

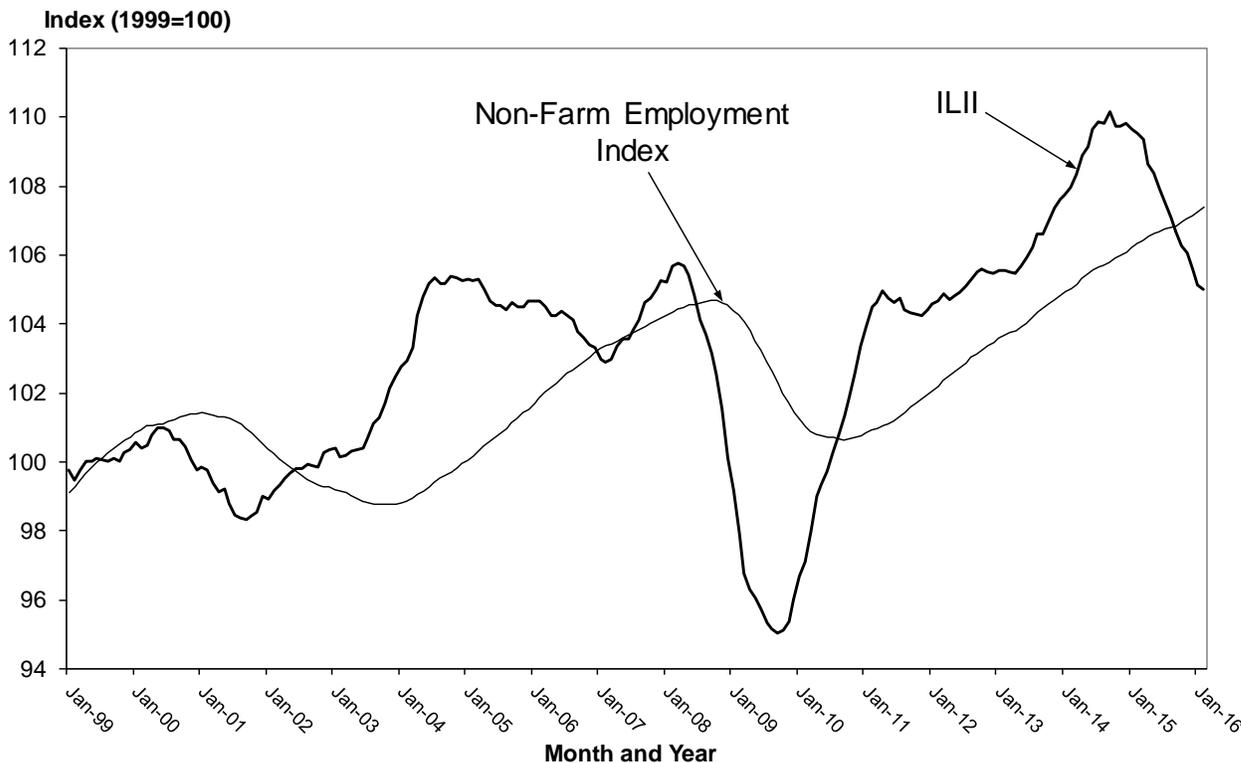


The Iowa Leading Indicators Index (ILII) fell to 105.0 (100=1999) in February 2016 from a revised 105.1 in January. The Iowa non-farm employment coincident index recorded a 0.09 percent rise in February, which extends the streak of employment gains to 65 months.

During the six-month span through February, the ILII decreased 2.0 percent (an annualized rate of -3.9 percent). The six-month diffusion index contracted to 18.8 with six of the eight components experiencing a decrease of greater than 0.05 percent over the last half a year. Residential building permits and average manufacturing hours are the only components to show positive growth over the past six months. The average building permits six-month growth rate fell from over 0.05 percent to between 0.00 and 0.05 percent in February, resulting in the contraction of the six-month diffusion index.

In February, four of eight Iowa Leading Indicators Index components contributed positively. The positive contributors were diesel fuel consumption, the new orders index, average weekly unemployment claims (inverted), and residential building permits. The national yield spread, the agricultural futures profits index, the Iowa stock market index, and average weekly manufacturing hours were the four components that contributed to the index negatively.

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



**Table 1. Iowa Leading Indicators Index: Six Month Overview**

Monthly Values	2015				2016	
	Sept	Oct	Nov	Dec	Jan	Feb
ILII	106.7	106.3	106.1	105.6	105.1	105.0
Percentage Change <sup>a</sup>	-0.4%	-0.4%	-0.2%	-0.5%	-0.4%	-0.1%
Diffusion Index <sup>b</sup>	37.5	25.0	56.3	18.8	25.0	50.0
Six-Month Values	Mar to Sept	Apr to Oct	May to Nov	Jun to Dec	Jul to Jan	Aug to Feb
ILII						
Percentage Change	-2.4%	-2.2%	-2.1%	-2.2%	-2.2%	-2.0%
Annualized Percentage Change	-4.9%	-4.4%	-4.3%	-4.4%	-4.4%	-3.9%
Diffusion Index	12.5	18.8	12.5	12.5	25.0	18.8

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced March 30, 2016.

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 <sup>a</sup>	2015				2016	
	Sept	Oct	Nov	Dec	Jan	Feb
AFPI <sup>b</sup>						
Corn Profits (cents per bushel)	24.7	29.2	30.3	28.8	27.9	27.4
Soybean Profits (cents per bushel)	87.1	80.7	65.7	52.4	41.0	30.7
Hog Profits (cents per pound)	18.1	16.8	14.7	13.6	13.9	15.2
Cattle Profits (cents per pound)	-3.8	-8.5	-13.5	-18.2	-21.2	-23.0
Iowa Stock Market Index (10=1984-86)	85.45	87.66	91.57	90.98	81.46	80.79
Yield Spread (10-year less 3-month)	2.15	2.05	2.13	2.01	1.83	1.47
Residential Building Permits	842	832	833	841	878	878
Average Weekly Unemployment Claims <sup>d</sup>	3,044	3,047	3,087	3,092	3,084	3,075
Average Weekly Manufacturing Hours	41.97	42.06	42.09	42.11	42.04	42.03
New Orders Index (percent)	51.6	51.2	50.3	49.1	48.4	48.6
Diesel Fuel Consumption (mil gallons)	58.93	58.39	58.38	57.89	57.61	57.72

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced March 30, 2016.

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 25, 2015).

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

- **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 2.2 percent between February 2015 and 2016, causing the 12-month moving average to grow to 57.72 million gallons, from 57.61 in January, and contributing 0.03 to the ILII value.
- **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 51.3 in February from 45.5 in January and was up from 49.2 one year ago. The 12-month moving average of the new orders index increased to 48.6, contributing 0.01 to the ILII.
- **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 0.01 to the ILII value. The 12-month moving average of weekly unemployment insurance claims decreased to 3,075 in February from 3,084 in January. Average monthly claims were down 4.3 percent from last February and 20.8 percent below the monthly historical average (1987-2015).
- **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 February, this component contributed 0.00 to the ILII with the 12-month moving average growing remaining unchanged at 878. February 2016 permits were 1.1 percent above February 2015, yet 17.1 percent below the historical average for February (1998-2015).
- **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 February 2016, this component contributed -0.01 to the ILII value with its decrease to 42.03 from a revised 42.04. February 2016 hours were 41.8, below the 41.9 hours in February 2015, yet above the historical monthly average of 40.7 (1996-2015).
- **Iowa stock market index:** Capitalization-weighted index of 35 Iowa-based or Iowa-concentrated publicly-traded companies. During February 2016, 18 of the 35 companies gained value, including five of the 12 financial-sector companies. Despite just over half of the stocks recording gains the index fell to 80.79 in February from 81.46 in January and contributed -0.02 to the ILII value.
- **Agricultural futures profits index:** Composite measure of corn, soybean, hog, and cattle expected profits, measured as the futures price less estimated breakeven costs, weighted by the respective share of Iowa annual cash receipts in the prior calendar year. Changes are calculated based on a 12-month moving average. This component contributed -0.04 to the index with expected profit decreases for three of four commodities, with hogs being the exception. Corn prices are down 6.6 percent, soybean prices are 12.1 percent lower, and cattle prices are 14.1 percent below February 2015. Hogs prices are 4.2 percent above February 2015.
- **Yield spread:** Difference between the yield on 10-year Treasury bonds and 3-month Treasury bills. During February, the yield spread contracted to 1.47 percent as the long-term rate decreased 31 basis points to 1.78 while the short-term rate increased 5 basis points to 0.31. For the month, the yield spread contributed -0.12 to the ILII.

### Table 3. ILII Components and Standardization Factors for FY 2016

Iowa Leading Indicator Index Components	Standardization Factor
Agricultural Futures Profits Index	0.037
Iowa Stock Market Index	0.019
Yield Spread	0.335
Residential Building Permits	0.034
Average Weekly Unemployment Claims	0.035
Average Weekly Manufacturing Hours	0.290
New Orders Index	0.064
Diesel Fuel Consumption	0.187

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced August 27, 2015  
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 2015 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 yield spread and the Iowa stock market index. 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.

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