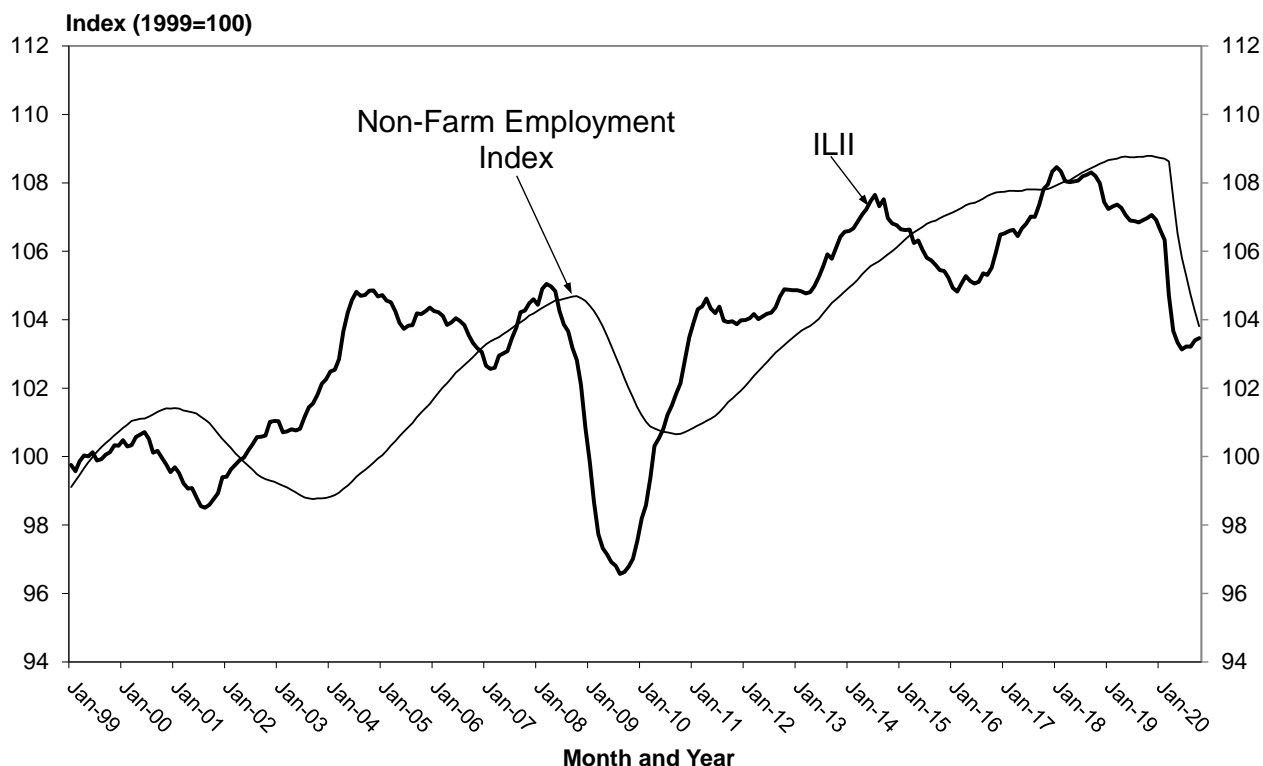


The Iowa Leading Indicators Index (ILII) increased to 103.5 in October 2020 (100=1999) from 103.4 in September. October is the third month that the index has increased since the COVID Crisis in Iowa began. The ILII has decreased 2.7 percent from February 2020, the last month before the COVID-19 quarantines began in Iowa, to October 2020. The Iowa non-farm employment coincident index recorded a 0.41 percent decline in October, the eleventh month in a row of decline and the seventh largest one month decline in its history behind April 2020 through September 2020. October marks the first month since February 2020 that the ILII has not shown contractionary signals. During the six-month span through October, the ILII decreased 0.2 percent (an annualized rate of -0.4 percent). The six-month diffusion index improved to 50.0 in October from 43.8 in September. Four of the eight component indicators (diesel fuel consumption, the Iowa Stock Market Index, the national yield spread, and the new orders index) experienced an increase of greater than 0.05 percent over the last half-year. Residential building permits experienced a decrease of more than 0.05 percent over the last half year, taking it out of the positive contributors to the six-month diffusion index.

Four of the eight components added to the ILII's monthly increase in October: the new orders index, diesel fuel consumption, the national yield spread, and the Iowa Stock Market Index. Residential building permits, average manufacturing hours, the agricultural futures profits index, and average weekly unemployment claims (inverted) dragged down the index.

**Figure 1. Iowa Leading Indicators Index and Iowa Non-Farm Employment Coincident Index: January 1999-October 2020**



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

Monthly Values	2020					
	May	Jun	Jul	Aug	Sep	Oct
ILII	103.3	103.1	103.2	103.2	103.4	103.5
Percentage Change <sup>a</sup>	-0.3%	-0.2%	0.1%	0.0%	0.2%	0.1%
Diffusion Index <sup>b</sup>	18.8	18.8	37.5	50.0	56.3	50.0
Six-Month Values	Nov to May	Dec to June	Jan to July	Feb to Aug	Mar to Sep	Apr to Oct
ILII						
Percentage Change	-3.5%	-3.5%	-3.2%	-2.9%	-1.3%	-0.2%
Annualized Percentage Change	-7.0%	-7.1%	-6.4%	-5.9%	-2.5%	-0.4%
Diffusion Index	37.5	25.0	25.0	25.0	43.8	50.0

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced November 30, 2020.

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>	2020					
	May	Jun	Jul	Aug	Sep	Oct
AFPI <sup>b</sup>						
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 <sup>d</sup>						
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 November 30, 2020.

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 September 2, 2020).

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

- **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 increased to a remarkable reading of 82.1 compared to 59.3 seen one year ago. The 12-month moving average of the new orders index increased to 55.3 from 53.4 in September, contributing 0.12 to the ILII.
- **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 8.0 percent between October 2019 and October 2020. The 12-month moving average increased to 63.28 million gallons from 62.87 million in September, contributing 0.12 to the ILII value.
- **Yield spread:** Difference between the yield on 10-year Treasury bonds and 3-month Treasury bills. During October, the yield spread expanded to 0.69 percent from 0.57 percent in September. The long-term rate increased 11 basis points while the short-term rate decreased 1 basis point. For the month, the yield spread contributed 0.04 to the ILII.
- **Iowa stock market index:** Capitalization-weighted index of 31 Iowa-based or Iowa-concentrated publicly-traded companies. During October 2020, 23 of the 31 companies gained value, and 9 of the 11 financial-sector companies increased. With over two-thirds of the stocks experiencing gains, the index increased to 81.59 in October from 79.94 in September, contributing 0.03 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 -0.02 to the ILII value with the 12-month moving average of claims increasing from 9,993 to 10,144. Unemployment claims for the month were 77.0 percent above October 2019 claims and 49.0 percent above average historical claims for October (1988-2019). The 4,417 average weekly unemployment claims for October were 88.9 percent lower than that of March's 40,835 average weekly unemployment claims.
- **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 -0.03 to the ILII with expected profit losses in both livestock commodities while both grain commodities are expected to have profit gains. The October crush margin for hogs decreased 6.8 percent from September while the crush margin for cattle decreased 1.1 percent. Compared to last year, new crop corn prices were 2.3 percent higher while soybean prices were 14.0 percent higher.
- **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 -0.06 to the ILII with the 12-month moving average decreasing to 40.17 from a downwardly revised 40.25 in September. October 2020 average hours were 40.4, below the 41.4 hours in October 2019, and nearly an hour and a half below the historical monthly average (1996-2019).
- **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 October, permits were 1,181, lower than the 1,699 seen in the prior year. This component contributed -0.14 to the October ILII with the 12-month moving average decreasing to 963 from 1,007 in September. October 2020 permits were 30.5 percent below October 2019 and 5.8 percent below the monthly historical average (1998-2019).

**Table 3. ILII Components and Standardization Factors for FY 2021**

Iowa Leading Indicator Index Components	Standardization Factor
Agricultural Futures Profits Index	0.035
Iowa Stock Market Index	0.015
Yield Spread	0.349
Residential Building Permits	0.032
Average Weekly Unemployment Claims	0.015
Average Weekly Manufacturing Hours	0.307
New Orders Index	0.065
Diesel Fuel Consumption	0.183

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced September 2, 2020  
 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 2020 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.