

# News You Can Use

## An Introduction to Chicago Fed Indexes



## The Chicago Fed National Activity Index (CFNAI)

A *monthly* summary statistic for U.S. economic growth.

- Weighted average of 85 indicators of U.S. economic activity
- Weights capture the relative importance to historical fluctuations
- Estimated by principal components analysis
- Covers *four* broad categories of data
  - ① *Production and Income*: e.g., Industrial Production
  - ② *Employment, Unemployment, and Hours*: e.g., Payroll Employment
  - ③ *Personal Consumption and Housing*: e.g., Housing Starts
  - ④ *Sales, Orders, and Inventories*: e.g., Manufacturing & Trade Sales
- First introduced in Evans, Liu, and Pham-Kanter (2001)
- Released toward the *end* of each month at [chicagofed.org/cfnai](http://chicagofed.org/cfnai)



## Proven track record of success over the past 16 years

- 1 95% accuracy in identifying U.S. recessions and expansions
  - Berge and Jorda (2011)
- 2 Led NBER recession dating by 6-18 months in **real time**
  - Brave and Butters (2010)
- 3 Used to “nowcast” GDP growth and forecast inflation
  - Brave and Butters (2014)
- 4 Also, to identify “trend” GDP growth
  - Brave and Butters (2013)
- 5 Leading indicator of inflationary pressures
  - Fisher (2000)



## Interpreting the CFNAI

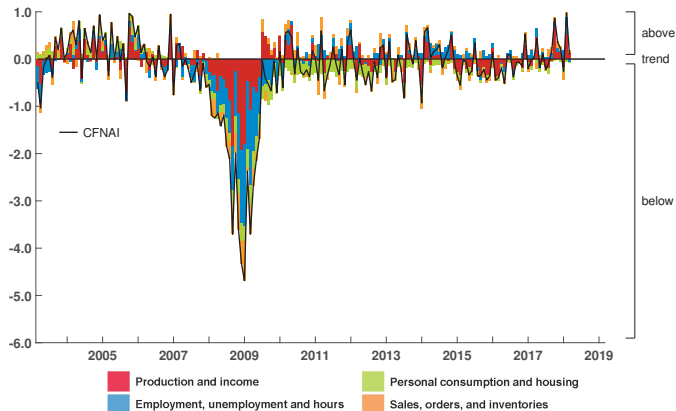
Simple interpretation...a “*Goldilocks*” index

- A value of zero reflects an economy growing at *trend*
- Positive values indicate *above-average* growth
- Negative values indicate *below-average* growth
- Scale is in standard deviations from trend growth

To highlight business cycles and inflationary pressures, focus is given to a 3-month moving average of the index, i.e., the CFNAI-MA3.



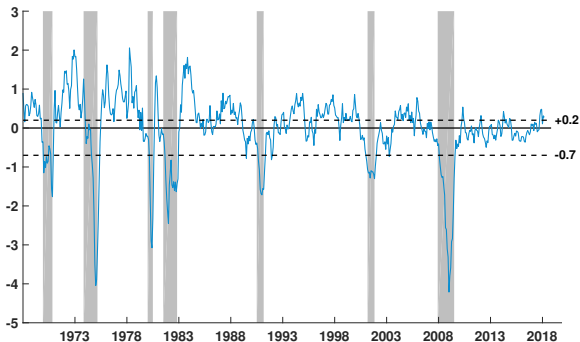
## The CFNAI and its Components



## Background Information



## CFNAI-MA3 and Business Cycles

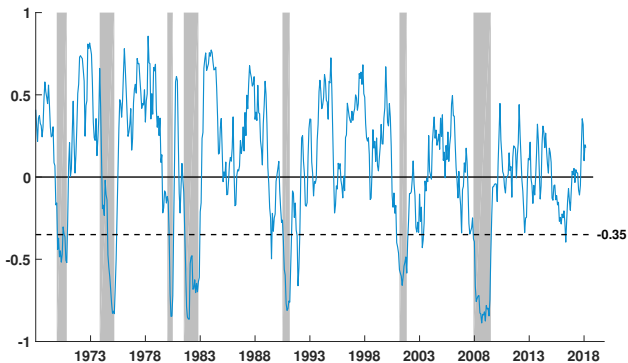


Above  $-0.7$  characteristic of periods of economic expansion

Below  $-0.7$  increasing chance of *recession* | Above  $+0.2$  significant chance of *recovery*

## The Chicago Fed National Activity Index and Business Cycles

## CFNAI Diffusion Index

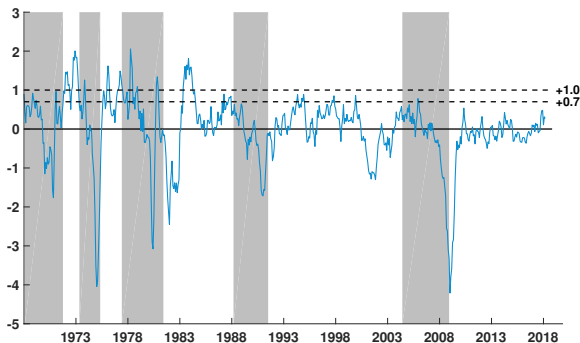


Above  $-0.35$  characteristic of periods of economic expansion

## A Different Way to Review the Chicago Fed National Activity Index



## CFNAI-MA3 and Inflation Cycles



More than 2 years into an economic expansion

Above +0.7 increasing chance of *sustained rising inflation* | Above +1.0 substantial

## Forecasting Inflation with a Lot of Data



## CFNAI Historical (Real-time) Data

### Median Absolute Values of Month-to-Month Revisions

Series	T-1	T-2	T-3	T-4	T-5
CFNAI	0.10	0.09	0.05	0.02	0.02
P&I	0.07	0.04	0.03	0.01	0.01
EU&H	0.04	0.02	0.00	0.00	0.00
C&H	0.02	0.01	0.01	0.00	0.00
SO&I	0.02	0.07	0.02	0.00	0.00
CFNAI-MA3	0.05	0.04	0.02	0.01	0.01
CFNAI Diffusion	0.04	0.04	0.01	0.01	0.01

Note: T denotes the last month of the index at the time of release.

Revisions to index due to data revisions and estimates of previously unavailable data



Additional information available at [chicagofed.org/research/data/index](https://chicagofed.org/research/data/index)

Contacts:

Laura LaBarbera  
Media Relations  
Federal Reserve Bank of Chicago  
312-322-2387

Scott Brave  
Economic Research  
Federal Reserve Bank of Chicago  
312-322-5784  
[sbrave@frbchi.org](mailto:sbrave@frbchi.org)

