectations	4.3893	0.2278	0.1059				

Tables 2 and 3 show the calculation for the change in CEI-N and LEI-N between November and December 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	73.35	74.98	-1.63	0.03	-0.06	-0.05%
Airline Passengers	95.78	96.89	-1.12	0.14	-0.15	-0.13%
U.S. Dollar Exchange Rate (Inverse)	85.44	86.34	-0.90	0.38	-0.35	-0.29%
Initial Unemployment Insurance Claims (Inverse)	112.35	112.87	-0.52	0.05	-0.02	-0.02%
Manufacturing Hours	97.50	97.81	-0.31	0.29	-0.09	-0.08%
Survey Business Expectations ¹	53.72		3.72	0.11	0.39	0.33%
Trend Adjustment					0.13	0.11%
Total (weighted average)	118.80	118.94			-0.14	-0.12%

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	136.09	134.99	1.10	0.16	0.17	0.15%
Private Wage	105.99	107.10	-1.11	0.43	-0.47	-0.40%
Agricultural Commodities	134.74	137.47	-2.74	0.23	-0.62	-0.53%
Survey Business Conditions ¹	52.90		2.90	0.19	0.56	0.47%
Total (weighted average)	116.91	117.28			-0.37	-0.31%

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.

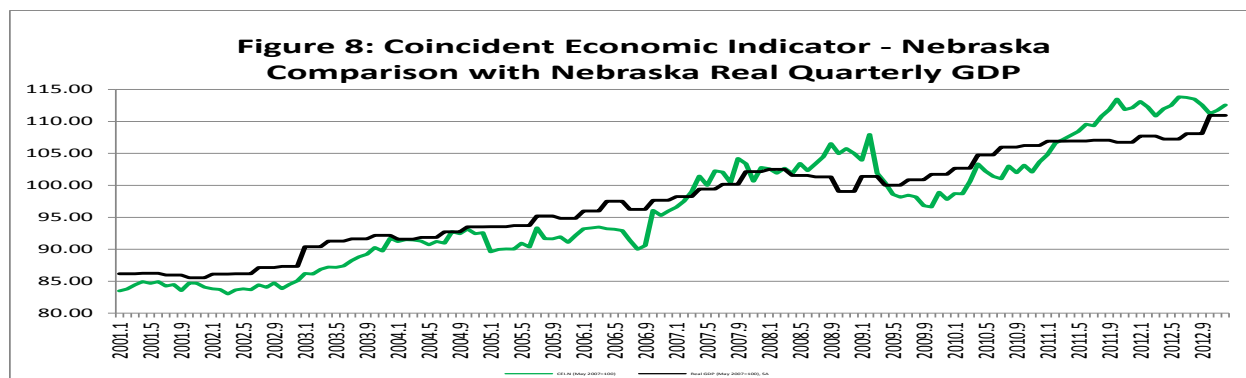


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months 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 0.92.

