



The Iowa Leading Indicators Index (ILII) grew to 105.8 (100=1999) in April 2016 from a revised 105.5 in March, the second monthly increase in a row. The revision reflects a correction to the AFPI commodity weights identified with the start of the ILII annual review. The Iowa non-farm employment coincident index recorded a 0.11 percent rise in April, which extends the streak of employment gains to 67 months.

During the six-month span through April, the ILII decreased 0.5 percent (an annualized rate of -0.9 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 diesel fuel consumption are the only components to show positive growth over the past six months. The drop in the six-month diffusion index reflects the average weekly manufacturing hours' six-month growth rate dropping from over 0.05 percent to a decrease of greater than 0.05 percent and diesel fuel consumption dropping to growth between 0.00 and 0.05 percent.

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

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

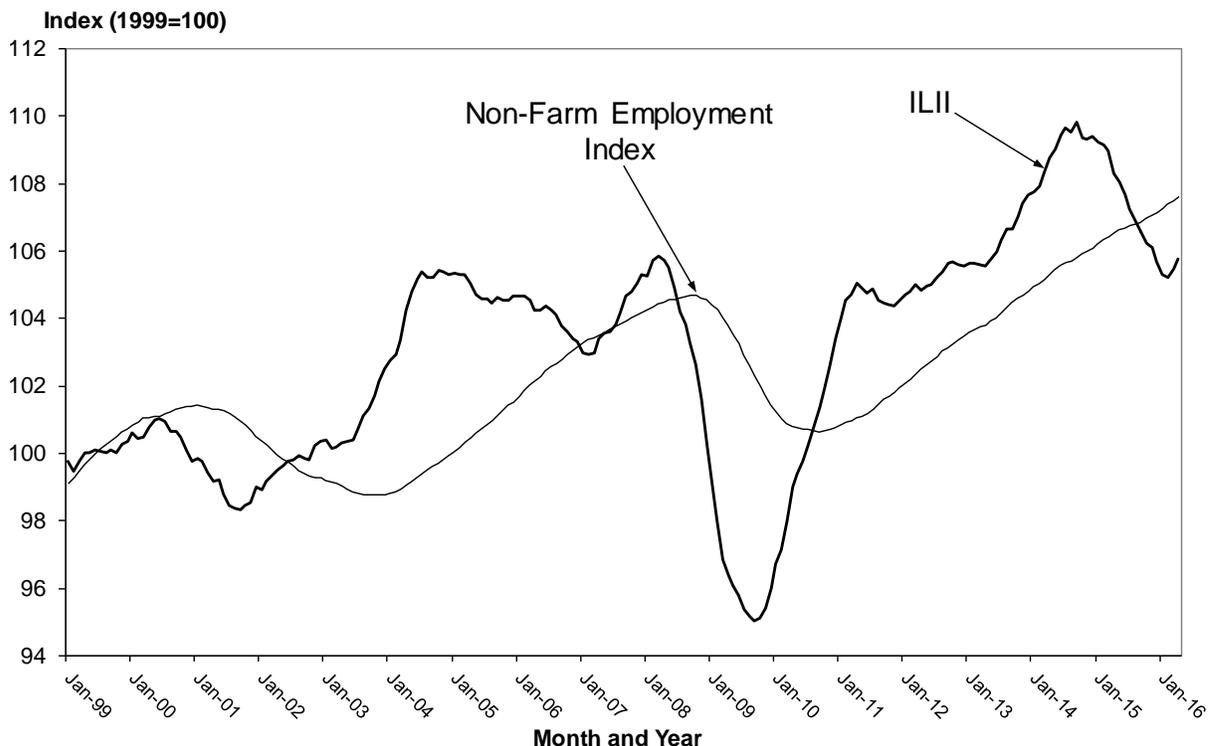


Table 1. Iowa Leading Indicators Index: Six Month Overview

Monthly Values	2015		2016			
	Nov	Dec	Jan	Feb	Mar	Apr
ILII	106.1	105.7	105.3	105.2	105.5	105.8
Percentage Change ^a	-0.1%	-0.4%	-0.4%	-0.1%	0.2%	0.3%
Diffusion Index ^b	56.3	18.8	25.0	50.0	68.8	43.8

Six-Month Values	May to	Jun to	Jul to	Aug to	Sept to	Oct to
	Nov	Dec	Jan	Feb	Mar	Apr
ILII						
Percentage Change	-1.8%	-1.8%	-1.8%	-1.6%	-1.0%	-0.5%
Annualized Percentage Change	-3.6%	-3.7%	-3.7%	-3.2%	-2.1%	-0.9%
Diffusion Index	12.5	12.5	25.0	18.8	25.0	18.8

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced May 26, 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 ^a	2015		2016			
	Nov	Dec	Jan	Feb	Mar	Apr
AFPI ^b						
Corn Profits (cents per bushel)						
Soybean Profits (cents per bushel)						
Hog Profits (cents per pound)						
Cattle Profits (cents per pound)						
Iowa Stock Market Index (10=1984-86)						
Yield Spread (10-year less 3-month)						
Residential Building Permits						
Average Weekly Unemployment Claims ^d						
Average Weekly Manufacturing Hours						
New Orders Index (percent)						
Diesel Fuel Consumption (mil gallons)						

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced May 26, 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 11.3 percent between April 2015 and 2016, causing the 12-month moving average to grow to 58.40 million gallons from 57.88 in March and contributing 0.17 to the ILII value.
- **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 April, this component contributed 0.16 to the ILII with the 12-month moving average growing to 950. April 2016 permits were 66.1 percent above April 2015 and 11.1 percent above the historical average for April (1998-2015).
- **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 0.03 to the index despite expected profit decreases for three of four commodities. With the highest share of 2014 Iowa farm income giving hogs the heaviest weight within the index, the 12.3 percent year-over-year price gain for hogs offset the 1.1 percent decline in corn prices, 0.2 percent drop in soybean prices, and 19.2 percent decline in cattle prices from April 2015.
- **Yield spread:** Difference between the yield on 10-year Treasury bonds and 3-month Treasury bills. During April, the yield spread contracted to 1.58 percent as the long-term rate decreased 8 basis points while the short-term rate decreased 7 basis points. For the month, the yield spread contributed -0.00 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 increased to 3,103 in April from 3,098 in March. Average monthly claims were up 2.9 percent from last April, yet 19.3 percent below the monthly historical average (1987-2015).
- **Iowa stock market index:** Capitalization-weighted index of 35 Iowa-based or Iowa-concentrated publicly-traded companies. During April 2016, 23 of the 35 companies gained value, including 8 of the 12 financial-sector companies. Despite nearly two-thirds of the stocks recording gains, the index dropped to 84.40 in April from 84.88 in March 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 April 2016, this component contributed -0.02 to the ILII value with its decrease to 42.00 from 42.03. April 2016 hours were 41.8, below the 42.1 hours in April 2015, yet above the historical monthly average of 40.9 (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 51.1 in April from 54.2 in March and was down from 56.1 one year ago. The 12-month moving average of the new orders index decreased to 47.7, contributing -0.03 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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