

The Iowa Leading Indicators Index (ILII) decreased to 107.1 in May 2019 from 107.3 (100=1999) in April, a decrease of 0.2 percent. This is the second consecutive month of negative change. The Iowa non-farm employment coincident index recorded a 0.03 percent rise in May.

During the six-month span through May, the ILII decreased 0.9 percent (an annualized rate of -1.7 percent), a slight improvement from April. The six-month diffusion index remained at 25.0 in May for the fifth month in a row. Only two of the eight indicators (diesel fuel consumption and the agricultural futures profits index) experienced an increase of greater than 0.05 percent over the last half-year.

Seven of the eight components were negative contributors to the ILII in May. These include, in order from largest negative contributor to smallest, the agricultural futures profits index, the new orders index, residential building permits, the national yield spread, average manufacturing hours, the Iowa stock market index, and average weekly unemployment claims (inverted). Diesel fuel consumption was the only component that contributed positively to the index.

Figure 1. Iowa Leading Indicators Index and Iowa Non-Farm Employment Coincident Index: January 1999-May 2019

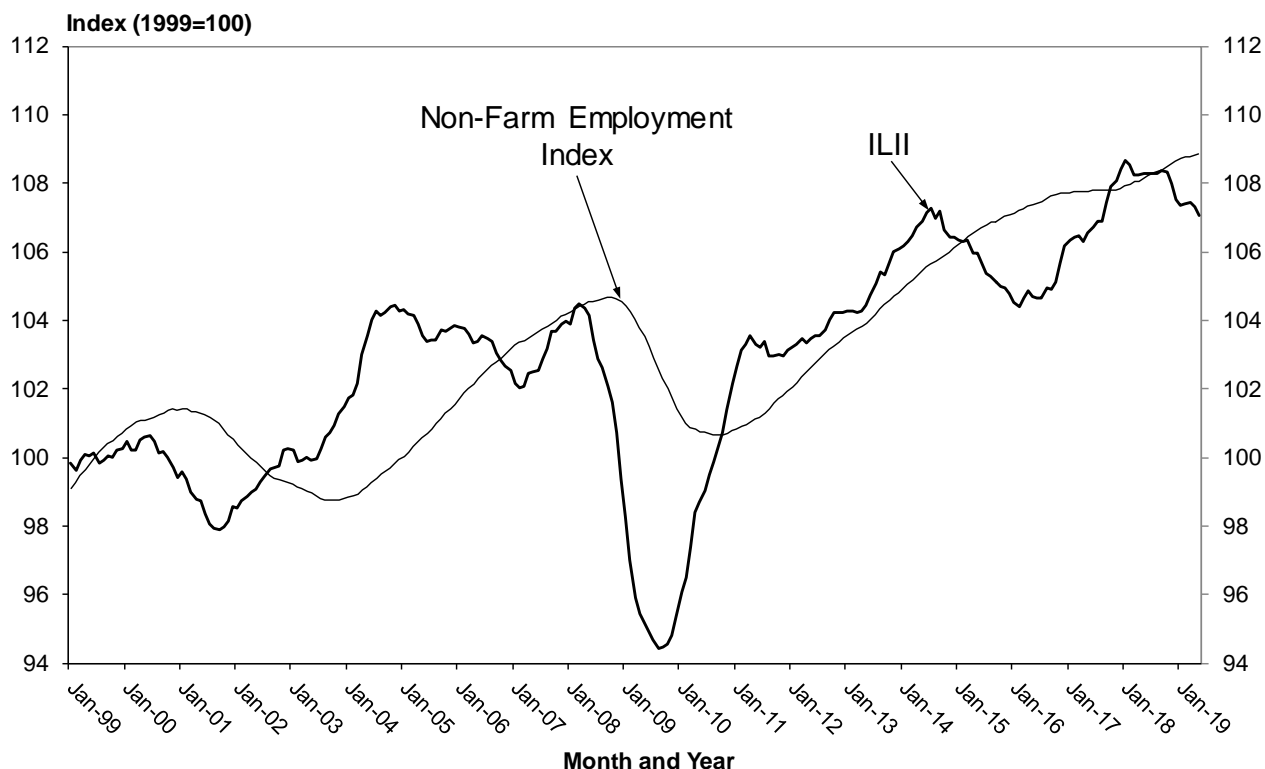


Table 1. Iowa Leading Indicators Index: Six Month Overview

Monthly Values	2018	2019				
	Dec	Jan	Feb	Mar	Apr	May
ILII	107.6	107.4	107.4	107.5	107.3	107.1
Percentage Change ^a	-0.4%	-0.2%	0.1%	0.0%	-0.1%	-0.2%
Diffusion Index ^b	12.5	25.0	43.8	31.3	25.0	12.5
Six-Month Values	Jun to Dec	Jul to Jan	Aug to Feb	Sep to Mar	Oct to Apr	Nov to May
ILII						
Percentage Change	-0.7%	-0.9%	-0.8%	-0.9%	-0.9%	-0.9%
Annualized Percentage Change	-1.4%	-1.7%	-1.6%	-1.7%	-1.9%	-1.7%
Diffusion Index	37.5	25.0	25.0	25.0	25.0	25.0

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced June 27, 2019.

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	2019					
	Dec	Jan	Feb	Mar	Apr	May	
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)	↓	103.81	102.87	104.98	104.71	103.13	101.78
Yield Spread (10-year less 3-month)	↓	0.42	0.29	0.24	0.12	0.10	0.00
Residential Building Permits	↓	951	949	935	901	877	863
Average Weekly Unemployment Claims ^d	↓	2,530	2,591	2,606	2,608	2,644	2,653
Average Weekly Manufacturing Hours	↓	41.65	41.68	41.64	41.63	41.58	41.55
New Orders Index (percent)	↓	61.8	61.0	60.5	59.8	58.7	57.7
Diesel Fuel Consumption (mil gallons)	↑	61.48	61.55	61.78	62.26	62.28	62.60

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced June 27, 2019.

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 6.6 percent between May 2018 and 2019. The 12-month moving average increased to 62.60 million gallons from 62.28 million in April, contributing 0.09 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 increasing from 2,644 to 2,653. Unemployment claims for the month were 5.6 percent above May 2018 claims, yet 9.3 percent below average historical claims for May (1987-2018).
- **Iowa stock market index:** Capitalization-weighted index of 33 Iowa-based or Iowa-concentrated publicly-traded companies. During May 2019, 15 of the 33 companies gained value, including 8 of the 12 financial-sector companies. With over half of the stocks experiencing losses, the index decreased to 101.78 in May from a revised 103.13 in April, contributing -0.02 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 May, this component contributed -0.02 to the ILII with the 12-month moving average decreasing to 41.55 from a revised 41.58 in April. May 2019 average hours were 40.9, below the 41.3 hours in May 2018, and below the historical monthly average of 41.2 (1996-2018).
- **Yield spread:** Difference between the yield on 10-year Treasury bonds and 3-month Treasury bills. During May, the yield spread decreased to 0.0 percent as the long-term rate decreased 13 basis points and the short-term rate decreased 3 basis points both reaching 2.4 percent. For the month, the yield spread contributed -0.03 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. In May, permits were 1,113, weaker than the 1,279 seen in the prior year. This component contributed -0.05 to the May ILII with the 12-month moving average decreasing to 863 from 877 in April. May 2019 permits were 13.0 percent below 2018 and 4.1 percent below the monthly historical average (1998-2018).
- **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 49.9 compared to 62.3 seen one year ago. The index fell below 50.0 for the first time in twenty-nine months, signaling a slowdown in manufacturing output. The 12-month moving average of the new orders index decreased to 57.7 from 58.7 in April, contributing -0.07 to the ILII.
- **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 May, this component contributed -0.10 to the ILII with losses in expected profits for the two crop commodities and for the two livestock commodities. Compared to last year, new crop soybean prices were 16.5 percent lower while corn prices were 4.3 percent lower. The May crush margin for hogs was down 5.1 percent from April while the crush margin for cattle was down 15.5 percent.

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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