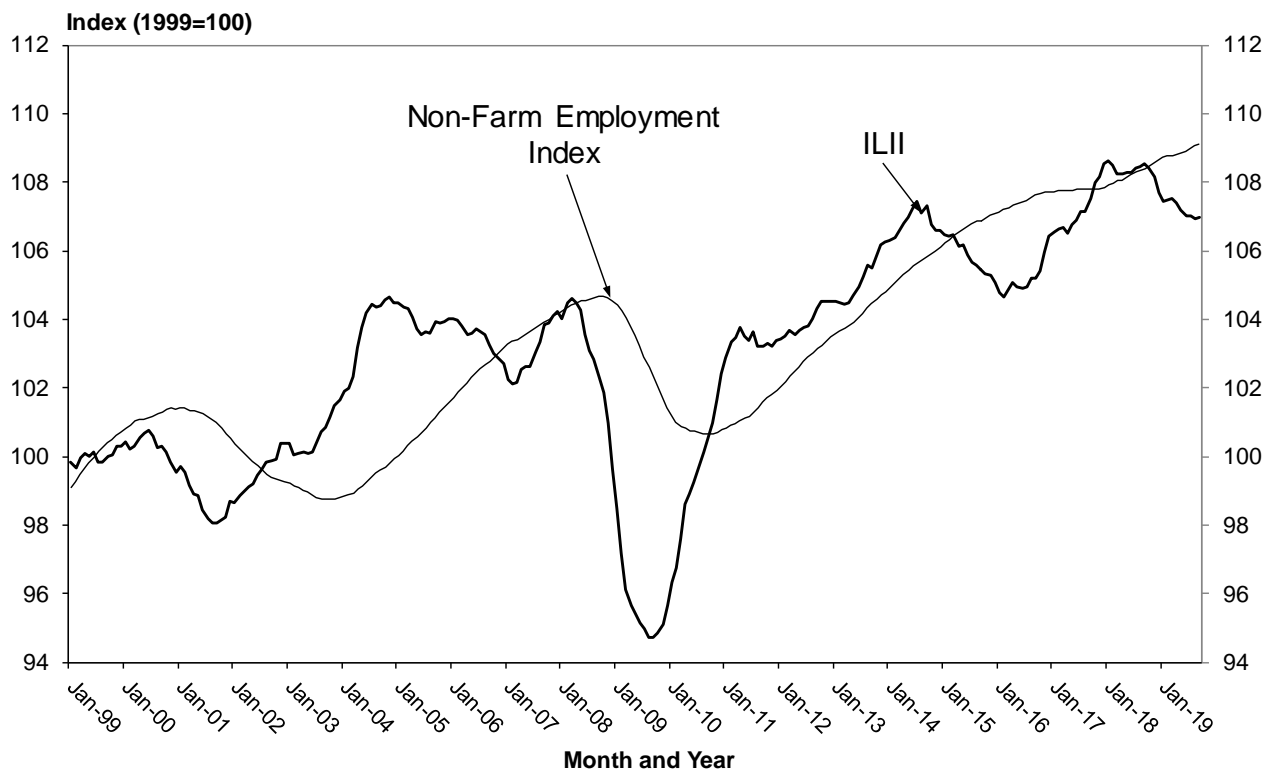


The Iowa Leading Indicators Index (ILII) increased to 107.0 in September 2019 (100=1999) from a revised 106.9 in August. This is the third time in the last four months that the index registered at 107.0. The Iowa non-farm employment coincident index recorded a 0.05 percent rise in September. The revision to the index is due to a downward revision to the average manufacturing hours component.

During the six-month span through September, the ILII decreased 0.5 percent (an annualized rate of -1.0 percent). The six-month diffusion index increased to 37.5 in September from 25.0 in August. Only three of the eight indicators (diesel fuel consumption, Iowa stock market index, and residential building permits) experienced an increase of greater than 0.05 percent over the last half-year. The increase in the six-month diffusion index this month is due to the Iowa stock market index and residential building permits experiencing an increase of more than 0.05 percent over the last half-year while the agricultural futures profits index experienced an increase of less than 0.05 percent.

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

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



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

Monthly Values	2019					
	Apr	May	Jun	Jul	Aug	Sep
ILII	107.4	107.2	107.0	107.0	106.9	107.0
Percentage Change <sup>a</sup>	-0.1%	-0.2%	-0.1%	0.0%	-0.1%	0.0%
Diffusion Index <sup>b</sup>	25.0	18.8	50.0	50.0	37.5	50.0
Six-Month Values	Oct to Apr	Nov to May	Dec to Jun	Jan to Jul	Feb to Aug	Mar to Sep
ILII						
Percentage Change	-0.9%	-0.9%	-0.6%	-0.4%	-0.5%	-0.5%
Annualized Percentage Change	-1.9%	-1.9%	-1.2%	-0.8%	-1.0%	-1.0%
Diffusion Index	25.0	25.0	25.0	37.5	25.0	37.5

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced September 30, 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 <sup>a</sup>		2019					
		Apr	May	Jun	Jul	Aug	Sep
AFP <sup>b</sup>	↑ <sup>c</sup>						
Corn Profits (cents per bushel)		89.0	86.2	89.9	94.0	93.2	92.0
Soybean Profits (cents per bushel)		121.0	104.3	95.6	93.2	86.9	85.0
Hog Profits (cents per pound)		35.7	33.9	27.6	28.2	27.3	30.4
Cattle Profits (cents per pound)		12.0	10.1	11.1	12.9	13.2	13.2
Iowa Stock Market Index (10=1984-86)	↑	106.35	104.29	105.50	108.33	105.30	110.16
Yield Spread (10-year less 3-month)	↑	0.10	0.00	-0.15	-0.09	-0.36	-0.23
Residential Building Permits	↑	877	863	881	854	887	912
Average Weekly Unemployment Claims <sup>d</sup>	↓	2,644	2,653	2,641	2,651	2,680	2,696
Average Weekly Manufacturing Hours	↓	41.58	41.57	41.59	41.56	41.58	41.54
New Orders Index (percent)	↓	58.7	57.7	56.9	56.8	55.5	53.7
Diesel Fuel Consumption (mil gallons)		62.28	62.60	62.54	62.58	62.87	62.66

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced September 30, 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, 2019).

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

- **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 September, permits were 1,037, higher than the 736 seen in the prior year. This component contributed 0.09 to the September ILII with the 12-month moving average increasing to 912 from 887 in August. September 2019 permits were 40.9 percent above 2018, yet 6.1 percent below the monthly historical average (1998-2018).
- **Iowa stock market index:** Capitalization-weighted index of 32 Iowa-based or Iowa-concentrated publicly-traded companies. During September 2019, 24 of the 32 companies gained value, including 10 of the 12 financial-sector companies. With over two-thirds of the stocks experiencing gains, the index increased to 110.16 in September from 105.30 in August, contributing 0.07 to the ILII value.
- **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 September, this component contributed 0.07 to the ILII with gains in expected profits for hogs offsetting the reductions in expected profits for corn and soybeans. Expected cattle profits remained unchanged from August. The September crush margin for hogs was up 11.3 percent from August while the crush margin for cattle was slightly down 0.3 percent. Compared to last year, new crop corn prices were 2.6 percent higher, and soybean prices were 5.2 percent lower.
- **Yield spread:** Difference between the yield on 10-year Treasury bonds and 3-month Treasury bills. During September, the yield spread remained inverted yet contracted from -0.36 percent to -0.23 percent as the long-term rate increased 7 basis points while the short-term rate decreased 6 basis points. For the month, the yield spread contributed 0.04 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 -0.02 to the ILII value with the 12-month moving average of claims increasing from 2,680 to 2,696. Unemployment claims for the month were 10.8 percent above September 2018 claims, yet 16.0 percent below average historical claims for September (1987-2018).
- **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 September, this component contributed -0.03 to the ILII with the 12-month moving average decreasing to 41.54 from a revised 41.58 in August. September 2019 average hours were 41.2, below the 41.7 hours in September 2018, and a half hour below the historical monthly average (1996-2018).
- **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 decreased 3.6 percent between September 2018 and 2019. The 12-month moving average decreased to 62.66 million gallons from 62.87 million in August, contributing -0.06 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 45.9 compared to 67.2 seen one year ago. The index fell back below 50.0 after three months above. The 12-month moving average of the new orders index decreased to 53.7 from 55.5 in August, contributing -0.11 to the ILII.

**Table 3. ILII Components and Standardization Factors for FY 2020**

Iowa Leading Indicator Index Components	Standardization Factor
Agricultural Futures Profits Index	0.034
Iowa Stock Market Index	0.016
Yield Spread	0.342
Residential Building Permits	0.031
Average Weekly Unemployment Claims	0.036
Average Weekly Manufacturing Hours	0.300
New Orders Index	0.064
Diesel Fuel Consumption	0.177

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced August 30, 2019  
 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 2019 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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