

The Iowa Leading Indicators Index (ILII) decreased to 106.0 (100=1999) in September (-0.3 percent) from a revised 106.3 in August. The monthly diffusion index increased to 37.5 in September from 31.3 in August. The Iowa nonfarm employment coincident index recorded a 0.07 percent increase in September. Long term trends in the ILII suggest that nonfarm employment will decrease over the next three to six months.

During the six-month span through September, the ILII decreased 1.4 percent (an annualized rate of -2.8 percent). The six-month diffusion index increased to 18.8 in September from 6.3 in August. The ILII was constructed to signal economic turning points with two key metrics that when seen together are considered a signal of a coming contraction: a six-month annualized change in the index below -2.0 percent and a six-month diffusion index below 50.0. The six-month diffusion index remained a contractionary signal for the ninth month in a row and the six-month annualized change showed contraction for the eleventh month in a row. Six of the eight component indicators decreased more than 0.05 percent over the last half-year: the agricultural futures profits index (AFPI), diesel fuel consumption, the Iowa stock market index, new orders index, residential building permits, and initial unemployment insurance claims. Average manufacturing hours was the only component to increase by more than 0.05 percent over the last six months while the national yield spread increased by more than 0.00 percent but less than 0.05 percent over the last six months.

Three of the eight components increased month over month in September: the national yield spread, average weekly manufacturing hours, and the new orders index. Diesel fuel consumption, the AFPI, residential building permits, the Iowa Stock Market Index, and the average weekly unemployment claims (inverted) detracted from the index.

Figure 1. Iowa Leading Indicators Index and Iowa Nonfarm Employment Coincident Index: January 1999-September 2023

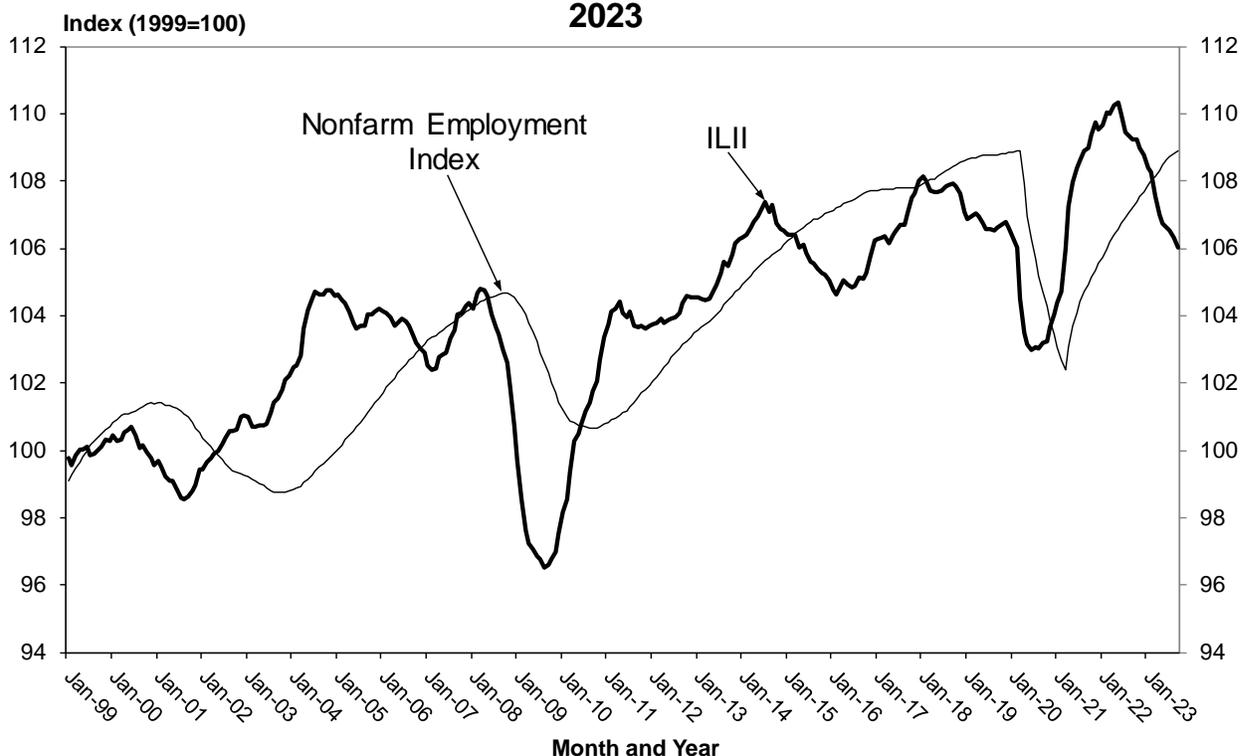


Table 1. Iowa Leading Indicators Index: Six Month Overview

Monthly Values	2023					
	Apr	May	Jun	Jul	Aug	Sep
ILII	107.0	106.8	106.6	106.5	106.3	106.0
Percentage Change ^a	-0.5%	-0.2%	-0.1%	-0.1%	-0.2%	-0.3%
Diffusion Index ^b	25.0	12.5	37.5	37.5	31.3	37.5
Six-Month Values	Nov to Apr	Dec to May	Jan to Jun	Feb to Jul	Mar to Aug	Apr to Sep
ILII						
Percentage Change	-2.0%	-2.0%	-2.0%	-1.7%	-1.8%	-1.4%
Annualized Percentage Change	-4.1%	-4.1%	-4.0%	-3.4%	-3.5%	-2.8%
Diffusion Index	12.5	12.5	6.3	6.3	6.3	18.8

Source: Tax Research Bureau, Iowa Department of Revenue, produced October 30, 2023.

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	2023					
	Apr	May	Jun	Jul	Aug	Sep
AFPJ ^b						
Corn Profits (cents per bushel)	240.1	214.9	199.2	188.6	172.7	152.1
Soybean Profits (cents per bushel)	365.3	323.2	287.1	272.6	250.8	227.3
Hog Profits (cents per pound)	17.8	20.7	21.2	22.3	23.1	24.7
Cattle Profits (cents per pound)	13.4	12.6	12.4	13.4	13.6	12.6
Iowa Stock Market Index (10=1984-86)	119.51	115.09	119.54	125.68	122.06	118.79
Yield Spread (10-year less 3-month)	-1.61	-1.74	-1.67	-1.59	-1.39	-1.18
Residential Building Permits	988	994	963	961	937	917
Average Weekly Unemployment Claims ^d	1,840	1,871	1,901	1,954	2,016	2,055
Average Weekly Manufacturing Hours	39.35	39.33	39.30	39.34	39.36	39.41
New Orders Index (percent)	52.5	52.1	52.0	51.0	50.1	50.3
Diesel Fuel Consumption (mil gallons)	66.88	66.79	66.86	66.61	66.67	65.92

Source: Tax Research Bureau, Iowa Department of Revenue, produced October 30, 2023.

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 12, 2023).

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

- **Yield spread:** Difference between the yield on 10-year Treasury bonds and 3-month Treasury bills. During September, the yield spread increased yet remained in inversion territory (below 0) at -1.18 percent from -1.39 percent in August. September is the eleventh month in a row that the yield spread has been in inversion. The long-term rate increased 21 basis points while the short-term rate remained unchanged. For the month, the yield spread contributed 0.07 to 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 September, this component contributed 0.04 to the ILII with the 12-month moving average increasing to 39.41 in September from a revised 39.36 in August. In September, average hours were 40.5, above the 39.9 hours in September 2022, yet just under an hour below the historical monthly average (1996-2022).
- **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 September increased to 47.5 compared to 46.6 in August. The 12-month moving average of the new orders index has increased to 50.3 from 50.1 in August 2023?, and contributed 0.01 to the ILII.
- **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 detracted 0.03 from the ILII value, with the 12-month moving average of claims increasing from 2,016 to 2,055. Unemployment claims were 38.01 percent above September 2022 claims, yet 32.43 percent below average historical claims for September (1988-2022).
- **Iowa stock market index:** Capitalization-weighted index of 28 Iowa-based or Iowa-concentrated publicly-traded companies. During September, 4 of the 28 companies gained value, and 1 of the 10 financial-sector companies increased. With over two-thirds of the stocks experiencing losses, the index decreased to 118.79 in September from 122.06 in August, detracting 0.04 from 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 September, permits were 931, down from 1,174 last year. This component detracted 0.07 from the September ILII with the 12-month moving average decreasing to 917 in September from 937 in August. September permits were 20.7 percent below September 2022, and 17.0 percent below the monthly historical average (1998-2022).
- **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 September, this component detracted 0.08 to the ILII with expected profits decreases in both crop commodities and cattle. Hogs experienced expected profit increases. Compared to last year, new crop corn prices were 29.0 percent lower while soybean prices were 6.8 percent lower. The September crush margin for cattle decreased 7.5 percent from August while the crush margin for hogs increased 6.9 percent.
- **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 13.0 percent between September 2022 and September 2023. The 12-month moving average decreased to 65.92 million gallons in September from 66.67 million in August, detracting 0.20 from the ILII value.

Table 3. ILII Components and Standardization Factors for FY 2024

Iowa Leading Indicator Index Components	Standardization Factor
Agricultural Futures Profits Index	0.034
Iowa Stock Market Index	0.015
Yield Spread	0.346
Residential Building Permits	0.032
Average Weekly Unemployment Claims	0.014
Average Weekly Manufacturing Hours	0.322
New Orders Index	0.062
Diesel Fuel Consumption	0.175

Source: Tax Research Bureau, Iowa Department of Revenue, produced September 12, 2023

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 2023 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.