

The Iowa Leading Indicators Index (ILII) increased to 104.2 in December 2020 (100=1999) from 103.8 in November. December marks the third month in a row that the ILII has not shown contractionary signals. December is the fifth month that the index has increased since the COVID Crisis in Iowa began. The ILII had decreased as much as 3.0 percent (June 2021) from February 2020 before gradually improving for five of the next six months. The Iowa non-farm employment coincident index recorded a 0.37 percent decline in December, the thirteenth month in a row of decline. During the six-month span through December, the ILII increased 1.1 percent (an annualized rate of 2.1 percent). The six-month diffusion index remained unchanged at 62.5 from November. Five of the eight component indicators (diesel fuel consumption, the Iowa Stock Market Index, the national yield spread, the new orders index, and residential building permits) experienced an increase of greater than 0.05 percent over the last half-year.

Six of the eight components added to the ILII's monthly increase in December: residential building permits, the Iowa Stock Market Index, the new orders index, average manufacturing hours, the national yield spread, and the agricultural futures profits index. Diesel fuel consumption 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-December 2020

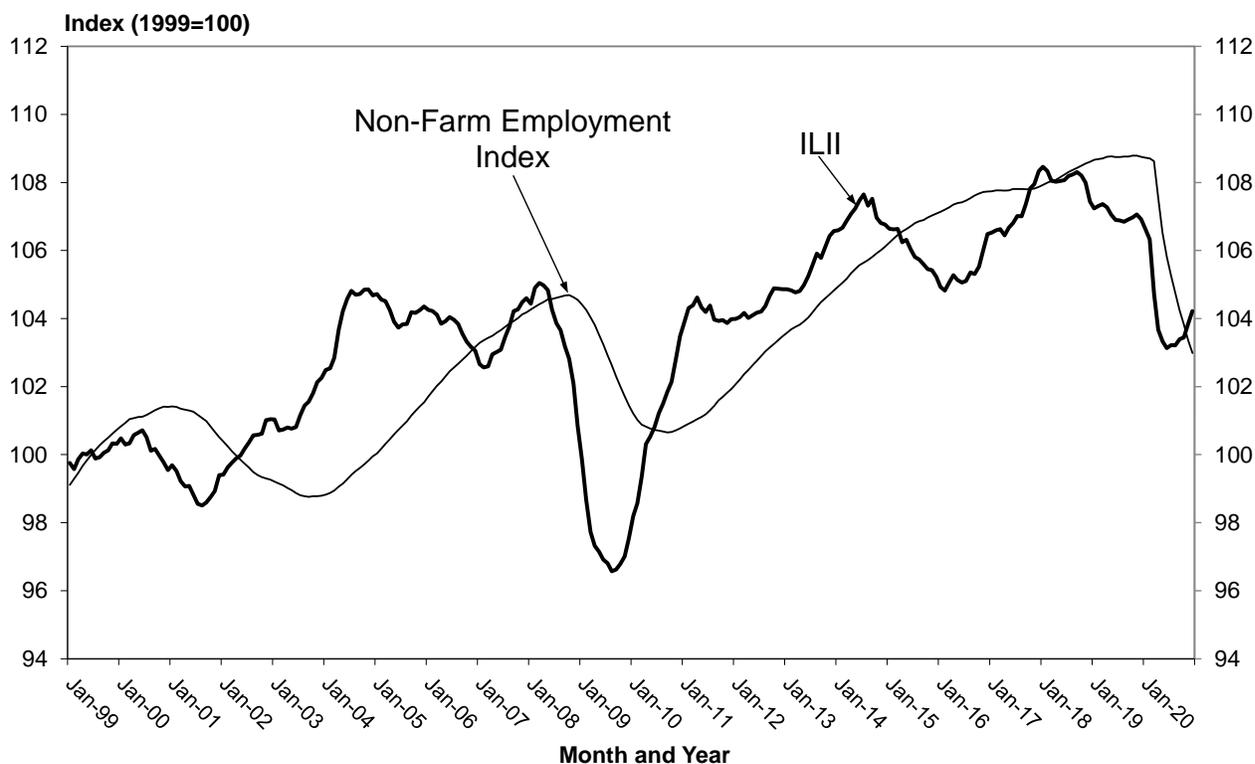


Table 1. Iowa Leading Indicators Index: Six Month Overview

Monthly Values	2020					
	Jul	Aug	Sep	Oct	Nov	Dec
ILII	103.2	103.2	103.4	103.4	103.8	104.2
Percentage Change ^a	0.1%	0.0%	0.2%	0.0%	0.4%	0.4%
Diffusion Index ^b	37.5	50.0	56.3	50.0	62.5	75.0
Six-Month Values	Jan to July	Feb to Aug	Mar to Sep	Apr to Oct	May to Nov	Jun to Dec
ILII						
Percentage Change	-3.2%	-2.9%	-1.3%	-0.2%	0.5%	1.1%
Annualized Percentage Change	-6.4%	-5.9%	-2.5%	-0.4%	1.0%	2.1%
Diffusion Index	25.0	25.0	43.8	50.0	62.5	62.5

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced January 29, 2021.

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		2020					
		Jul	Aug	Sep	Oct	Nov	Dec
AFPI ^b	↑ ^c						
Corn Profits (cents per bushel)		55.5	50.8	50.0	50.1	53.0	55.4
Soybean Profits (cents per bushel)		43.2	45.9	55.3	66.1	75.1	84.5
Hog Profits (cents per pound)		22.6	23.3	22.7	21.2	19.6	19.2
Cattle Profits (cents per pound)		12.3	13.3	12.9	12.8	13.2	12.5
Iowa Stock Market Index (10=1984-86)	↑	76.55	79.74	79.94	80.48	85.50	93.03
Yield Spread (10-year less 3-month)	↑	0.49	0.55	0.57	0.69	0.78	0.84
Residential Building Permits	↑	997	981	1,007	963	996	1,047
Average Weekly Unemployment Claims ^d	↓	10,270	10,581	10,826	10,990	11,259	11,292
Average Weekly Manufacturing Hours	↑	40.48	40.35	40.25	40.17	40.11	40.14
New Orders Index (percent)	↑	48.8	50.6	53.4	55.3	57.9	59.2
Diesel Fuel Consumption (mil gallons)	↓	62.85	62.79	62.87	63.28	63.57	63.37

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced January 29, 2021.

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

- **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 December, permits were 1,115, higher than the 506 seen in the prior year. This component contributed 0.16 to the December ILII with the 12-month moving average increasing to 1,047 from 996 in November. December 2020 permits were 120.4 percent above December 2019 and 65.5 percent above the monthly historical average (1998-2019).
- **Iowa stock market index:** Capitalization-weighted index of 31 Iowa-based or Iowa-concentrated publicly-traded companies. During December 2020, 26 of the 31 companies gained value, and all of the 11 financial-sector companies increased. With nearly all of the stocks experiencing gains, the index increased to 93.03 in December from a revised 85.5 in November, contributing 0.13 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 increased to a reading of 66.2 compared to 50.8 seen one year ago. The 12-month moving average of the new orders index increased to 59.2 from 57.9 in November, contributing 0.08 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 December, this component contributed 0.03 to the ILII with the 12-month moving average increasing to 40.14 from 40.11 in November. December 2020 average hours were 40.5, above the 40.1 hours in December 2019, and over an hour below the historical monthly average (1996-2019).
- **Yield spread:** Difference between the yield on 10-year Treasury bonds and 3-month Treasury bills. During December, the yield spread expanded to 0.84 percent from 0.78 percent in November. The long-term rate increased 6 basis points while the short-term rate remained unchanged. For the month, the yield spread contributed 0.02 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 December, this component contributed 0.01 to the ILII despite both grain commodities expecting to have profit gains, while expected profit for livestock commodities decreasing. Compared to last year, new crop corn prices were 9.4 percent higher while soybean prices were 11.8 percent higher. The December crush margin for hogs decreased 2.1 percent from November while the crush margin for cattle decreased 5.1 percent.
- **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 -0.00 to the ILII value with the 12-month moving average of claims increasing from 10,357 to 10,387. Unemployment claims for the month were 5.8 percent above December 2019 claims and 9.7 percent above average historical claims for December (1988-2019).
- **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 3.7 percent between December 2019 and December 2020. The 12-month moving average decreased to 63.37 million gallons from 63.57 million in November, contributing -0.06 to the ILII value.

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.