

## News Release

Embargoed for release:

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### What is the National Activity Index?

The index is a weighted average of 85 indicators of national economic activity drawn from four broad categories of data: 1) production and income; 2) employment, unemployment, and hours; 3) personal consumption and housing; and 4) sales, orders, and inventories.

A zero value for the index indicates that the national economy is expanding at its historical trend rate of growth; negative values indicate below-average growth (in standard deviation units); and positive values indicate above-average growth.

### Why are there three index values?

Each month, we provide a monthly index, its three-month moving average, and a diffusion index. Month-to-month movements can be volatile, so the monthly index's three-month moving average, the CFNAI-MA3, provides a more consistent picture of national economic growth. The CFNAI Diffusion Index captures the degree to which a change in the monthly index is spread out among its 85 indicators, averaged over a three-month period.

### What do the numbers mean?

When the CFNAI-MA3 value moves below  $-0.70$  following a period of economic expansion, there is an increasing likelihood that a recession has begun. Conversely, when the CFNAI-MA3 value moves above  $-0.70$  following a period of economic contraction, there is an increasing likelihood that a recession has ended.

When the CFNAI-MA3 value moves above  $+0.70$  more than two years into an economic expansion, there is an increasing likelihood that a period of sustained increasing inflation has begun.

The next CFNAI will be released:

January 26, 2017

8:30 am Eastern Time

7:30 am Central Time

FEDERAL RESERVE BANK  
OF CHICAGO

# Chicago Fed National Activity Index

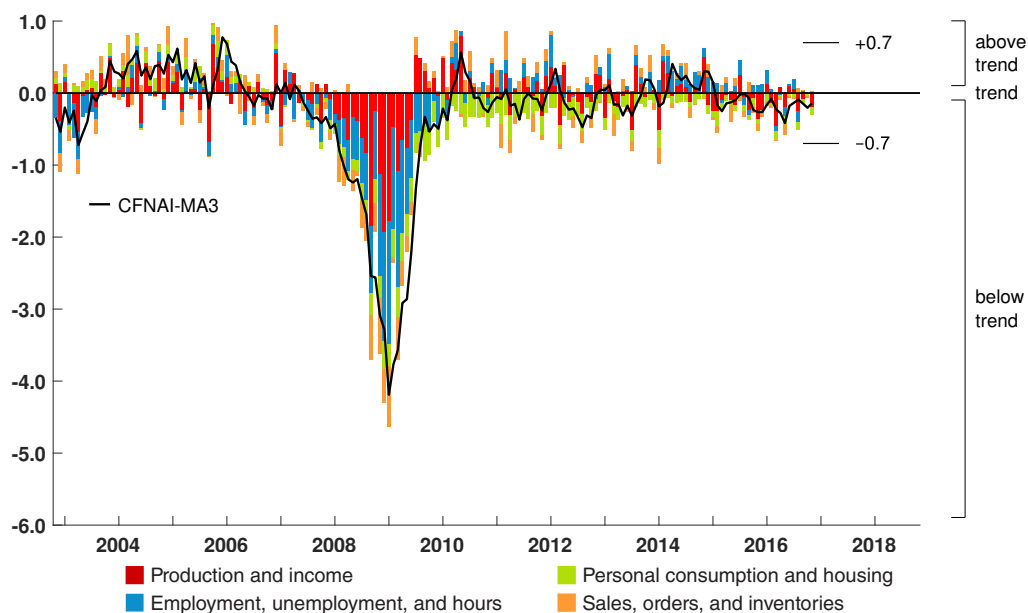
## Index shows economic growth decreased slightly in November

Led by declines in production-related indicators, the Chicago Fed National Activity Index (CFNAI) decreased to  $-0.27$  in November from  $-0.05$  in October. Two of the four broad categories of indicators that make up the index decreased from October, and two of the four categories made negative contributions to the index in November.

The index's three-month moving average, CFNAI-MA3, edged up to  $-0.14$  in November from  $-0.20$  in October. November's CFNAI-MA3 suggests that growth in national economic activity was slightly below its historical trend. The economic growth reflected in this level of the CFNAI-MA3 suggests subdued inflationary pressure from economic activity over the coming year.

The CFNAI Diffusion Index, which is also a three-month moving average, moved up to  $-0.15$  in November from  $-0.23$  in October. Thirty-one of the 85 individual indicators made positive contributions to the CFNAI in November, while 54 made negative contributions. Forty-one indicators improved from October to November, while forty-four indicators deteriorated. Of the indicators that improved, 17 made negative contributions.

Chicago Fed National Activity Index, by Categories, and CFNAI-MA3



### CFNAI, CFNAI-MA3, and CFNAI Diffusion for the Latest Six Months and Year-Ago Month

|                        | Nov '16 | Oct '16 | Sep '16 | Aug '16 | Jul '16 | Jun '16 | Nov '15 |
|------------------------|---------|---------|---------|---------|---------|---------|---------|
| <b>CFNAI</b>           |         |         |         |         |         |         |         |
| Current                | -0.27   | -0.05   | -0.11   | -0.45   | +0.12   | +0.06   | -0.41   |
| Previous               | N/A     | -0.08   | -0.23   | -0.52   | +0.14   | +0.06   | -0.41   |
| <b>CFNAI-MA3</b>       |         |         |         |         |         |         |         |
| Current                | -0.14   | -0.20   | -0.15   | -0.09   | -0.13   | -0.18   | -0.26   |
| Previous               | N/A     | -0.27   | -0.20   | -0.11   | -0.13   | -0.18   | -0.26   |
| <b>CFNAI Diffusion</b> |         |         |         |         |         |         |         |
| Current                | -0.15   | -0.23   | -0.10   | -0.02   | -0.05   | -0.20   | -0.21   |
| Previous               | N/A     | -0.35   | -0.16   | -0.01   | -0.04   | -0.20   | -0.21   |

Current and Previous values reflect index values as of the December 22, 2016, release and November 21, 2016, release, respectively. N/A indicates not applicable.

The contribution from production-related indicators to the CFNAI decreased to  $-0.20$  in November from  $-0.01$  in October. Total industrial production declined 0.4 percent in November after increasing 0.1 percent in October.

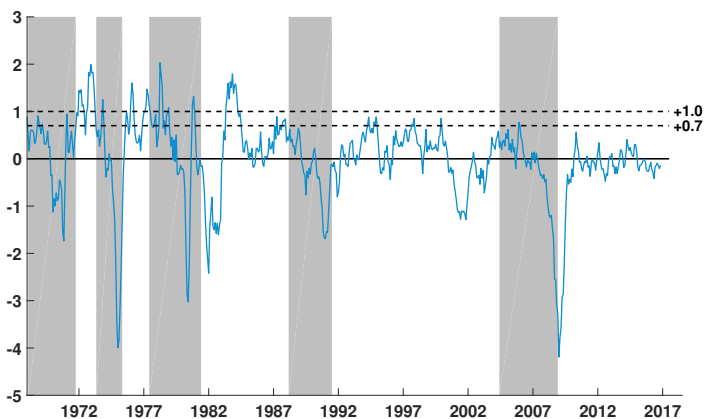
The contribution of the personal consumption and housing category to the CFNAI decreased to  $-0.10$  in November from  $-0.03$  in October. Housing starts fell to 1,090,000 annualized units in November from 1,340,000 in October, and housing permits decreased to 1,201,000 annualized units in November from 1,260,000 in the previous month.

Employment-related indicators contributed  $+0.02$  to the CFNAI in November, up slightly from  $+0.01$  in October. The civilian unemployment rate fell to 4.6 percent in November from 4.9 percent in October, and civilian nonagricultural employment increased by

135,000 in November after increasing by 77,000 in the previous month. The sales, orders, and inventories category made a contribution of  $+0.01$  to the CFNAI in November, up from  $-0.02$  in October.

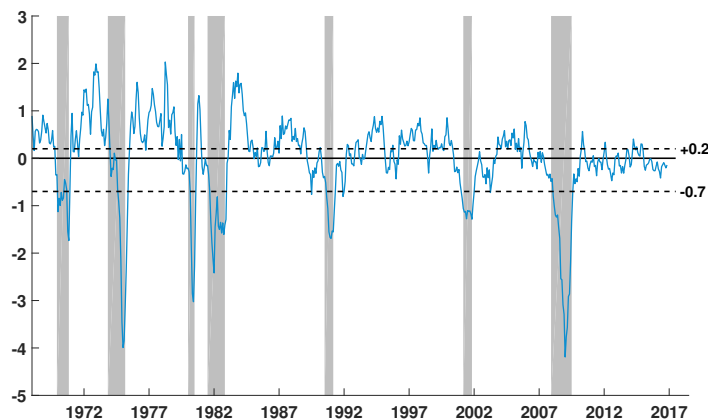
The CFNAI was constructed using data available as of December 16, 2016. At that time, November data for 49 of the 85 indicators had been published. For all missing data, estimates were used in constructing the index. The October monthly index value was revised to  $-0.05$  from an initial estimate of  $-0.08$ , and the September monthly index value was revised to  $-0.11$  from last month's estimate of  $-0.23$ . Revisions to the monthly index value can be attributed to two main factors: revisions in previously published data and differences between the estimates of previously unavailable data and subsequently published data. The revision to the October monthly index value was primarily due to the former, while the revision to the September monthly index value was primarily due to the latter.

### CFNAI-MA3 and Inflation Cycles



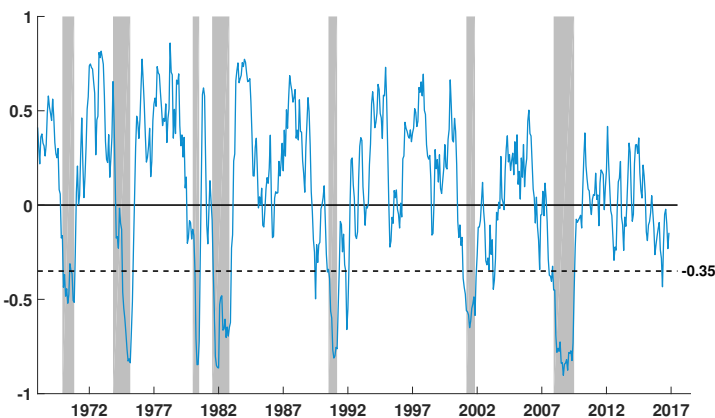
Notes: Shading represents periods of substantial inflation increases. A CFNAI-MA3 value above  $+0.70$  more than two years into an economic expansion indicates an increasing likelihood that a period of sustained increasing inflation has begun. A CFNAI-MA3 value above  $+1.00$  more than two years into an economic expansion indicates a substantial likelihood that a period of sustained increasing inflation has begun.

### CFNAI-MA3 and Business Cycles



Notes: Shading indicates official periods of recession as identified by the National Bureau of Economic Research. A CFNAI-MA3 value below  $-0.70$  following a period of economic expansion indicates an increasing likelihood that a recession has begun. A CFNAI-MA3 value above  $-0.70$  following a period of economic contraction indicates an increasing likelihood that a recession has ended. A CFNAI-MA3 value above  $+0.20$  following a period of economic contraction indicates a significant likelihood that a recession has ended.

### CFNAI Diffusion Index



Notes: Shading indicates official periods of recession as identified by the National Bureau of Economic Research. The CFNAI Diffusion Index represents the three-month moving average of the sum of the absolute values of the weights for the underlying indicators whose contribution to the CFNAI is positive in a given month less the sum of the absolute values of the weights for those indicators whose contribution is negative or neutral in a given month. Periods of economic expansion have historically been associated with values of the CFNAI Diffusion Index above  $-0.35$ .

### CFNAI, Monthly Index

