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# Nebraska Monthly Economic Indicators: March 21, 2014

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## Nebraska Monthly Economic Indicators: March 21, 2014

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**Summary:** *The Leading Economic Indicator – Nebraska (LEI-N) increased by 0.99% during February 2014. The increase in the LEI-N, which predicts economic growth in the state six months in the future, suggests moderate growth in the Nebraska economy during the summer of 2014. Four of six components of the leading economic indicator grew during February. Manufacturing hours and airline passenger counts both rose modestly. Initial unemployment claims dropped significantly in February, a positive sign for the labor market. There was also a solid improvement in business expectations. Respondents to the Survey of Nebraska Business predicted an increase in sales and employment at their business over the next six month. Among declining components, there was a slight drop in single-family home building permits in February and a modest increase in the value of the dollar, which is a negative for exports.*

### Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) in February 2014, compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N increased by 0.99% in February.

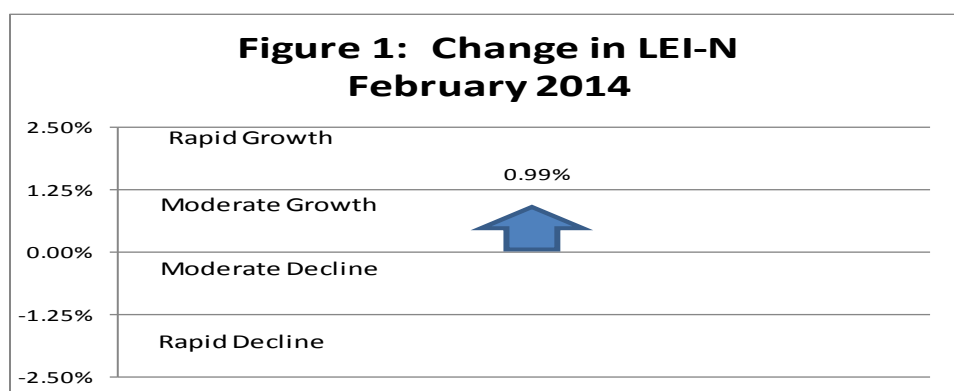


Figure 2 shows the growth in the LEI-N over the last 6 months. While there has been volatility in the leading indicator in recent months, the outlook is positive on balance. The LEI-N rose in September and October, 2013. Further, increases in the LEI-N since November have been larger than declines, also suggesting improvement. The overall picture is for growth in the Nebraska economy over the next 6 months, with growth improving to a moderate pace by summer.

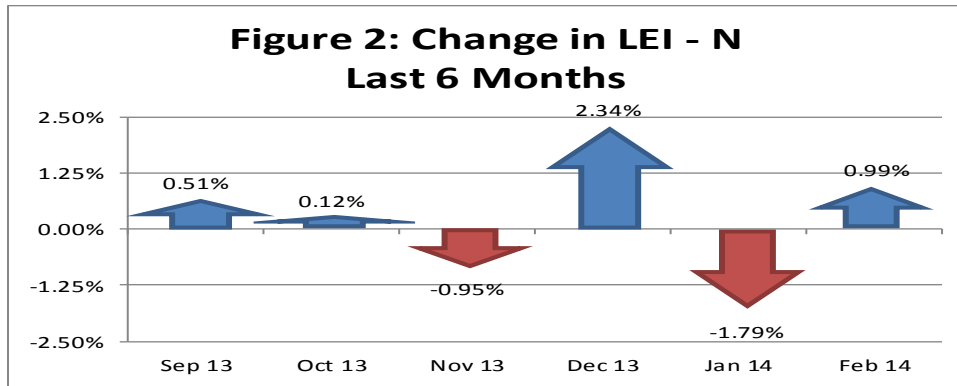
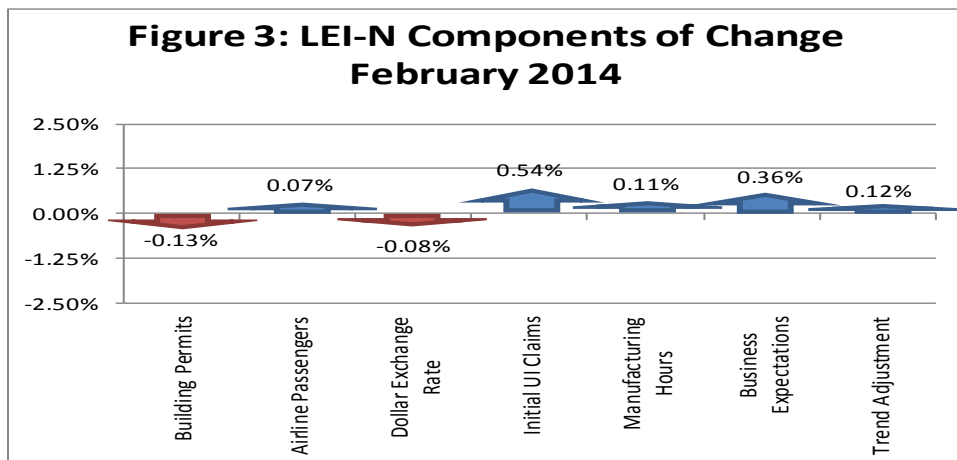
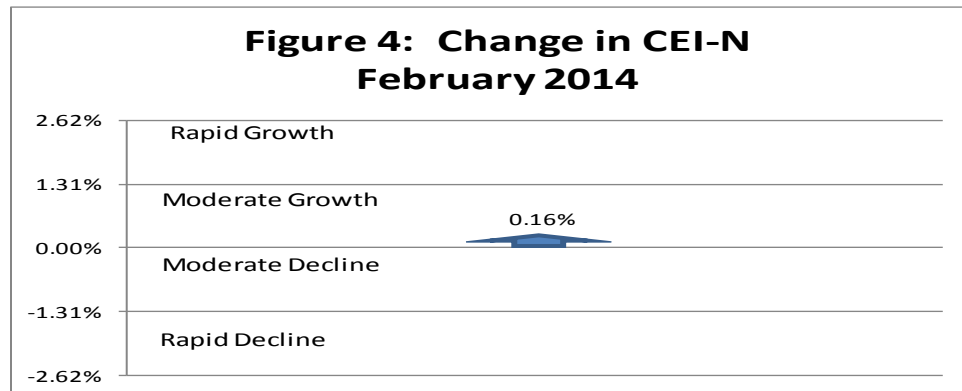


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during February 2014. The change in the overall LEI-N is the weighted average of changes in each component (see page 5). During February, four components of the indicator rose and two declined. Manufacturing hours and airline passenger counts both rose. This suggests strength in the industrial sector and confidence among consumers and business travelers. Initial unemployment claims also fell significantly during the month on a seasonally-adjusted basis, which is a positive sign for the Nebraska labor market. Business expectations also improved in February as respondents to the *Survey of Nebraska Business* predicted an increase in both sales and employment over the next six months. Among other components, single-family building permits declined modestly on a seasonally-adjusted basis. The value of the U.S. dollar increased slightly during February, which is negative for export activity. Note that the trend adjustment component pictured in Figure 3 is discussed on page 5.

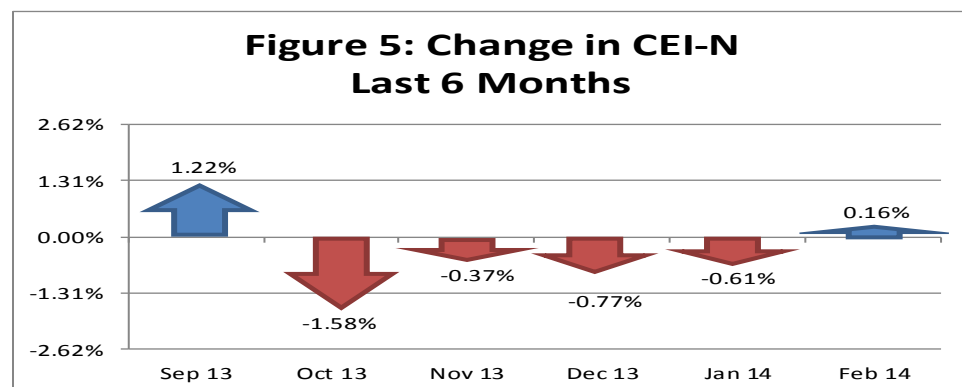


## Coincident Economic Indicator – Nebraska

The Coincident Economic Indicator - Nebraska (CEI-N) is a measure of the current size of the Nebraska economy. The CEI-N rose by 0.16% between January and February of 2004, as seen in Figure 4.



The small increase in the CEI-N during February is a sign of stabilization. As seen in Figure 5, the CEI-N dropped at the end of 2013, as the Nebraska economy continued to adjust to the sharp drop in the crop prices during the summer and fall of 2013. The declines in the CEI-N were moderate, but such steady declines are a sign of an anemic economy. The CEI-N for January was originally thought to have risen, but turned negative due to a downward revision in the average weekly hours of Nebraska workers. The improvement in the CEI-N in February suggests the economy is stabilizing. We note that the CEI-N is also expected to expand over most of the next 6 months (see Figure 7).



As seen in Figure 6, growth in the CEI-N during February was due to a rebound in private wages. Real weekly private wages grew during the month, suggesting growth in employment opportunities, hours-worked per week and real wages. The other three components of the CEI-N declined. Electricity sales fell slightly during February. Respondents to the *Survey of Nebraska Business* reported a modest decline in sales activity in recent months, though employment held steady. Agricultural commodity prices also were down slightly. 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*.

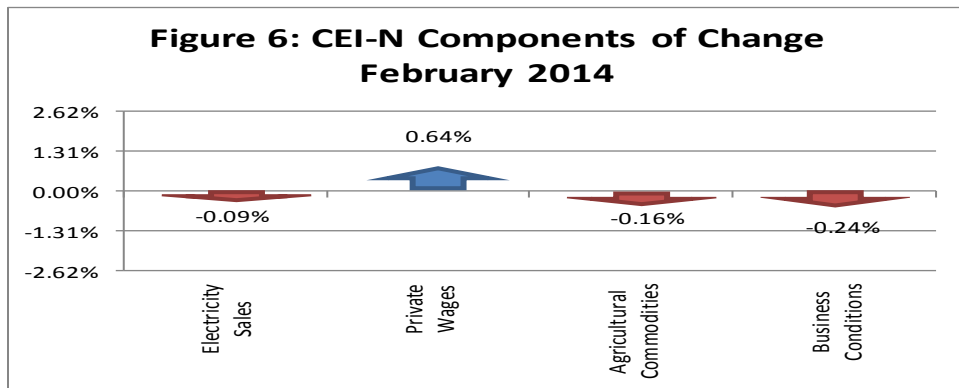
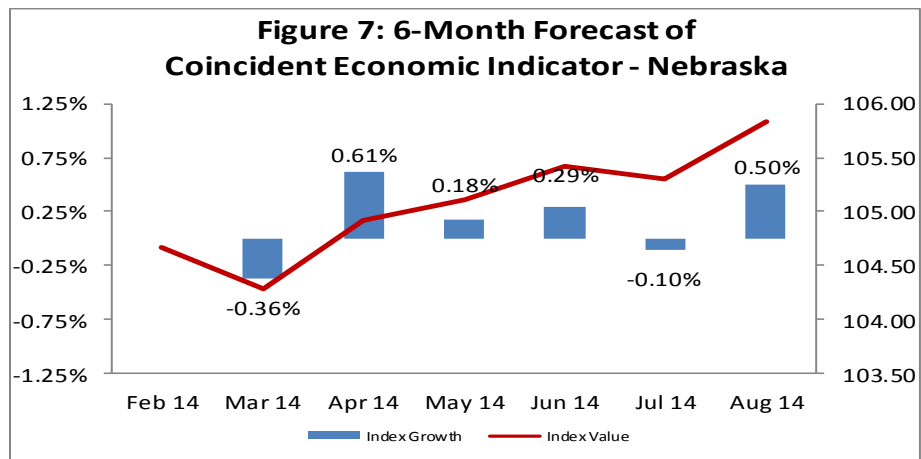


Figure 7 shows the forecast for the CEI-N over the next six months. The forecast suggests moderate growth in the CEI-N through August 2014, a result which is consistent with the overall improvement in the LEI-N over the last six months (see Figure 2). This expectation is consistent with an acceleration of economic growth in Nebraska throughout the year. It will be critical to see whether the LEI-N continues to expand in the coming months.



## 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	13.9983	0.0714	0.0325	Electricity Sales	4.9750	0.2010	0.1368
Airline Passengers	3.5671	0.2803	0.1275	Private Wages	1.7278	0.5788	0.3940
Exchange Rate	1.2079	0.8279	0.3764	Agricultural Commodities	3.1454	0.3179	0.2164
Initial UI Claims	10.0730	0.0993	0.0451	Survey Business Conditions	2.6928	0.3714	0.2528
Manufacturing Hours	1.4866	0.6727	0.3058				
Survey Business Expectations	4.0333	0.2479	0.1127				

Tables 2 and 3 show the calculation for the change in CEI-N and LEI-N between January and February of 2014. 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 adjustment.

<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	55.62	59.86	-4.24	0.03	-0.14	-0.13%
Airline Passengers	93.23	92.61	0.62	0.13	0.08	0.07%
U.S. Dollar Exchange Rate (Inverse)	101.27	101.51	-0.24	0.38	-0.09	-0.08%
Initial Unemployment Insurance Claims (Inverse)	88.16	75.39	12.77	0.05	0.58	0.54%
Manufacturing Hours	94.84	94.45	0.39	0.31	0.12	0.11%
Survey Business Expectations <sup>1</sup>	53.40		3.40	0.11	0.38	0.36%
Trend Adjustment					0.13	0.12%
Total (weighted average)	107.98	106.92			1.06	0.99%

<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	125.94	126.61	-0.66	0.14	-0.09	-0.09%
Private Wage	96.53	94.83	1.70	0.39	0.67	0.64%
Agricultural Commodities	142.88	143.65	-0.77	0.22	-0.17	-0.16%
Survey Business Conditions <sup>1</sup>	49.03		-0.97	0.25	-0.25	-0.24%
Total (weighted average)	104.66	104.50			0.17	0.16%

<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 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.

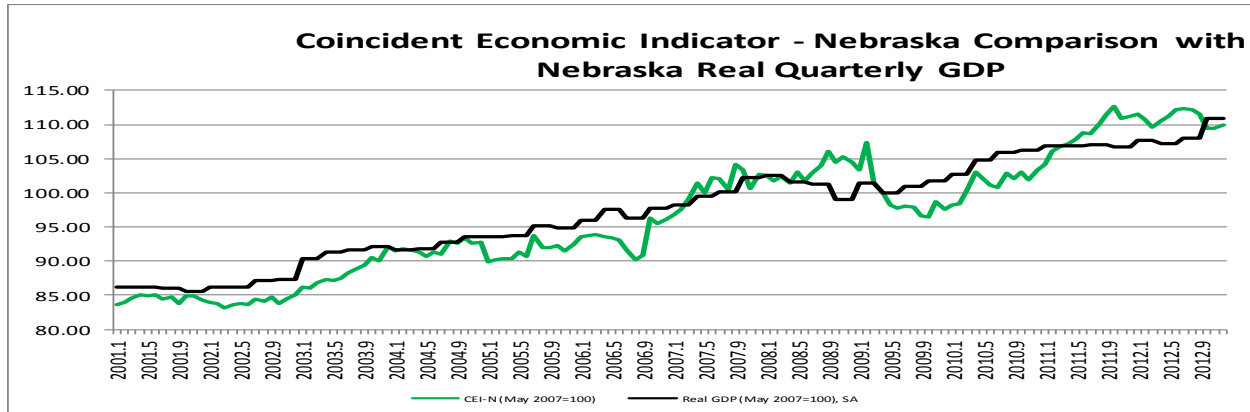


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months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

