

## News Release

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### What is the National Activity Index?

The index is a weighted average of 85 indicators of growth in 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.

### Why are there three index values?

Each month, we provide a monthly index (the CFNAI), 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 instead 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?

A zero value for the monthly index has been associated with the national economy expanding at its historical trend (average) rate of growth; negative values with below-average growth (in standard deviation units); and positive values with above-average growth.

Periods of economic expansion have historically been associated with values of the CFNAI-MA3 above  $-0.70$  and the CFNAI Diffusion Index above  $-0.35$ . Conversely, periods of economic contraction have historically been associated with values of the CFNAI-MA3 below  $-0.70$  and the CFNAI Diffusion Index below  $-0.35$ .

An increasing likelihood of a period of sustained increasing inflation has historically been associated with values of the CFNAI-MA3 above  $+0.70$  more than two years into an economic expansion. Similarly, a substantial likelihood of a period of sustained increasing inflation has historically been associated with values of the CFNAI-MA3 above  $+1.00$  more than two years into an economic expansion.

The next CFNAI will be released:  
November 21, 2017  
8:30 am Eastern Time  
7:30 am Central Time

FEDERAL RESERVE BANK  
OF CHICAGO

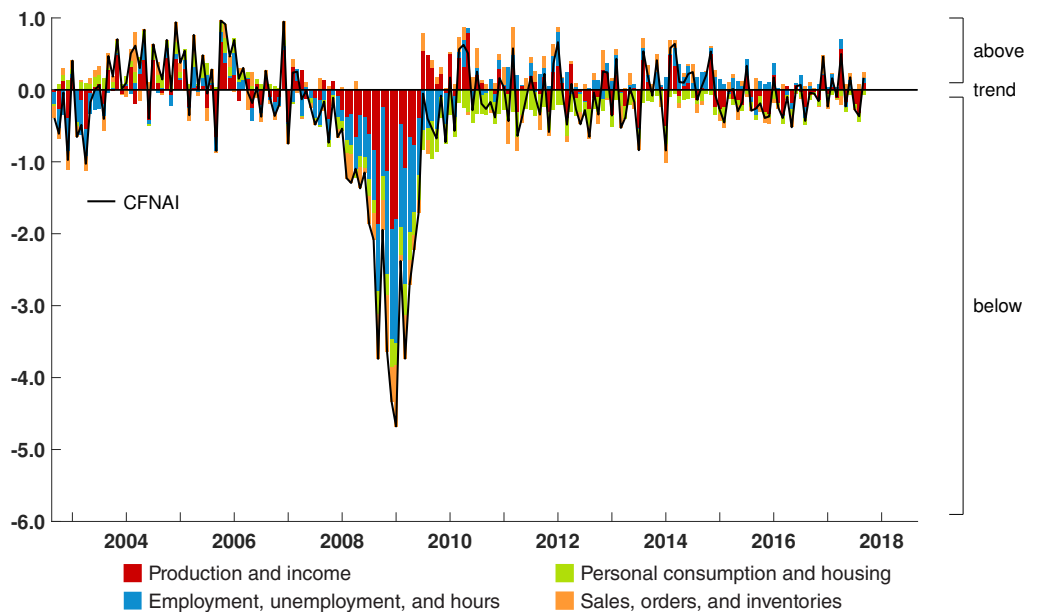
# Chicago Fed National Activity Index

## Index points to a pickup in economic growth in September

Led by improvements in production-related indicators, the Chicago Fed National Activity Index (CFNAI) moved up to  $+0.17$  in September from  $-0.37$  in August. All four broad categories of indicators that make up the index increased from August, and three of the four categories made positive contributions to the index in September. The index's three-month moving average, CFNAI-MA3, was unchanged at  $-0.16$  in September.

The CFNAI Diffusion Index, which is also a three-month moving average, ticked up to  $-0.19$  in September from  $-0.20$  in August. Forty-six of the 85 individual indicators made positive contributions to the CFNAI in September, while 39 made negative contributions. Fifty-four indicators improved from August to September, while 30 indicators deteriorated and one was unchanged. Of the indicators that improved, 17 made negative contributions.

### Chicago Fed National Activity Index, by Categories



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

	Sep '17	Aug '17	Jul '17	Jun '17	May '17	Apr '17	Sep '16
<b>CFNAI</b>							
Current	+0.17	-0.37	-0.27	+0.17	-0.23	+0.50	-0.04
Previous	N/A	-0.31	+0.03	+0.16	-0.20	+0.49	-0.04
<b>CFNAI-MA3</b>							
Current	-0.16	-0.16	-0.11	+0.15	+0.06	+0.19	-0.13
Previous	N/A	-0.04	0.00	+0.15	+0.06	+0.18	-0.13
<b>CFNAI Diffusion</b>							
Current	-0.19	-0.20	-0.13	+0.05	-0.01	+0.10	-0.16
Previous	N/A	-0.01	-0.01	+0.07	0.00	+0.10	-0.16

Current and Previous values reflect index values as of the October 23, 2017, release and September 25, 2017, release, respectively. N/A indicates not applicable.

The contribution from production-related indicators to the CFNAI increased to +0.10 in September from -0.33 in August. Total industrial production increased 0.3 percent in September after moving down 0.7 percent in August. The sales, orders, and inventories category also made a positive contribution to the CFNAI in September, edging up to +0.07 from +0.06 in August.

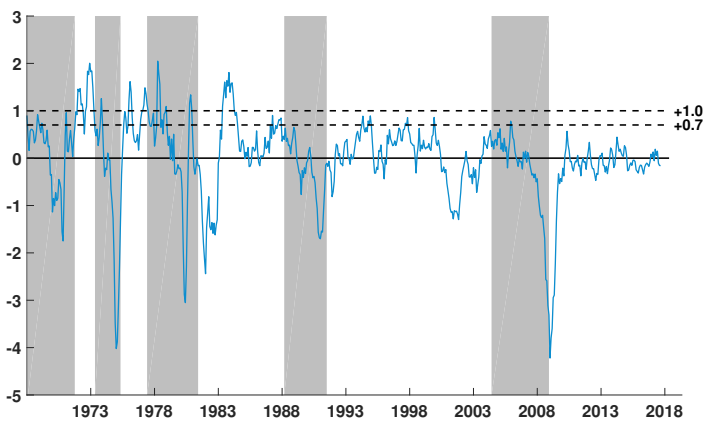
Employment-related indicators contributed +0.06 to the CFNAI in September, up from +0.01 in August. Civilian employment increased by 906,000 in September after decreasing by 74,000 in August, and the civilian unemployment rate moved down to 4.2 percent in September from 4.4 percent in the previous month. However, non-farm payrolls decreased by 33,000 in September after increasing by 169,000 in August.

The contribution of the personal consumption and housing category to the CFNAI increased to -0.07 in September from -0.11 in August. Consumption indicators improved, on balance, pushing

up the category's overall contribution. However, housing starts decreased to 1,127,000 annualized units in September from 1,183,000 in August, and housing permits decreased to 1,215,000 annualized units in September from 1,272,000 in the previous month.

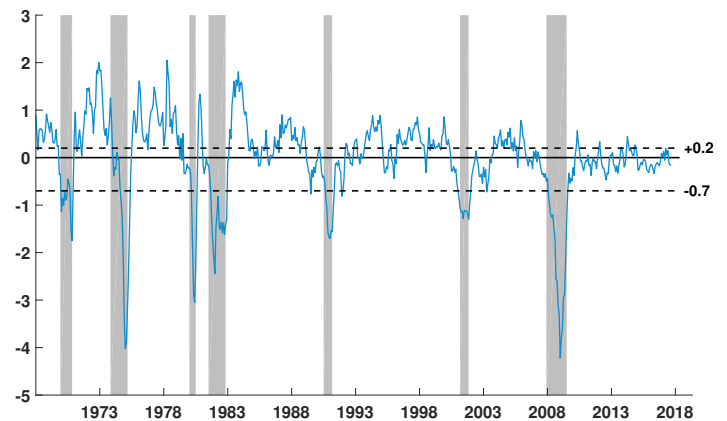
The CFNAI was constructed using data available as of October 19, 2017. At that time, September data for 51 of the 85 indicators had been published. For all missing data, estimates were used in constructing the index. The August monthly index value was revised to -0.37 from an initial estimate of -0.31, and the July monthly index value was revised to -0.27 from last month's estimate of +0.03. Revisions to the monthly index 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 August monthly index value was primarily due to the latter, while the revision to the July monthly index value was primarily due to the former.

### CFNAI-MA3 and Inflation Cycles



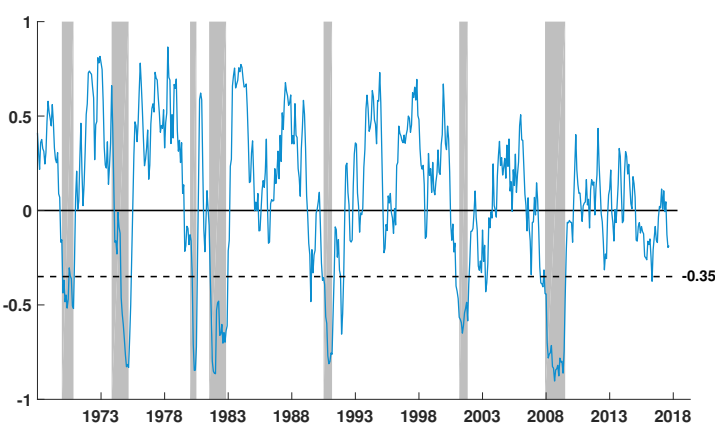
Notes: Shading represents periods of sustained increasing inflation. An increasing likelihood of a period of sustained increasing inflation has historically been associated with values of the CFNAI-MA3 above +0.70 more than two years into an economic expansion. Similarly, a substantial likelihood of a period of sustained increasing inflation has historically been associated with values of the CFNAI-MA3 above +1.00 more than two years into an economic expansion.

### CFNAI-MA3 and Business Cycles



Notes: Shading indicates official periods of recession as identified by the National Bureau of Economic Research. Following a period of economic expansion, an increasing likelihood of a recession has historically been associated with a CFNAI-MA3 value below -0.70. Conversely, following a period of economic contraction, an increasing likelihood of an expansion has historically been associated with a CFNAI-MA3 value above +0.20.

### 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

