# Iowa Leading Indicators Index
# July 2006

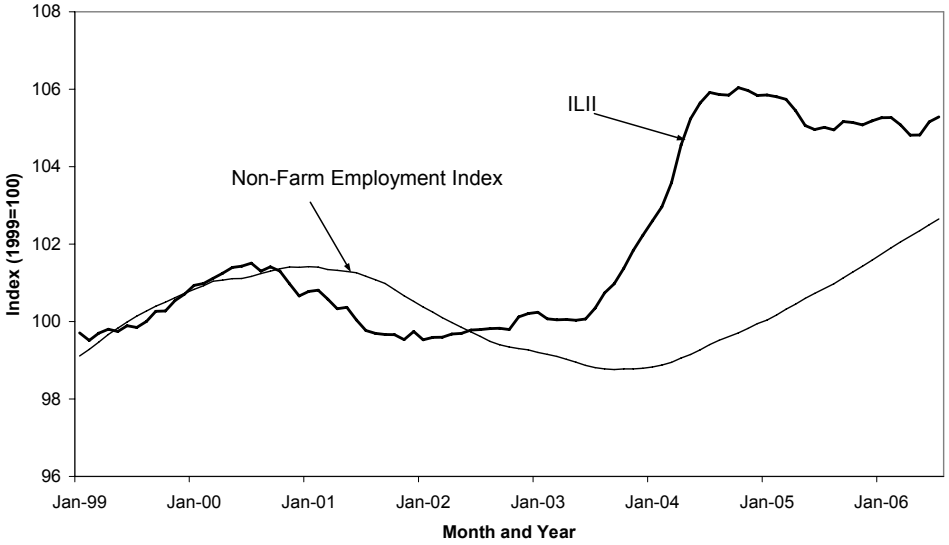
Iowa Department of Revenue
Tax Research and Program Analysis Section

The Iowa Leading Indicators Index (ILII) increased 0.1 percent in July 2006. The Iowa non-farm employment coincident index increased by 0.2 percent in July, the 32nd consecutive monthly increase.

The ILII's value in July reached 105.3 (100=1999). The index increased a revised 0.3 percent in June after remaining flat in May and falling by 0.3 percent in April. During the six-month span through July, the ILII was flat (a 0.0 percent annual rate). The six-month diffusion index (value of 50.0) reflects four of eight components increasing and the other four decreasing over the last half year.

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

**Figure 1. Iowa Leading Indicators Index and Iowa Non-Farm Employment Coincident Index: Jan. 1999-July 2006**



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

| Monthly Values | 2006 February | March | April | May | June | July |
|---|---|---|---|---|---|---|
| ILII | 105.3 | 105.1 | 104.8 | 104.8 | 105.2 | 105.3 |
| Percentage Change | 0.0% | -0.2% | -0.3% | 0.0% | 0.3% | 0.1% |
| Diffusion Index[a] | 43.8 | 37.5 | 31.3 | 43.8 | 75.0 | 62.5 |

| Six-Month Values | Aug to February | Sept to March | Oct to April | Nov to May | Dec to June | Jan to July |
|---|---|---|---|---|---|---|
| ILII | | | | | | |
| Percentage Change | 0.3% | -0.1% | -0.3% | -0.2% | 0.0% | 0.0% |
| Diffusion Index | 50.0 | 25.0 | 25.0 | 37.5 | 50.0 | 50.0 |

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced Sept 5, 2006
a. 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, components experiencing decreases greater than 0.05 percent are assigned a value of 0.0.

## Table 2. Iowa Leading Indicators Components: Six Month Overview

| Component Series Monthly Values[a] | | 2006 February | March | April | May | June | July |
|---|---|---|---|---|---|---|---|
| AFPI[b] | ↑[c] | | | | | | |
| Hog Profits (cents per pound) | | 14.5 | 13.6 | 12.6 | 11.9 | 12.6 | 13.1 |
| Corn (cents per bushel) | | 223.2 | 224.4 | 227.0 | 230.2 | 232.1 | 233.2 |
| Soybeans (cents per bushel) | | 628.1 | 624.3 | 620.3 | 616.9 | 609.3 | 602.1 |
| Cattle Profits (cents per pound) | | 3.6 | 3.2 | 2.4 | 1.7 | 1.5 | 1.8 |
| Iowa Stock Market Index (10=1984-86) | ↑ | 50.03 | 50.17 | 50.53 | 50.94 | 51.25 | 51.63 |
| Yield Spread (10-year less 3-month) | ↓ | 0.03 | 0.09 | 0.27 | 0.27 | 0.19 | 0.01 |
| Building Permits | ↓ | 1,405 | 1,357 | 1,296 | 1,279 | 1,274 | 1,236 |
| Average Weekly Unemployment Claims[d] | ↑ | 3,121 | 3,171 | 3,199 | 3,214 | 3,210 | 3,201 |
| Average Weekly Manufacturing Hours | ↑ | 41.6 | 41.5 | 41.3 | 41.3 | 41.5 | 41.7 |
| New Orders Index (percent) | ↓ | 59.0 | 58.6 | 58.5 | 59.3 | 59.8 | 59.6 |
| Diesel Fuel Consumption (mil gallons) | ↑ | 54.25 | 54.59 | 54.54 | 54.67 | 55.02 | 55.25 |

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced Sept 5, 2006
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

- 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 July 2006 this component contributed 0.13 percent to the ILII as the average weekly hours worked increased.

- Diesel fuel consumption: Number of taxable gallons of diesel fuel sold in Iowa. Changes are calculated based on a 12-month moving average. During July 2006 this component contributed 0.07 percent to the ILII increase as the number of gallons sold rose.

- Iowa stock market index: Capitalization-weighted index of 29 Iowa-based or Iowa-concentrated publicly traded companies. Changes are calculated based on a 12-month moving average. During July 2006 this component contributed 0.04 percent to the ILII increase as 15 of 29 companies gained value during the month.

- Agricultural futures price index: Composite measure of cattle, hogs, corn and soybeans futures prices weighted by the respective share of annual Iowa production value. 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 July 2006 this component contributed 0.02 percent to the ILII increase as corn prices, hog profits, and cattle profits were up with only soybean prices experiencing a drop.

- 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 July 2006 this component contributed 0.01 percent to the ILII increase as the number of initial claims fell slightly.

- 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 July 2006 this component contributed -0.01 percent to the ILII increase as the new orders index fell slightly.

- Yield spread: Difference between the yield on 10-year Treasury bonds and 3-month Treasury notes. During July 2006 this component contributed -0.04 percent to the ILII increase as the 10-year rate fell while the 3-month rate rose.

- 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 July 2006 this component contributed -0.09 percent to the ILII increase as the number of permits dropped.

## Table 3. ILII Components and Standardization Factors

| Iowa Leading Indicator Components | Standardization Factor |
|---|---|
| Agricultural Futures Price Index | 0.130 |
| Iowa Stock Market Index | 0.056 |
| Yield Spread | 0.236 |
| Building Permits | 0.030 |
| Unemployment Claims | 0.032 |
| Average Weekly Hours | 0.302 |
| New Orders Index | 0.053 |
| Diesel Fuel Consumption | 0.161 |

Source: Tax Research and Program Analysis Section, Iowa Department of Revenue, produced July 24, 2006
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 2006 period. These factors equalize the volatility of the contribution from each component and are normalized to 1. 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.

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.