

# Iowa Leading Indicators Index December 2007

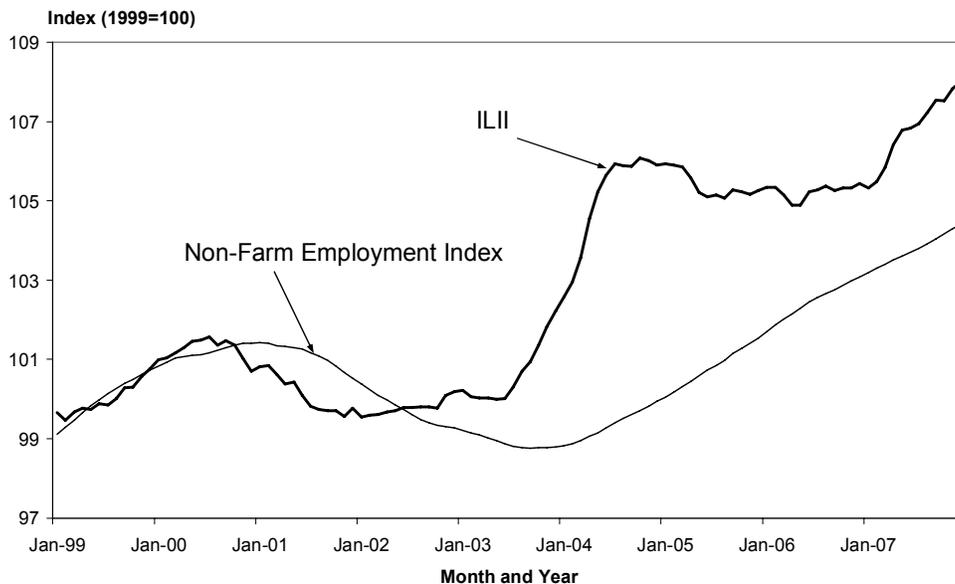
Iowa Department of Revenue  
Tax Research and Program Analysis Section

The Iowa Leading Indicators Index (ILII) increased 0.2 percent in December 2007. The Iowa non-farm employment coincident index increased by 0.1 percent in December, the 49<sup>th</sup> consecutive month.

The ILII's value in December rose to 108.0 (100=1999). The strength in December follows similar increases in November, a revised 0.3 percent increase, September, 0.3 percent, and August, 0.3 percent. The index was flat in October. During the six-month span through December, the ILII increased 1.1 percent (a 2.2 percent annual rate). The six-month diffusion index (value of 75.0) reflects six of eight components experiencing a 0.5 percent or greater increase and two components (building permits and average manufacturing hours) experiencing a 0.5 percent or greater decrease over the last half year.

In December, five of the eight Iowa Leading Indicators components increased. The positive contributors were the new orders index, the agricultural futures price index, diesel fuel consumption the yield spread, and the Iowa stock market index. The negative contributors were residential building permits, unemployment insurance claims (inverted), and average weekly manufacturing hours

**Figure 1. Iowa Leading Indicators Index and Iowa Non-Farm Employment Coincident Index: Jan. 1999-December 2007**



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

Monthly Values	2007					
	July	August	September	October	November	December
ILII	106.9	107.2	107.5	107.5	107.8	108.0
Percentage Change <sup>a</sup>	0.1%	0.3%	0.3%	0.0%	0.3%	0.2%
Diffusion Index <sup>b</sup>	56.3	75.0	87.5	56.3	87.5	68.8
Six-Month Values	Jan to July	Feb to August	Mar to September	Apr to October	May to November	June to December
ILII						
Percentage Change	1.5%	1.6%	1.6%	1.0%	1.0%	1.1%
Diffusion Index	87.5	87.5	75.0	75.0	75.0	75.0

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced January 28, 2008.

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>		2007					
		July	August	September	October	November	December
AFPI <sup>b</sup>	↑ <sup>c</sup>						
Corn (cents per bushel)		355.7	364.2	373.4	377.9	380.1	384.8
Hog Profits (cents per pound)		15.5	15.4	14.9	14.2	13.4	13.1
Soybeans (cents per bushel)		719.7	743.7	777.5	809.3	839.2	879.8
Cattle Profits (cents per pound)		0.1	0.0	-0.4	-0.9	-0.8	-0.4
Iowa Stock Market Index (10=1984-86)	↑	61.18	61.79	62.50	63.17	63.49	63.90
Yield Spread (10-year less 3-month)	↑	0.04	0.35	0.53	0.53	0.80	1.03
Building Permits	↓	976	963	973	942	924	894
Average Weekly Unemployment Claims <sup>d</sup>	↓	3,385	3,376	3,305	3,330	3,291	3,314
Average Weekly Manufacturing Hours	↓	42.3	42.1	42.1	41.9	42.0	42.0
New Orders Index (percent)	↑	56.5	57.8	58.3	58.8	59.7	61.2
Diesel Fuel Consumption (mil gallons)	↑	55.83	56.12	56.23	56.45	56.65	56.86

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced January 28, 2008.

a. For all component series except for the yield spread (the only national series) the values represent 12-month backward moving averages.

b. The agricultural futures price index is computed as the sum of the standardized symmetric percent changes in the four series, each weighted by the annual share of the commodity to Iowa cash farm income.

c. Arrows indicate the direction of the series' contribution to the ILII for the latest month.

d. Changes in unemployment 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. During December 2007 this component contributed 0.08 percent to the ILII value as the monthly new orders index value for December rose sharply above the November value.
- Agricultural futures price index: Composite measure of cattle, hogs, corn and soybeans futures prices weighted by the respective share of annual Iowa cash farm income. New information on 2006 income shares increased the weight on corn and decreased the weight on hogs. Changes are calculated based on a 12-month moving average of the futures price series, where cattle and hogs series also incorporate estimates of break-even costs. During December 2007 this component contributed 0.08 percent to the ILII value with a large rise in soybean prices, a moderate rise in corn prices, an improvement in cattle profits, and a small drop in hog profits.
- Diesel fuel consumption: Number of taxable gallons of diesel fuel sold in Iowa. Changes are calculated based on a 12-month moving average. During December 2007 this component contributed 0.06 percent to the ILII value as diesel fuel consumption for the month increased 4.4 percent relative to the prior year.
- Yield spread: Difference between the yield on 10-year Treasury bonds and 3-month Treasury notes. During December, the yield spread increased as the short-term rate fell 28 basis points while the long-term rate dropped just five. This component contributed 0.06 percent to the ILII value.
- Iowa stock market index: Capitalization-weighted index of 37 Iowa-based or Iowa-concentrated publicly-traded companies. Changes are calculated based on a 12-month moving average. During December 2007 this component contributed 0.04 percent to the ILII value as 15 of the 37 companies and 3 of the 15 financial-sector companies gained value during the month.
- 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. During December 2007 this component contributed -0.01 percent to the ILII value as December hours fell relative to November 2007 and December 2006.
- 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. During December 2007 this component contributed -0.02 percent to the ILII value. December 2007 unemployment claims came in 3.9 percent above December 2006.
- 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. During December 2007 this component contributed -0.09 percent to the ILII value. December permits were 48.7 percent below the number reported in December 2006, pulling down the 12-month moving average by 3.2 percent.

**Table 3. ILII Components and Standardization Factors for FY 2008**

Iowa Leading Indicator Components	Standardization Factor
Agricultural Futures Price Index	0.124
Iowa Stock Market Index	0.058
Yield Spread	0.247
Building Permits	0.029
Unemployment Claims	0.034
Average Weekly Hours	0.289
New Orders Index	0.055
Diesel Fuel Consumption	0.164

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced August 28, 2007. 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 2007 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 moving averages for all components except the yield spread, which is the only national series. 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 the summer.

## Comments

The Iowa Leading Indicators Index is designed to forecast the likely 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 indicators index. A movement in the ILII for only one month does not produce a clear signal, rather it is necessary to consider the direction of the index over several consecutive months. The Conference Board considers a contraction signal in the national leading indicators index reliable when two conditions are met: 1. the index declines by at least two percent over a six month period (using an annual rate); and, 2. a majority of the individual components also decline over those six months (six-month diffusion index less than 50.0).

The Iowa Non-Farm Employment Coincident Index measures the change in non-farm employment of all workers 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 designed to represent the current state of economic activity in Iowa.

The Employment Index and the ILII are constructed to have a value of 100 in the year 1999.