

# Nebraska Monthly Economic Indicators: October 19, 2012

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**Summary:** *The Leading Economic Indicator – Nebraska (LEI-N) grew by just 0.09% during September 2012. The increase in the LEI-N, which predicts economic growth in the state six months in the future, was quite weak, but did follow two months of solid increase in July and August. The continued expansion of the LEI-N, however slight, confirms that the Nebraska economy will grow moderately at the end of 2012 and early 2013. A primary reason for the slight improvement in the LEI-N was a solid increase in single-family building permits, suggesting continued improvement in the Nebraska housing market. A declining U.S. dollar also was a positive indicator, suggesting future growth in Nebraska export activity. But, other components of the LEI-N declined during September. Airline passenger counts and manufacturing hours both declined during the month. Initial unemployment claims rose in Nebraska. Finally, respondents to the Survey of Nebraska Business indicated that both sales and employment would decline moderately in their business over the next six months.*

## Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) in September 2012, compared to the previous month. The LEI-N, which predicts economic growth six months into the future, rose by just 0.09% in September.

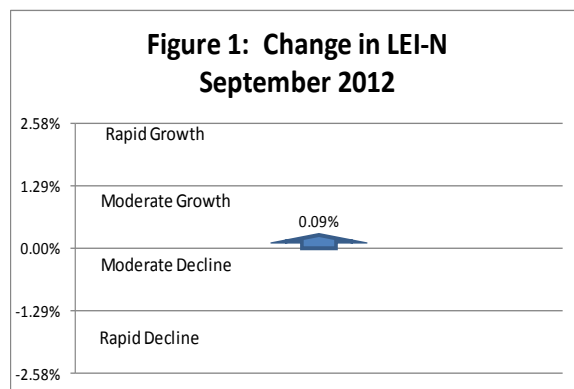


Figure 2 shows the growth in the LEI-N over the last 6 months. The Figure shows that the leading indicator grew solidly in July and August, before its slight improvement in September. This pattern suggests that the Nebraska economy will grow moderately in late 2012 and early 2013. However, the decline in LEI-N in both May and June suggests a weak economy over the next two months.

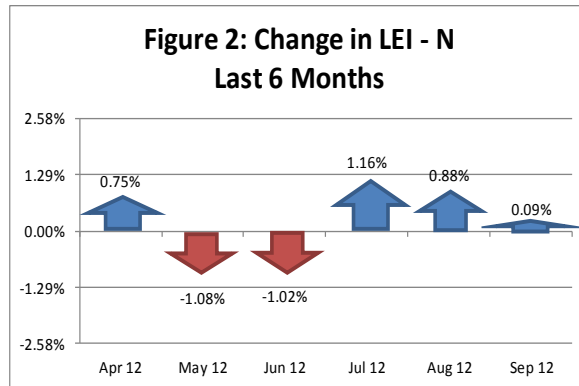
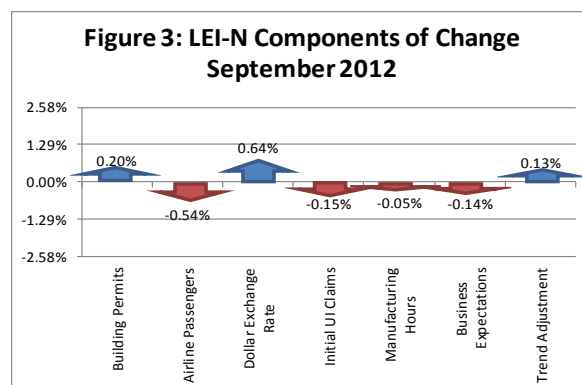
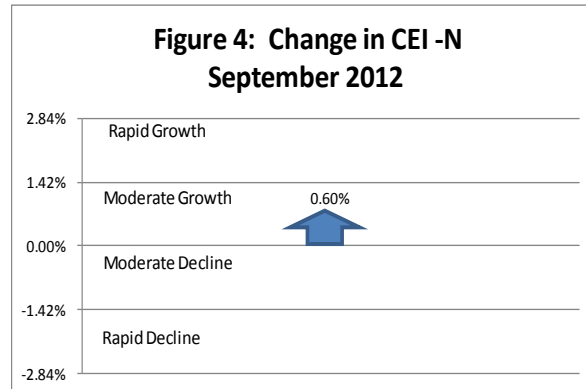


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during September 2012. The change in the overall LEI – N is the weighted average of changes in each component (see page 5). Only two components contributed to the increase in the LEI-N. The first was a solid increase in single-family building permits. This increase indicates that Nebraska construction activity will continue to improve. The second was a declining U.S. dollar, which will support growth of Nebraska’s large export sector in the coming months. While the overall value of LEI-N rose slightly during September, four components suggest a weaker economic outlook. The decline in airline passenger counts indicates a decline in businesspeople traveling to support future business activity and that households are cutting back on leisure travel. An increase in initial unemployment claims suggests that employers expect to need fewer workers in the coming months. This interpretation is supported by the respondents to the *Survey of Nebraska Businesses*. Respondents reported that they expect a modest decline in sales and employment in their businesses over the next six months. Finally, the slight decline in manufacturing hours indicates that manufacturing is no longer a strong engine of growth in the Nebraska economy, as it has been much of the past year. Note that the trend adjustment component pictured in Figure 3 is discussed on page 5.

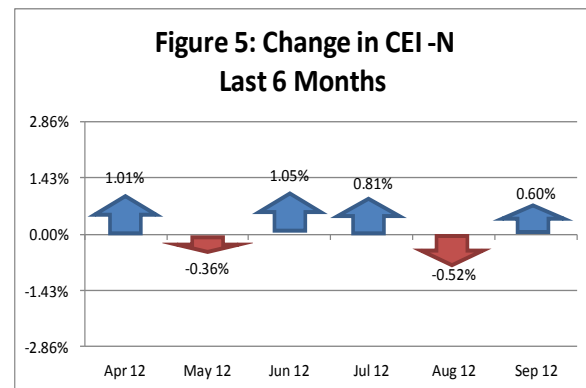


## Coincident Economic Indicator – Nebraska

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 grew moderately, by 0.60%, between August and September of 2012.



As seen in Figure 5, the increase in the CEI-N during September reversed a decline in August. Taking August and September together, growth has sputtered in Nebraska in recent months after a period of solid growth, especially in June and July.



As seen in Figure 6, growth in private wages was the primary reason for the improvement in the CEI-N during September. Real (inflation adjusted) private wages grew during September, reflecting moderate employment growth and rising real hourly wages in a lower inflation environment. Agricultural commodity prices also rose in September, due to an increase in beef prices. This increase in price will help mitigate the economic costs of the drought during the current year. There was weakness in other components of the CEI-N, however, as would be expected in the current weak economic environment. Weather adjusted electricity sales fell in September compared to August. Finally, respondents to the *Survey of Nebraska Business* reported a decline in sales and employment 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](http://www.cba.unl.edu) in *Technical Report: Coincident and Leading Economic Indicators- Nebraska*.

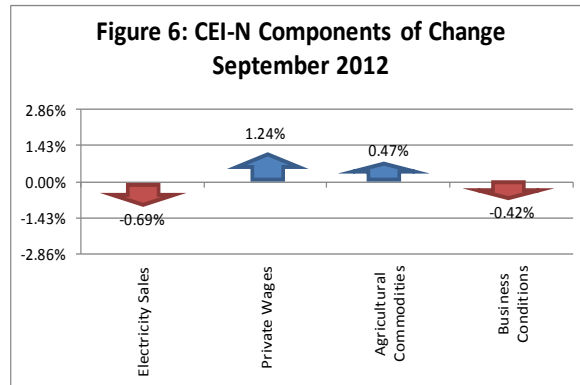
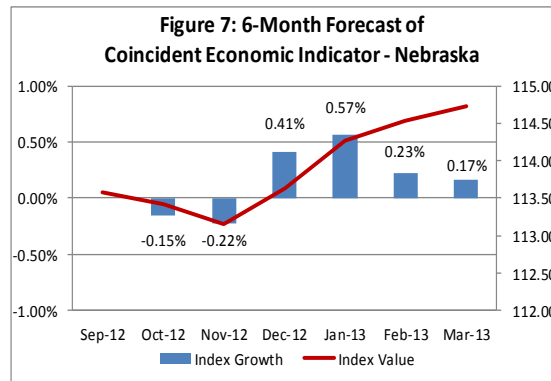


Figure 7 shows the forecast for the CEI-N over the next six months. The forecast reflects changes in the value of LEI-N between April and September of 2012 (see Figure 2). Recall that the LEI-N declined during May and June but then rose solidly in July and August, and rose slightly in September. This pattern suggests continued weakness in the Nebraska economy over the next few months before moderate economic growth returns during late 2012 and early 2013. These expectations are depicted in Figure 7. During October and November, the CEI-N will decline slightly. The CEI-N is then expected to rise from December 2012 through March 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.

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	14.3982	0.0695	0.0341	Electricity Sales	4.8582	0.2058	0.1744
Airline Passengers	3.6810	0.2717	0.1333	Private Wages	1.8117	0.5520	0.4676
Exchange Rate	1.2553	0.7966	0.3910	Agricultural Commodities	3.3142	0.3017	0.2556
Initial UI Claims	9.9498	0.1005	0.0493	Survey Business Conditions	8.2757	0.1208	0.1024
Manufacturing Hours	1.4577	0.6860	0.3367				
Survey Business Expectations	8.8351	0.1132	0.0556				

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

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	65.69	59.75	5.94	0.03	0.20	0.20%
Airline Passengers	90.91	95.02	-4.11	0.13	-0.55	-0.54%
U.S. Dollar Exchange Rate (Inverse)	105.40	103.74	1.66	0.39	0.65	0.64%
Initial Unemployment Insurance Claims (Inverse)	60.68	63.68	-3.00	0.05	-0.15	-0.15%
Manufacturing Hours	86.92	87.06	-0.14	0.34	-0.05	-0.05%
Survey Business Expectations <sup>1</sup>	47.36		-2.64	0.06	-0.15	-0.14%
Trend Adjustment					0.13	0.13%
Total (weighted average)	101.92	101.83			0.09	0.09%

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

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	107.59	112.06	-4.47	0.17	-0.78	-0.69%
Private Wage	95.79	92.80	2.99	0.47	1.40	1.24%
Agricultural Commodities	151.90	149.82	2.08	0.26	0.53	0.47%
Survey Business Conditions <sup>1</sup>	45.39		-4.61	0.10	-0.47	-0.42%
Total (weighted average)	113.58	112.90			0.68	0.60%

<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.

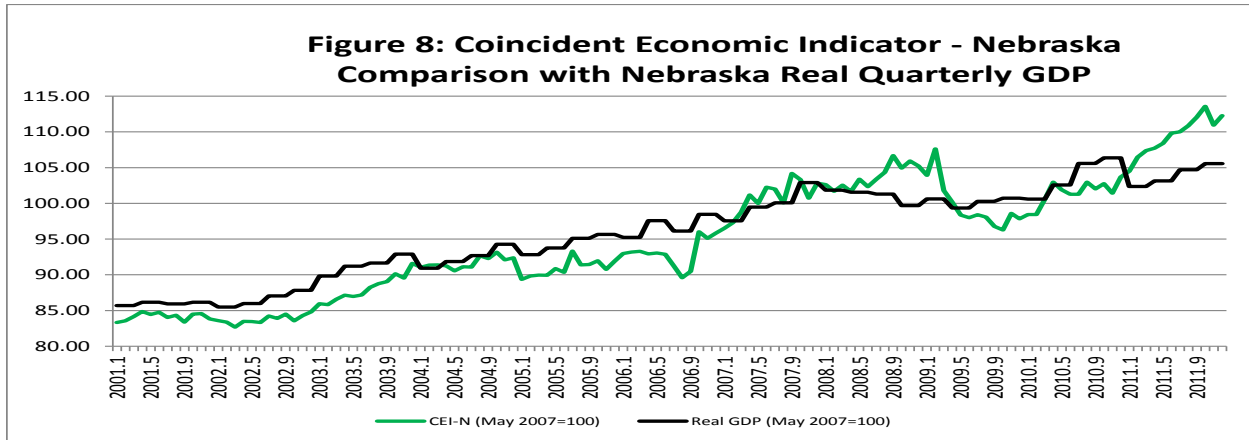


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months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

