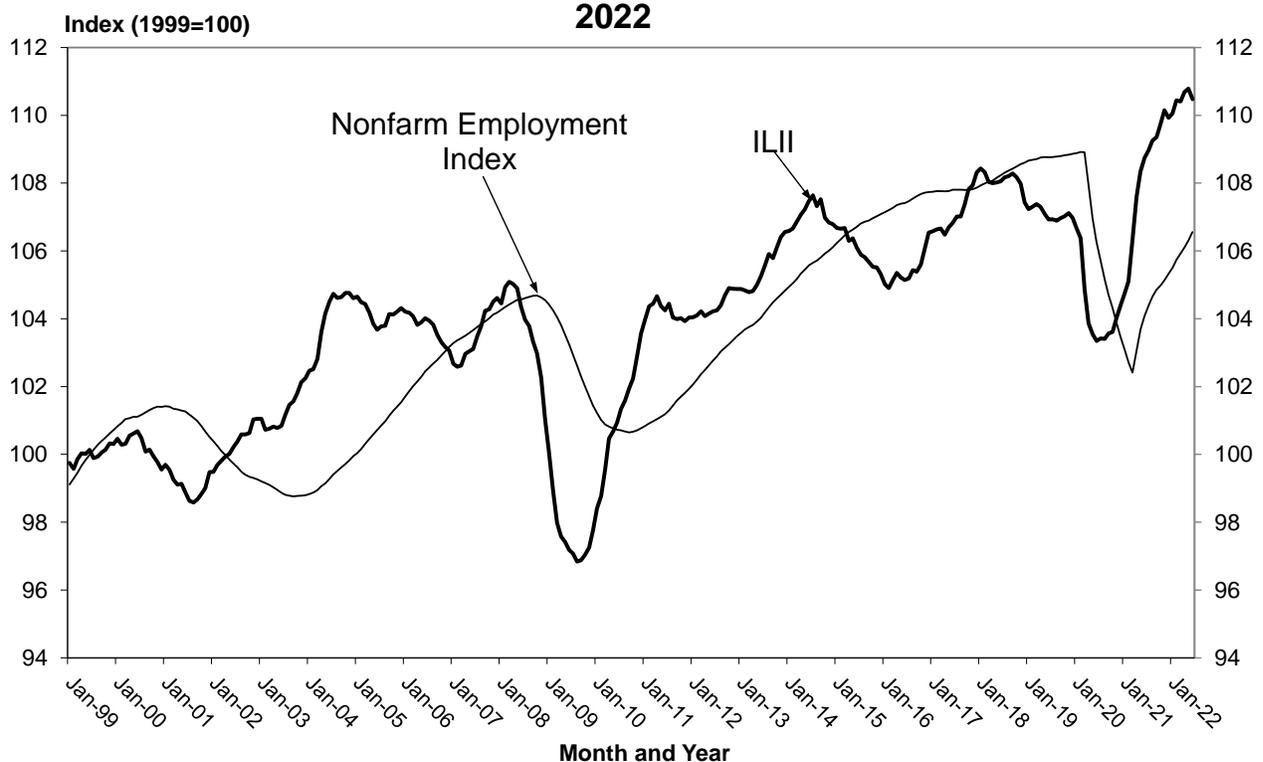


The Iowa Leading Indicators Index (ILII) decreased to 110.5 (100=1999) in June 2022 (0.3 percent) from 110.8 in May 2022. The monthly diffusion index decreased to 43.8 in June from 50.0 in May. This is the first month since December 2021 that the monthly diffusion index recorded below 50.0. The Iowa nonfarm employment coincident index recorded a 0.23 percent increase in June, the fifteenth month of growth.

During the six-month span through June, the ILII increased 0.5 percent (an annualized rate of 1.0 percent). The six-month diffusion index decreased to 50.0 in June from 62.5 in May, April, and March 2022. Four of the eight component indicators increased more than 0.05 percent over the last half-year: agricultural futures profits index (AFPI), average weekly unemployment claims, diesel fuel consumption, and national yield spread. The Iowa Stock Market Index no longer experienced an increase of more than 0.05 percent, causing the diffusion index to decrease.

Three of the eight components increased month over month in June: the AFPI, average weekly unemployment claims (inverted), and residential building permits. The Iowa Stock Market Index, the national yield spread, the new orders index, and diesel fuel consumption, detracted from the index. Average manufacturing hours contributed no change to the index as the component experienced no change from last month.

**Figure 1. Iowa Leading Indicators Index and Iowa Nonfarm Employment Coincident Index: January 1999-June 2022**



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

Monthly Values	2022					
	Jan	Feb	Mar	Apr	May	Jun
ILII	110.1	110.4	110.4	110.7	110.8	110.5
Percentage Change <sup>a</sup>	0.1%	0.4%	0.0%	0.2%	0.1%	-0.3%
Diffusion Index <sup>b</sup>	62.5	56.3	50.0	50.0	50.0	43.8
Six-Month Values	Jul to Jan	Aug to Feb	Sep to Mar	Oct to Apr	Nov to May	Dec to Jun
ILII						
Percentage Change	1.0%	1.1%	1.0%	0.9%	0.6%	0.5%
Annualized Percentage Change	2.0%	2.2%	1.9%	1.7%	1.2%	1.0%
Diffusion Index	68.8	75.0	62.5	62.5	62.5	50.0

Source: Tax Research Bureau, Iowa Department of Revenue, produced July 28, 2022.

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>	2022					
	Jan	Feb	Mar	Apr	May	Jun
AFP <sup>b</sup>						
Corn Profits (cents per bushel)	203.3	215.5	231.5	250.1	265.5	275.2
Soybean Profits (cents per bushel)	447.8	473.8	499.6	521.8	536.9	545.6
Hog Profits (cents per pound)	22.5	21.3	19.0	16.2	15.8	18.5
Cattle Profits (cents per pound)	13.7	13.9	13.8	15.2	14.9	14.9
Iowa Stock Market Index (10=1984-86)	142.31	144.81	141.47	139.12	141.88	122.92
Yield Spread (10-year less 3-month)	1.61	1.62	1.68	1.99	1.91	1.60
Residential Building Permits	1,196	1,181	1,119	1,092	1,118	1,128
Average Weekly Unemployment Claims <sup>d</sup>	3,098	2,797	2,472	2,180	2,021	1,963
Average Weekly Manufacturing Hours	39.33	39.29	39.26	39.19	39.15	39.15
New Orders Index (percent)	70.4	69.1	69.1	68.4	67.0	65.3
Diesel Fuel Consumption (mil gallons)	66.85	67.82	67.68	68.09	67.95	67.78

Source: Tax Research Bureau, Iowa Department of Revenue, produced July 28, 2022.

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 June, this component contributed 0.13 to the ILII with both grain commodities and lean hogs expecting profit gains while expected profits for live cattle decreased slightly. Compared to last year, new crop corn prices were 21.7 percent higher while soybean prices were 10.4 percent higher. The June crush margin for hogs increased 17.7 percent from May while the crush margin for cattle decreased 0.4 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 0.04 to the ILII value with the 12-month moving average of claims decreasing from 2,021 to 1,963. Unemployment claims were 33.9 percent below June 2021 claims and 57.5 percent below average historical claims for June (1988-2021).
- **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 June, permits were 1,481, up from 1,359 last year. This component added 0.03 to the June ILII with the 12-month moving average increasing to 1,128 in June from 1,118 in May. June 2022 permits were 9.0 percent above June 2021, and 24.6 percent above the monthly historical average (1998-2021).
- **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 June, this component contributed 0.0 to the ILII with the 12-month moving average unchanged from a revised 39.15 in May. In June 2022, average hours were 39.4, equal to the 39.4 hours in June 2021, and yet two hours below the historical monthly average (1996-2021).
- **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 3.2 percent between June 2021 and June 2022. The 12-month moving average decreased to 67.78 million gallons in June from 67.95 million in May, contributing -0.05 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 new orders index in June 2022 decreased to 52.8 compared to 56.6 in May. The 12-month moving average of the new orders index has decreased to 65.26 from 75.48 in June 2021, and contributed -0.11 to the ILII.
- **Yield spread:** Difference between the yield on 10-year Treasury bonds and 3-month Treasury bills. During June, the yield spread decreased to 1.60 percent from 1.91 percent in May. June is the eighteenth month in a row since December 2020 that the yield spread has been at or above 1.0 percent. The long-term rate increased 24 basis points while the short-term rate increased 55 basis points. For the month, the yield spread contributed -0.11 to the ILII value.
- **Iowa stock market index:** Capitalization-weighted index of 29 Iowa-based or Iowa-concentrated publicly-traded companies. During June 2022, only one of the 29 companies gained value, and none of the 10 financial-sector companies increased. With nearly all of the stocks experiencing losses, the index decreased to 122.92 in June from 141.88 in May, contributing -0.21 of the ILII value.

**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.