

Nebraska Monthly Economic Indicators: December 20, 2013

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

Authors: Dr. Eric Thompson, Dr. William Walstad
Graduate Research Assistants: Shannon McClure,
Mihdi Vahedi

| | |
|---|---|
| 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) declined by 0.59% during November 2013. The decrease in the LEI-N, which predicts economic growth in the state six months in the future, follows three months of expansion. Taking these four months together, the Nebraska economy is expected to expand at a moderate rate in the first half of 2014 but the rate of growth will slow by mid-2014. During November, two components of the indicator expanded and four declined. Among expanding components, there were small increases in both airline passenger counts and manufacturing hours. Among declining components, building permits fell on a seasonally-adjusted basis. There also was a decline business expectations. In particular, respondents to the Survey of Nebraska Business predicted a decline in sales at their business over the next six month. Initial unemployment claims also rose in November on a seasonally-adjusted basis. Finally, there was an increase in the value of the U.S. dollar during November, which creates a more difficult environment for the state’s exporting businesses.*

Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) in November 2013, compared to the previous month. The LEI-N predicts economic growth six months into the future. The LEI-N decreased by 0.59% in November.

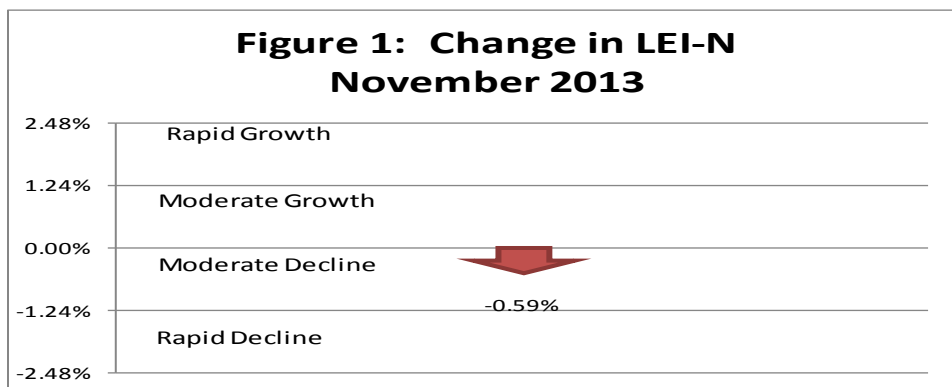


Figure 2 shows the growth in the LEI-N over the last 6 months. The indicator changed very little on net in June and July but rose steadily in August and September. Results for August and September suggest moderate growth in the LEI-N during the first quarter of 2014. Indicator values were mixed in October and November. After an upward revision, there was a modest increase in the LEI-N during October 2013. LEI-N values for October and November suggest slow economic growth in Nebraska during mid-2014.

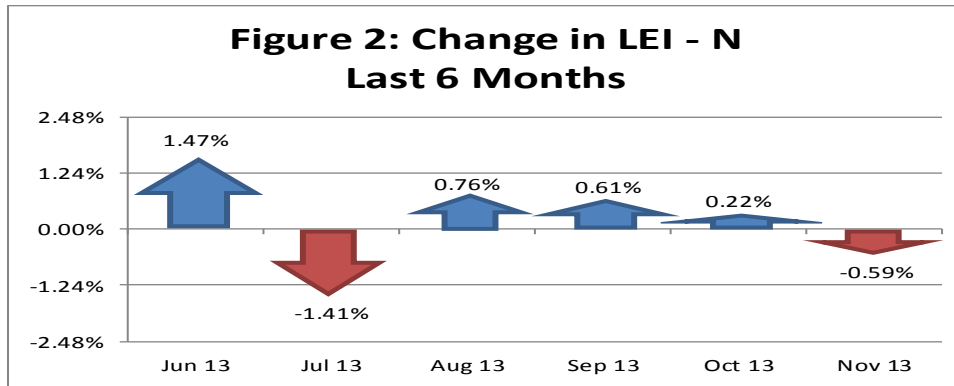
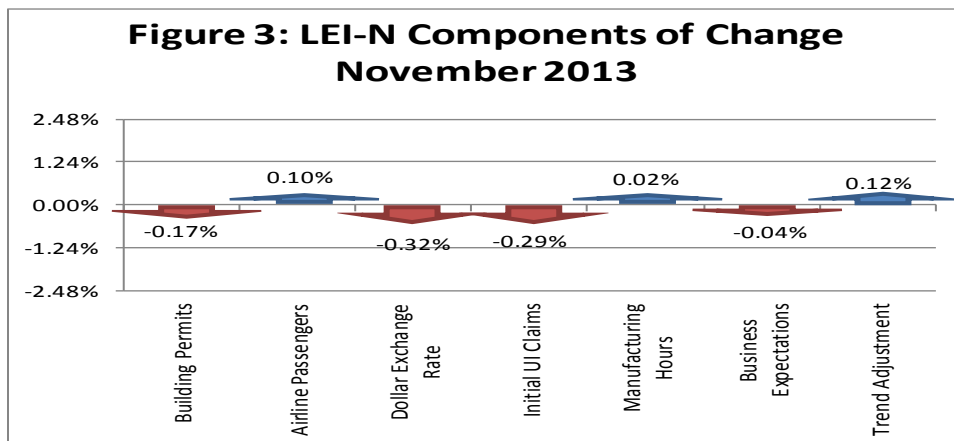
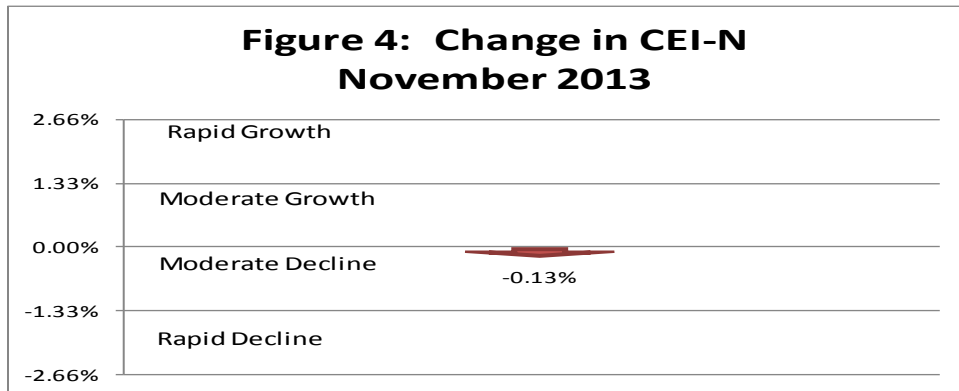


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during November 2013. The change in the overall LEI–N is the weighted average of changes in each component (see page 5). During November, two components of the indicator grew and four declined. Airline passenger counts rose during November, suggesting improving confidence among the households that participate in leisure travel and the firms that participate in business travel. There also was a slightly increase in manufacturing hours. Among declining components, there was a decline in building permits for single-family homes. There also was a decline in business expectations as measured by the *Survey of Nebraska Business*. Respondents to the survey projected a decrease in sales at their business over the next six months. Initial unemployment claims also rose in November, suggesting a weaker the job market. Finally, the value of the U.S. dollar increased during November, which is negative for export activity. Note that the trend adjustment component pictured in Figure 3 is discussed on page 5.

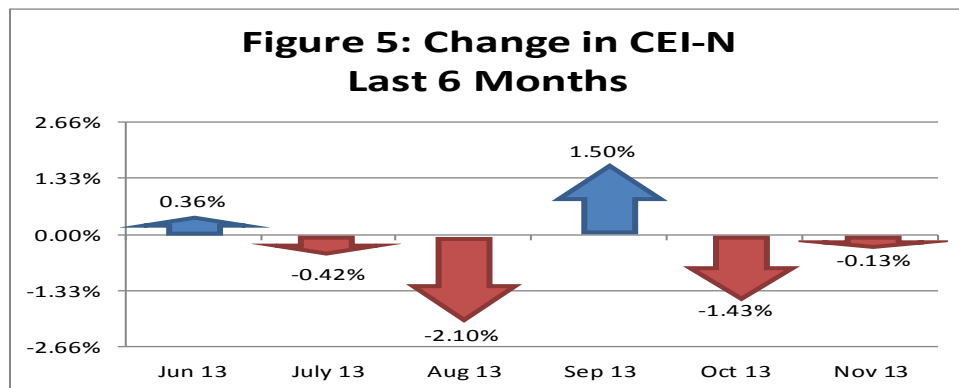


Coincident Economic Indicator – Nebraska

The Coincident Economic Indicator - Nebraska (CEI-N) is a measure of the current size of the Nebraska economy. The CEI-N declined slightly, by 0.13%, between October and November of 2013, as seen in Figure 4.



The slight decline in the CEI-N during November reflects stabilization in the economy. Growth has been mixed over the last three months. The CEI-N was up sharply in September and down sharply in October. This followed a decline during the June through August period. It will be critical to see if the CEI-N remains stable during December and the first months of 2014.



As seen in Figure 6, two of the four components of the CEI-N increased during November. Real weakly private wages grew during the month, suggesting growth in employment opportunities and real wages. Electricity sales also rose during November, after accounting for weather and seasonal trends. Among declining components, respondents to the *Survey of Nebraska Business* reported a modest decline in sales activity and employment in recent months. There also was continued decline in agricultural commodity prices in November, due to a sharp decline in crop prices. The decline in corn prices was the primary reason for the slight decline in the CEI-N during November. A detailed discussion of the components of the CEI-N, as well as the LEI-N, can be found at www.cba.unl.edu in *Technical Report: Coincident and Leading Economic Indicators- Nebraska*.

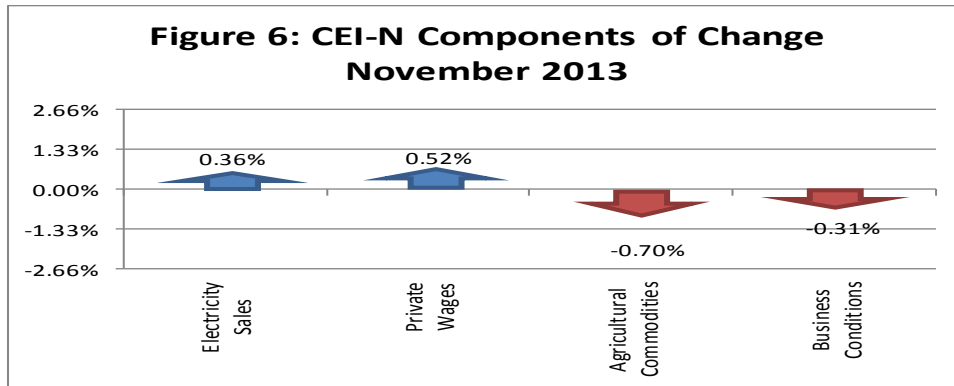
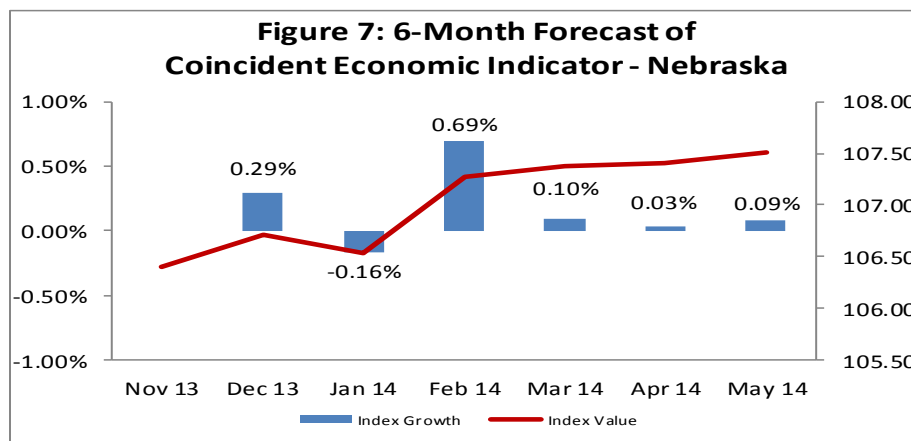


Figure 7 shows the forecast for the CEI-N over the next six months. The forecast suggests moderate growth in the CEI-N during the first quarter of 2014, primarily due to a solid improvement in February 2014. Growth will be anemic during the second quarter of 2014, consistent with recent weakness in the LEI-N during October and November of 2013 (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.

| 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 | 13.9093 | 0.0719 | 0.0327 | Electricity Sales | 4.9985 | 0.2001 | 0.1381 |
| Airline Passengers | 3.5588 | 0.2810 | 0.1279 | Private Wages | 1.7604 | 0.5681 | 0.3921 |
| Exchange Rate | 1.2158 | 0.8225 | 0.3743 | Agricultural Commodities | 3.1512 | 0.3173 | 0.2191 |
| Initial UI Claims | 10.0984 | 0.0990 | 0.0451 | Survey Business Conditions | 2.7531 | 0.3632 | 0.2507 |
| Manufacturing Hours | 1.4682 | 0.6811 | 0.3099 | | | | |
| Survey Business Expectations | 4.1282 | 0.2422 | 0.1102 | | | | |

Tables 2 and 3 show the calculation for the change in CEI-N and LEI-N between October and November of 2013. 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 adjacent factor.

| 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 | 71.02 | 76.49 | -5.47 | 0.03 | -0.18 | -0.17% |
| Airline Passengers | 89.93 | 89.12 | 0.80 | 0.13 | 0.10 | 0.10% |
| U.S. Dollar Exchange Rate (Inverse) | 102.68 | 103.61 | -0.93 | 0.37 | -0.35 | -0.32% |
| Initial Unemployment Insurance Claims (Inverse) | 77.81 | 84.82 | -7.01 | 0.05 | -0.32 | -0.29% |
| Manufacturing Hours | 94.23 | 94.18 | 0.05 | 0.31 | 0.02 | 0.02% |
| Survey Business Expectations ¹ | 49.62 | | -0.38 | 0.11 | -0.04 | -0.04% |
| Trend Adjustment | | | | | 0.13 | 0.12% |
| Total (weighted average) | 107.16 | 107.80 | | | -0.64 | -0.59% |

¹ 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 | 118.79 | 116.03 | 2.76 | 0.14 | 0.38 | 0.35% |
| Private Wage | 96.28 | 94.86 | 1.42 | 0.39 | 0.56 | 0.51% |
| Agricultural Commodities | 148.27 | 151.65 | -3.39 | 0.22 | -0.74 | -0.69% |
| Survey Business Conditions ¹ | 48.68 | | -1.32 | 0.25 | -0.33 | -0.31% |
| Total (weighted average) | 106.40 | 106.53 | | | -0.14 | -0.13% |

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 0.95.

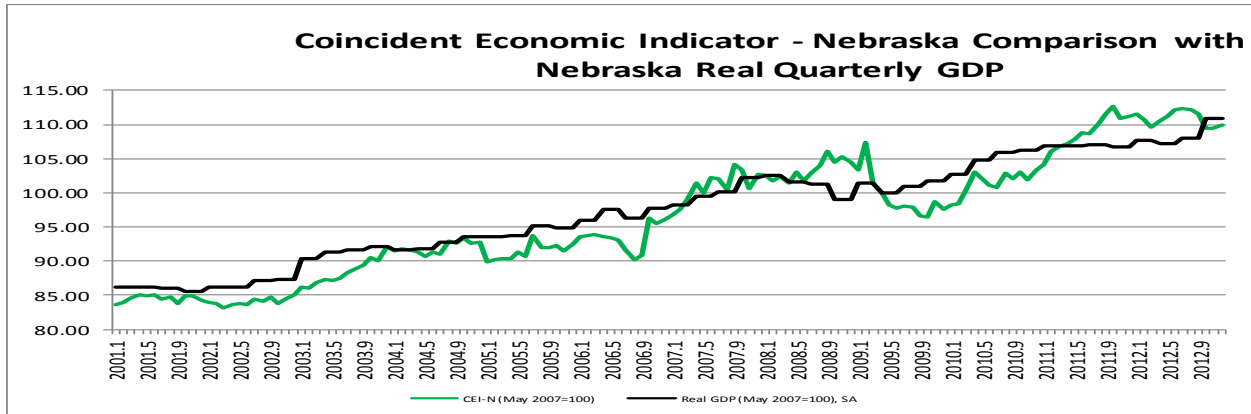


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months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

