Nebraska Monthly Economic Indicators: August 16, 2013

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

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Summary: *The Leading Economic Indicator – Nebraska (LEI-N) fell by 1.05% during July 2013. The decline in the LEI-N, which predicts economic growth in the state six months in the future, reverses a strong increase in June, and signals that Nebraska will be unable to sustain rapid economic growth. Taken together, results for the past two months indicate that economic growth will be modest at the end of 2013 and the beginning of 2014. Components of the leading indicator showed few signs of growth during July. In particular, five of the six components of the leading indicator fell during the month. No change was identified in single-family building permits. Both airline passenger counts and manufacturing hours declined slightly during July. Further, initial unemployment insurance claims rose during the month, a negative signal for the labor market. Business expectations also fell during July. Respondents to the Survey of Nebraska Business predicted a slight decline in sales and employment at their business over the next six month. Finally, the value of the U.S. dollar rose again during July, continuing to pressure businesses that export, a significant concern in Nebraska with its large export industry.*

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) in July 2013, compared to the previous month. The LEI-N, which predicts economic growth six months into the future, decreased by 1.05% in July.

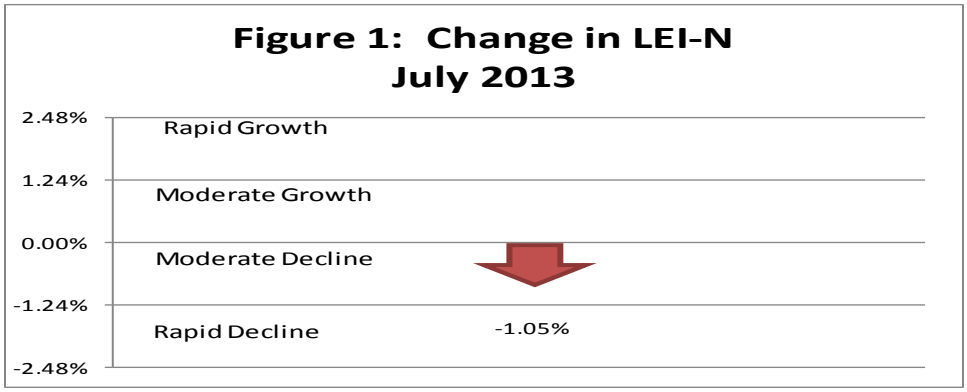


Figure 2 shows the growth in the LEI-N over the last 6 months. The indicator rose, at least modestly, from February through June. However, growth has been choppy in the last four months. There were sharp improvements in the LEI-N in both April and June. But, in each case, momentum was not sustained in the month that followed. Taken together, results for the LEI-N suggest that economic growth in Nebraska will be modest rather than robust at the end of 2013 and in early 2014.

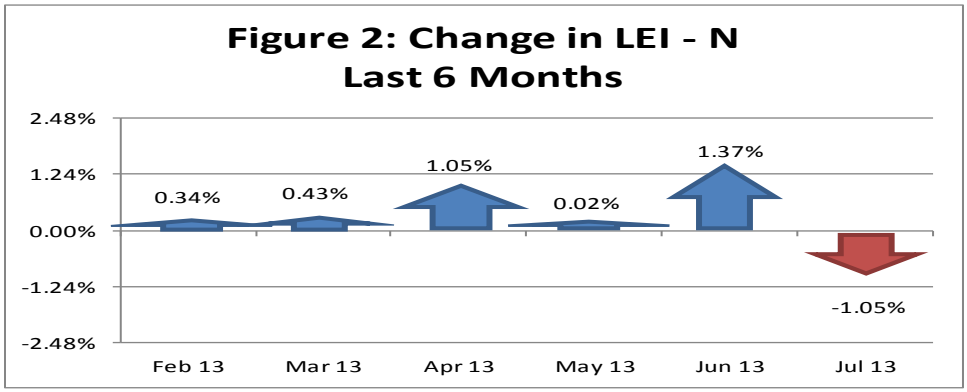
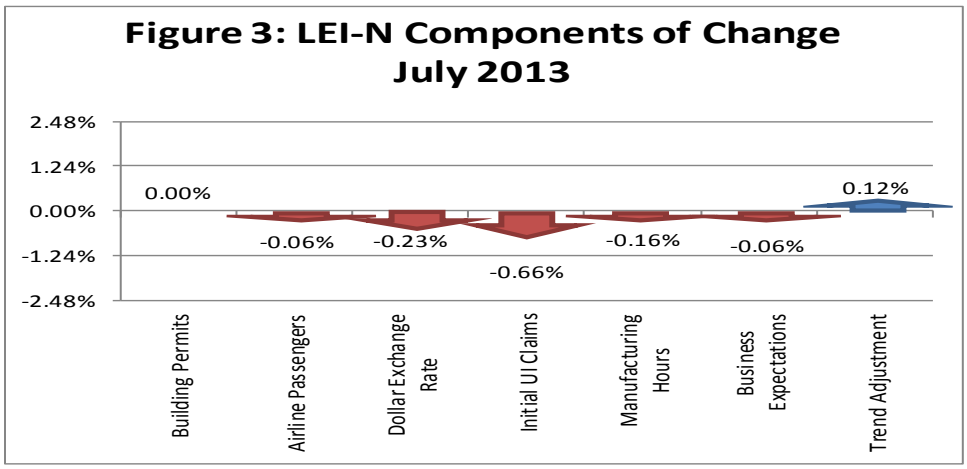
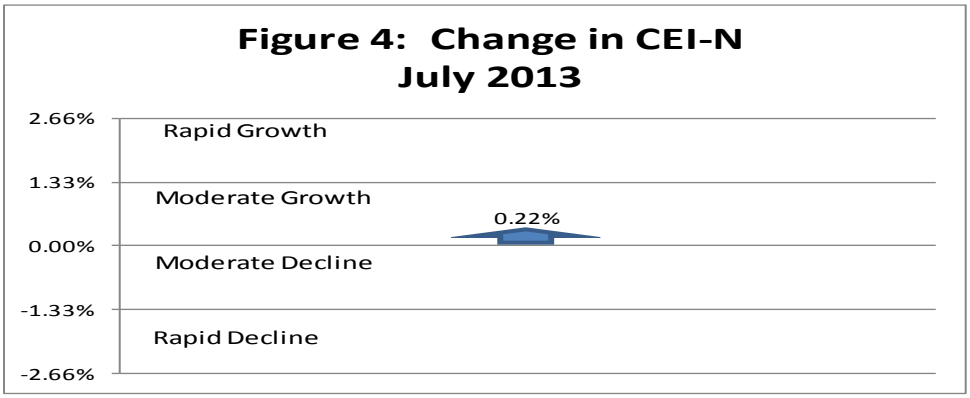


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during July 2013. The change in the overall LEI – N is the weighted average of changes in each component (see page 5). There were few signals of economic growth among leading indicator components in July. No change was identified among single-family building permits. There was a slight drop in both airline passenger counts and manufacturing hours during the month. There also was a significant increase in initial unemployment insurance claims during July, a negative signal for the labor market. Business expectations were negative in July. Respondents to the *Survey of Nebraska Business* projected a slight decline in both sales and employment in their business over the next six months. Finally, the value of the U.S. dollar continued to rise during July. This is a negative development for Nebraska's large export sector in agriculture and manufacturing. Note that the trend adjustment component pictured in Figure 3 is discussed on page 5.

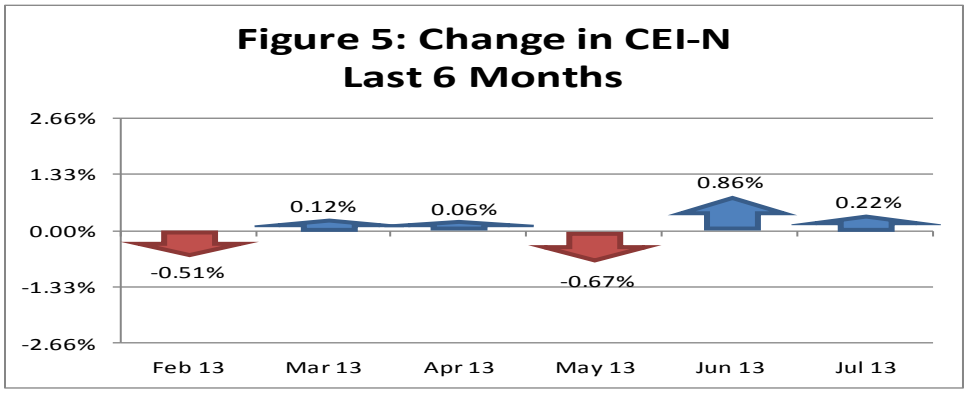


Coincident Economic Indicator – Nebraska

The Coincident Economic Indicator - Nebraska (CEI-N) is a measure of the current size of the Nebraska economy. The CEI-N increased by 0.22% between June and July of 2013, as seen in Figure 4.



The modest increase in the CEI-N during July is consistent with the pattern of growth since March 2013, as seen in Figure 5. Changes in the LEI-N during May and June, taken together, represent a modest increase in the LEI-N. Growth also was modest in March and April. Such modest growth represents an improved rate of growth in the Nebraska economy, given that the CEI-N declined in both January and February. A key question is whether growth will continue to improve during the year, reaching a moderate rather than modest pace in the second half of 2013.



As seen in Figure 6, only one of the four components of the CEI-N rose during July. There was a solid increase in electricity sales during July, even after adjusting for weather conditions during the month. However, there was a slight decrease in both private wages and agricultural prices. The decline in private wages is consistent with the disappointing report on U.S. average wages, weekly hours and job growth which was released earlier this month. Finally, respondents to the *Survey of Nebraska Business* reported a modest decline in sales activity in recent months. A detailed discussion of the components of the CEI-N, as well as the LEI-N, can be found at www.cba.unl.edu in *Technical Report: Coincident and Leading Economic Indicators- Nebraska.*

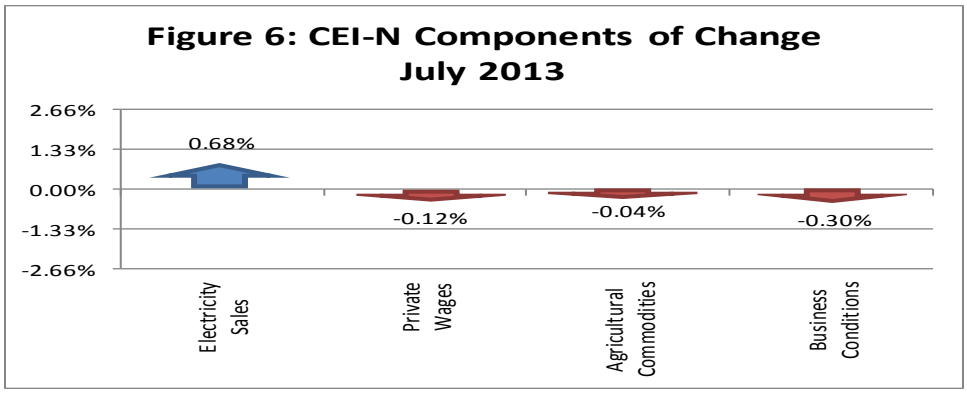
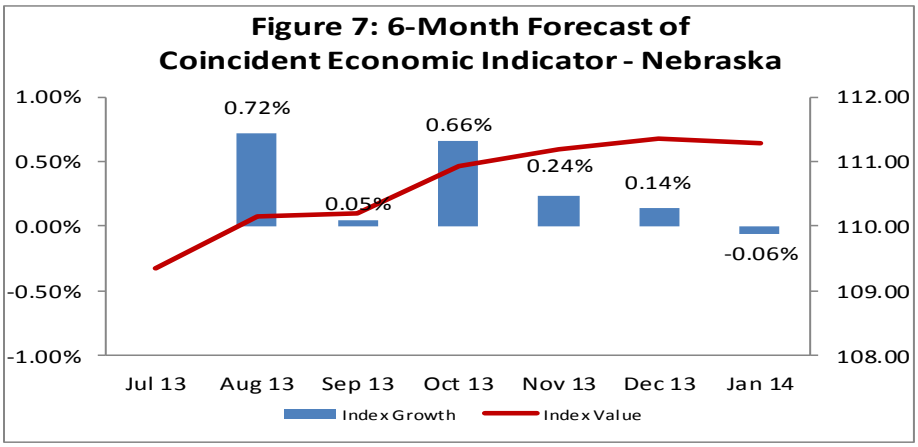


Figure 7 shows the forecast for the CEI-N over the next six months. The forecast reflects the improvement in the LEI-N from February through June, as seen in Figure 2, as well as this month's decline in the leading economic indicator. The forecast calls for moderate growth in the CEI-N through November, but combined growth will slow in December 2013 and January 2014. Moderate growth in CEI-N during the August to November period will ensure moderate overall economic growth in the state of Nebraska for the year 2013.



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	14.0748	0.0710	0.0326	Electricity Sales	4.8105	0.2079	0.1442
Airline Passengers	3.5973	0.2780	0.1275	Private Wages	1.7597	0.5683	0.3943
Exchange Rate	1.2264	0.8154	0.3740	Agricultural Commodities	3.2395	0.3087	0.2142
Initial UI Claims	10.0930	0.0991	0.0454	Survey Business Conditions	2.8060	0.3564	0.2473
Manufacturing Hours	1.4609	0.6845	0.3140				
Survey Business Expectations	4.3086	0.2321	0.1065				

Tables 2 and 3 show the calculation for the change in CEI-N and LEI-N between June and July of 2013. 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 adjacent factor.

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	72.67	72.61	0.06	0.03	0.00	0.00%
Airline Passengers	88.14	88.62	-0.48	0.13	-0.06	-0.06%
U.S. Dollar Exchange Rate (Inverse)	102.23	102.89	-0.67	0.37	-0.25	-0.23%
Initial Unemployment Insurance Claims (Inverse)	79.26	94.96	-15.70	0.05	-0.71	-0.66%
Manufacturing Hours	92.97	93.50	-0.54	0.31	-0.17	-0.16%
Survey Business Expectations[1]	49.38		-0.62	0.11	-0.07	-0.06%
Trend Adjustment					0.13	0.12%
Total (weighted average)	106.24	107.37			-1.13	-1.05%

[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	117.94	112.83	5.11	0.14	0.74	0.68%
Private Wage	96.95	97.27	-0.32	0.39	-0.13	-0.12%
Agricultural Commodities	154.56	154.76	-0.20	0.21	-0.04	-0.04%
Survey Business Conditions[1]	48.68		-1.32	0.25	-0.33	-0.30%
Total (weighted average)	109.36	109.12			0.24	0.22%

[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 0.95.

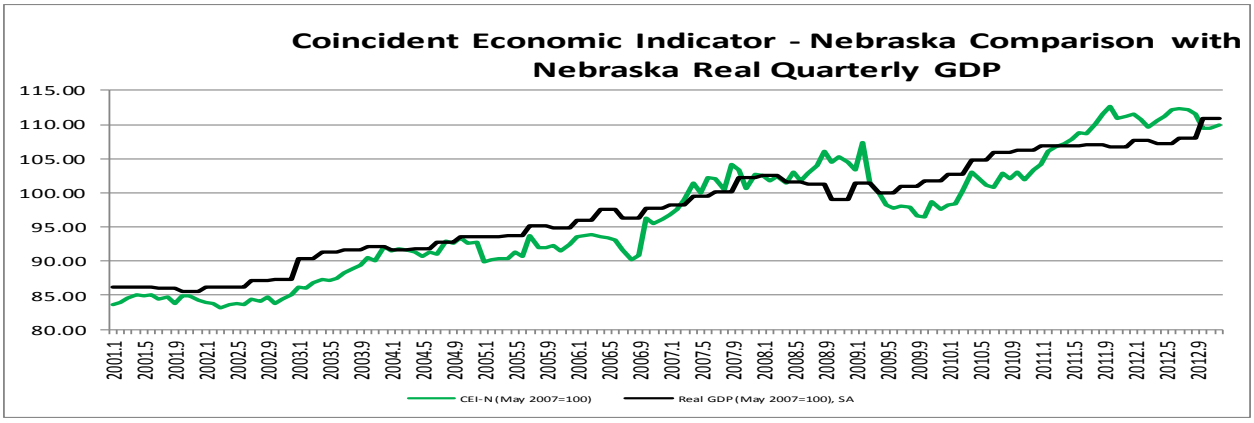


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months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