

The Iowa Leading Indicators Index (ILII) increased 0.1 percentage points to 108.3 in November 2017 from 108.2 (100=1999) in October. The Iowa non-farm employment coincident index recorded a 0.11 percent rise in November, which extends the streak of employment gains into a seventh consecutive year.

During the six-month span through November, the ILII increased 1.3 percent (an annualized rate of 2.7 percent). The six-month diffusion index remained unchanged at 75.0 in November. Six of the eight indicators (agricultural futures profits index (AFPI), average manufacturing hours, average weekly unemployment claims (inverted), diesel fuel consumption, the Iowa stock market index, and new orders index) experienced an increase of greater than 0.05 percent over the last half-year.

Five of the eight components were positive contributors to the ILII in November. These include, in the order from largest contributor to smallest, diesel fuel consumption, the new orders index, average weekly unemployment claims (inverted), the agriculture futures profit index, and the Iowa stock market index. The national yield spread, residential building permits, and average manufacturing hours were the three components that contributed negatively to the index in November.

Figure 1. Iowa Leading Indicators Index and Iowa Non-Farm Employment Coincident Index: January 1999–November 2017

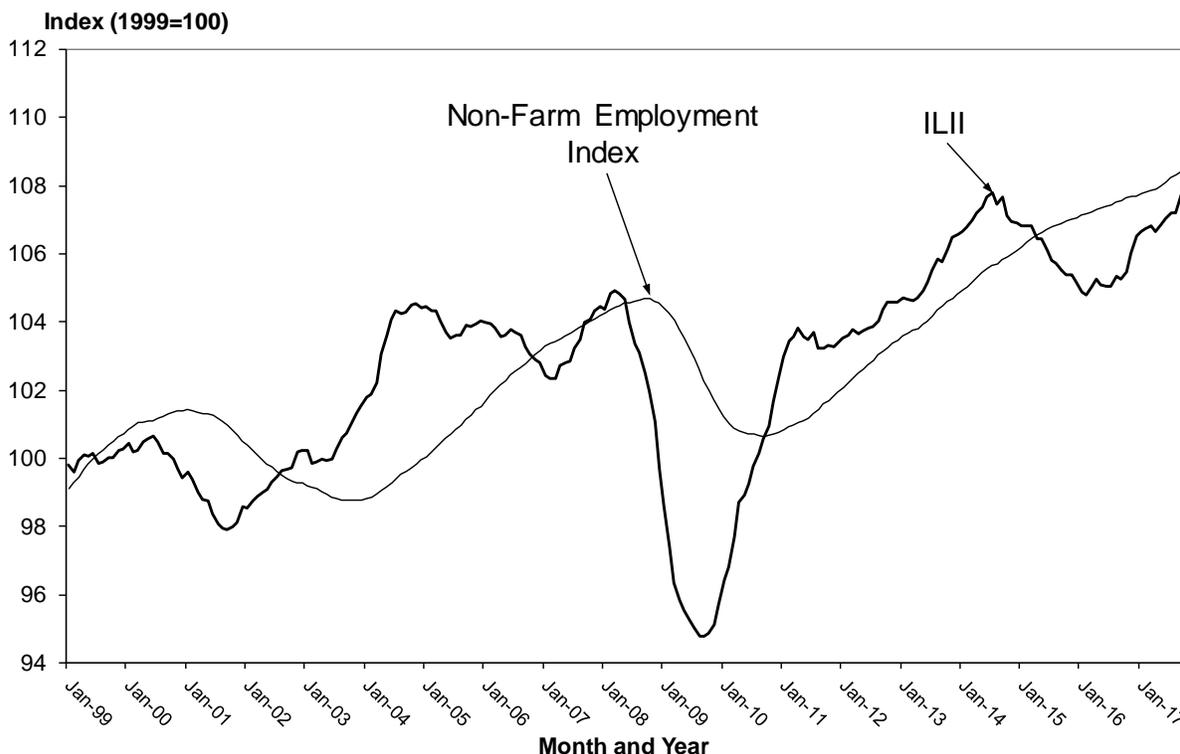


Table 1. Iowa Leading Indicators Index: Six Month Overview

Monthly Values	2017					
	Jun	Jul	Aug	Sep	Oct	Nov
ILII	107.0	107.2	107.2	107.8	108.2	108.3
Percentage Change ^a	0.1%	0.2%	0.0%	0.5%	0.4%	0.1%
Diffusion Index ^b	75.0	62.5	68.8	75.0	93.8	68.8
Six-Month Values	Dec to Jun	Jan to Jul	Feb to Aug	Mar to Sep	Apr to Oct	May to Nov
ILII						
Percentage Change	0.5%	0.5%	0.4%	0.9%	1.5%	1.3%
Annualized Percentage Change	1.0%	1.0%	0.9%	1.7%	2.9%	2.7%
Diffusion Index	68.8	62.5	62.5	62.5	75.0	75.0

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced December 27, 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		2017					
		Jun	Jul	Aug	Sep	Oct	Nov
AFPI ^b	↑ ^c						
Corn Profits (cents per bushel)		61.6	65.2	68.2	69.9	70.0	69.8
Soybean Profits (cents per bushel)		188.7	179.3	169.1	162.4	155.1	147.1
Hog Profits (cents per pound)		19.1	17.8	19.4	19.5	20.7	21.4
Cattle Profits (cents per pound)		6.7	6.7	6.2	6.1	6.8	8.6
Iowa Stock Market Index (10=1984-86)	↑	94.36	96.73	94.38	109.57	114.45	114.75
Yield Spread (10-year less 3-month)	↓	1.19	1.23	1.18	1.15	1.27	1.10
Residential Building Permits	↓	1,135	1,153	1,108	1,085	1,106	1,089
Average Weekly Unemployment Claims ^d	↑	2,703	2,675	2,659	2,655	2,638	2,612
Average Weekly Manufacturing Hours	↓	41.63	41.65	41.68	41.78	41.91	41.89
New Orders Index (percent)	↑	53.6	55.2	56.0	57.8	59.4	60.4
Diesel Fuel Consumption (mil gallons)	↑	59.13	58.90	59.08	59.43	59.44	59.70

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced December 27, 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, 2017).

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 4.9 percent between November 2016 and 2017. The 12-month moving average increased to 59.70 million gallons from 59.44 in October, contributing 0.08 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 was 58.4 compared to 46.1 seen one year ago. The index remained above 50.0 for the twelfth month in a row, suggesting continued growth in manufacturing. The 12-month moving average of the new orders index increased to 60.4 from 59.4 in October, contributing 0.07 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 0.04 to the ILII value. The 12-month moving average of claims decreased to 2,612 with unemployment claims for the month 8.5 percent below November 2016 claims and 12.6 percent below average historical claims for November (1987-2016).
- **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 November, this component contributed 0.02 to the index with an increase in expected profits experienced by the two livestock commodities included in the index. November crush margins for hogs were up 3.4 percent from October while crush margins for cattle were up 26.7 percent. Compared to last year, new crop corn and soybean prices were each less than one percent lower.
- **Iowa stock market index:** Capitalization-weighted index of 35 Iowa-based or Iowa-concentrated publicly-traded companies. During November 2017, 18 of the 35 companies gained value, including six of the 12 financial-sector companies. Despite approximately half of the stocks experiencing gains, the index only increased to 114.75 in November from 114.45 in October; the index contributed 0.00 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 November 2017, this component contributed -0.01 to the ILII with the 12-month moving average decreasing to 41.89 from a revised 41.91 in October. November 2017 average hours were 42.4, below the 42.6 hours in November 2016, yet over half an hour above the historical monthly average of 41.8 (1996-2016).
- **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 November, this component contributed -0.05 to the ILII with the 12-month moving average decreasing to 1,089 from 1,106 in October. November 2017 permits were 14.0 percent below 2016, yet 27.4 percent above the historical average for November (1998-2016).
- **Yield spread:** Difference between the yield on 10-year Treasury bonds and 3-month Treasury bills. During November, the yield spread contracted to 1.10 percent as the long-term rate decreased 1 basis point while the short-term rate increased 16 basis points. For the month, the yield spread contributed -0.06 to the ILII.

Table 3. ILII Components and Standardization Factors for FY 2018

Iowa Leading Indicator Index Components	Standardization Factor
Agricultural Futures Profits Index	0.034
Iowa Stock Market Index	0.019
Yield Spread	0.339
Residential Building Permits	0.032
Average Weekly Unemployment Claims	0.036
Average Weekly Manufacturing Hours	0.298
New Orders Index	0.064
Diesel Fuel Consumption	0.179

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

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