

The Iowa Leading Indicators Index (ILII) increased to 107.7 in April 2021 (100=1999) from 106.4 in March. April marks the seventh month in a row that the ILII has not shown contractionary signals. April is the ninth month that the index has increased since the COVID Crisis in Iowa began a year ago. The ILII had decreased as much as 3.0 percent (June 2020) from March 2020 before gradually improving for nine of the next ten months. The Iowa nonfarm employment coincident index recorded a 0.57 percent increase in April, the first month of positive growth since February 2020. During the six-month span through April, the ILII increased 4.1 percent (an annualized rate of 8.2 percent). The six-month diffusion index remained at 87.5 in April. Seven of the eight component indicators (agricultural futures profits index (AFPI), diesel fuel consumption, the Iowa Stock Market Index, the national yield spread, the new orders index, residential building permits, and average weekly unemployment claims) increased more than 0.05 percent over the last half-year.

All eight components increased in April: average weekly unemployment claims (inverted), the new orders index, residential building permits, diesel fuel consumption, the Iowa Stock Market Index, the agricultural futures profits index, average manufacturing hours, and the national yield spread.

Figure 1. Iowa Leading Indicators Index and Iowa Non-Farm Employment Coincident Index: January 1999-April 2021

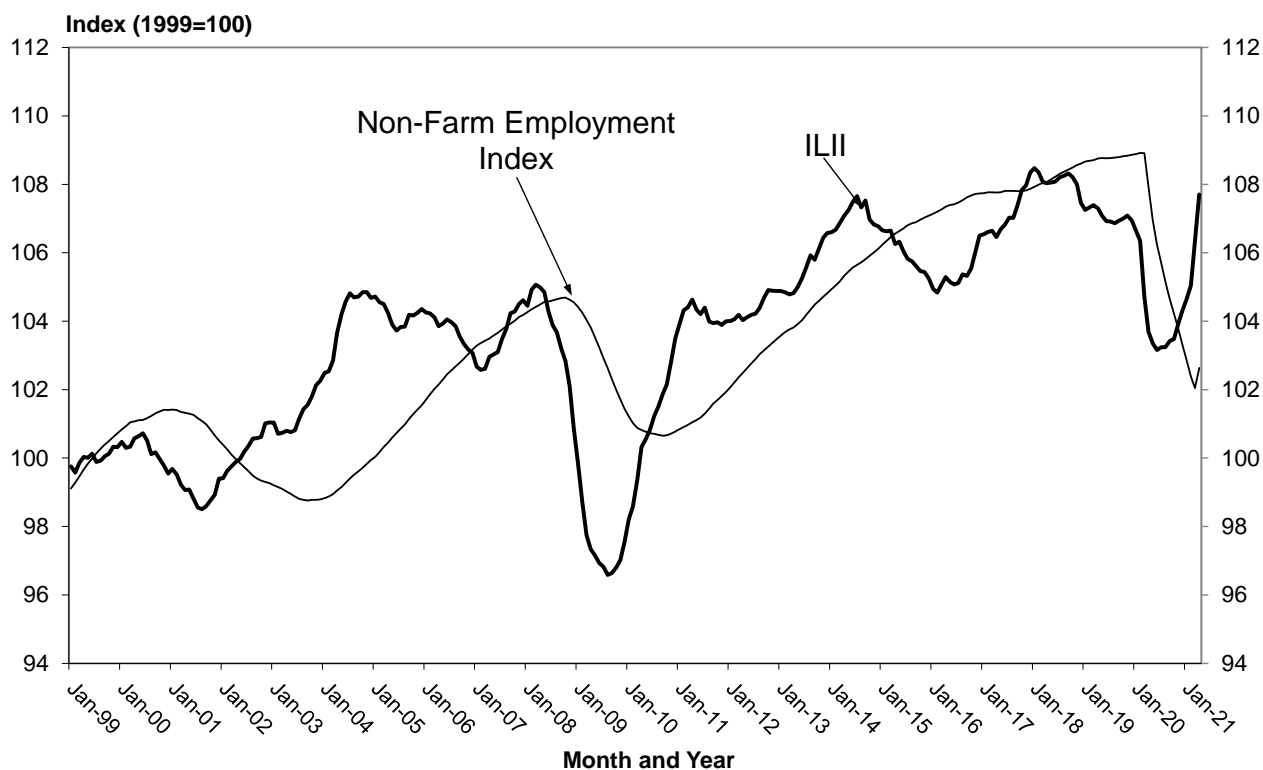


Table 1. Iowa Leading Indicators Index: Six Month Overview

Monthly Values	2021					
	Nov	Dec	Jan	Feb	Mar	Apr
ILII	103.9	104.3	104.7	105.0	106.4	107.7
Percentage Change ^a	0.4%	0.4%	0.3%	0.4%	1.3%	1.3%
Diffusion Index ^b	62.5	75.0	68.8	68.8	87.5	93.8
Six-Month Values	May to Nov	Jun to Dec	Jul to Jan	Aug to Feb	Sep to Mar	Oct to Apr
ILII						
Percentage Change	0.5%	1.1%	1.4%	1.7%	2.9%	4.1%
Annualized Percentage Change	1.1%	2.2%	2.7%	3.5%	5.7%	8.2%
Diffusion Index	62.5	62.5	62.5	75.0	87.5	87.5

Source: Tax Research Division, Iowa Department of Revenue, produced May 28, 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		2021				
	Nov	Dec	Jan	Feb	Mar	Apr	
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)	↑	86.44	94.05	101.74	108.11	119.37	125.94
Yield Spread (10-year less 3-month)	↑	0.78	0.84	1.00	1.22	1.58	1.62
Residential Building Permits	↑	996	1,047	1,045	1,073	1,144	1,231
Average Weekly Unemployment Claims ^d	↑	11,259	11,292	11,502	11,736	8,783	6,654
Average Weekly Manufacturing Hours	↑	40.16	40.23	40.22	40.15	40.08	40.12
New Orders Index (percent)	↑	57.9	59.2	60.7	62.4	65.4	70.0
Diesel Fuel Consumption (mil gallons)	↑	63.57	63.37	63.64	63.63	63.82	64.17

Source: Tax Research Division, Iowa Department of Revenue, produced May 28, 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

- **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 0.42 to the ILII value with the 12-month moving average of claims decreasing from 8,783 to 6,654. Unemployment claims were 84.3 percent below April 2020 claims yet 28.8 percent above average historical claims for April (1988-2020).
- **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 new orders index has recovered sharply over the last year, up to 79.7 compared to 23.7 last April. The 12-month moving average of the new orders index increased to 70.0 from 65.4 in March, contributing 0.30 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 April, permits were 1,903, up from 858 last year. This component contributed 0.23 to the April ILII with the 12-month moving average increasing to 1,231 from 1,144 in March. April 2021 permits were 121.8 percent above April 2020, and 59.6 percent above the monthly historical average (1998-2020).
- **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 6.9 percent between April 2020 and April 2021. The 12-month moving average increased to 64.17 million gallons from 63.82 million in March, contributing 0.10 to the ILII value.
- **Iowa stock market index:** Capitalization-weighted index of 31 Iowa-based or Iowa-concentrated publicly-traded companies. During April 2021, 18 of the 31 companies gained value, and 5 of the 11 financial-sector companies increased. With nearly two-thirds of the stocks experiencing gains, the index increased to 125.94 in April from a revised 119.37 in March, contributing 0.08 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 April, this component contributed 0.07 to the ILII with both grain commodities expecting profit gains and both livestock commodities expecting profit losses. Compared to last year, new crop corn prices were 52.4 percent higher while soybean prices were 51.2 percent higher. The April crush margin for hogs decreased 5.8 percent from March while the crush margin for cattle decreased 6.3 percent.
- **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 April, this component contributed 0.03 to the ILII with the 12-month moving average increasing to 40.12 from a revised 40.08 in March. In April 2021, average hours were 40.1, above the 39.7 hours in April 2020, but nearly an hour below the historical monthly average (1996-2020).
- **Yield spread:** Difference between the yield on 10-year Treasury bonds and 3-month Treasury bills. During April, the yield spread expanded to 1.62 percent from 1.58 percent in March. April is the fourth month in a row since May 2018 that the yield spread has been at or above 1.0 percent. The long-term rate increased 3 basis points while the short-term rate decreased 1 basis point. For the month, the yield spread contributed 0.01 to the ILII.

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 nonfarm 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.