

9-21-2012

# Nebraska Monthly Economic Indicators: September 21, 2012

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Thompson, Eric; Walstad, William; and George, Adam, "Nebraska Monthly Economic Indicators: September 21, 2012" (2012).

*Leading Economic Indicator Reports*. 17.

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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) grew by 1.19% during August 2012. The increase in the LEI-N, which predicts economic growth in the state six months in the future, is the second monthly increase in a row. The two consecutive months of increase suggest that the Nebraska economy will grow moderately at the end of 2012 and early 2013. A primary reason for the improvement in the LEI-N was a solid increase in seasonally adjusted airline passenger counts during August. This suggests that both business travelers and household leisure travelers have confidence in the future. Along the same lines, there also was an improvement in business expectations for sales and employment growth, according to the Survey of Nebraska Business. Finally, building permits rose while a declining U.S. dollar in August suggests growth in Nebraska export activity. Among other indicator components, there was a slight drop in Nebraska manufacturing hours between July and August of 2012 and an increase in initial unemployment claims.

## Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) in August 2012, compared to the previous month. The LEI-N, which predicts economic growth six months into the future, rose by 1.19% in August, suggesting that the Nebraska economy will expand at the end of 2012 and in early 2013.

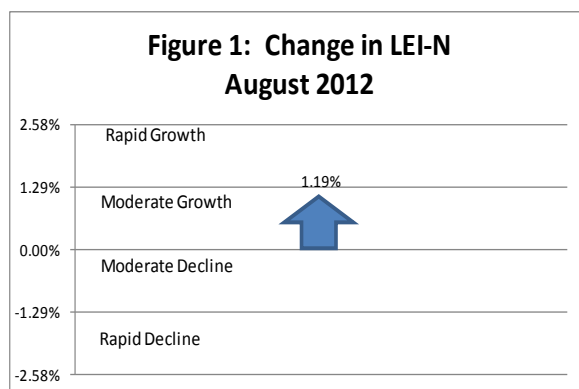


Figure 2 shows the growth in the LEI-N over the last 6 months. Rather than showing a steady increase, the LEI-N has alternated between decline and growth over the last six months. The indicator dropped in May and June and then rose in July and August. This pattern suggests that the Nebraska economy will grow haltingly in the fall but that moderate growth will return in late 2012 and early 2013.

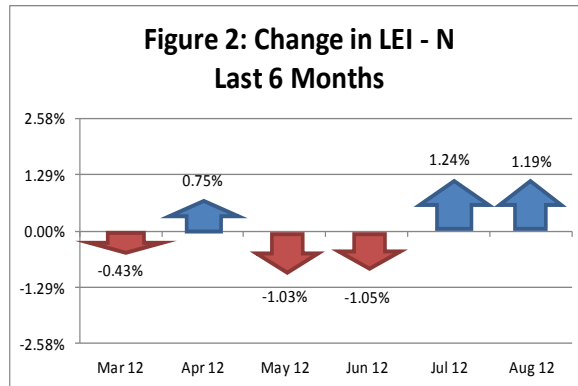
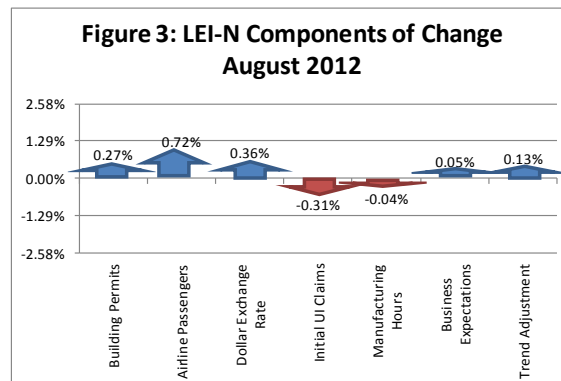
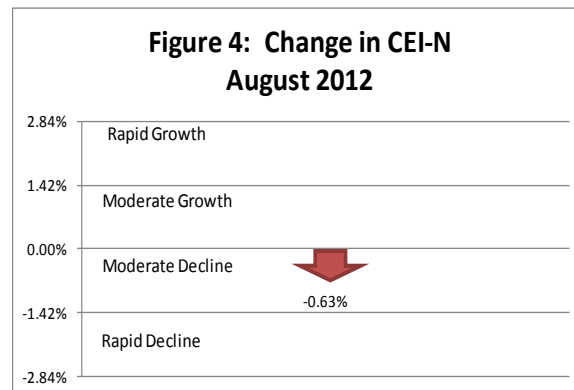


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during August 2012. The change in the overall LEI – N is the weighted average of changes in each component (see page 5). Four components contributed to the increase in the LEI-N. The first factor was a sharp increase in seasonally adjusted airline passenger counts in August. This increase in passenger counts suggests that both businesspeople are continuing to travel to support future business activity and that households are confident enough in the future to continue leisure travel. Second, respondents to the *Survey of Nebraska Businesses* reported an expectation for a modest increase in sales and employment in their businesses over the next six months. Third, building permits rose predicting an increase in future construction activity. Fourth, a declining U.S. dollar will contribute to future growth in export activity. Among other indicators, there was a slight decline in manufacturing hours between July and August. Initial unemployment claims also rose in August. Both factors reduce expectations about the future. Note that the trend adjustment component pictured in Figure 3 is discussed on page 5.

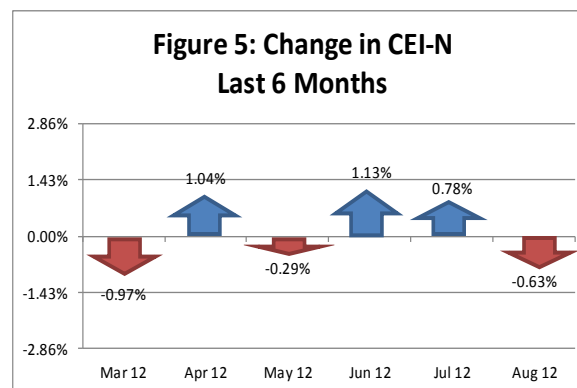


## Coincident Economic Indicator – Nebraska

The Coincident Economic Indicator - Nebraska (CEI-N) is a measure of the current size of the Nebraska economy. As seen in Figure 4, the CEI-N declined moderately, by 0.63%, between July and August of 2012.



As seen in Figure 5, the decline in the CEI-N during August followed solid increases in both June and July. Taking the three months together, the Nebraska economy grew during the summer of 2012. But, the decline in the indicator in August confirms that summer growth was moderate rather than rapid.



As seen in Figure 6, a decline in private wages was the primary reason for the decline in the CEI-N during August. Real (inflation adjusted) private wages declined during August, reflecting weak employment growth and declining real hourly wages. Weak employment growth is consistent with slow job growth throughout the country during August. The drop in real hourly wages is consistent with the rapid consumer price inflation during August. Weather adjusted electricity sales also fell modestly in August compared to July. Among other indicators, respondents to the *Survey of Nebraska Business* reported an increase in sales and employment activity in recent months. Agricultural commodity prices also rose in August. These increases are a positive for the future economy because the price increases will help mitigate the economic costs of the drought. A detailed discussion of the components of the CEI-N, as

well as the LEI-N, can be found at [www.cba.unl.edu](http://www.cba.unl.edu) in *Technical Report: Coincident and Leading Economic Indicators- Nebraska*.

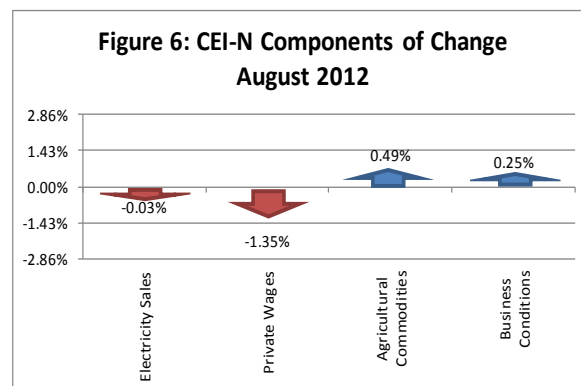
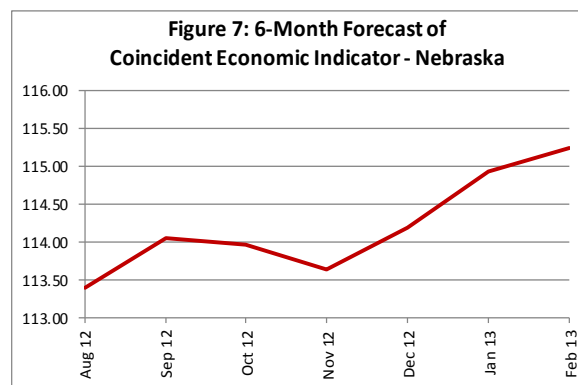


Figure 7 shows the forecast for the CEI-N over the next six months. The forecast reflects changes in the value of LEI-N between March and August of 2012 (see Figure 2). Recall that the LEI-N declined during May and June but then rose in July and August. This pattern suggests limited economic growth in Nebraska during the fall but that moderate economic growth could return during the winter months in late 2012 and early 2013. These expectations are depicted in Figure 7. From September through November, the CEI-N will both rise and fall in individual months, and there will be little net growth. The CEI-N is then expected to rise steadily from December 2012 through February 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.

<b>Table 1: Component Weights for LEI-N and CEI-N</b>							
<b>Leading Economic Indicator - Nebraska</b>				<b>Coincident Economic Indicator - Nebraska</b>			
<b>Variable</b>	<b>Standard Deviation</b>	<b>Inverse STD</b>	<b>Weight (Inverse STD Standardize)</b>	<b>Variable</b>	<b>Standard Deviation</b>	<b>Inverse STD</b>	<b>Weight (Inverse STD Standardize)</b>
SF Housing Permits	14.4242	0.0693	0.0340	Electricity Sales	4.8559	0.2059	0.1725
Airline Passengers	3.6788	0.2718	0.1334	Private Wages	1.7921	0.5580	0.4675
Exchange Rate	1.2530	0.7981	0.3916	Agricultural Commodities	3.2370	0.3089	0.2588
Initial UI Claims	9.9959	0.1000	0.0491	Survey Business Conditions	8.2757	0.1208	0.1012
Manufacturing Hours	1.4587	0.6855	0.3364				
Survey Business Expectations	8.8351	0.1132	0.0555				

Tables 2 and 3 show the calculation for the change in CEI-N and LEI-N between July and August. 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 0.13% per month. There is also a trend adjustment factor for the U.S. Leading Economic Indicator.

<b>Table 2: Component Contributions to the Change in Leading Economic Indicator</b>						
<b>Leading Economic Indicator - Nebraska</b>						
Component Index Value (May 2007=100)						
<b>Component</b>	<b>Current</b>	<b>Previous</b>	<b>Difference</b>	<b>Weight</b>	<b>Contribution</b>	<b>Percentage Contribution (Relative to Previous LEI-N)</b>
SF Building Permits	61.61	53.52	8.09	0.03	0.28	0.27%
Airline Passengers	94.82	89.38	5.44	0.13	0.73	0.72%
U.S. Dollar Exchange Rate (Inverse)	103.74	102.83	0.92	0.39	0.36	0.36%
Initial Unemployment Insurance Claims (Inverse)	64.73	71.03	-6.30	0.05	-0.31	-0.31%
Manufacturing Hours	88.03	88.14	-0.11	0.34	-0.04	-0.04%
Survey Business Expectations <sup>1</sup>	50.95		0.95	0.06	0.05	0.05%
Trend Adjustment					0.13	0.13%
Total (weighted average)	102.26	101.07			1.20	1.19%

<sup>1</sup> Survey results are a diffusion Index, which is always compared to 50

<b>Table 3: Component Contributions to the Change in Coincident Economic Indicator</b>						
<b>Coincident Economic Indicator - Nebraska</b>						
Component Index Value (May 2007=100)						
<b>Component</b>	<b>Current</b>	<b>Previous</b>	<b>Difference</b>	<b>Weight</b>	<b>Contribution</b>	<b>Percentage Contribution (Relative to Previous CEI-N)</b>
Electricity Sales	112.20	112.40	-0.20	0.17	-0.03	-0.03%
Private Wage	92.73	96.01	-3.29	0.47	-1.54	-1.35%
Agricultural Commodities	151.01	148.84	2.16	0.26	0.56	0.49%
Survey Business Conditions <sup>1</sup>	52.87		2.87	0.10	0.29	0.25%
Total (weighted average)	113.40	114.12			-0.72	-0.63%

<sup>1</sup> 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 2011. The comparison ends in 2011 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 0.94.

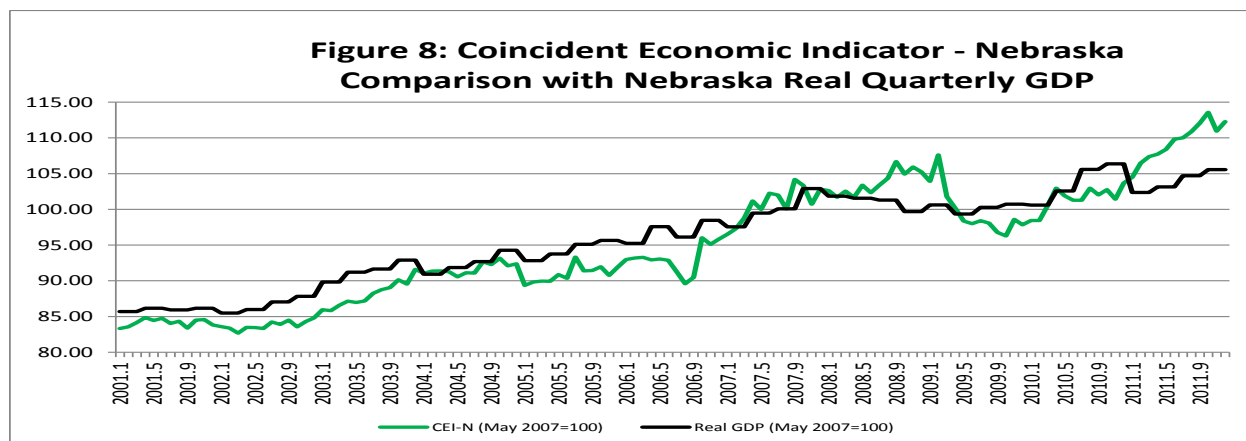


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months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

