

The Iowa Leading Indicators Index (ILII) decreased 0.2 percent to 108.2 in October 2018 after increasing to 108.4 (100=1999) in September. The ILII had experienced five consecutive months of no change before September's increase and October's decrease. The Iowa non-farm employment coincident index recorded a 0.12 percent rise in October.

During the six-month span through October, the ILII decreased 0.1 percent (an annualized rate of -0.1 percent). The six-month diffusion index decreased to 37.5 in October from 56.3 in September. Three of the eight indicators (average weekly unemployment claims (inverted), diesel fuel consumption, and the new orders index) experienced an increase of greater than 0.05 percent over the last half-year. The decrease in the six-month diffusion index is due to the Iowa stock market index and the agricultural futures profits index moving from experiencing an increase to experiencing a decrease greater than 0.05 percent over the last six months.

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

Figure 1. Iowa Leading Indicators Index and Iowa Non-Farm Employment Coincident Index: January 1999-October 2018

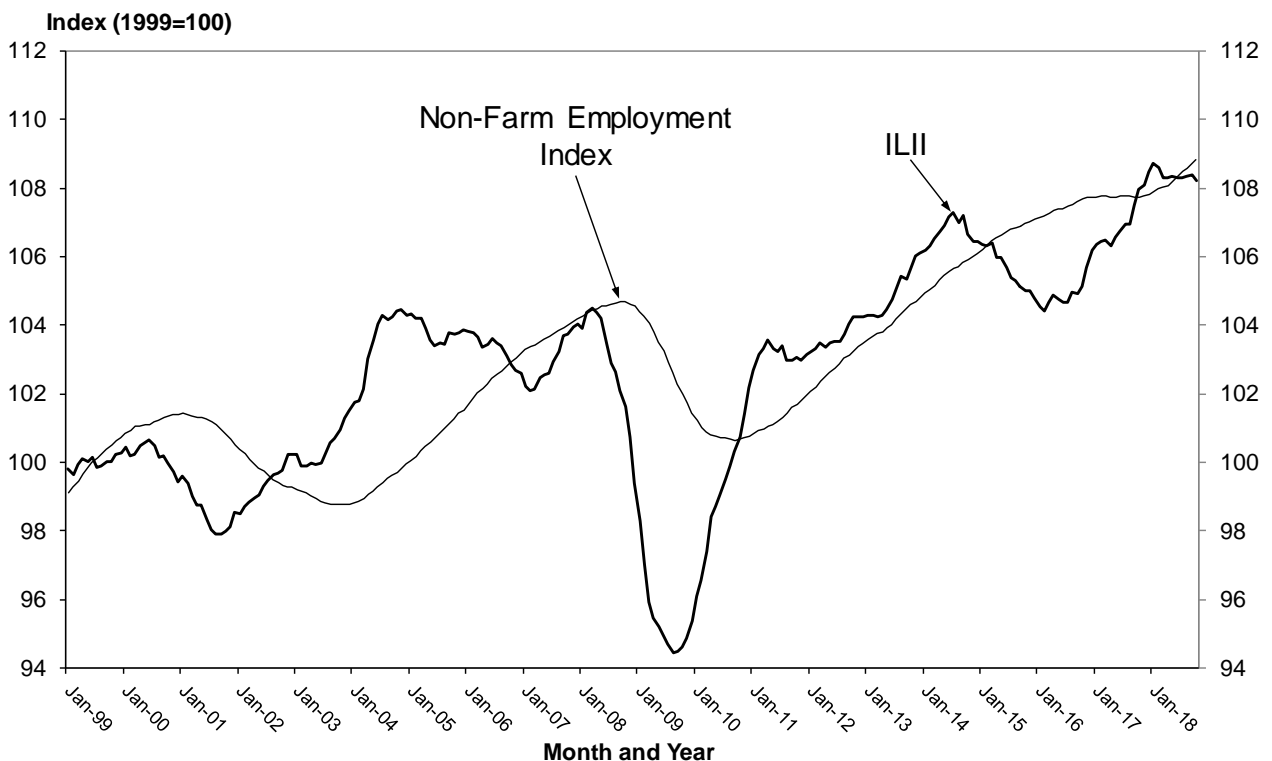


Table 1. Iowa Leading Indicators Index: Six Month Overview

Monthly Values	2018					
	May	Jun	Jul	Aug	Sep	Oct
ILII	108.3	108.3	108.3	108.3	108.4	108.2
Percentage Change ^a	0.0%	0.0%	0.0%	0.0%	0.1%	-0.2%
Diffusion Index ^b	62.5	50.0	50.0	62.5	56.3	50.0
Six-Month Values	Nov to May	Dec to Jun	Jan to Jul	Feb to Aug	Mar to Sep	Apr to Oct
ILII						
Percentage Change	0.2%	-0.1%	-0.4%	-0.2%	0.1%	-0.1%
Annualized Percentage Change	0.4%	-0.3%	-0.7%	-0.4%	0.2%	-0.1%
Diffusion Index	56.3	50.0	43.8	37.5	56.3	37.5

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced November 28, 2018.

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	2018						
	May	Jun	Jul	Aug	Sep	Oct	
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)	↓	116.12	117.89	118.45	121.47	119.81	110.27
Yield Spread (10-year less 3-month)	↑	1.08	0.97	0.90	0.82	0.83	0.86
Residential Building Permits	↑	1,075	1,074	1,112	1,065	1,039	1,041
Average Weekly Unemployment Claims ^d	↑	2,559	2,594	2,582	2,578	2,574	2,566
Average Weekly Manufacturing Hours	↓	42.07	42.05	42.01	41.92	41.85	41.81
New Orders Index (percent)	↓	62.9	62.5	62.0	63.1	63.5	63.4
Diesel Fuel Consumption (mil gallons)	↑	60.05	60.18	60.38	60.80	61.07	61.24

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced November 28, 2018.

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, 2018).

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 3.4 percent between October 2017 and 2018. The 12-month moving average increased to 61.24 million gallons from 61.07 million in September, 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 0.01 to the ILII value with the 12-month moving average of claims decreasing from 2,574 to 2,566. Unemployment claims for the month were 4.1 percent below October 2017 claims and 30.7 percent below average historical claims for October (1987-2017).
- **Yield spread:** Difference between the yield on 10-year Treasury bonds and 3-month Treasury bills. During October, the yield spread increased to 0.86 percent as the long-term rate increased 15 basis points and the short-term rate increased 12 basis points. For the month, the yield spread contributed 0.01 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 October, this component contributed 0.01 to the ILII with the 12-month moving average increasing to 1,041 from 1,039 in September. October 2018 permits were 1.7 percent above 2017 and 18.9 percent above the historical average for October (1998-2017).
- **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 57.8 compared to 58.4 seen one year ago. The index remained above 50.0 for the twenty-third month, suggesting continued growth in manufacturing. The 12-month moving average of the new orders index decreased to 63.4 from 63.5 in September, contributing -0.00 to the ILII.
- **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 October, this component contributed -0.03 to the ILII with the 12-month moving average decreasing to 41.81 from a revised 41.85 in September. October 2018 average hours were 42.6, below the 43.1 hours in October 2017 yet nearly an hour above the historical monthly average of 41.7 (1996-2017).
- **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 October, this component contributed -0.05 to the index with losses in expected profits for the two livestock commodities as well as by the two crop commodities. Compared to last year, new crop soybean prices were 11.8 percent lower while corn prices were 5.4 percent higher; however, corn breakeven prices were 13.6 percent higher, pushing down expected profits. The October crush margin for cattle was down 1.7 percent from September and the crush margin for hogs was down 4.4 percent.
- **Iowa stock market index:** Capitalization-weighted index of 34 Iowa-based or Iowa-concentrated publicly-traded companies. During October 2018, 6 of the 34 companies gained value, including 2 of the 12 financial-sector companies. With only one-sixth of the stocks experiencing gains, the index decreased to 110.27 in October from 119.81 in September, contributing -0.14 to the ILII value.

Table 3. ILII Components and Standardization Factors for FY 2019

Iowa Leading Indicator Index Components	Standardization Factor
Agricultural Futures Profits Index	0.034
Iowa Stock Market Index	0.017
Yield Spread	0.341
Residential Building Permits	0.032
Average Weekly Unemployment Claims	0.036
Average Weekly Manufacturing Hours	0.299
New Orders Index	0.064
Diesel Fuel Consumption	0.177

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced August 30, 2018
 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 2018 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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