

The Iowa Leading Indicators Index (ILII) increased to 109.4 in August 2021 (100=1999) from 109.1 in July. August marks the eleventh month in a row since the ILII has exited contraction. This suggests that the nonfarm employment will continue to improve over the next three to six months. Monthly gains went up slightly. Month over month, the ILII increased 0.3 percent, up from a 0.2 percent increase in July. The monthly diffusion index improved modestly as well, to 68.8 from 50.0. The ILII had decreased as much as 3.0 percent (June 2020) from March 2020 to a low of 103.4 before gradually improving for the past year. The Iowa nonfarm employment coincident index recorded a 0.22 percent increase in August, the fifth month of growth since February 2020.

During the six-month span through August, the ILII increased 4.0 percent (an annualized rate of 7.9 percent). The six-month diffusion index decreased to 81.3 in August from 87.5 in July. August marks the thirteenth month in a row that the monthly diffusion index has registered at or above 50.0. Six of the eight component indicators (agricultural futures profits index (AFPI), diesel fuel consumption, the Iowa Stock Market Index, the new orders index, residential building permits, and average weekly unemployment claims) increased more than 0.05 percent over the last half-year. The change in the six-month diffusion index was the national yield spread increasing by less than 0.05 percent over the past six months.

Five of the eight components increased in August: the AFPI, average weekly unemployment claims (inverted), the Iowa Stock Market Index, average manufacturing hours, and the new orders index. Residential building permits, diesel fuel consumption, and the national yield spread are the three components detracted from the index.

Figure 1. Iowa Leading Indicators Index and Iowa Nonfarm Employment Coincident Index: January 1999-August 2021

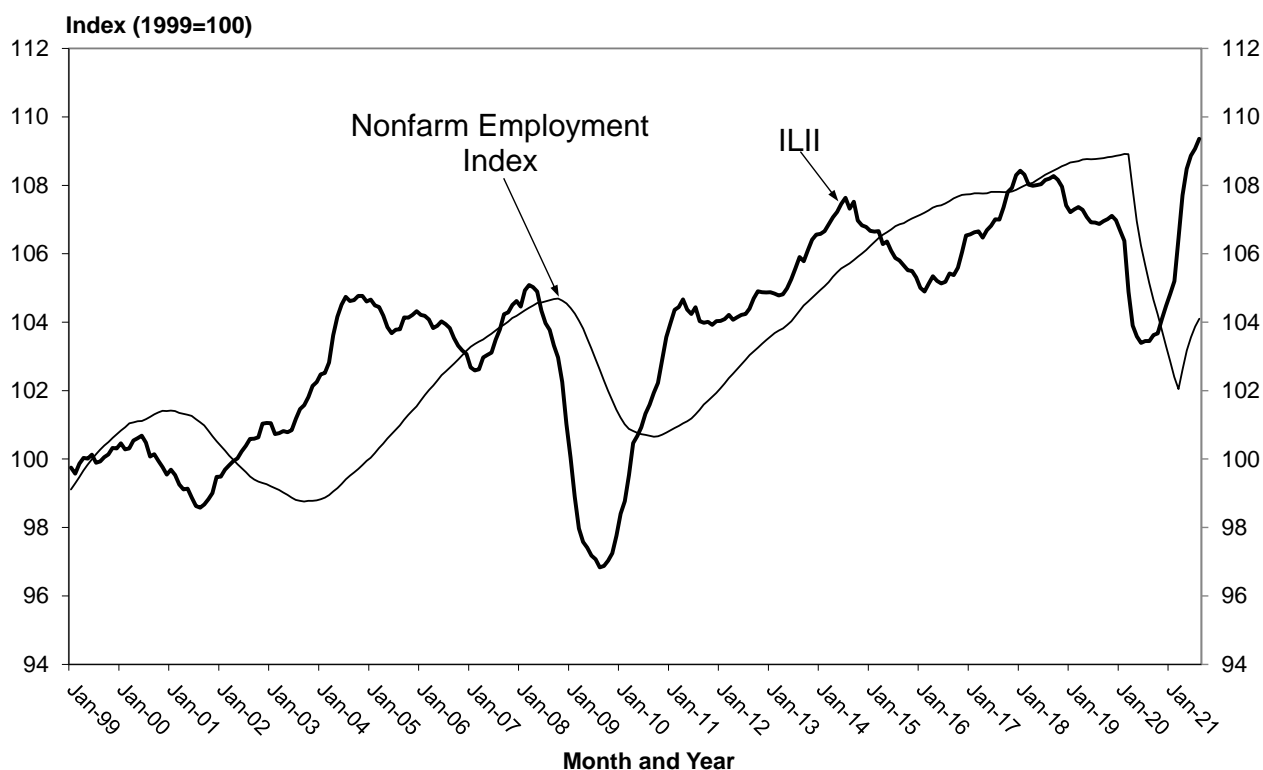


Table 1. Iowa Leading Indicators Index: Six Month Overview

Monthly Values	2021					
	Mar	Apr	May	Jun	Jul	Aug
ILII	106.5	107.7	108.5	108.9	109.1	109.4
Percentage Change ^a	1.2%	1.2%	0.7%	0.4%	0.2%	0.3%
Diffusion Index ^b	87.5	87.5	81.3	50.0	50.0	68.8
Six-Month Values	Sep to Mar	Oct to Apr	Nov to May	Dec to Jun	Jan to Jul	Feb to Aug
ILII						
Percentage Change	2.8%	3.9%	4.2%	4.2%	4.1%	4.0%
Annualized Percentage Change	5.5%	7.8%	8.4%	8.4%	8.1%	7.9%
Diffusion Index	87.5	87.5	87.5	87.5	87.5	81.3

Source: Tax Research Bureau, Iowa Department of Revenue, produced September 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		2021					
		Mar	Apr	May	Jun	Jul	Aug
AFPI ^b	↑ ^c						
Corn Profits (cents per bushel)		77.2	92.0	111.2	129.7	146.6	164.0
Soybean Profits (cents per bushel)		132.7	167.2	209.8	247.2	282.8	315.3
Hog Profits (cents per pound)		22.6	21.3	21.4	21.5	22.4	22.0
Cattle Profits (cents per pound)		13.8	12.9	13.9	14.2	14.8	15.2
Iowa Stock Market Index (10=1984-86)	↑	121.27	127.59	132.48	128.37	126.37	133.06
Yield Spread (10-year less 3-month)	↓	1.58	1.62	1.60	1.48	1.27	1.23
Residential Building Permits	↓	1,144	1,231	1,231	1,226	1,195	1,179
Average Weekly Unemployment Claims ^d	↑	8,783	6,654	5,970	5,413	4,886	4,554
Average Weekly Manufacturing Hours	↑	40.08	40.09	40.10	39.98	39.88	39.92
New Orders Index (percent)	↑	65.4	70.0	73.5	75.5	76.0	76.4
Diesel Fuel Consumption (mil gallons)	↓	63.82	64.17	64.68	65.27	65.68	65.62

Source: Tax Research Bureau, Iowa Department of Revenue, produced September 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, 2021).

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

- **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 August, this component contributed 0.11 to the ILII with both grain commodities and live cattle expecting profit gains while wean to finish hogs expect profit losses. Compared to last year, new crop corn prices were 63.7 percent higher while soybean prices were 47.2 percent higher. The August crush margin for hogs decreased 1.6 percent from July while the crush margin for cattle increased 3.0 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 0.10 to the ILII value with the 12-month moving average of claims decreasing from 4,886 to 4,554. Unemployment claims were 70.1 percent below August 2020 claims and 35.1 percent below average historical claims for August (1988-2020).
- **Iowa stock market index:** Capitalization-weighted index of 30 Iowa-based or Iowa-concentrated publicly-traded companies. During August 2021, 20 of the 30 companies gained value, and nine of the 10 financial-sector companies increased. With two-thirds of the stocks experiencing gains, the index increased to 133.06 in August from a revised 126.37 in July, contributing 0.08 of 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 August, this component contributed 0.03 to the ILII with the 12-month moving average remaining unchanged at 39.9 from a revised 39.9 in July. In August 2021, average hours were 40.1, above the 39.7 hours in August 2020, yet over one hour below the historical monthly average (1996-2020).
- **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 77.2 compared to 72.5 last August. The 12-month moving average of the new orders index increased to 76.4 from 76.0 in July, contributing 0.02 to the ILII.
- **Yield spread:** Difference between the yield on 10-year Treasury bonds and 3-month Treasury bills. During August, the yield spread contracted to 1.23 percent from 1.27 percent in July. August is the eighth month in a row since August 2018 that the yield spread has been at or above 1.0 percent. The long-term rate decreased 4 basis points while the short-term rate increased remained unchanged. For the month, the yield spread dragged down the ILII 0.01.
- **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 1.1 percent between August 2020 and August 2021. The 12-month moving average decreased to 65.62 million gallons in August from 65.68 million in July, contributing -0.02 to the ILII value.
- **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 August, permits were 1,023, down from 1,217 last year. This component detracted 0.04 from the August ILII with the 12-month moving average decreasing to 1,179 in August from 1,195 in July. August 2021 permits were 15.9 percent below August 2020, and 10.9 percent below the monthly historical average (1998-2020).

Table 3. ILII Components and Standardization Factors for FY 2022

Iowa Leading Indicator Index Components	Standardization Factor
Agricultural Futures Profits Index	0.035
Iowa Stock Market Index	0.015
Yield Spread	0.352
Residential Building Permits	0.031
Average Weekly Unemployment Claims	0.014
Average Weekly Manufacturing Hours	0.310
New Orders Index	0.061
Diesel Fuel Consumption	0.183

Source: Tax Research Bureau, Iowa Department of Revenue, produced September 8, 2021

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 2021 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 nonfarm 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.