

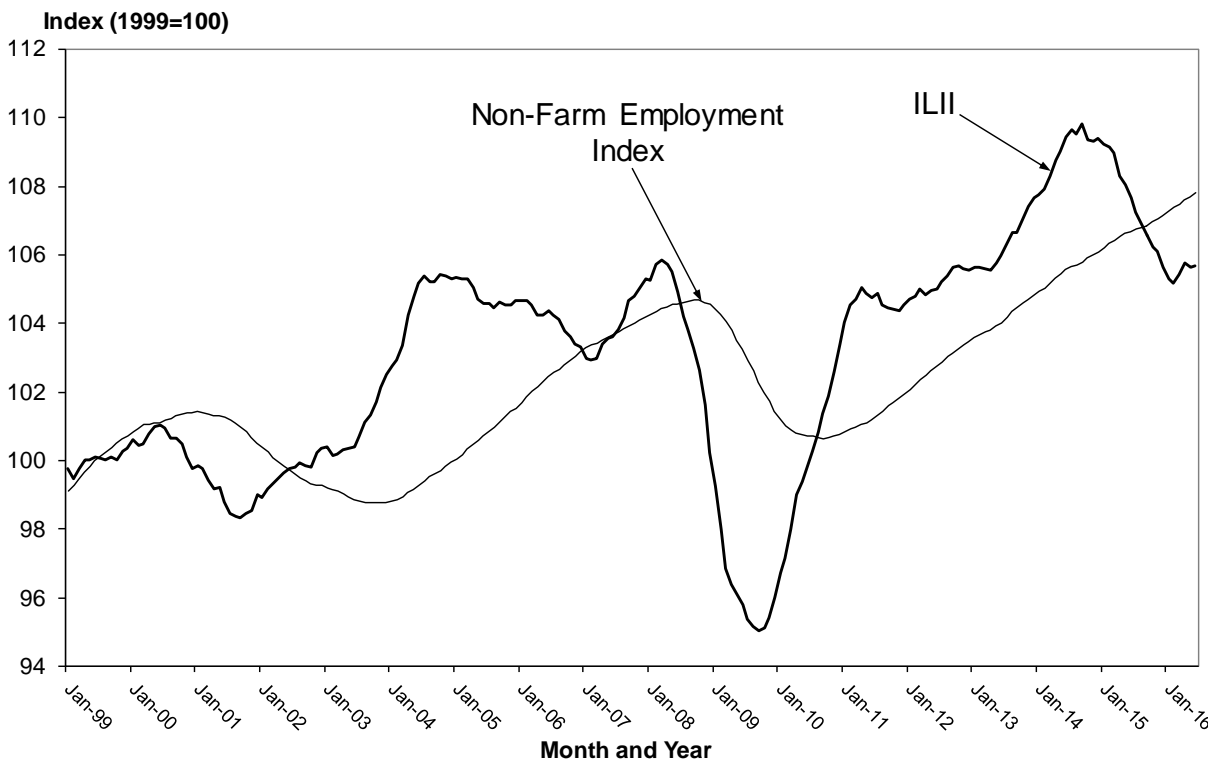


The Iowa Leading Indicators Index (ILII) inched to 105.7 (100=1999) in June 2016 from 105.6 in May. The Iowa non-farm employment coincident index recorded a 0.12 percent rise in June, which extends the streak of employment gains to 69 months.

During the six-month span through June, the ILII was unchanged (an annualized rate of 0.0 percent). The six-month diffusion index was 43.8 with four of the eight components experiencing a decrease of greater than 0.05 percent over the last half a year. Residential building permits was joined by diesel fuel consumption and the agricultural futures profits index as components experiencing increases greater than 0.05 percent over the past six months. Average weekly unemployment claims experienced change greater than 0.00 yet less than 0.05 percent.

In June, four of eight Iowa Leading Indicators Index components contributed positively. The positive contributors were the agricultural futures profits index, diesel fuel consumption, average weekly unemployment claims (inverted), and residential building permits. The national yield spread, the new orders index, average weekly manufacturing hours, and Iowa stock market index 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-June 2016**



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

Monthly Values	2016					
	Jan	Feb	Mar	Apr	May	Jun
ILII	105.3	105.2	105.5	105.8	105.6	105.7
Percentage Change <sup>a</sup>	-0.4%	-0.1%	0.2%	0.3%	-0.1%	0.0%
Diffusion Index <sup>b</sup>	25.0	50.0	68.8	43.8	31.3	50.0

Six-Month Values	Jul to	Aug to	Sept to	Oct to	Nov to	Dec to
	Jan	Feb	Mar	Apr	May	Jun
ILII						
Percentage Change	-1.8%	-1.6%	-1.0%	-0.5%	-0.4%	0.0%
Annualized Percentage Change	-3.7%	-3.2%	-2.1%	-0.9%	-0.9%	0.0%
Diffusion Index	25.0	18.8	25.0	18.8	12.5	43.8

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced July 27, 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>		2016					
		Jan	Feb	Mar	Apr	May	Jun
AFPI <sup>b</sup>	↑ <sup>c</sup>						
Corn Profits (cents per bushel)		27.9	27.4	27.0	28.3	32.5	35.0
Soybean Profits (cents per bushel)		41.0	30.7	23.2	22.8	31.5	43.5
Hog Profits (cents per pound)		13.9	15.2	16.7	17.9	18.6	19.6
Cattle Profits (cents per pound)		-21.2	-23.0	-23.9	-24.9	-24.8	-24.3
Iowa Stock Market Index (10=1984-86)	↓	80.87	80.15	84.20	83.71	84.25	83.82
Yield Spread (10-year less 3-month)	↓	1.83	1.47	1.59	1.58	1.53	1.37
Residential Building Permits	↑	878	878	905	950	929	935
Average Weekly Unemployment Claims <sup>d</sup>	↑	3,084	3,075	3,098	3,103	3,113	3,091
Average Weekly Manufacturing Hours	↓	42.04	42.04	42.03	41.99	41.93	41.89
New Orders Index (percent)	↓	48.4	48.6	48.1	47.7	47.6	46.9
Diesel Fuel Consumption (mil gallons)	↑	57.61	57.72	57.88	58.40	58.33	58.49

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced July 27, 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

- **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 0.07 to the index with expected profit increases for all four commodities. Expected profits for hogs increased 63.8 percent year-over-year. Current crop year 2015 corn and soybean prices finally rose above crop year 2014 prices with corn prices up 11.0 percent, while soybean prices increased 19.4 percent over last June. Expected cattle profits improved to a loss of 24.3 cents per pound in June from a loss of 24.8 cents per pound in May.
- **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 3.3 percent between June 2015 and 2016, causing the 12-month moving average to rise to 58.49 million gallons from 58.33 in May and contributing 0.05 to the ILII value.
- **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 weekly unemployment insurance claims decreased to 3,091 in June from 3,113 in May. Average monthly claims were down 9.9 percent from last June and 20.4 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 June, this component contributed 0.02 to the ILII with the 12-month moving average rising to 935. June 2016 permits were 5.9 percent above June 2015 and 4.4 percent above the historical average for June (1998-2015).
- **Iowa stock market index:** Capitalization-weighted index of 35 Iowa-based or Iowa-concentrated publicly-traded companies. During June 2016, 22 of the 35 companies gained value, including 8 of the 12 financial-sector companies. Despite nearly two-thirds of stocks recording gains, the index fell to 83.82 in June from 84.25 in May and contributed -0.01 to the ILII value.
- **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 June 2016, this component contributed -0.02 to the ILII value with its decrease to 41.89 from 41.93. June 2016 hours were 41.7, below the 42.1 hours in June 2015, yet above the historical monthly average of 41.5 (1996-2015).
- **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 decreased to 46.1 in June from 50.0 in May and was down from 53.9 one year ago. The 12-month moving average of the new orders index decreased to 46.9, contributing -0.04 to the ILII.
- **Yield spread:** Difference between the yield on 10-year Treasury bonds and 3-month Treasury bills. During June, the yield spread contracted to 1.37 percent as the long-term rate decreased 17 basis points while the short-term rate decreased 1 basis point. For the month, the yield spread contributed -0.05 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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