



The Iowa Leading Indicators Index (ILII) increased to 106.6 (100=1999) in December 2016, up from 106.1 in November, a third consecutive monthly increase and the second consecutive 0.5 percentage change increase. The Iowa non-farm employment coincident index recorded a 0.05 percent rise in December for the second month in a row, which extends the streak of employment gains further into the sixth consecutive year. During the six-month span through December, the ILII increased 1.4 percent (an annualized rate of 2.8 percent). The six-month diffusion index remained unchanged at 75.0.

In December, seven of the eight Iowa Leading Indicators Index components contributed positively. The positive contributors were the Iowa stock market index, diesel fuel consumption, the national yield spread, the new orders index, residential building permits, the agriculture futures profit index, and average weekly unemployment claims (inverted). Average manufacturing hours was the only component that contributed to the index negatively.

Figure 1. Iowa Leading Indicators Index and Iowa Non-Farm Employment Coincident Index: January 1999-December 2016

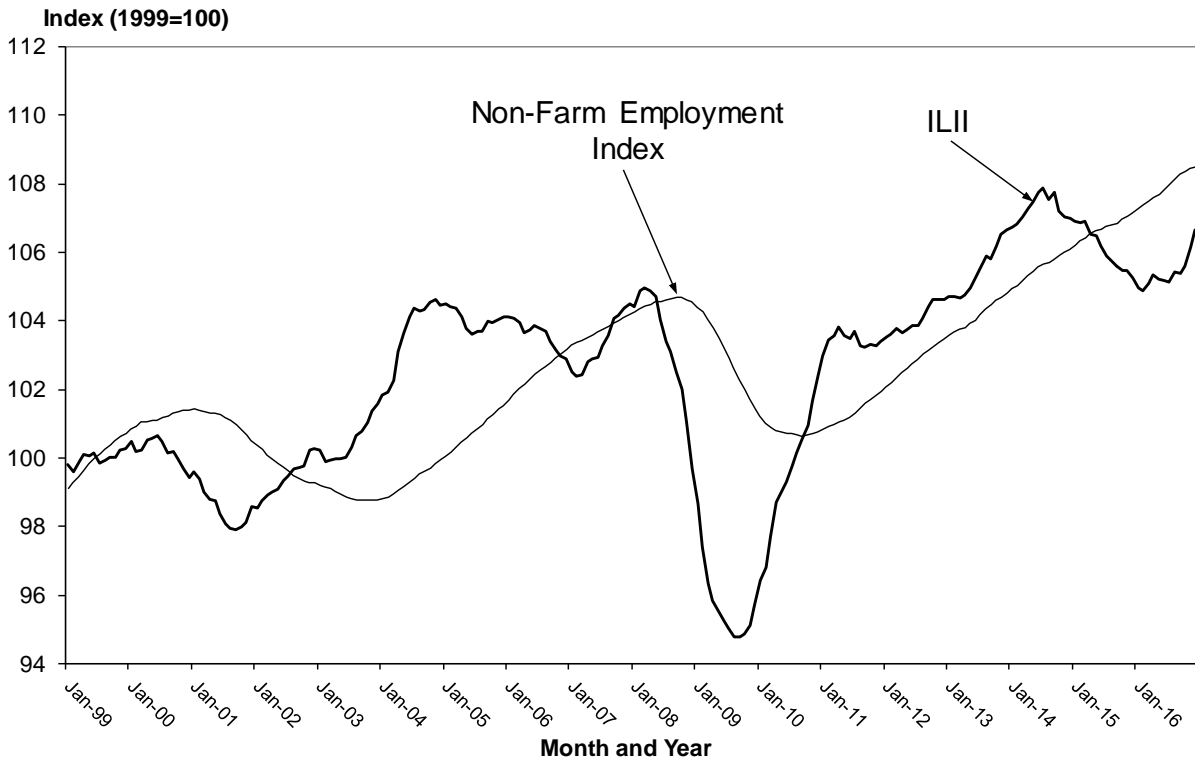


Table 1. Iowa Leading Indicators Index: Six Month Overview

Monthly Values	2016					
	Jul	Aug	Sep	Oct	Nov	Dec
ILII	105.1	105.4	105.4	105.6	106.1	106.6
Percentage Change ^a	0.0%	0.3%	0.0%	0.2%	0.5%	0.5%
Diffusion Index ^b	37.5	62.5	56.3	62.5	87.5	87.5
Six-Month Values	Jan to Jul	Feb to Aug	Mar to Sep	Apr to Oct	May to Nov	Jun to Dec
ILII						
Percentage Change	0.2%	0.5%	0.3%	0.2%	0.9%	1.4%
Annualized Percentage Change	0.3%	1.0%	0.5%	0.5%	1.8%	2.8%
Diffusion Index	50.0	62.5	37.5	50.0	75.0	75.0

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced January 30, 2017.

a. Percentage changes in the ILII do not always equal changes in the level of the ILII due to rounding.

b. A diffusion index measures the proportion of components that are rising based on the actual changes (not the standardized contributions to the ILII). Components experiencing increases greater than 0.05 percent are assigned a value of 1.0, components that experience changes less than an absolute value of 0.05 percent are assigned a value of 0.5, and components experiencing decreases greater than 0.05 percent are assigned a value of 0.0.

Table 2. Iowa Leading Indicators Index Components: Six Month Overview

Component Series Monthly Values ^a		2016					
		Jul	Aug	Sep	Oct	Nov	Dec
AFPI ^b	↑ ^c						
Corn Profits (cents per bushel)		54.9	53.1	51.3	50.4	50.7	52.6
Soybean Profits (cents per bushel)		112.4	121.7	132.5	143.3	158.1	171.3
Hog Profits (cents per pound)		17.6	19.3	16.2	15.9	17.7	18.5
Cattle Profits (cents per pound)		12.0	11.0	9.7	10.2	11.2	8.7
Iowa Stock Market Index (10=1984-86)	↑	84.17	85.02	83.01	82.17	86.70	93.58
Yield Spread (10-year less 3-month)	↑	1.20	1.26	1.34	1.43	1.69	1.98
Residential Building Permits	↑	926	1,028	1,034	1,047	1,102	1,120
Average Weekly Unemployment Claims ^d	↑	3,093	3,053	3,020	3,009	2,924	2,910
Average Weekly Manufacturing Hours	↓	41.85	41.78	41.77	41.69	41.73	41.66
New Orders Index (percent)	↑	46.2	45.3	44.7	44.7	45.5	46.9
Diesel Fuel Consumption (mil gallons)	↑	58.82	58.53	58.68	59.28	58.94	59.30

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced January 30, 2017.

a. For all component series except for the yield spread and the Iowa stock market index, the values represent 12-month backward moving averages.

b. The agricultural futures profits index is computed as the sum of the standardized symmetric percent changes in the four series, each weighted by the commodity's annual share of Iowa cash farm income (updated August 30, 2016).

c. Arrows indicate the direction of the series' contribution to the ILII for the latest month.

d. Changes in average weekly initial unemployment insurance claims are inverted when added to the ILII, thus a negative change in the series contributes positively to the index.

ILII Components

- **Iowa stock market index:** Capitalization-weighted index of 35 Iowa-based or Iowa-concentrated publicly-traded companies. During December 2016, 30 of the 35 companies gained value, including all of the 12 financial-sector companies. With nearly all of the stocks experiencing gains, the index increased to 93.58 in December from 86.70 in November and contributed 0.14 to the ILII value.
- **Diesel fuel consumption:** Number of taxable gallons of diesel fuel sold in Iowa. Changes are calculated based on a 12-month moving average. Diesel fuel consumption increased 7.5 percent between December 2015 and 2016, causing the 12-month moving average to increase to 59.30 million gallons from 58.94 in November, and contributing 0.11 to the ILII value.
- **Yield spread:** Difference between the yield on 10-year Treasury bonds and 3-month Treasury bills. During December, the yield spread expanded to 1.98 percent as the long-term rate increased 35 basis points while the short-term rate increased 6 basis points. For the month, the yield spread contributed 0.10 to the ILII.
- **New orders index:** Diffusion index measuring the share of purchasing managers in Iowa reporting increases in orders received for manufacturing output. Changes are calculated based on a 12-month moving average. The monthly value of the index increased to 52.5 from 36.5 seen one year ago. With the gain, the index returned above 50.0, suggesting growth in manufacturing. The 12-month moving average of the new orders index increased to 46.9 in December 2016 from 45.5 in November 2016, contributing 0.09 to the ILII.
- **Residential building permits:** Number of total permits issued in Iowa for the construction of residential housing units. Changes are calculated based on a 12-month moving average. For December, this component contributed 0.05 to the ILII with the 12-month moving average increasing from 1,102 in November to 1,120. December 2016 permits were 34.6 percent above December 2015, and 26.6 percent above the historical average for December (1998-2015).
- **Agricultural futures profits index:** Composite measure of corn and soybean expected profits, measured as the 12-month moving average of the futures price less estimated breakeven costs, and cattle and hog expected profits, measured as the average of the crush margin for the next 12 months, weighted by the respective share of Iowa annual cash receipts averaged over the prior ten calendar years. During December this component contributed 0.02 to the index with expected profit increases for three of the four commodities. Compared to last year, new crop soybean prices are 12.6 percent higher, while corn prices are down 4.4 percent; however, lower breakeven costs pushed up profits slightly. December crush margins for hogs are up 5.1 percent from November, however cattle crush margins are 22.5 percent below November.
- **Average weekly unemployment claims:** Weekly average of initial claims for unemployment insurance in Iowa. Changes are calculated based on a 12-month moving average and are inverted when added to the ILII. This component contributed 0.02 to the ILII value. The 12-month moving average of claims decreased to 2,910 with unemployment claims for the month 2.6 percent below December 2015 claims and 3.5 percent below average historical claims for December (1987-2015).
- **Average weekly manufacturing hours:** Weekly average of hours worked in the manufacturing sector in Iowa. Changes are calculated based on a 12-month moving average. For December 2016, this component contributed -0.05 to the ILII value with its decrease to 41.66 from 41.73. December 2016 hours were 41.9, below the 42.8 hours in December 2015, yet 0.2 hours above the historical monthly average (1996-2015).

Table 3. ILII Components and Standardization Factors for FY 2017

Iowa Leading Indicator Index Components	Standardization Factor
Agricultural Futures Profits Index	0.034
Iowa Stock Market Index	0.019
Yield Spread	0.338
Residential Building Permits	0.033
Average Weekly Unemployment Claims	0.035
Average Weekly Manufacturing Hours	0.294
New Orders Index	0.064
Diesel Fuel Consumption	0.183

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced August 30, 2016
The standardization factors are the inverse of the standard deviation of the month-to-month changes in each component over the January 1999 to June 2016 period. These factors equalize the volatility of the contribution from each component and are normalized to one. The month-to-month changes are based on 12-month backward moving averages for all components except the agricultural futures profits index, the Iowa stock market index, and yield spread. The yield spread and new orders index changes are simple arithmetic changes; month-to-month changes for the rest of the components are computed as symmetric percentage changes.

The factors are updated annually during August.

Comments

The Iowa Leading Indicators Index (ILII) is designed to forecast the future direction of economic activity in the state of Iowa. The techniques used to build the ILII follow those used by The Conference Board to construct the national Leading Economics Index (LEI) prior to the 2001 revisions. A one-month movement in such an index does not produce a clear signal, rather it is necessary to consider the direction of the index over several consecutive months. A contraction signal in the ILII is considered reliable when two conditions are met: 1. The index declines by at least two percent over a six month period (using an annualized rate); and, 2. A majority of the individual components decline over those six months (the six-month diffusion index less than 50.0).

The Iowa non-farm employment coincident index measures the change in non-seasonally adjusted, total non-farm employment in the state of Iowa. Changes are based on a 12-month moving average of employment and are computed as symmetric percentage changes. The index is a representation of overall economic activity in Iowa.

The employment index and the ILII are constructed to have a value of 100 in the year 1999.

Contact: Questions can be addressed to Victoria Daniels of the Iowa Department of Revenue at (515) 281-8450 or Victoria.Daniels@iowa.gov.