

10-17-2014

Nebraska Monthly Economic Indicators: October 17, 2014

Eric Thompson

University of Nebraska-Lincoln, ethompson2@unl.edu

William Walstad

University of Nebraska-Lincoln, wwalstad1@unl.edu

Follow this and additional works at: <http://digitalcommons.unl.edu/bbrleir>



Part of the [Business Commons](#)

Thompson, Eric and Walstad, William, "Nebraska Monthly Economic Indicators: October 17, 2014" (2014). *Leading Economic Indicator Reports*. 47.

<http://digitalcommons.unl.edu/bbrleir/47>

This Article is brought to you for free and open access by the Bureau of Business Research at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Leading Economic Indicator Reports by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

Nebraska Monthly Economic Indicators: October 17, 2014

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

Authors: Dr. Eric Thompson, Dr. William Walstad

| | |
|---|---|
| Leading Economic Indicator..... | 1 |
| Coincident Economic Indicator..... | 3 |
| Weights and Component Shares..... | 5 |
| Performance of the LEI-N and CEI-N..... | 6 |

Summary: *The Leading Economic Indicator – Nebraska (LEI-N) fell by 0.45% during September 2014. The decline in the LEI-N, which predicts economic growth in the state six months in the future, is the second in three months and suggests that Nebraska economic growth will slow. In particular, state economic growth is expected to slow in the first quarter of 2015. Three components contributed to the decline in the leading economic indicator in September. Most importantly, there was a significant increase in the value of the U.S. Dollar. Such an increase reduces the competitiveness of exporters in Nebraska and throughout the United States. There also was a decline in airline passenger counts during September, and an increase in initial claims for unemployment insurance. Among other measures, there was no change in manufacturing hours during the month and a slight improvement in building permits, after seasonal adjustment. Business expectations were slightly positive. In particular, respondents to the Survey of Nebraska Business predicted only a small increase in employment over the next six month.*

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) in September 2014, compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N fell by 0.45% in September.

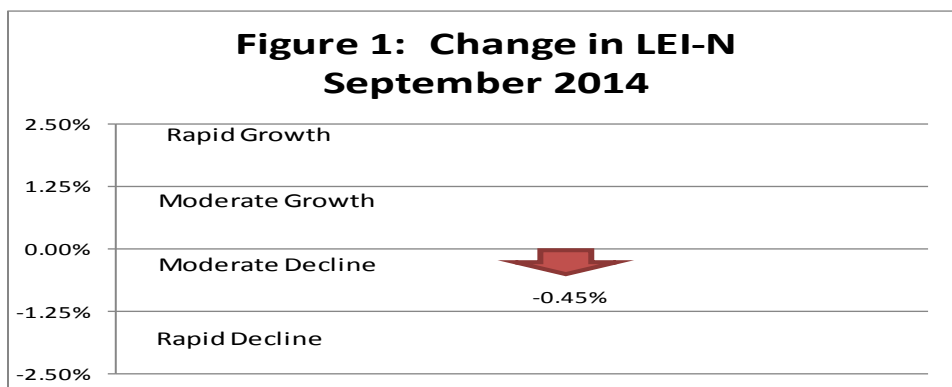


Figure 2 shows the change in the LEI-N over the last 6 months. While the leading indicator rose steadily from April through June, it has declined two of the last three months. These results for July through September portend slower growth for the Nebraska economy during the first quarter of 2015.

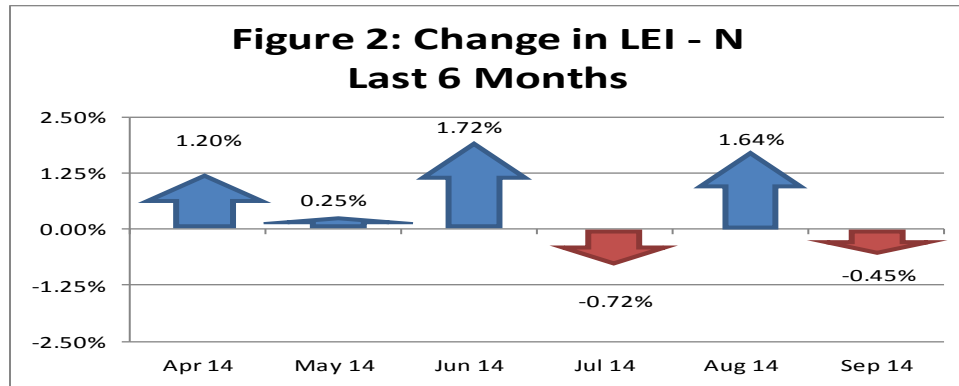
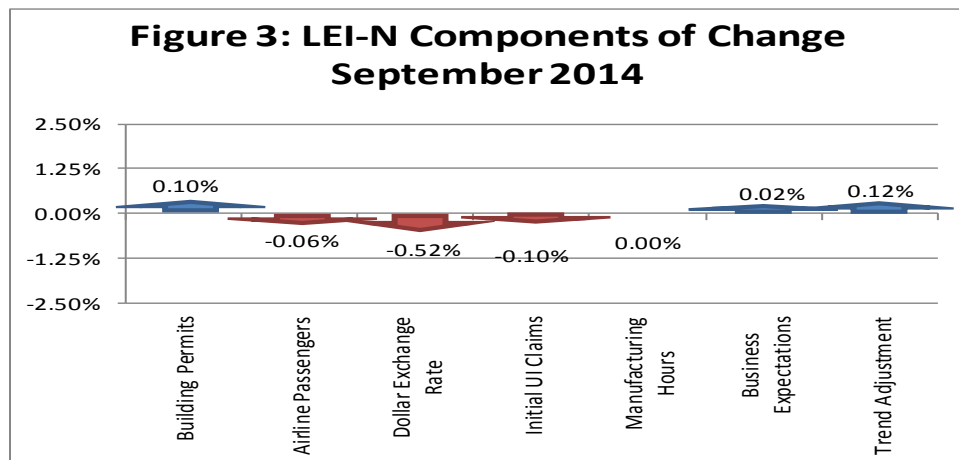
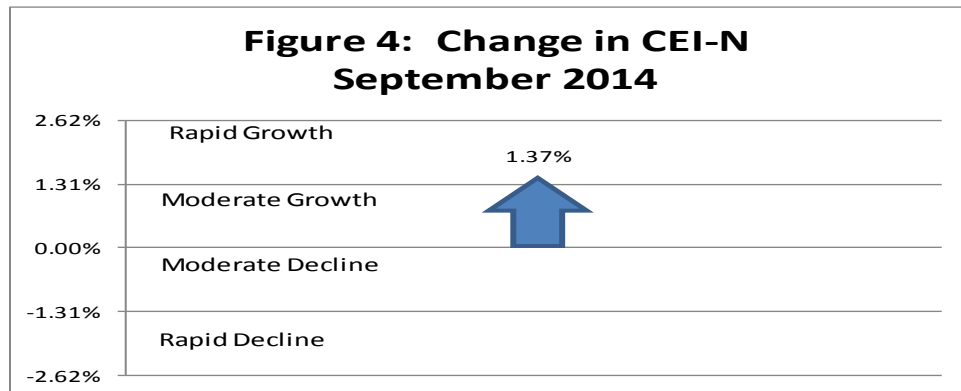


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during September 2014. The change in the overall LEI-N is the weighted average of changes in each component (see page 5). During September, three of the six components of the LEI-N declined. In particular, there was deterioration in conditions for Nebraska exporting businesses, due to a sharp increase in the value of the U.S. dollar. There also was a dip in airline passenger counts and an increase in initial claims for unemployment insurance, after adjusting for seasonality. Weak business expectations also were a factor. After months of optimism, September respondents to the *Survey of Nebraska Business* were not enthusiastic about growth prospects for the next six months. Expectations were barely positive, based on an expectation for a modest increase in employment. Building permits rose during September, after adjusting for seasonal factors. There was no change in manufacturing hours. Note that the trend adjustment component pictured in Figure 3 is discussed on page 5.

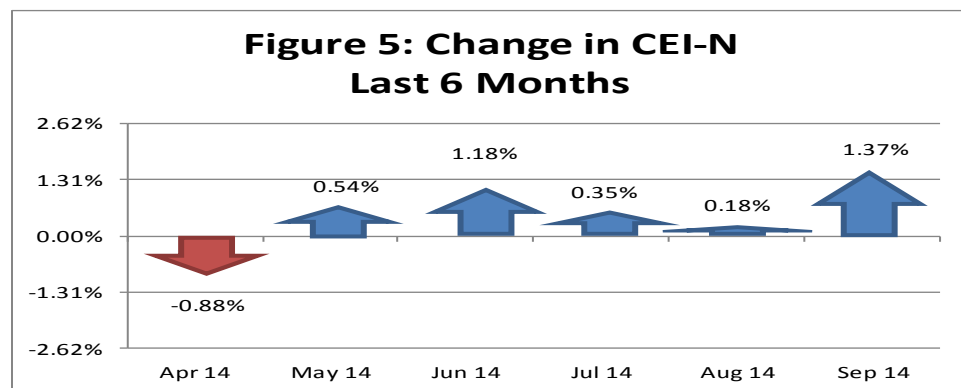


Coincident Economic Indicator – Nebraska

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 rose by a robust 1.37% last month.



The CEI-N has grown for five consecutive months, as seen in Figure 5, including strong growth in both June and September. The key question is whether this economic growth will continue.



As seen in Figure 6, three components of the CEI-N rose during September while just one fell. Electricity sales rose sharply in September on a seasonally-adjusted basis. This increase largely reflects a recovery after weak sales in July and August. Reported business conditions also were strong during September. Respondents to the *Survey of Nebraska Business* reported recent increases in both sales and employment. Real private wages also rose modestly during September, as increases in jobs, weekly hours, and hourly wages exceeded inflation during the month. Among declining components, agricultural commodity prices fell during September as the sharp decline in corn prices outweighed improvements in beef prices. A detailed discussion of the components of the CEI-N and LEI-N can be found at www.cba.unl.edu in *Technical Report: Coincident and Leading Economic Indicators- Nebraska*.

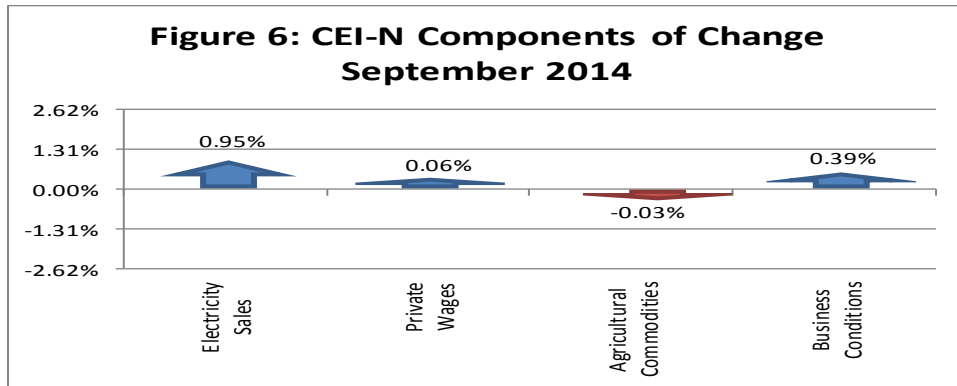
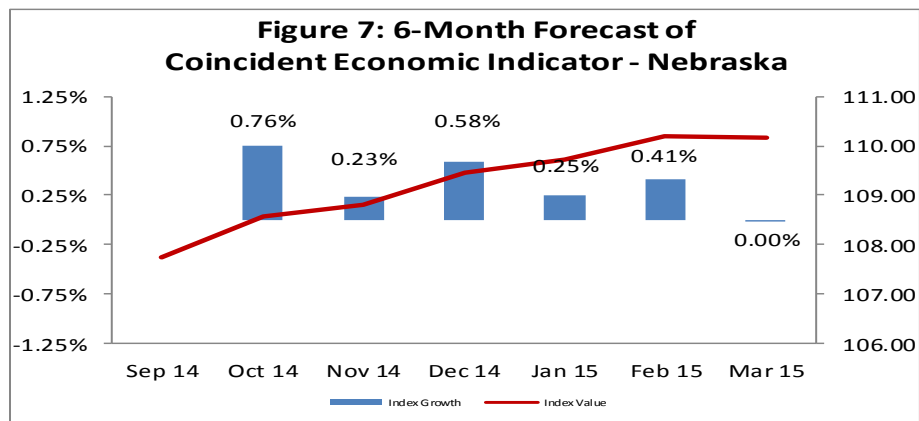


Figure 7 shows the forecast for the CEI-N over the next six months. The forecast suggests solid economic growth during the last quarter of 2014. The forecast also calls for growth to slow during the first quarter of 2015. These expectations are consistent with recent values for the LEI-N (see Figure 2).



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 | 13.8425 | 0.0722 | 0.0329 | Electricity Sales | 4.8283 | 0.2071 | 0.1500 |
| Airline Passengers | 3.4989 | 0.2858 | 0.1302 | Private Wages | 1.6571 | 0.6035 | 0.4370 |
| Exchange Rate | 1.1925 | 0.8386 | 0.3820 | Agricultural Commodities | 3.2324 | 0.3094 | 0.2240 |
| Initial UI Claims | 10.5511 | 0.0948 | 0.0432 | Survey Business Conditions | 3.8311 | 0.2610 | 0.1890 |
| Manufacturing Hours | 1.4668 | 0.6817 | 0.3105 | | | | |
| Survey Business Expectations | 4.5005 | 0.2222 | 0.1012 | | | | |

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

| 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 | 64.07 | 60.80 | 3.26 | 0.03 | 0.11 | 0.10% |
| Airline Passengers | 89.22 | 89.70 | -0.48 | 0.13 | -0.06 | -0.06% |
| U.S. Dollar Exchange Rate (Inverse) | 99.74 | 101.27 | -1.53 | 0.38 | -0.59 | -0.52% |
| Initial Unemployment Insurance Claims (Inverse) | 102.66 | 105.39 | -2.73 | 0.04 | -0.12 | -0.10% |
| Manufacturing Hours | 97.17 | 97.18 | -0.02 | 0.31 | 0.00 | 0.00% |
| Survey Business Expectations ¹ | 50.25 | | 0.25 | 0.10 | 0.03 | 0.02% |
| Trend Adjustment | | | | | 0.13 | 0.12% |
| Total (weighted average) | 112.04 | 112.54 | | | -0.51 | -0.45% |

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 | 118.20 | 111.43 | 6.77 | 0.15 | 1.02 | 0.95% |
| Private Wage | 98.19 | 98.05 | 0.14 | 0.44 | 0.06 | 0.06% |
| Agricultural Commodities | 150.71 | 150.86 | -0.15 | 0.22 | -0.03 | -0.03% |
| Survey Business Conditions ¹ | 52.18 | | 2.18 | 0.19 | 0.41 | 0.39% |
| Total (weighted average) | 107.75 | 106.30 | | | 1.45 | 1.37% |

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 0.96.

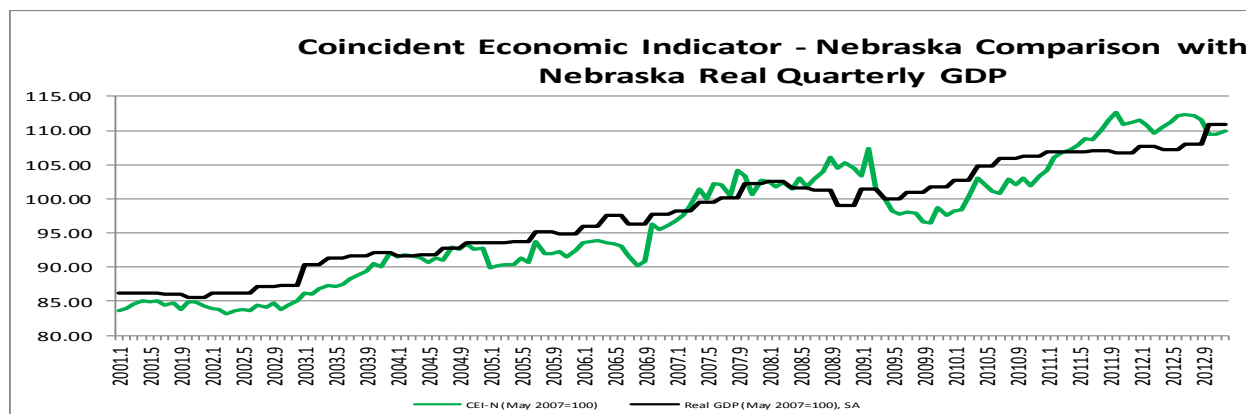


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months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

