

4-20-2012

## Nebraska Monthly Economic Indicators: April 20, 2012

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Thompson, Eric; Walstad, William; and George, Adam, "Nebraska Monthly Economic Indicators: April 20, 2012" (2012). *Leading Economic Indicator Reports*. 7.

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# Nebraska Monthly Economic Indicators: April 20, 2012

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**Summary:** *The Leading Economic Indicator – Nebraska (LEI-N) fell for the first time in four months in March 2012, posting a 0.32% decline. The decline in the LEI-N, which predicts economic growth in the state six months in the future, suggests that the Nebraska economy will grow slowly during the fall of 2012. A rising U.S. dollar, which would reduce exports, was one primary reason for the decline in the LEI-N. The other primary factor was a sharp drop in airline passengers. A modest increase in building permits and growth in manufacturing hours each made a positive contribution to the LEI-N in March, as did business expectations for both sales and employment growth. Looking at earlier months, the LEI-N declined in October and November 2011 but rose from December through February 2012, suggesting a weak Nebraska economy next month but growth during the late spring and summer of 2012.*

## Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) in March 2012, compared to the previous month of February 2012. The LEI-N, which predicts economic growth six months into the future, declined by 0.32% in March. This modest decline suggests that economic growth in Nebraska may slow in the fall of 2012, six months from now, though it is difficult to be certain based on this single month of data. Future releases of the monthly LEI-N will help determine expectations for economic growth in Nebraska in late 2012.

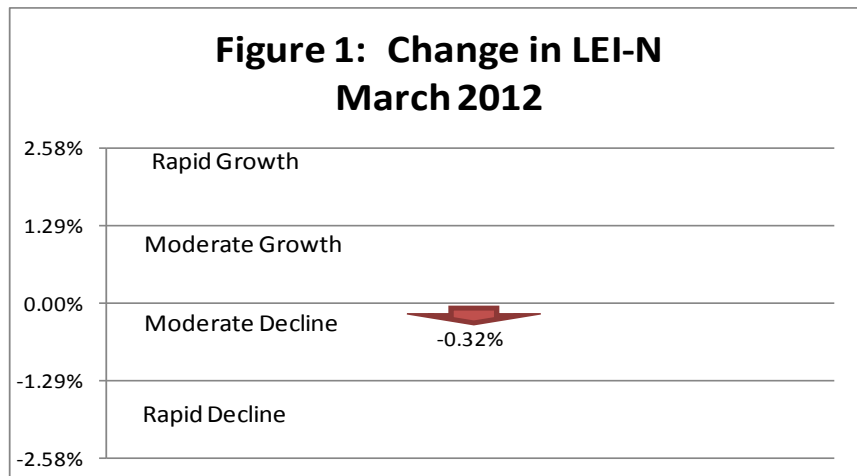


Figure 2 shows the growth in the LEI-N over the last 6 months. The LEI-N declined during October and November 2011 before rebounding in December 2011 and January and February of 2012. As noted earlier, these increases suggest solid growth in the Nebraska economy during the late spring and summer of 2012. For the past 5 months, changes in LEI-N have all been moderate (less than 1.29%), suggesting steady trends in the Nebraska economy, rather than rapid change.

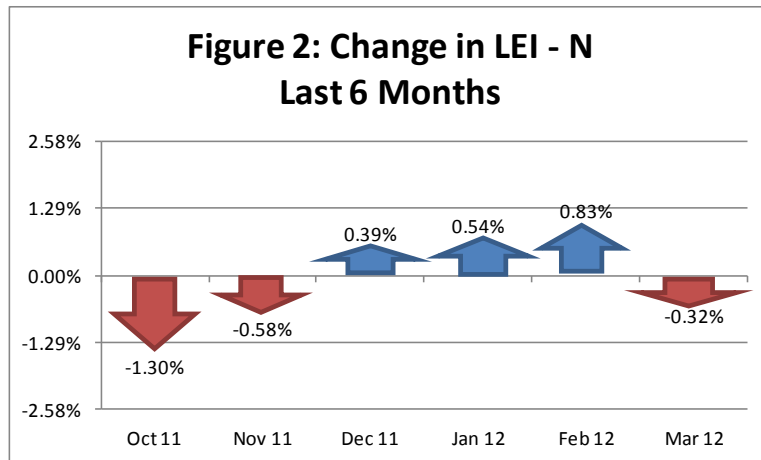
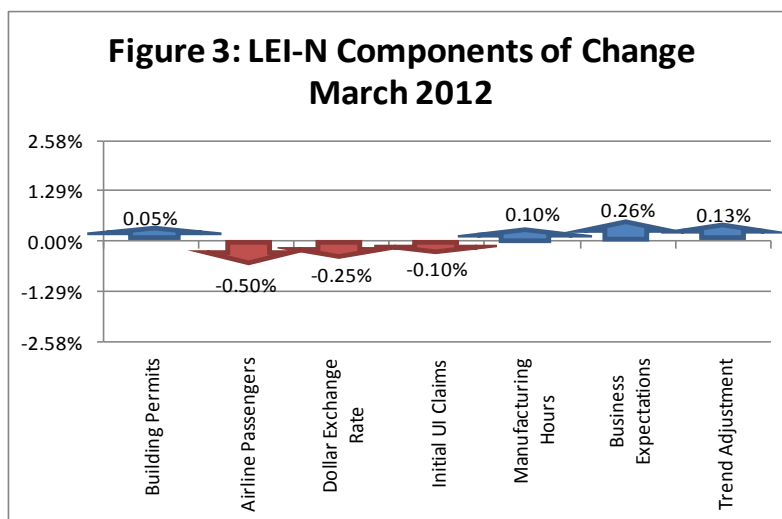
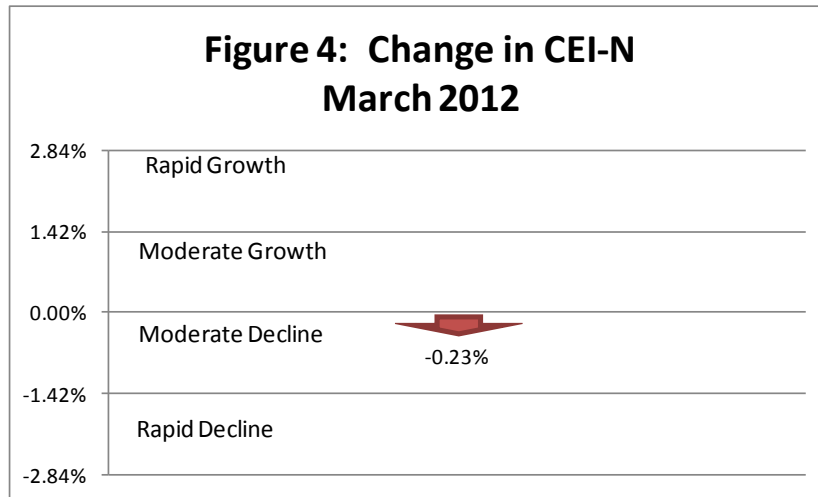


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during March 2012. The change in the overall LEI – N is the weighted average of changes in each component (see page 5). The trade-weighted value of the U.S. Dollar increased during March 2012, discouraging exports and leading to a decline in LEI-N. A sharp decline in seasonally adjusted airline passengers in March 2012 also led to a decline in LEI-N, as did a modest increase in initial unemployment claims. Several factors had a positive impact on LEI-N. Respondents to the monthly *Survey of Nebraska Business* reported an expectation of rising sales and employment in their businesses over the next six months. A rise in manufacturing hours and single-family building permits also made a positive contribution to LEI-N. Finally, 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, CEI-N declined modestly during March 2012, by 0.23%, indicating that Nebraska had a weak economy during March 2012. This weakness is consistent with the decline in the Leading Economic Indicator – Nebraska that was observed in late 2011 (see Figure 2).



The decline in the CEI-N during March is the second consecutive monthly decline, as seen in Figure 5. Last month's indicator report had shown a small increase in CEI-N in February. However, revisions in the data over the last month revealed that the CEI-N declined in February. Two consecutive months of decline suggest that the Nebraska economy has been flat during the first quarter of 2012.

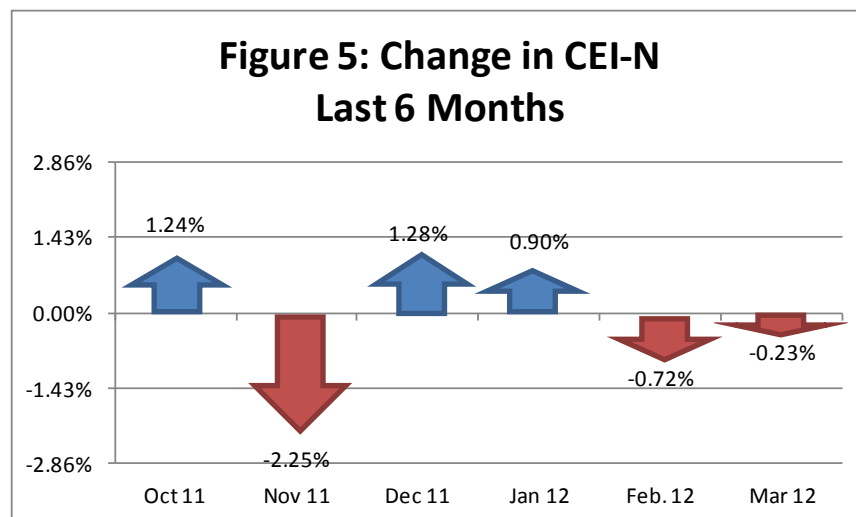


Figure 6 shows change in the four components of the CEI-N during March 2012. A decline in electricity sales in Nebraska, after adjusting for weather and other seasonal factors, was one reason for the decline

in CEI-N during March. Responses from the *Survey of Nebraska Business* also suggested a decline. Businesses responding to the survey reported a recent decline in both sales and employment in recent months. A rise in agricultural commodity prices made a positive contribution to CEI-N, portending continued strength in Nebraska’s large agricultural sector. Real (inflation adjusted) private wages were largely unchanged in Nebraska during March, another sign of a weak economy. 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*.

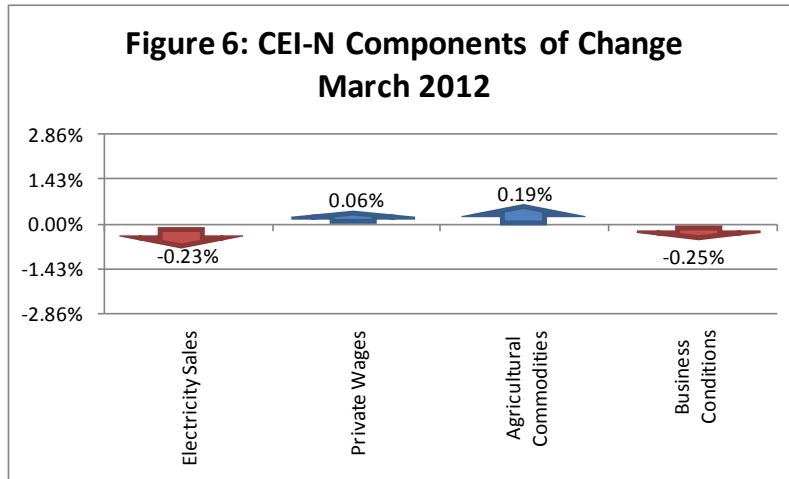
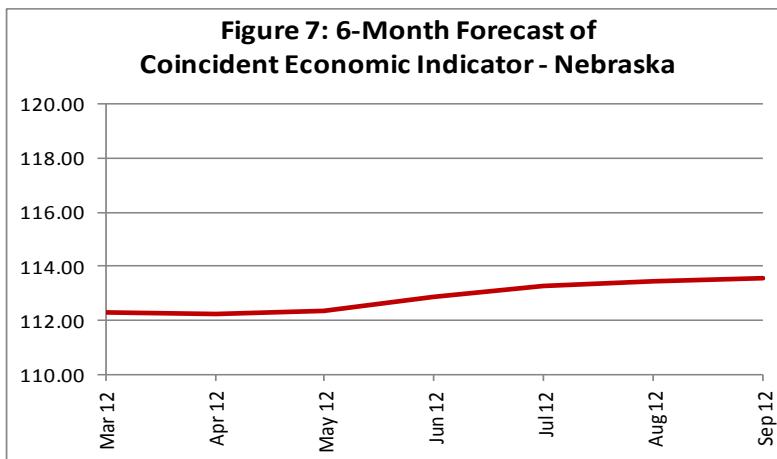


Figure 7 shows the forecast for the CEI-N over the next six months. The forecast reflects changes in the value of LEI-N between October 2011 and March 2012 (see Figure 2). The LEI-N declined in October and November 2011; consequently, the CEI-N is forecast to decline modestly in April 2012. LEI-N grew solidly from December 2011 through February 2012 and the CEI-N is forecast to grow steadily between May and August of 2012. Finally, the CEI-N is forecast to change little between August and September 2012, consistent with the decline in LEI-N this month. Overall, the forecast suggests that the Nebraska economy will grow steadily in the middle of 2012 after a weak first four months. The performance of the economy in late 2012, however, has become uncertain given the decline in the LEI-N in March 2012.



## 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 weight that is utilized is 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 be 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>							
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	14.6288	0.0684	0.0339	Electricity Sales	4.9214	0.2032	0.1708
Airline Passengers	3.7707	0.2652	0.1314	Private Wages	1.8178	0.5501	0.4623
Exchange Rate	1.2583	0.7947	0.3939	Agricultural Commodities	3.1677	0.3157	0.2653
Initial UI Claims	9.8653	0.1014	0.0502	Survey Business Conditions	8.2757	0.1208	0.1016
Manufacturing Hours	1.4818	0.6748	0.3345				
Survey Business Expectations	8.8351	0.1132	0.0561				

Tables 2 and 3 show the calculation for the change in CEI-N and LEI-N between February and March. 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>						
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	54.54	53.01	1.52	0.03	0.05	0.05%
Airline Passengers	90.40	94.28	-3.88	0.13	-0.51	-0.51%
U.S. Dollar Exchange Rate (Inverse)	105.90	106.55	-0.65	0.39	-0.26	-0.26%
Initial Unemployment Insurance Claims (Inverse)	63.29	65.32	-2.03	0.05	-0.10	-0.10%
Manufacturing Hours	87.19	86.90	0.30	0.33	0.10	0.10%
Survey Business Expectations <sup>1</sup>	54.66		4.66	0.06	0.26	0.26%
Trend Adjustment					0.13	0.13%
<b>Total (weighted average)</b>	<b>101.20</b>	<b>101.53</b>			<b>-0.33</b>	<b>-0.32%</b>

<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>						
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	105.99	107.49	-1.50	0.17	-0.26	-0.23%
Monthly Wage	93.98	93.84	0.14	0.46	0.07	0.06%
Agricultural Commodities	148.78	147.99	0.79	0.27	0.21	0.18%
Survey Business Conditions <sup>1</sup>	47.23		-2.77	0.10	-0.28	-0.25%
<b>Total (weighted average)</b>	<b>112.30</b>	<b>112.56</b>			<b>-0.26</b>	<b>-0.23%</b>

<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 2010. The comparison ends in 2010 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.

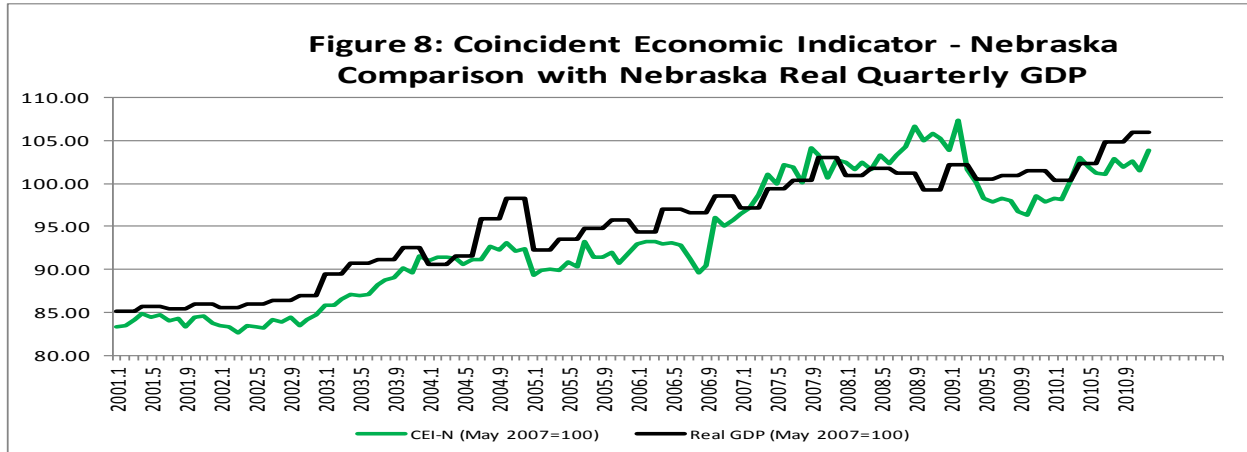


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months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

