

The Iowa Leading Indicators Index (ILII) remained unchanged at 103.1 in August 2020 (100=1999) from a revised 103.1 in July. After revisions, this is the third month in a row that the index has registered at 103.1. The ILII had decreased 2.9 percent from February 2020, the last month before the COVID-19 quarantines began in Iowa, to August 2020. The Iowa non-farm employment coincident index recorded a 0.50 percent decline in August, the ninth month in a row of decline and the fifth largest one month decline in its history behind April, May, June, and July 2020. August marked the fifth month that COVID-19 fully affected non-farm employment. The downward revision of the July index reflects updates to the reported average manufacturing hours.

During the six-month span through August, the ILII decreased 2.9 percent (an annualized rate of -5.9 percent). The six-month diffusion index remained unchanged at 25.0 in August from July. Two of the eight component indicators (national yield spread and residential building permits) experienced an increase of greater than 0.05 percent over the last half-year.

Four of the eight components added to the ILII's monthly increase in August, the new orders index, the Iowa stock market index, the national yield spread, and the agricultural futures profits index. Average manufacturing hours, residential building permits, average weekly unemployment claims (inverted), and diesel fuel consumption dragged down the index.

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

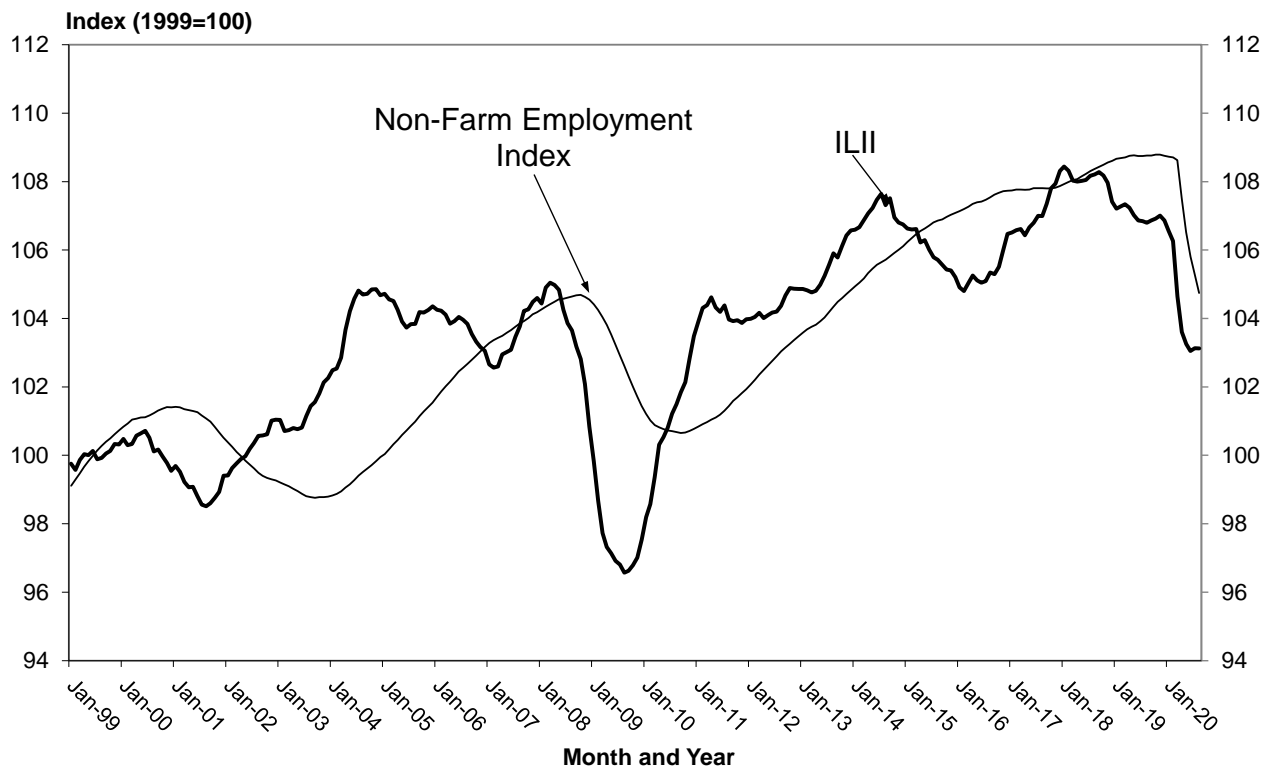


Table 1. Iowa Leading Indicators Index: Six Month Overview

Monthly Values	2020					
	Mar	Apr	May	Jun	Jul	Aug
ILII	104.6	103.6	103.2	103.1	103.1	103.1
Percentage Change ^a	-1.5%	-1.0%	-0.3%	-0.2%	0.1%	0.0%
Diffusion Index ^b	31.3	18.8	18.8	18.8	37.5	50.0
Six-Month Values	Sep to Mar	Oct to Apr	Nov to May	Dec to June	Jan to July	Feb to Aug
ILII						
Percentage Change	-2.1%	-3.1%	-3.5%	-3.6%	-3.2%	-2.9%
Annualized Percentage Change	-4.1%	-6.2%	-7.0%	-7.1%	-6.4%	-5.9%
Diffusion Index	37.5	37.5	37.5	25.0	25.0	25.0

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced September 29, 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 ^a		2020					
		Mar	Apr	May	Jun	Jul	Aug
AFPI ^b	↑ ^c						
Corn Profits (cents per bushel)		79.3	73.7	66.1	56.3	47.8	43.2
Soybean Profits (cents per bushel)		36.9	25.8	18.6	11.2	6.6	6.1
Hog Profits (cents per pound)		22.5	19.2	23.0	22.5	22.6	23.3
Cattle Profits (cents per pound)		10.4	10.1	12.9	10.8	12.3	13.3
Iowa Stock Market Index (10=1984-86)	↑	77.11	72.85	70.28	77.51	76.55	79.74
Yield Spread (10-year less 3-month)	↑	0.57	0.52	0.54	0.57	0.49	0.55
Residential Building Permits	↓	986	974	961	960	997	981
Average Weekly Unemployment Claims ^d	↓	6,113	8,466	9,248	9,778	10,270	10,560
Average Weekly Manufacturing Hours	↓	40.83	40.69	40.59	40.51	40.48	40.35
New Orders Index (percent)	↑	52.2	49.5	48.0	47.7	48.8	50.6
Diesel Fuel Consumption (mil gallons)	↓	62.91	63.04	62.98	62.65	62.85	62.79

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced September 29, 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 very strong reading of 72.5 compared to 51.8 seen one year ago. The 12-month moving average of the new orders index increased to 50.6 from 48.8 in July, contributing 0.11 to the ILII.
- **Iowa stock market index:** Capitalization-weighted index of 31 Iowa-based or Iowa-concentrated publicly-traded companies. During August 2020, 26 of the 31 companies gained value, including only 9 of the 11 financial-sector companies. With over three-fourths of the stocks experiencing gains, the index increased to 79.74 in August from 76.55 in July, contributing 0.06 to the ILII value.
- **Yield spread:** Difference between the yield on 10-year Treasury bonds and 3-month Treasury bills. During August, the yield spread expanded to 0.55 percent from 0.49 percent in July. The long-term rate increased 3 basis points while the short-term rate decreased 3 basis points. 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 August, this component contributed 0.01 to the ILII with expected profit gains in both livestock commodities and soybeans while corn commodities are expected to have losses. The August crush margin for hogs increased 3.3 percent from July while the crush margin for cattle increased 7.8 percent. Compared to last year, new crop soybean prices were 3.7 percent higher while corn prices were 12.5 percent lower.
- **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 1.0 percent between August 2019 and August 2020. The 12-month moving average decreased to 62.79 million gallons from 62.85 million in July, contributing -0.02 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 -0.04 to the ILII value with the 12-month moving average of claims increasing from 9,480 to 9,767. Unemployment claims for the month were 190 percent above August 2019 claims and 128 percent above average historical claims for August (1988-2019). The 5,688 average weekly unemployment claims for August were 86.1 percent lower than that of March's 40,835 average weekly unemployment claims.
- **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 1,217, lower than the 1,409 seen in the prior year. This component contributed -0.05 to the August ILII with the 12-month moving average decreasing to 981 from 997 in July. August 2020 permits were 13.6 percent below August 2019, yet 6.3 percent above the monthly historical average (1998-2019).
- **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 -0.09 to the ILII with the 12-month moving average decreasing to 40.35 from a downwardly revised 40.48 in July. August 2020 average hours were 39.7, below the 41.2 hours in August 2019, and over an hour and a half below the historical monthly average (1996-2019).

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.