



Greater St. Louis Economic Development Network



Recession Risk Is Elevated in 2016

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William R. Emmons
Federal Reserve Bank of St. Louis
William.R.Emmons@stls.frb.org

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Recession Risk Is Elevated in 2016

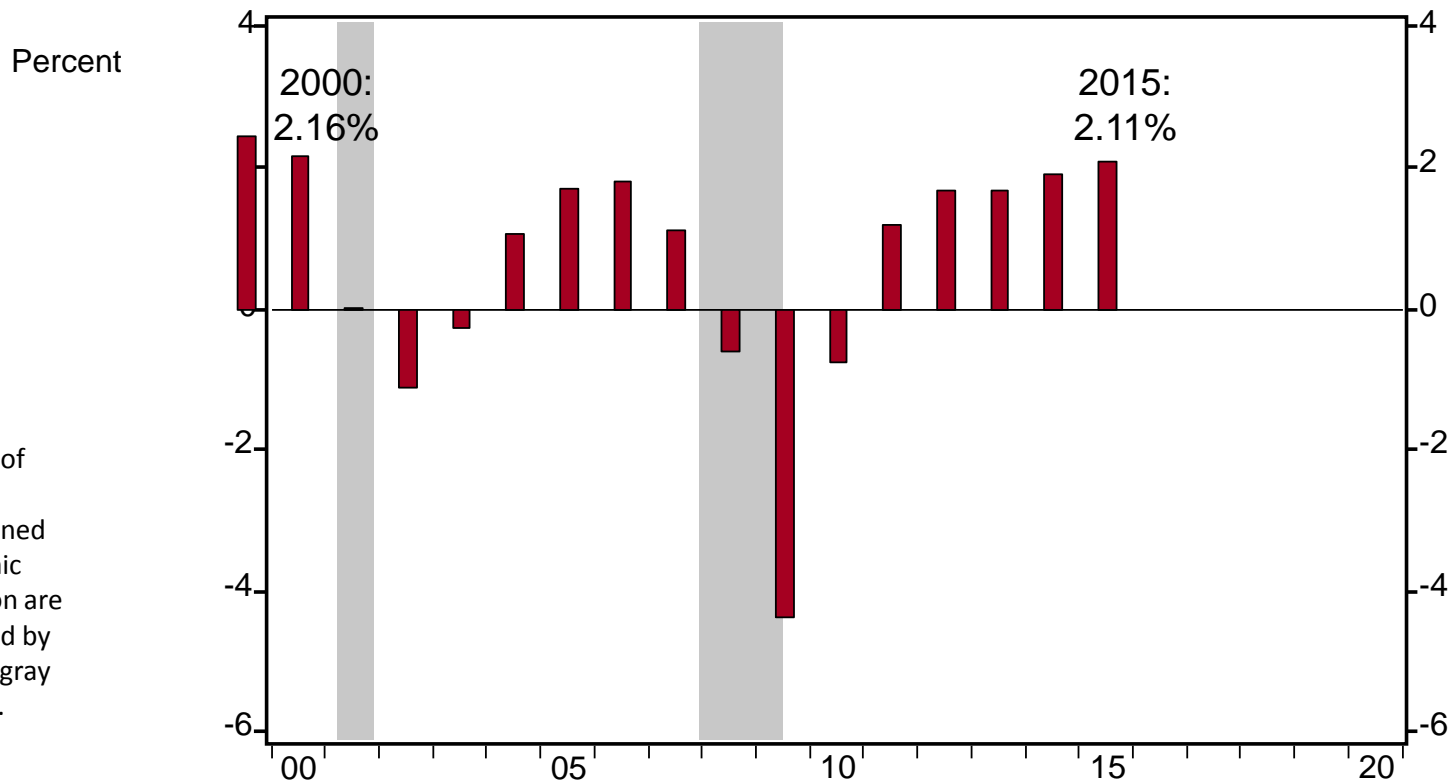
- **The US and St. Louis economies faced headwinds in 2015.**
 - **Strongest U.S. job growth and consumer spending in a decade or more, but household income growth remains sluggish.**
 - **Businesses, the government sector and international trade are subtracting from growth.**
- **Housing and mortgage markets: Mixed messages**
 - **U.S. house prices, construction and sales are rising but the homeownership rate is falling.**
 - **St. Louis housing and mortgage quality are recovering steadily.**
- **Recession indicators suggest caution in 2016.**
 - **The stock market, corporate-bond spreads, corporate profits and the Chicago Fed's recession model all signal moderate recession risks.**
 - **My evaluation of the odds for a U.S. recession in 2016: 1 in 4.**



Best U.S. Job Growth Since 2000

Annual Change in Employment

Percent



Source: Bureau of Labor Statistics

Annual thru 2015

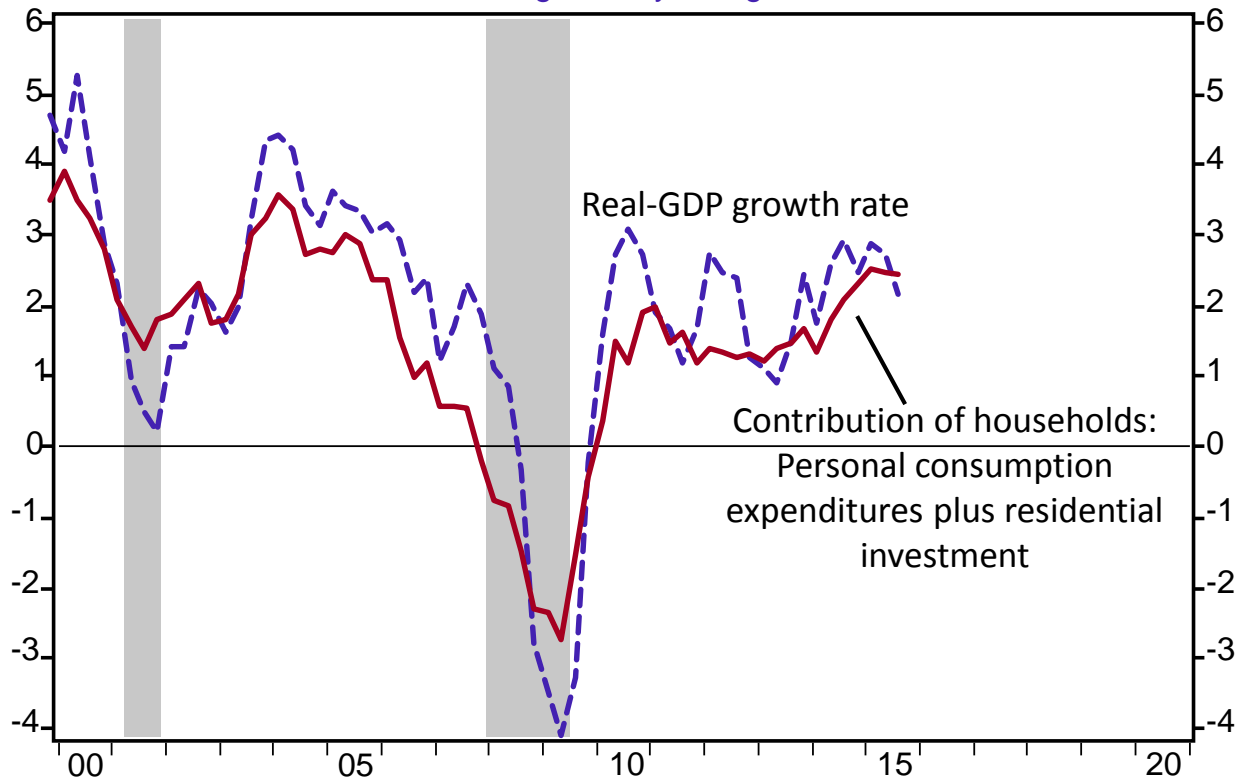


Strongest U.S. Consumer Spending Since 2005

IHs' Contribution to Real-GDP Growth: Consumer Spending + Res. Inv.
 Percentage points; 4-quarter moving average

Growth Rate of Real GDP
 Percent change from year ago

GDP: Percent;
 Contribution:
 Percentage points



Periods of NBER-determined economic recession are indicated by vertical gray shading.

Source: Bureau of Economic Analysis

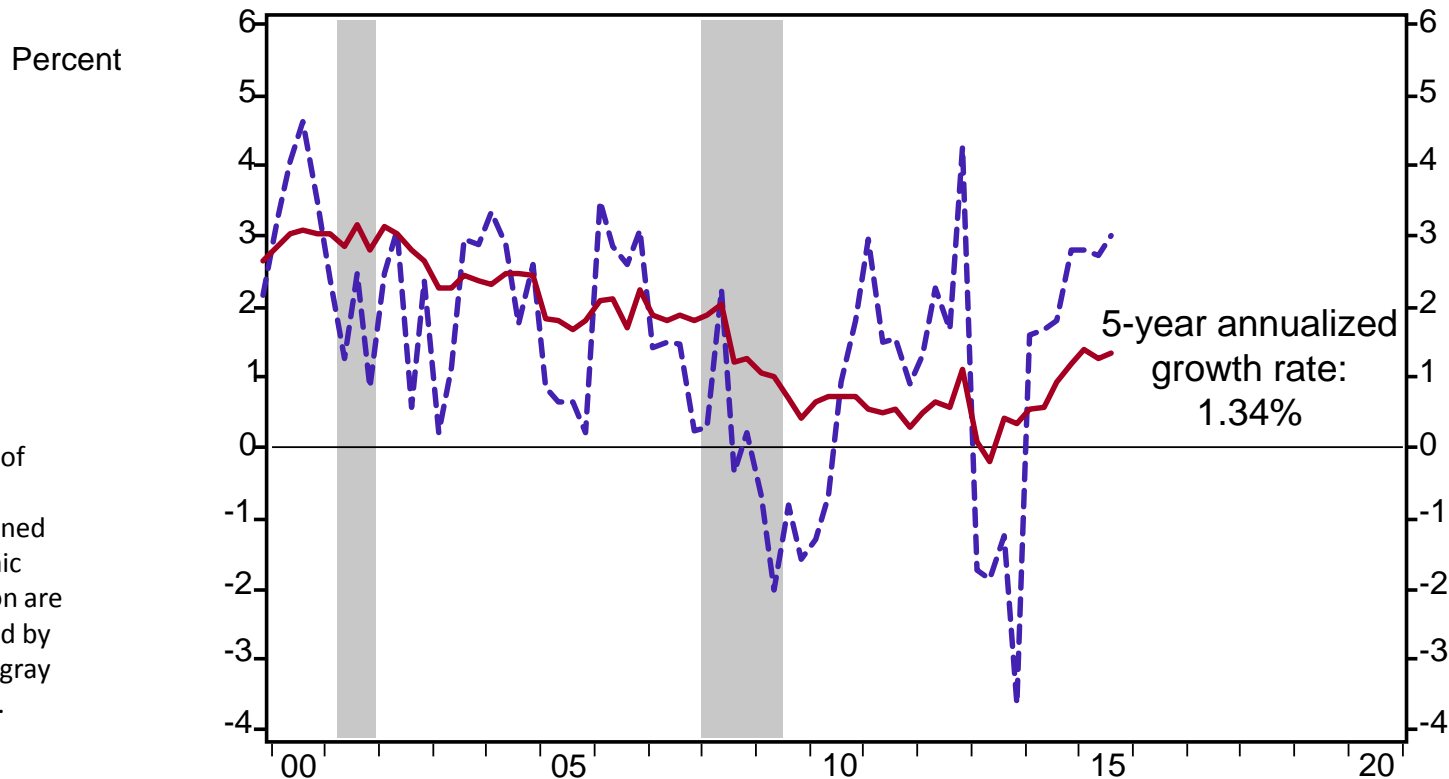
Quarterly thru Q3.2015



But Income Growth Has Not Been Consistently Strong

Year Annualized Growth of Real Disposable Personal Income per Capita
Percent

1-Year Growth of Real Disposable Personal Income per Capita
Percent



Source: Bureau of Economic Analysis

Quarterly thru Q3.2015

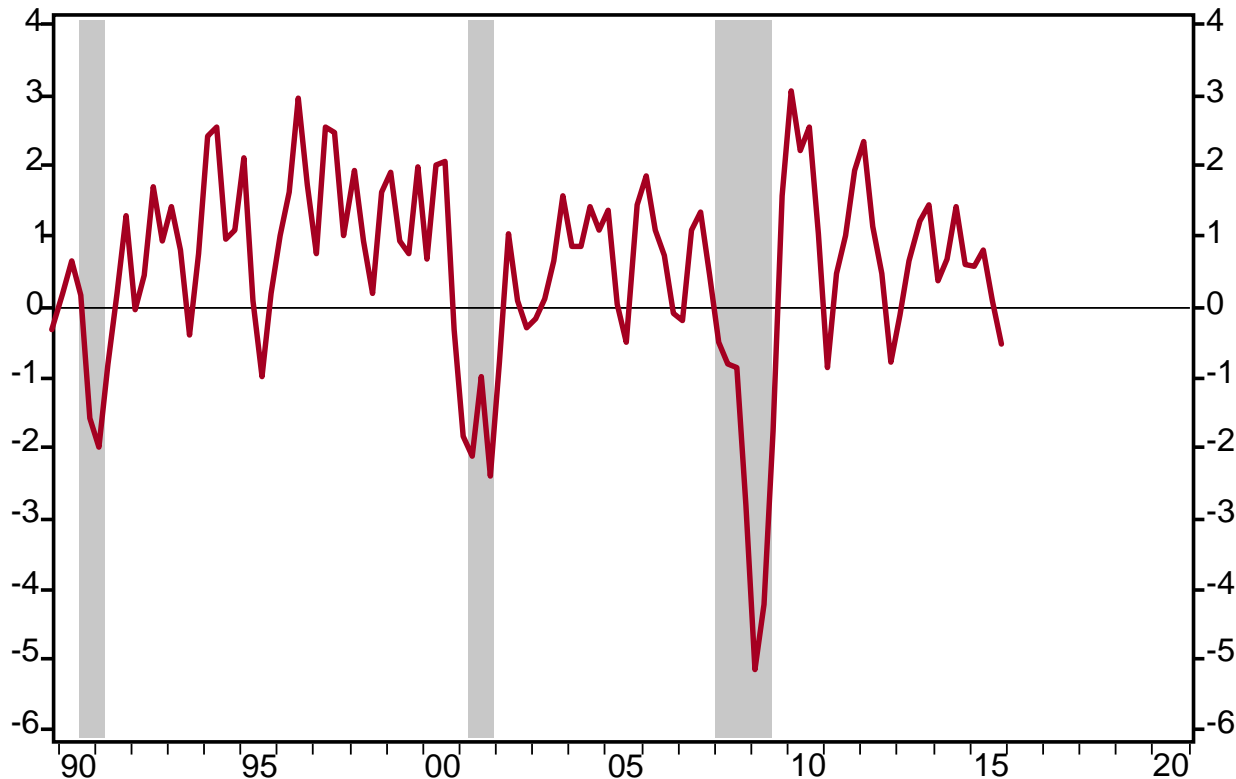


Business Investment Is Subtracting From Economic Growth

Contribution of Business Investment to GDP Growth

2-quarter moving average percentage points

Percentage points



Source: Bureau of Economic Analysis

Quarterly thru Q4.2015

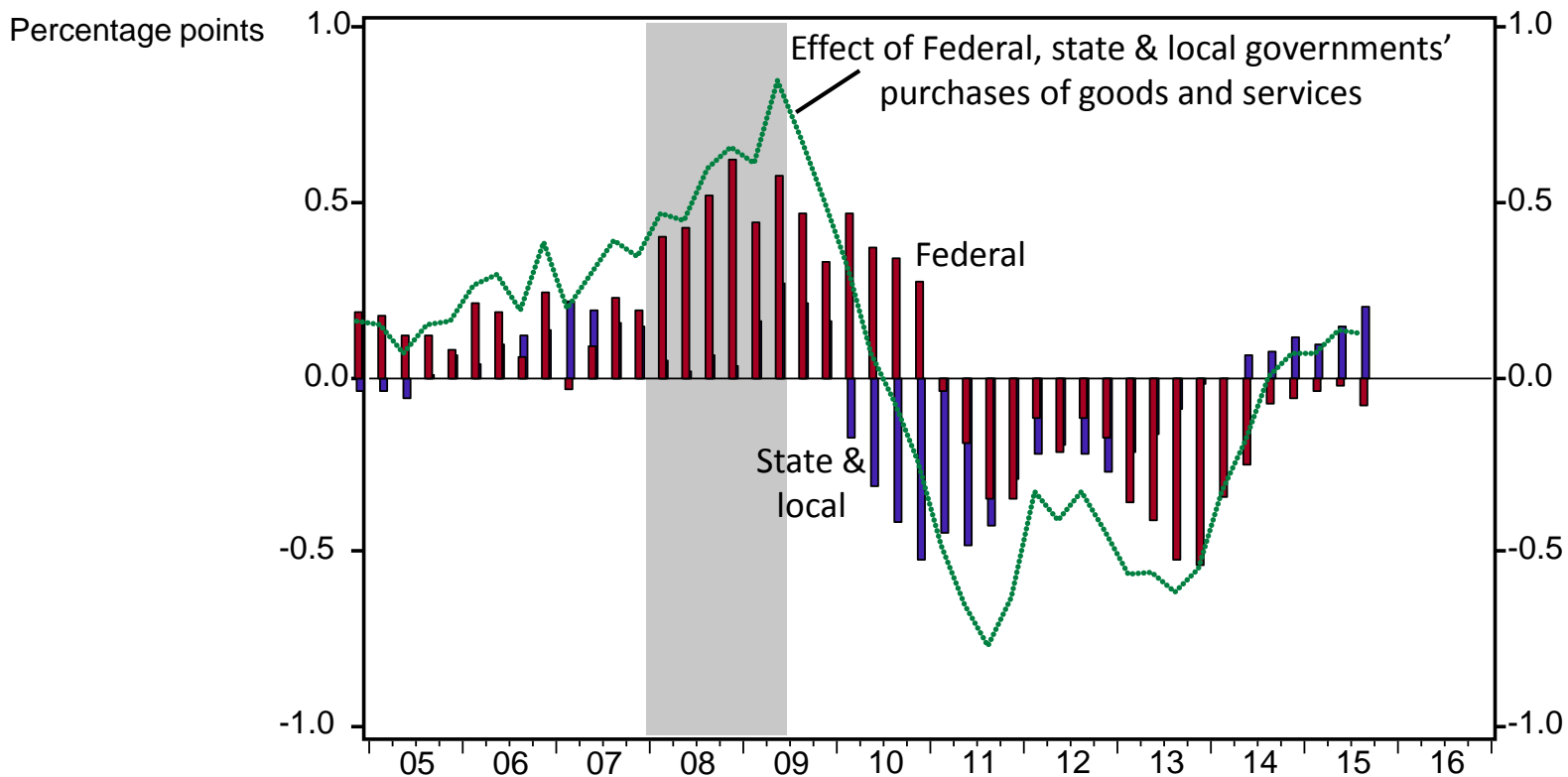


Declining Direct Government Purchases of Goods and Services Slowed Recovery

Contribution to GDP Growth of Federal Expenditures (4-qtr. moving avg)

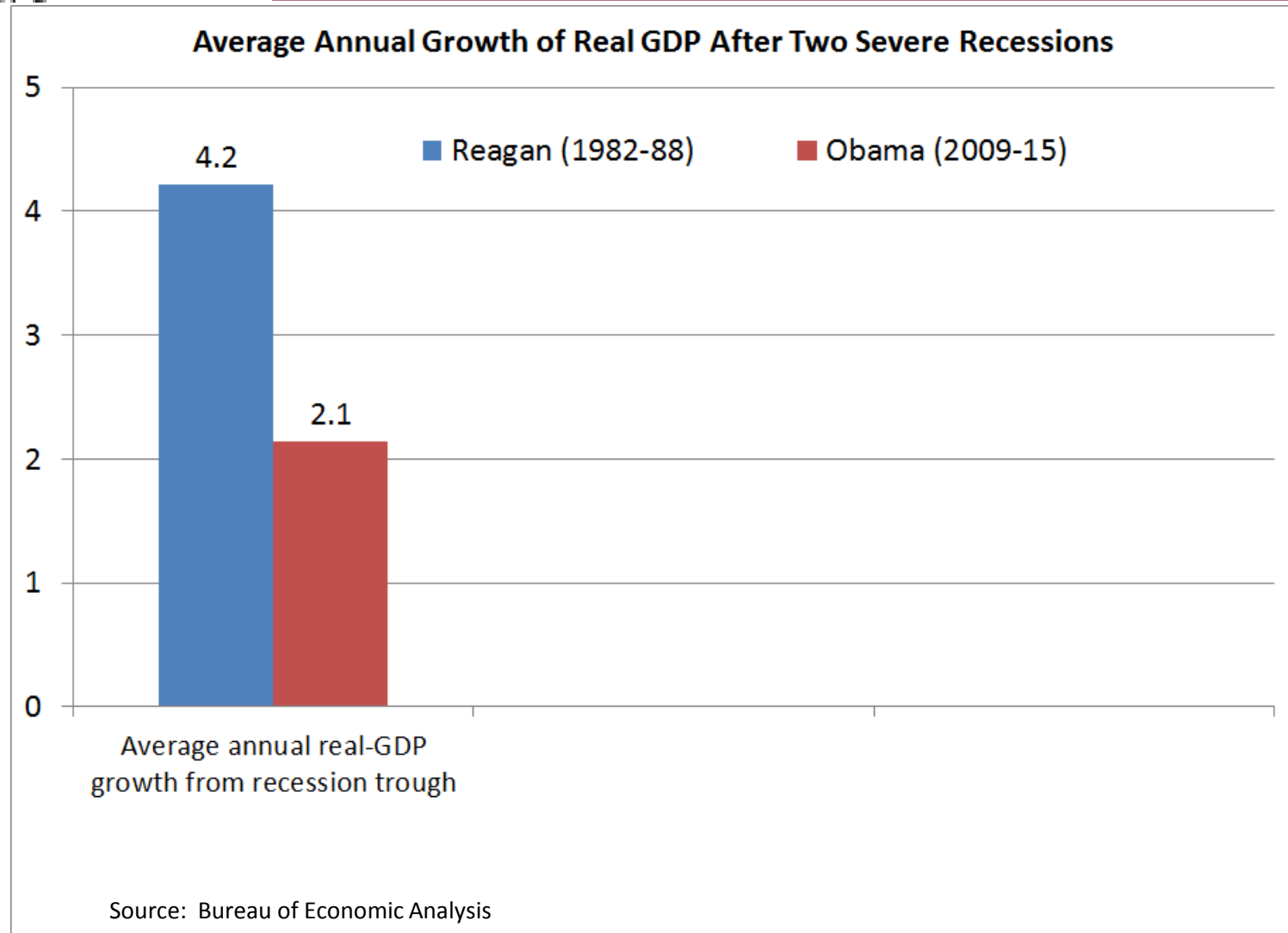
Contribution to GDP Growth of State/Local Expenditures (4-qtr. moving avg)

Contribution to GDP Growth of All Govt. Expenditures (4-qtr. moving avg)



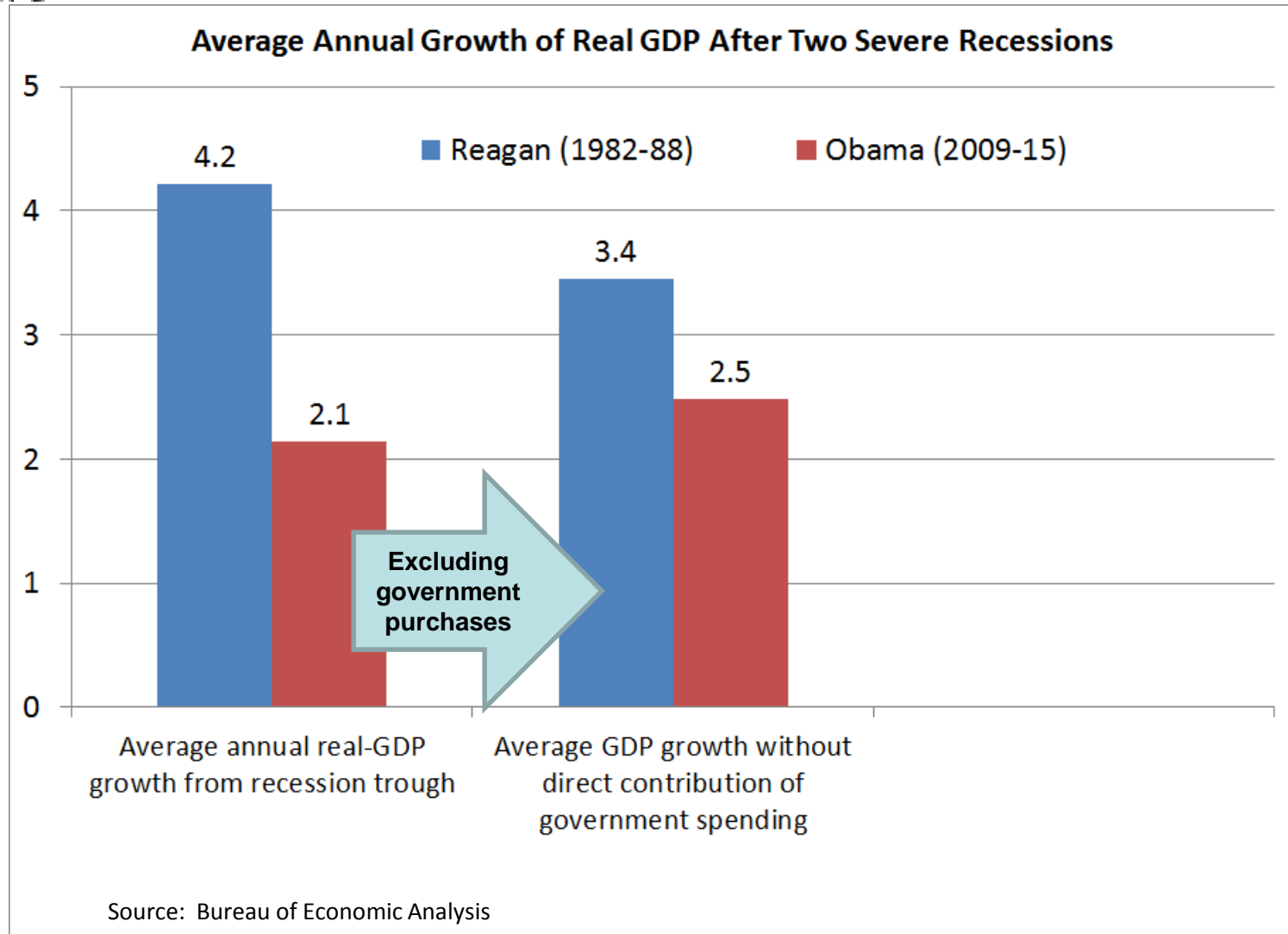


Austerity Disguised Similar Underlying Strength of Reagan and Obama Recoveries



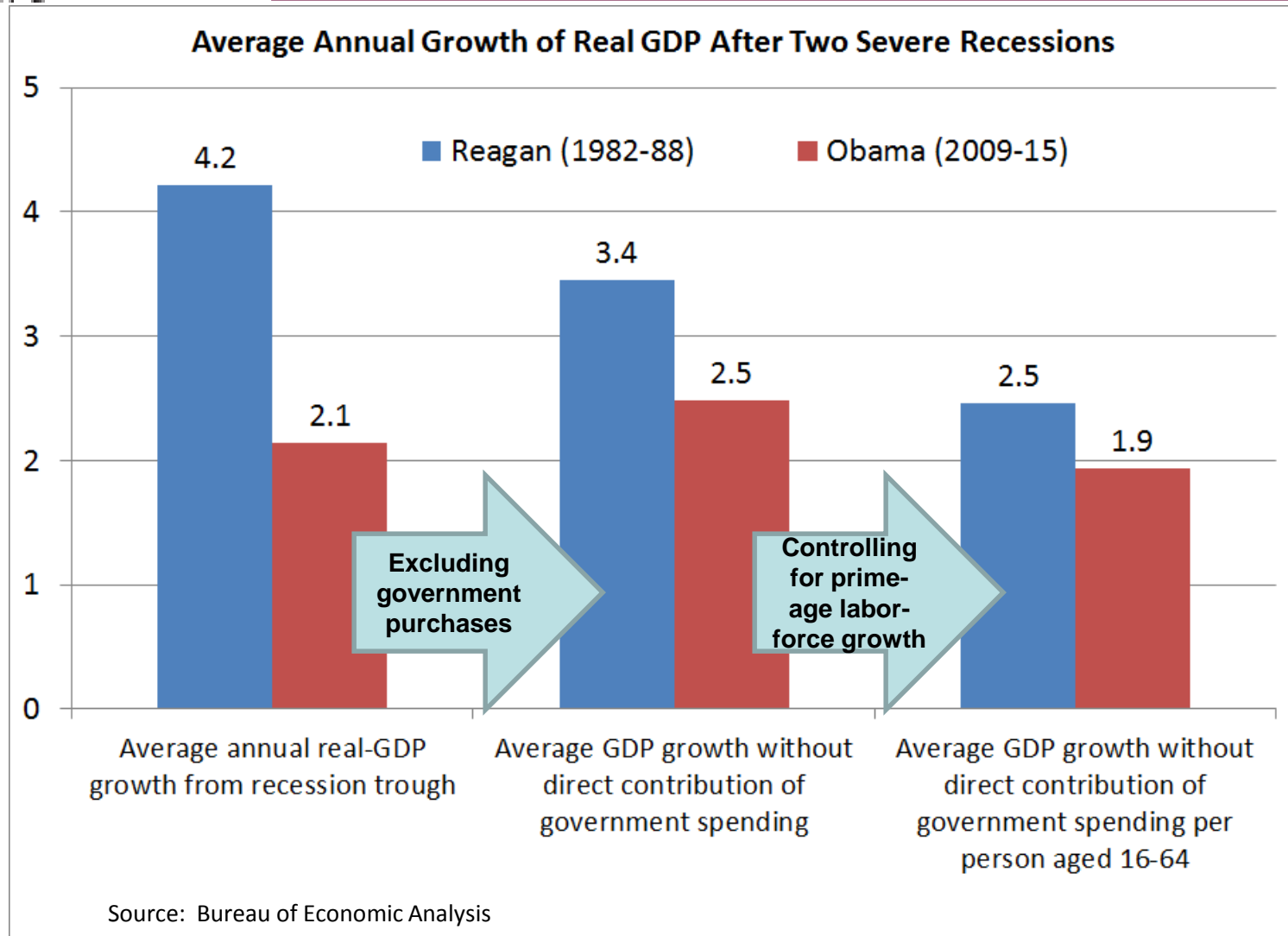


Austerity Disguised Similar Underlying Strength of Reagan and Obama Recoveries





Austerity Disguised Similar Underlying Strength of Reagan and Obama Recoveries

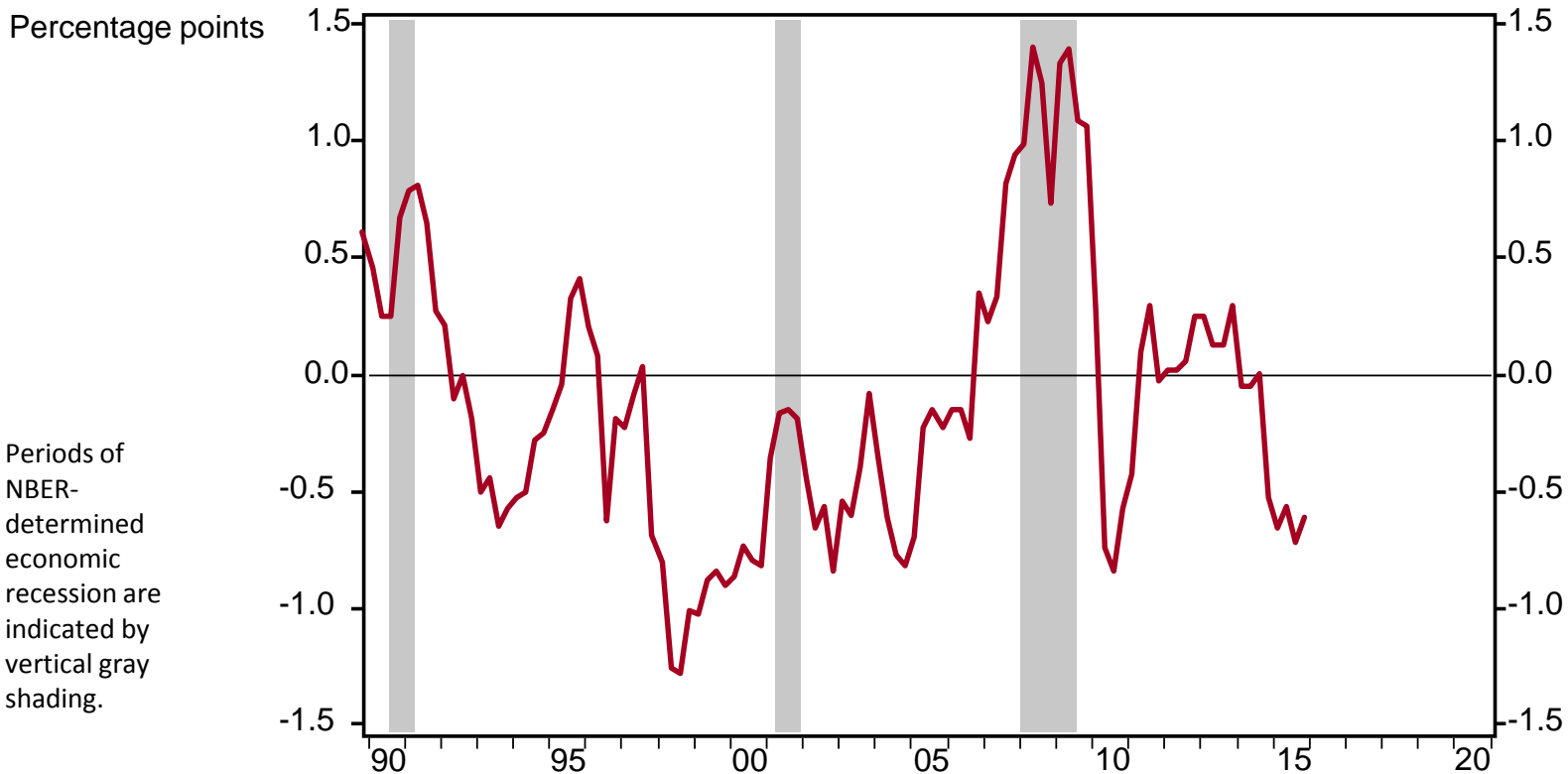




International Trade Is Subtracting A Half Point From Growth

Contribution of Net Exports of Goods & Services to GDP Growth

4-quarter moving average percentage points



Source: Bureau of Economic Analysis

Quarterly thru Q4.2015

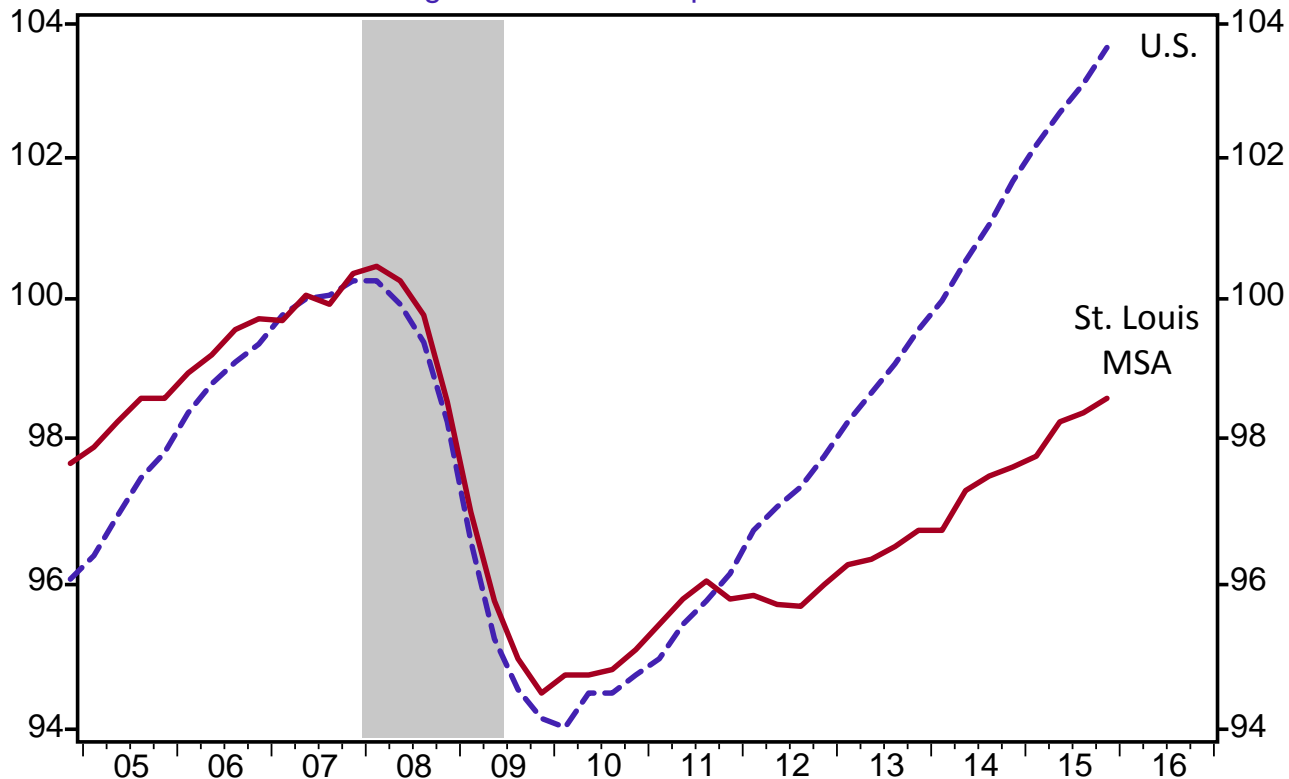


St. Louis MSA Employment Growth Trails the Nation...

St. Louis MSA Nonfarm Payroll Employment
Average level in 2007 equals 100

U.S. Nonfarm Payroll Employment
Average level in 2007 equals 100

Index levels equal 100 in 2007



Periods of NBER-determined economic recession are indicated by vertical gray shading.

Source: Bureau of Labor Statistics

Quarterly thru Q4.2015

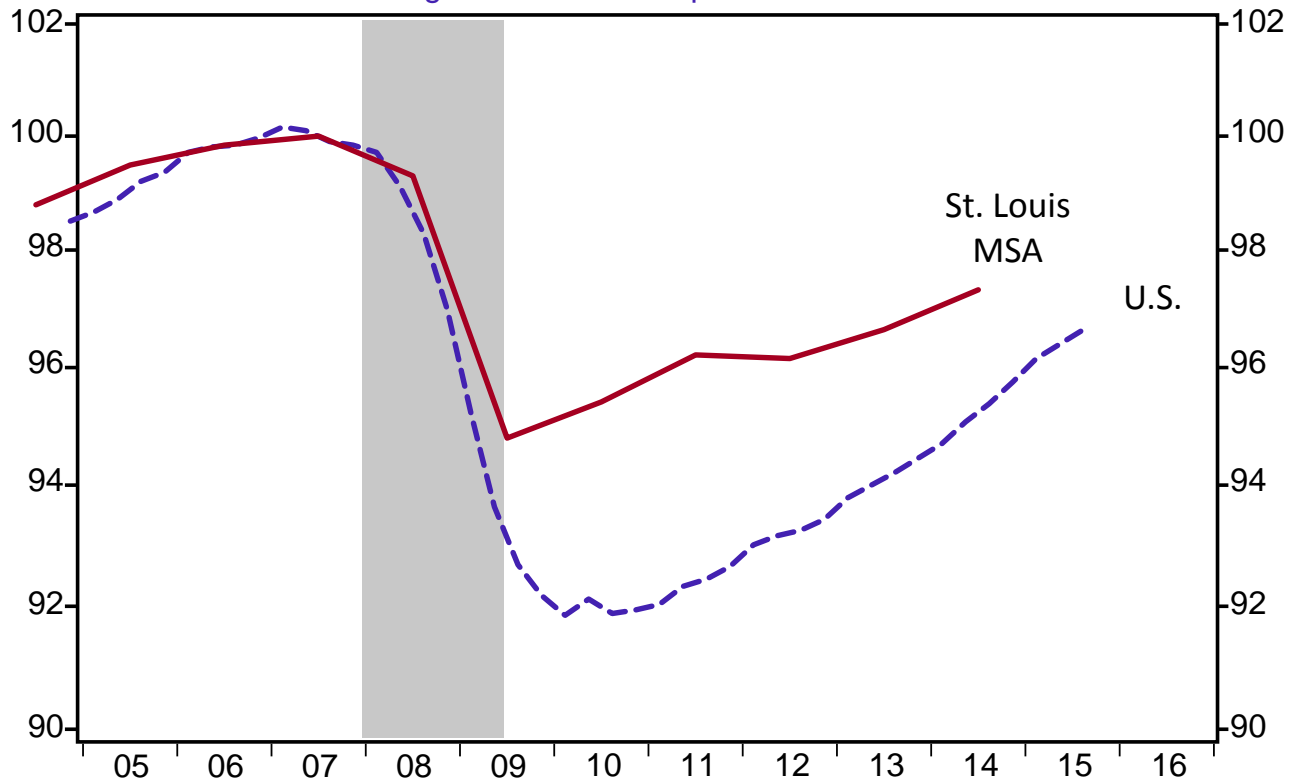


... But We Do Better Than the Nation On A Per-Capita Basis

St. Louis MSA Nonfarm Payroll Employment Per Capita
Average level in 2007 equals 100

U.S. Nonfarm Payroll Employment Per Capita
Average level in 2007 equals 100

Index levels equal 100 in 2007



Periods of NBER-determined economic recession are indicated by vertical gray shading.



Summary of Economic Conditions at the End of 2015

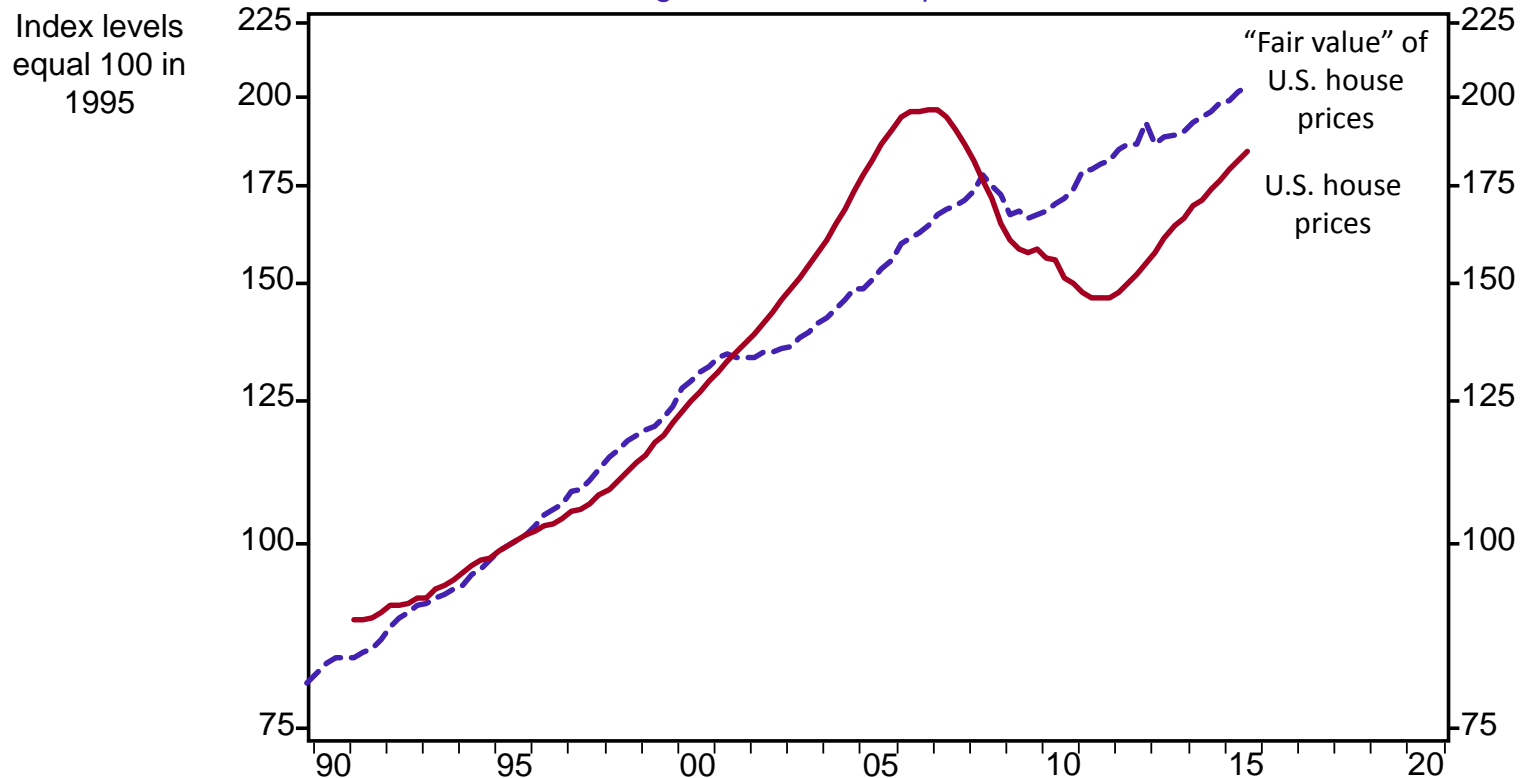
- **Consumers are the only game in town, accounting for virtually 100% of economic growth.**
- **Business investment and profits are soft.**
- **Government austerity is easing but still dragging on growth.**
- **International trade is hampering growth.**
- **St. Louis employment growth is slow mainly due to slow population growth.**



Nationwide Housing Recovery Continues

U.S. House-Price Index (FHFA Expanded Data)
Average level in 1995 equals 100

U.S. Per-Capita Personal Income
Average level in 1995 equals 100

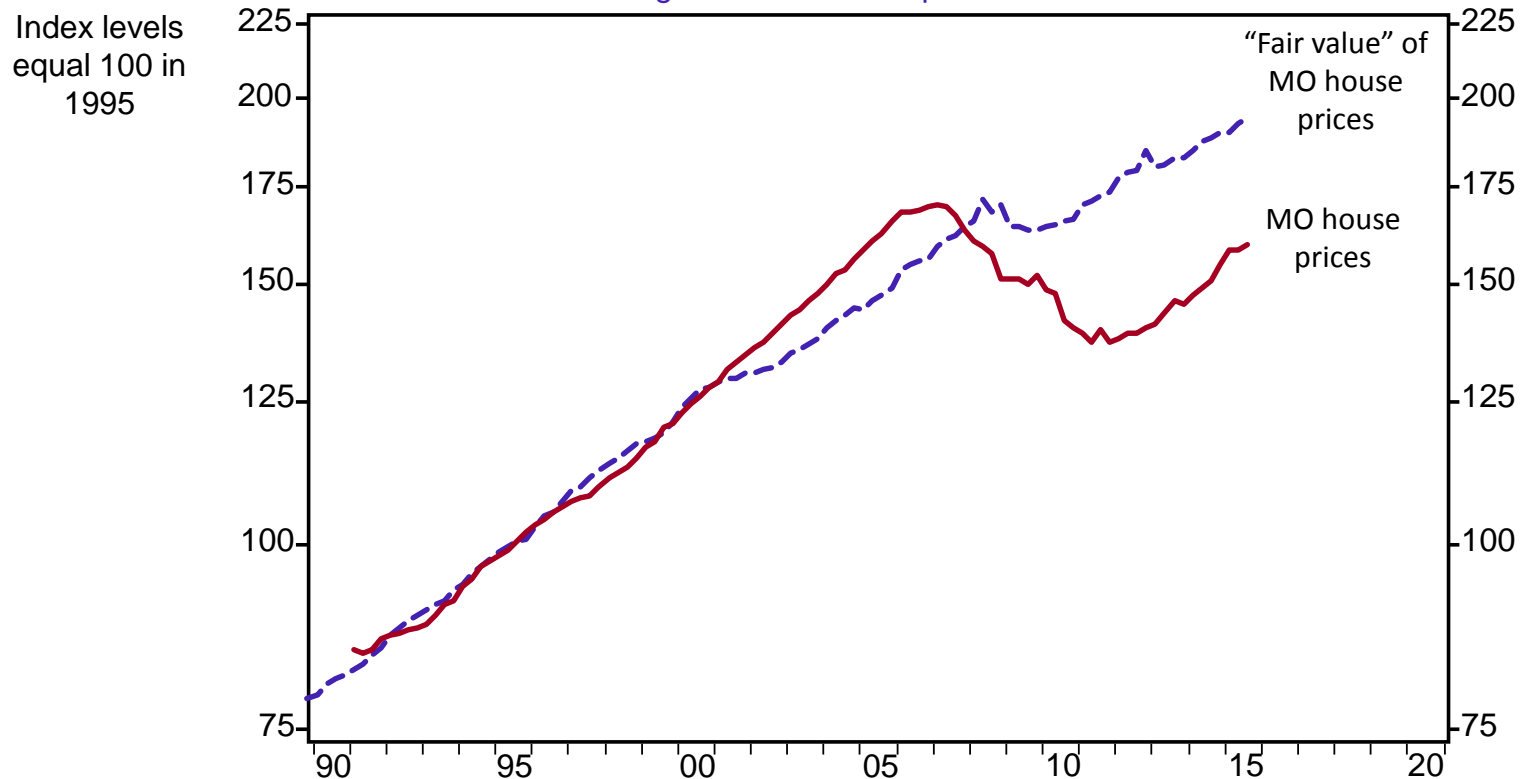




Missouri Housing Remains Very Affordable

Missouri House-Price Index (FHFA Expanded Data)
Average level in 1995 equals 100

Missouri Per-Capita Personal Income
Average level in 1995 equals 100

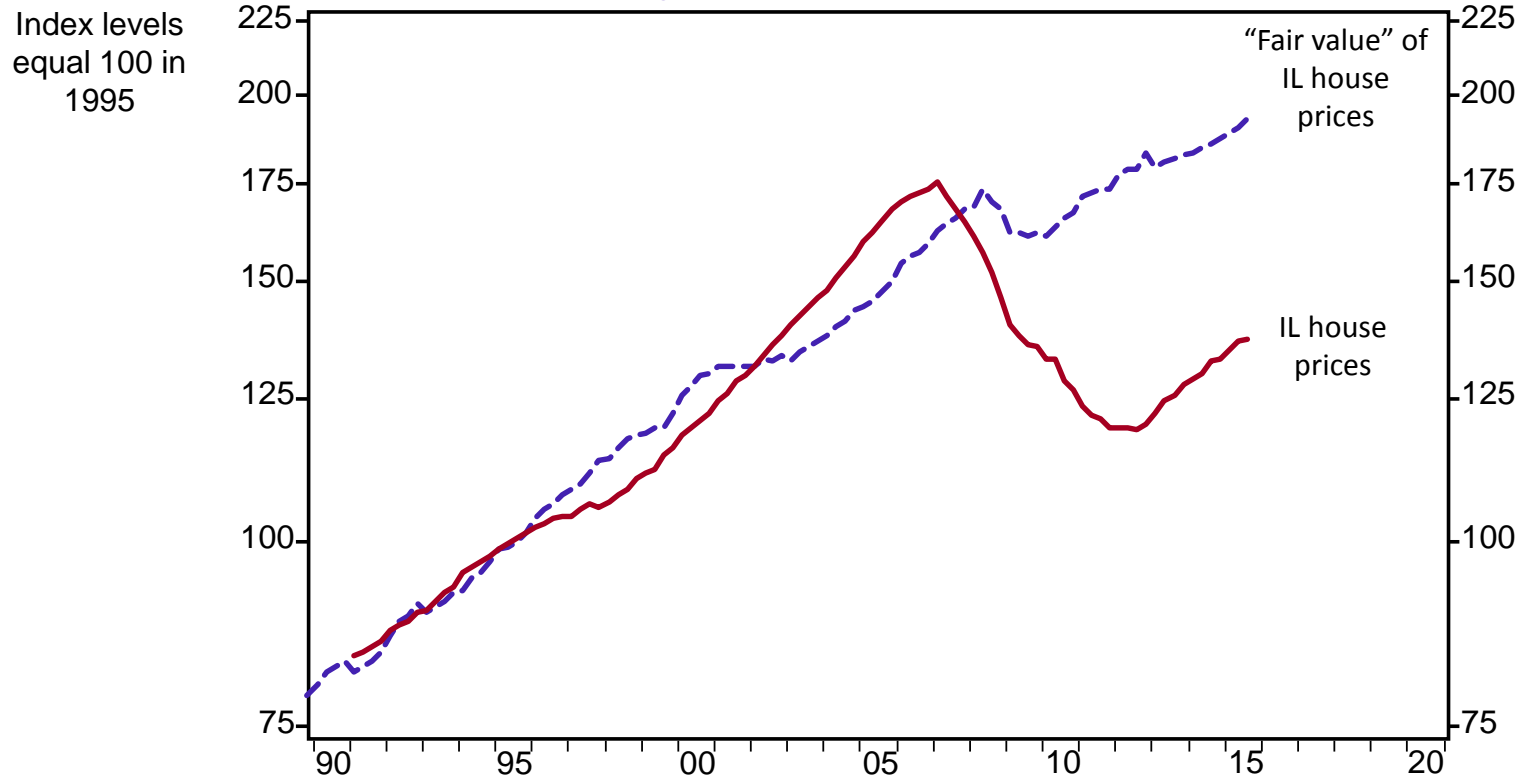




Illinois Suffered A Larger House-Price Crash Than Missouri

Illinois House-Price Index (FHFA Expanded Data)
Average level in 1995 equals 100

Illinois Per-Capita Personal Income
Average level in 1995 equals 100

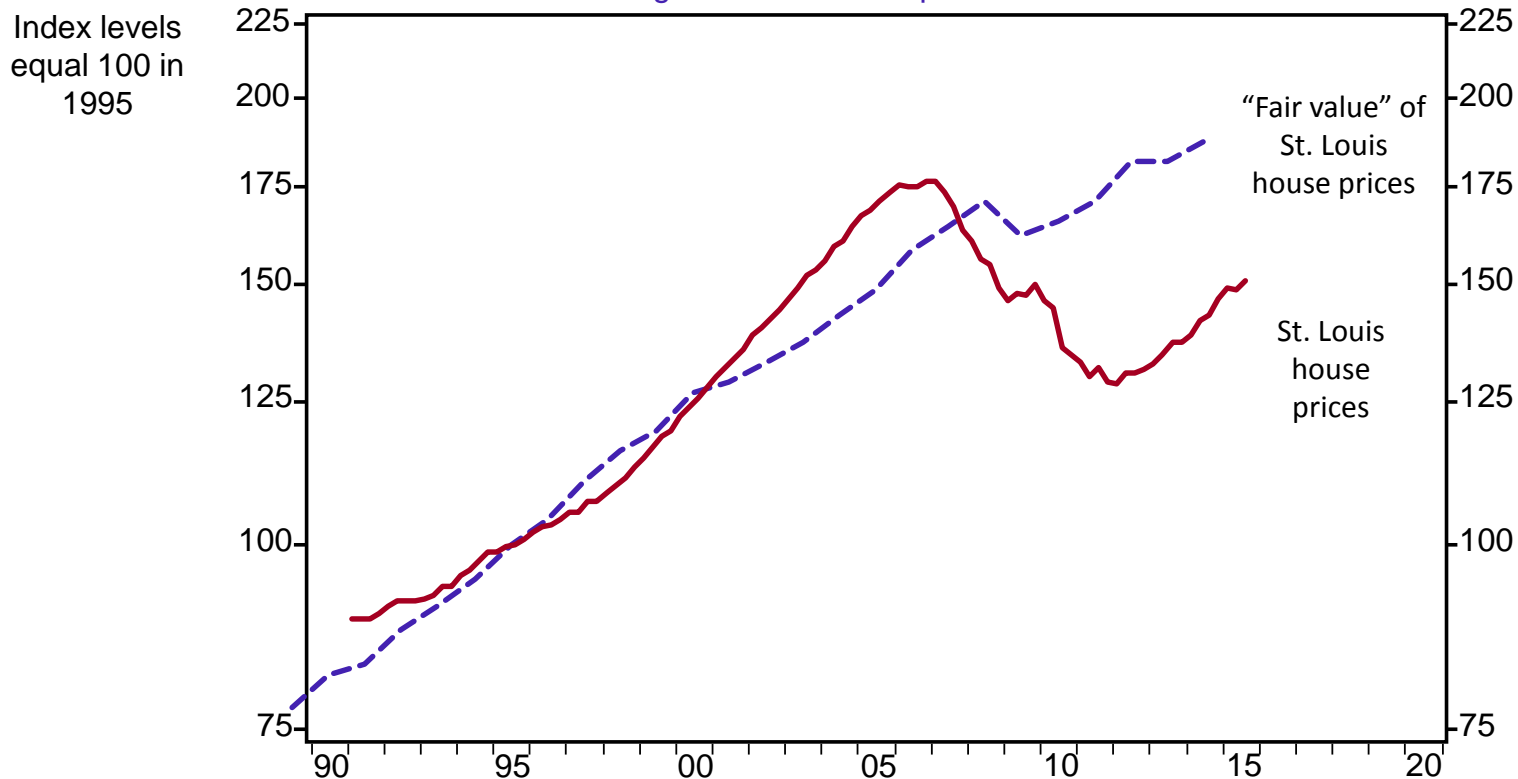




Typical St. Louis House May Be 25 Percent Below Fair Value

St. Louis MSA House-Price Index (FHFA Expanded Data)
Average level in 1995 equals 100

St. Louis MSA Per-Capita Personal Income
Average level in 1995 equals 100

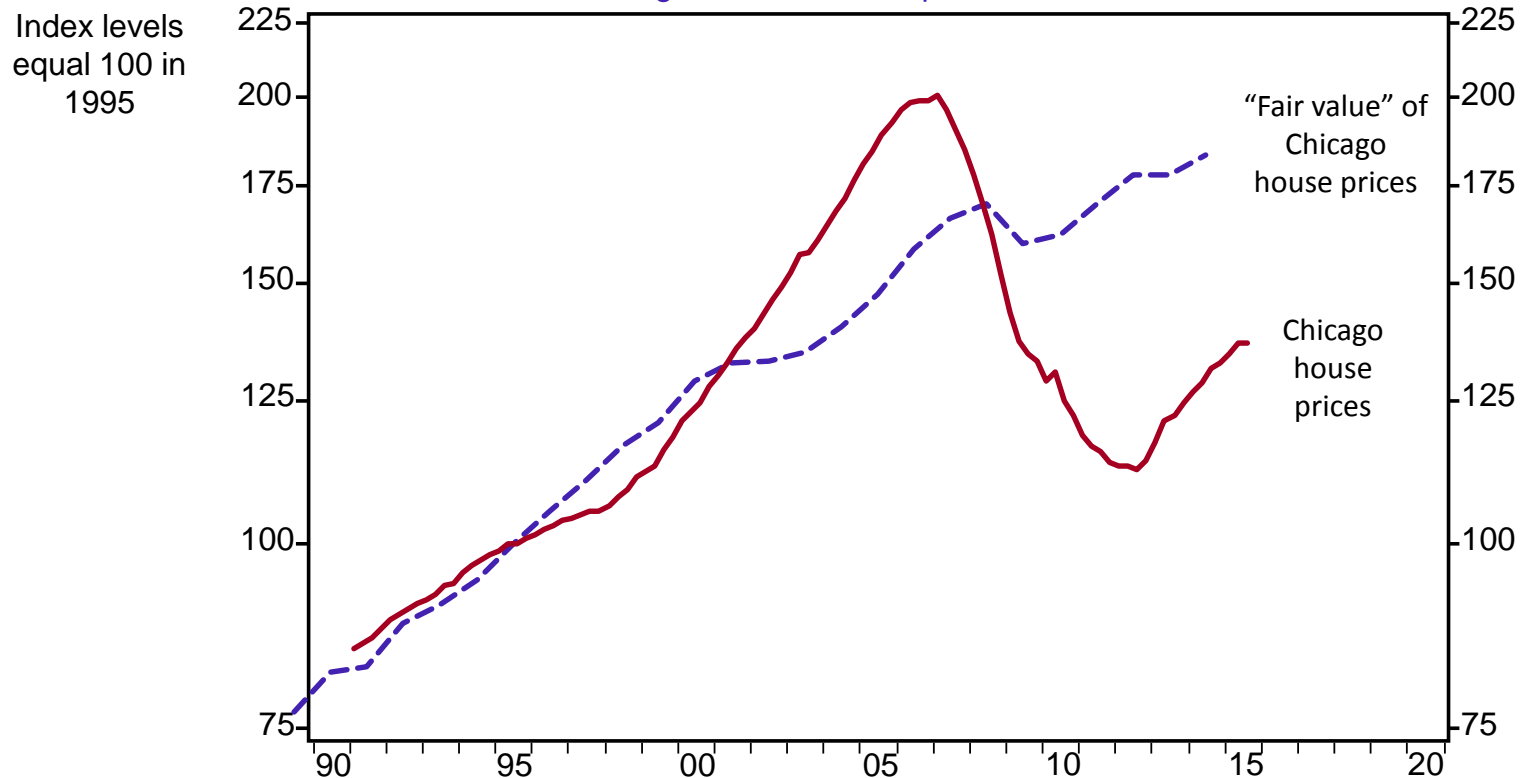




Typical Chicago Income and House Price Have Recovered Less Than St. Louis

Chicago MSA House-Price Index (FHFA Expanded Data)
Average level in 1995 equals 100

Chicago MSA Per Capita Personal Income
Average level in 1995 equals 100

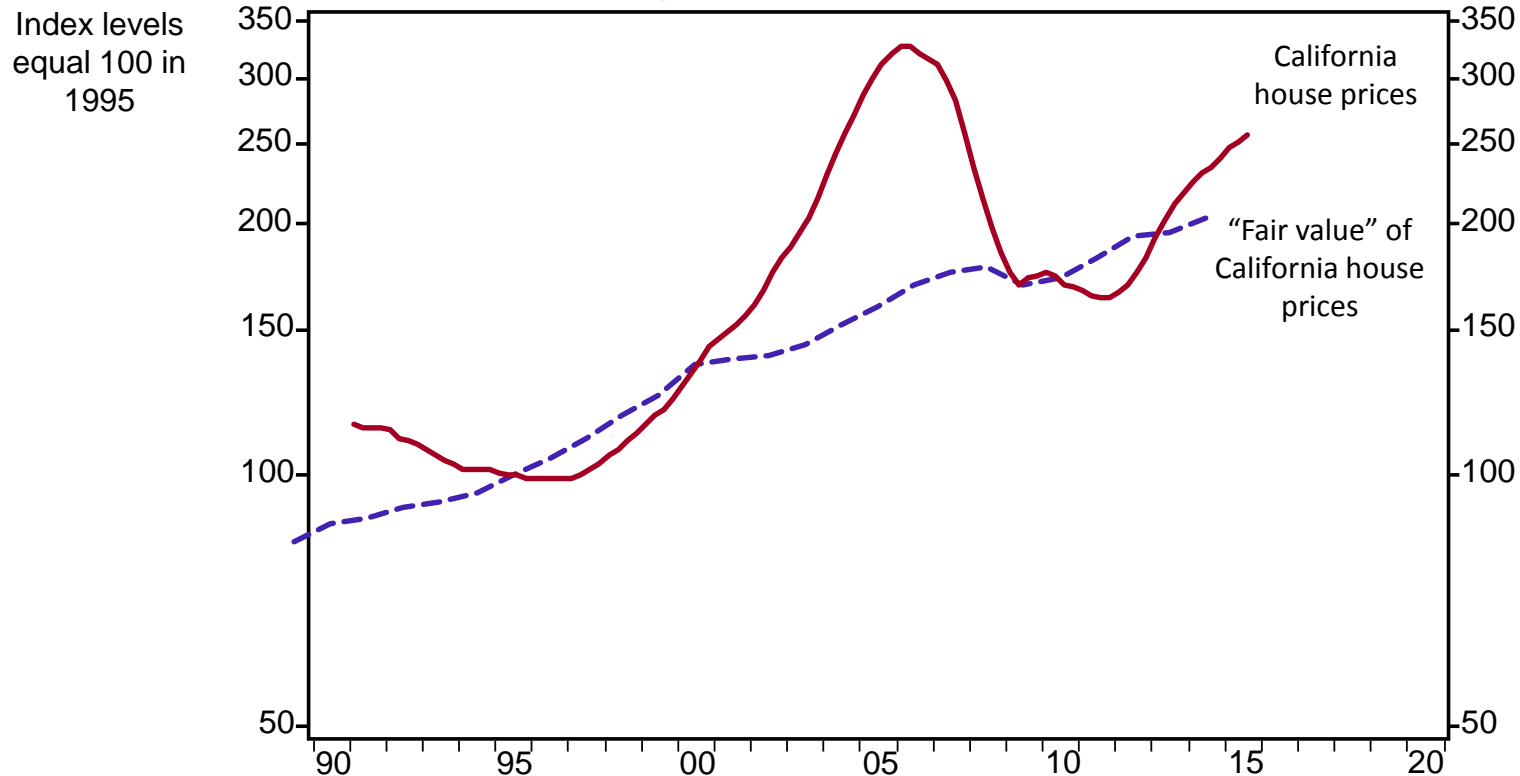




Another California Bubble Is Inflating But Won't Be As Big As the Last One

California House-Price Index (FHFA Expanded Data)
Average level in 1995 equals 100

California Per Capita Personal Income
Average level in 1995 equals 100



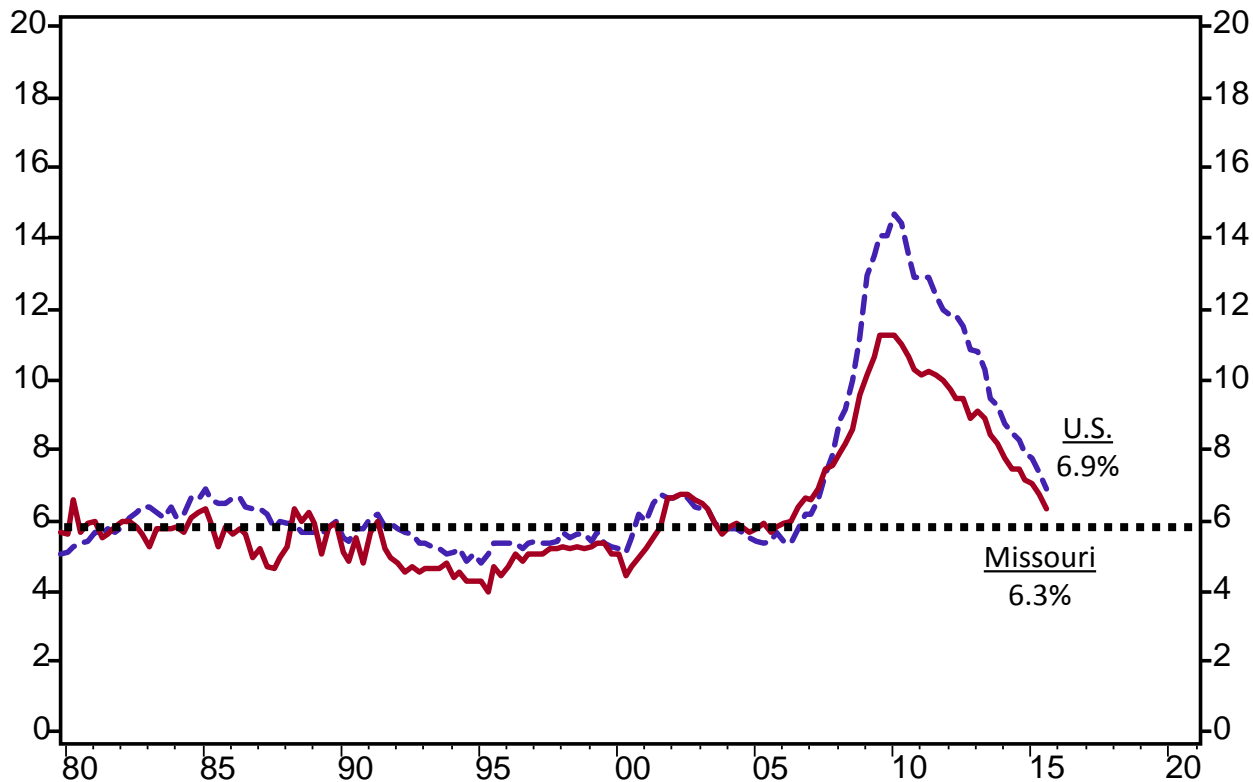


Missouri Mortgage Conditions Better Than U.S. Average

Share of Missouri Mortgages 30+ Days Delinquent or In Foreclosure
Percent

Share of U.S. Mortgages 30+ Days Delinquent or In Foreclosure
Percent

Percent of
mortgages



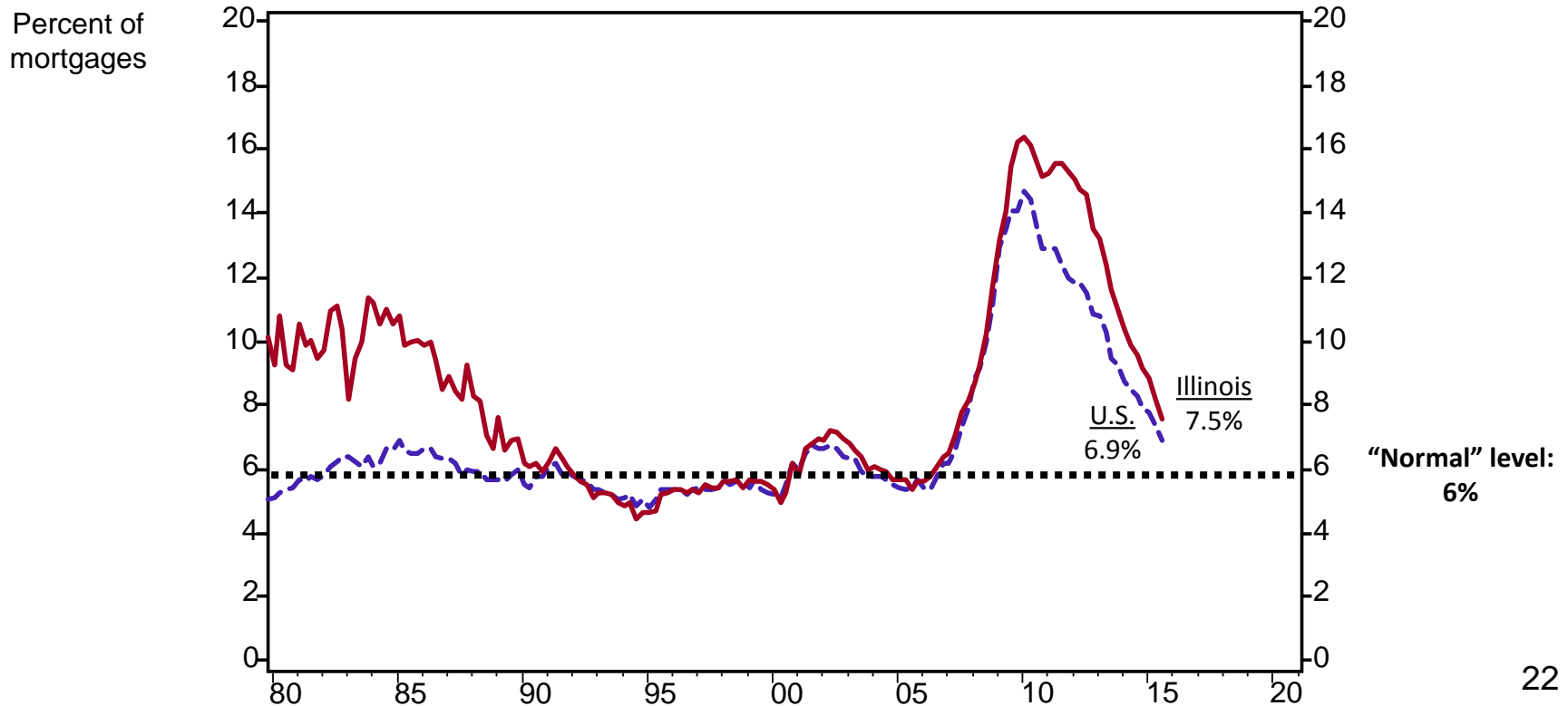
"Normal" level:
6%



Illinois Mortgage Conditions Worse Than U.S. Average

Share of Illinois Mortgages 30+ Days Delinquent or in Foreclosure
Percent

Share of U.S. Mortgages 30+ Days Delinquent or in Foreclosure
Percent



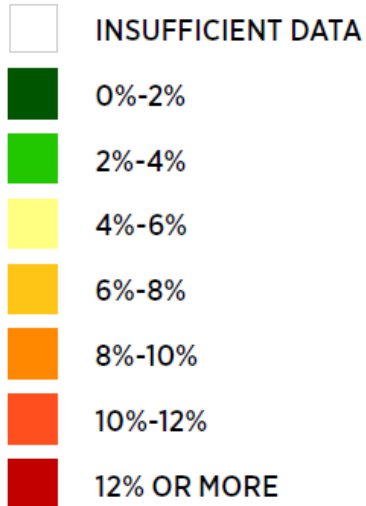
Source: Mortgage Bankers Association

Quarterly thru Q3.2015



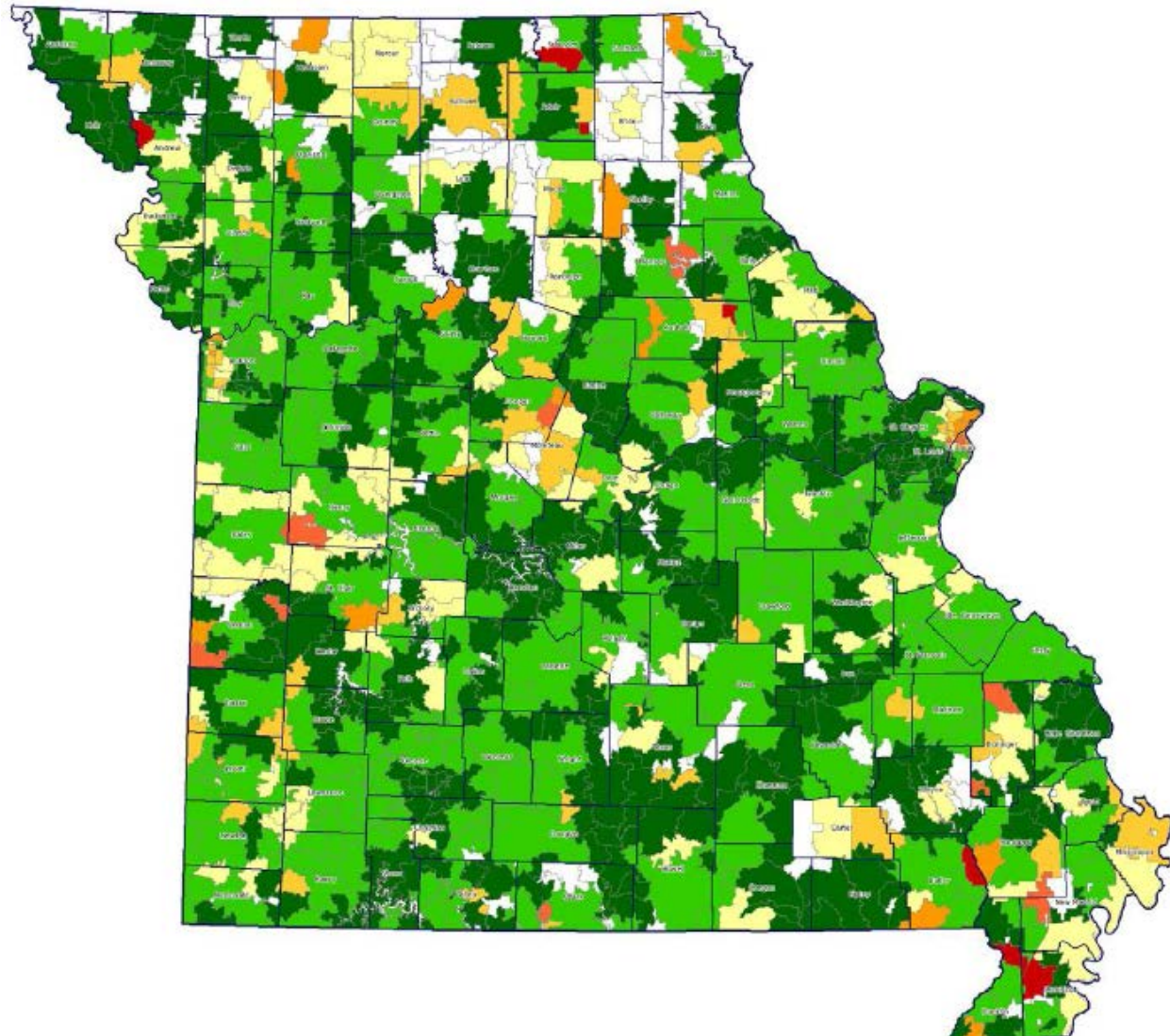
Mostly Healthy: Missouri 90+ Day Mortgage-Delinquency Rate By ZIP Code

https://www.stlouisfed.org/~media/Files/PDFs/Community%20Development/HMC3Q2015/HMC_3Q2015_IL.pdf



Source: Lender Processing Services

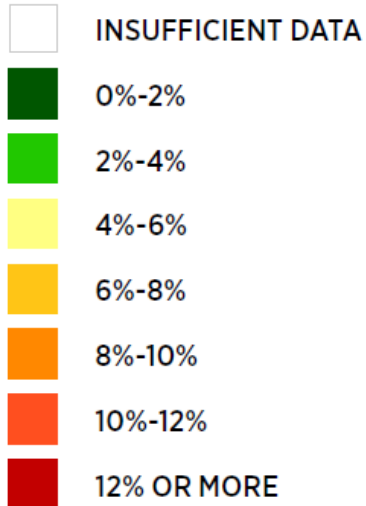
Percent of mortgages
90+ days delinquent or
in foreclosure.





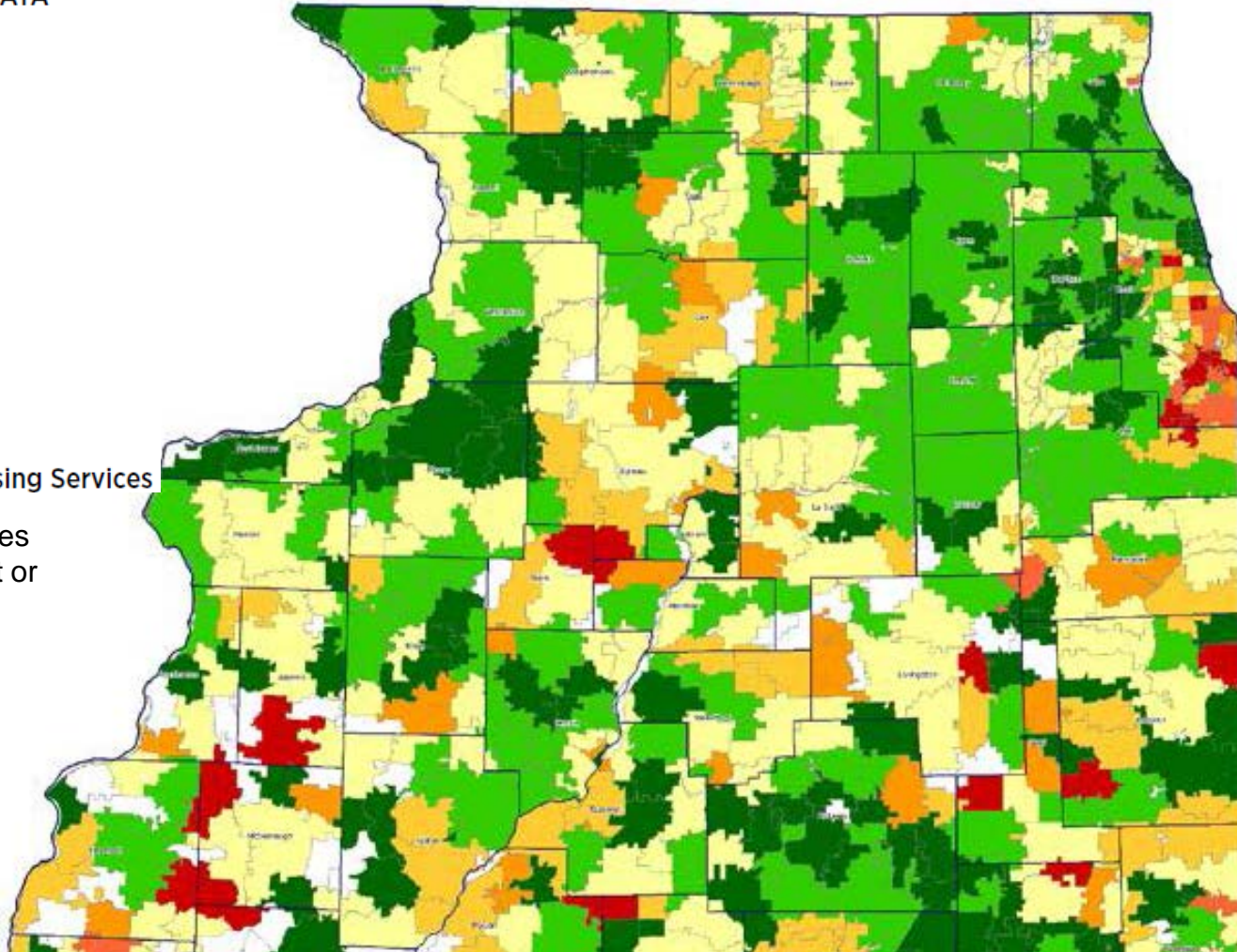
Pockets of Distress: Illinois 90+ Day Mortgage-Delinquency Rate By ZIP Code

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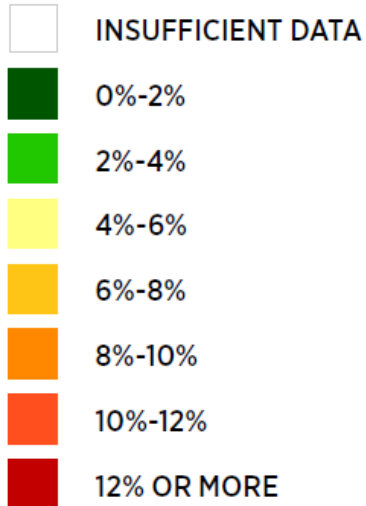
Percent of mortgages
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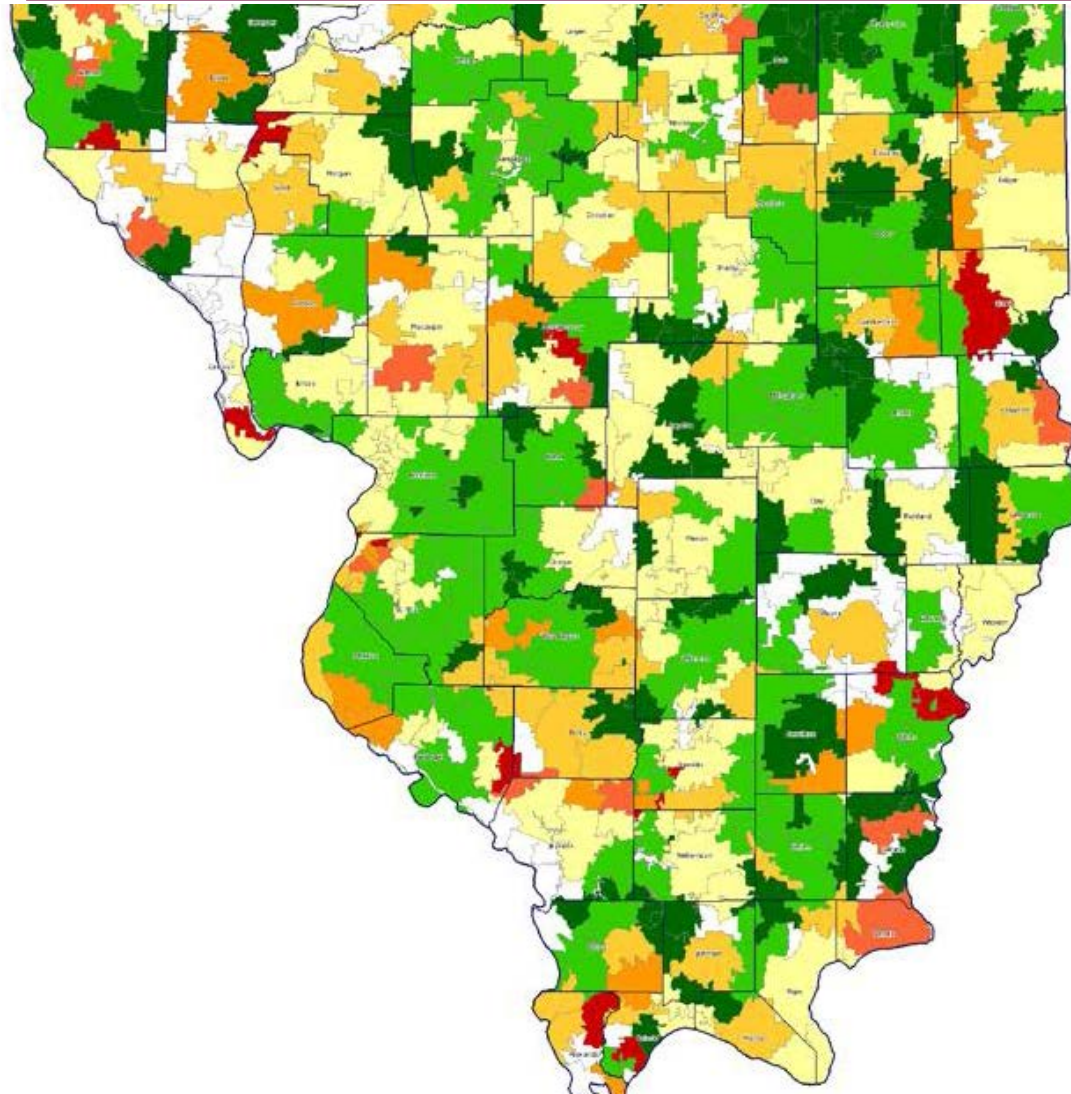
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Source: Lender Processing Services

Percent of mortgages
90+ days delinquent or
in foreclosure.





A Puzzle: If Housing is Recovering, Why Is the Homeownership Rate Still Falling?

United States Homeownership Rate

Percent



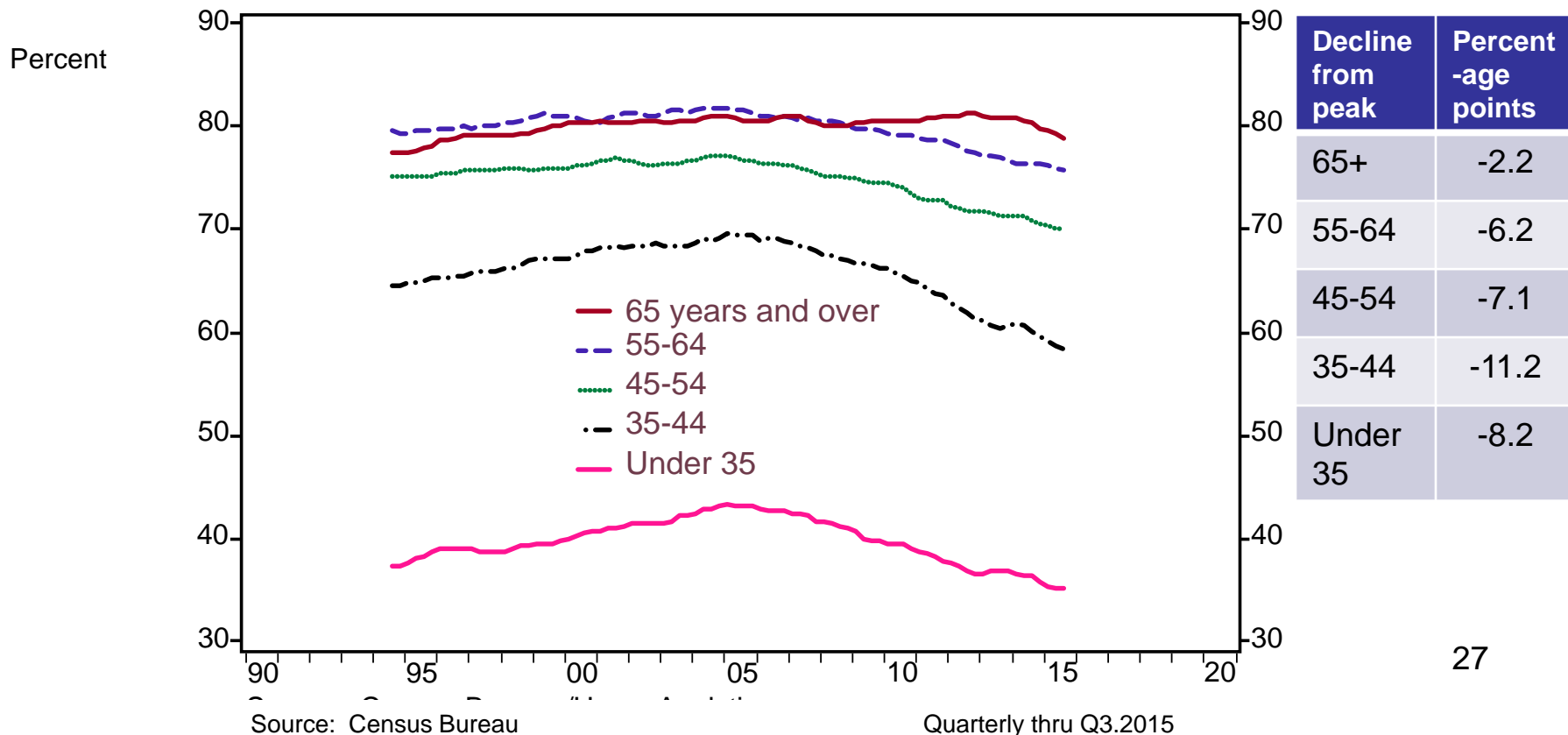
Source: Census Bureau

Annual thru 2015



The Homeownership Rate is Falling Among All Age Groups

Homeownership Rates by Age of Household Head



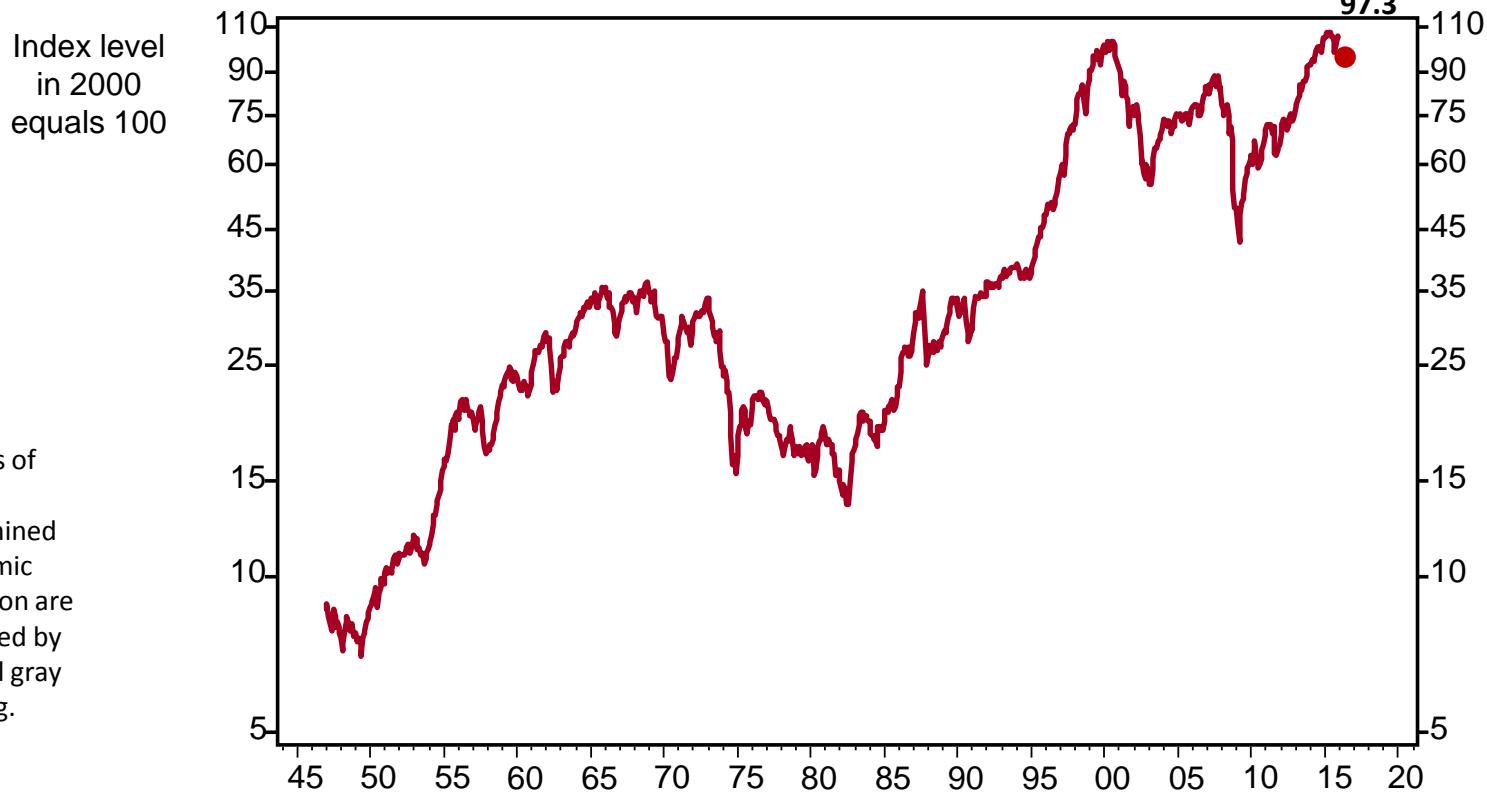


How Reliable Is the Stock Market in Predicting Recessions?

Inflation-Adjusted Level of S&P 500

Index level equals 100 in 2000

Jan. 2016:
97.3



Sources: Standard & Poor's, Bureau of Labor Statistics

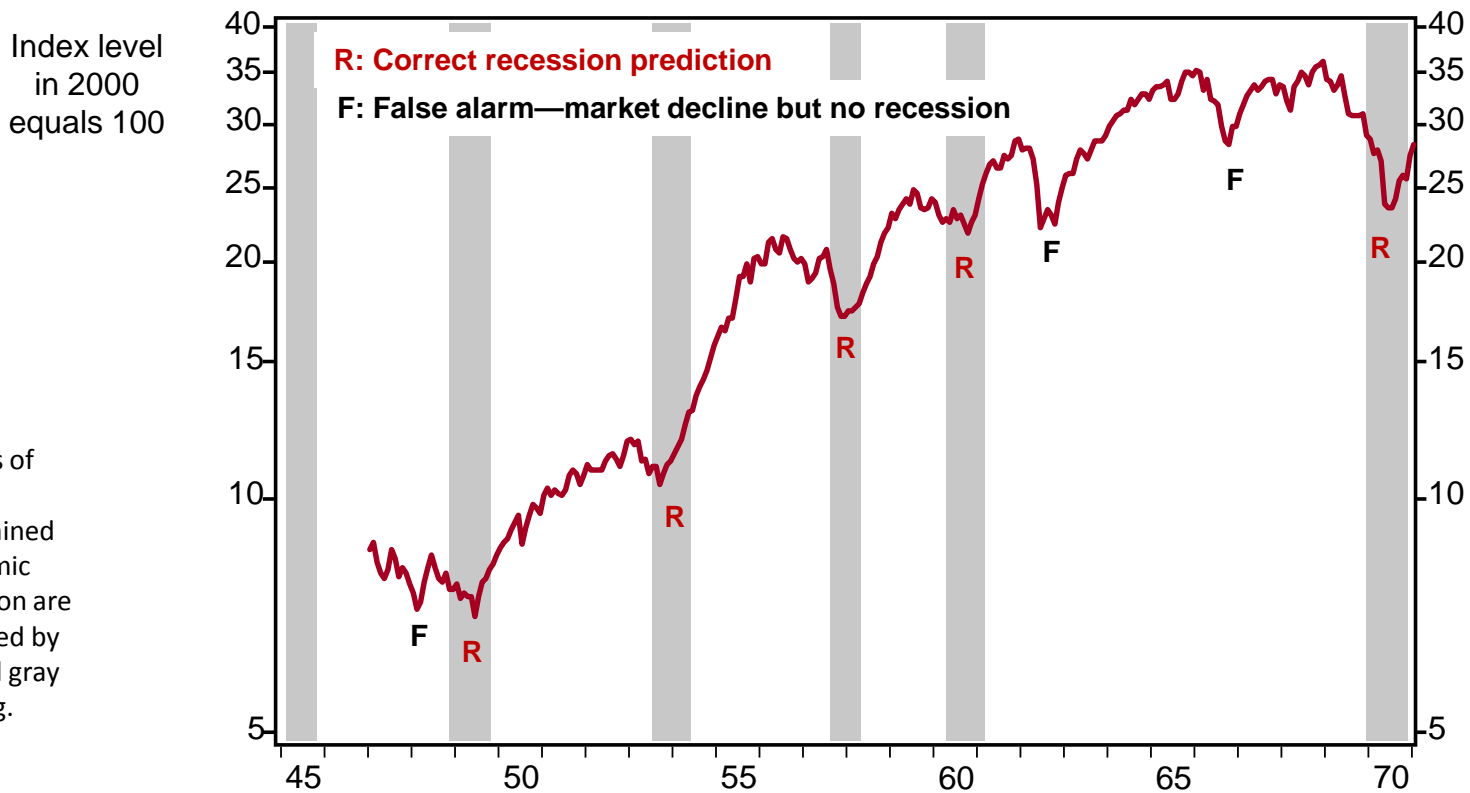
Monthly thru Dec. 2015; estimated for Jan. 2016



Stock Market Predicted 8 of the 5 Recessions Between 1947 and 1970

Inflation-Adjusted Level of S&P 500

Index level equals 100 in 2000



Sources: Standard & Poor's, Bureau of Labor Statistics

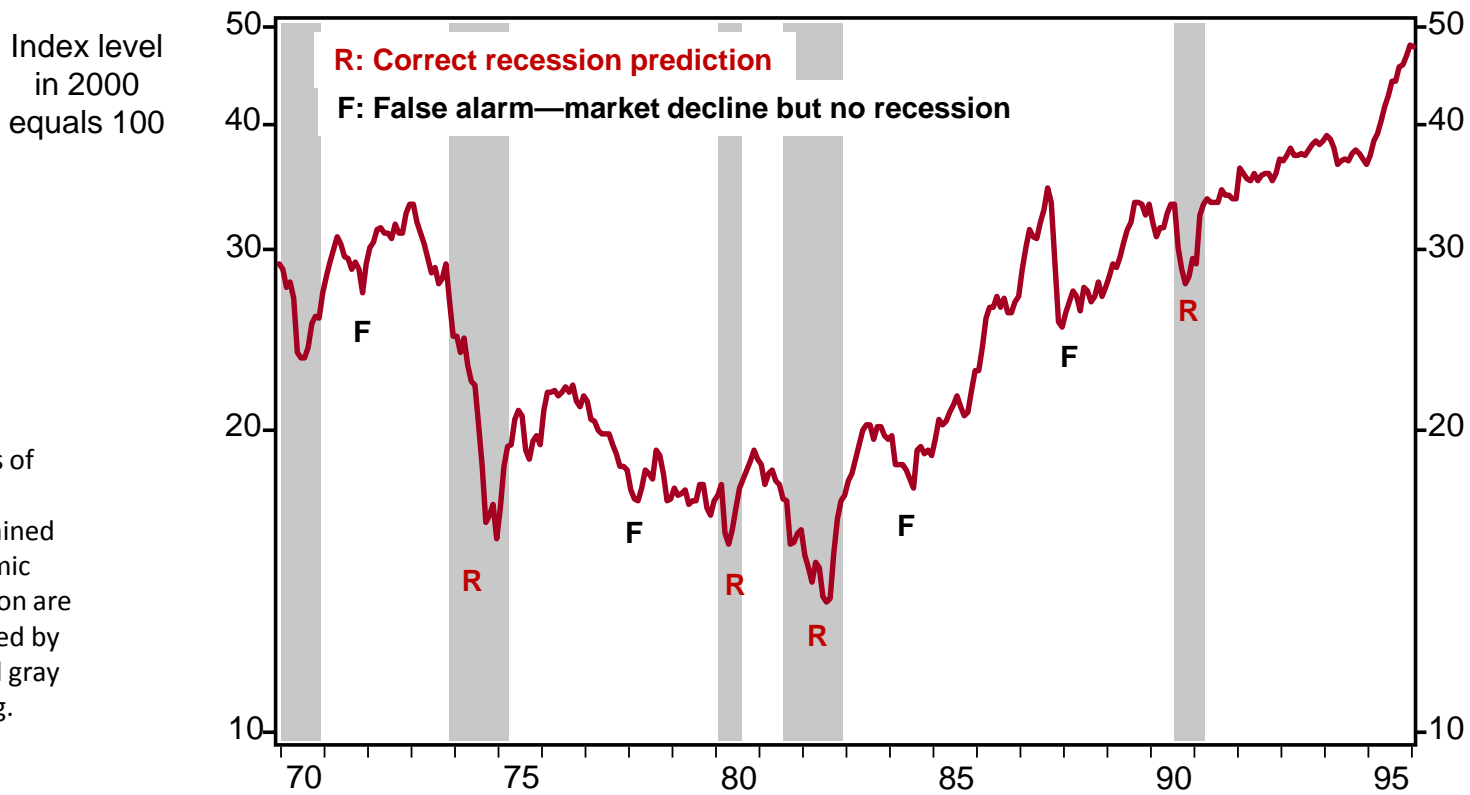
Monthly thru Dec. 2015; estimated for Jan. 2016



Stock Market Predicted 8 of the 4 Recessions Between 1970 and 1995

Inflation-Adjusted Level of S&P 500

Index level equals 100 in 2000



Sources: Standard & Poor's, Bureau of Labor Statistics

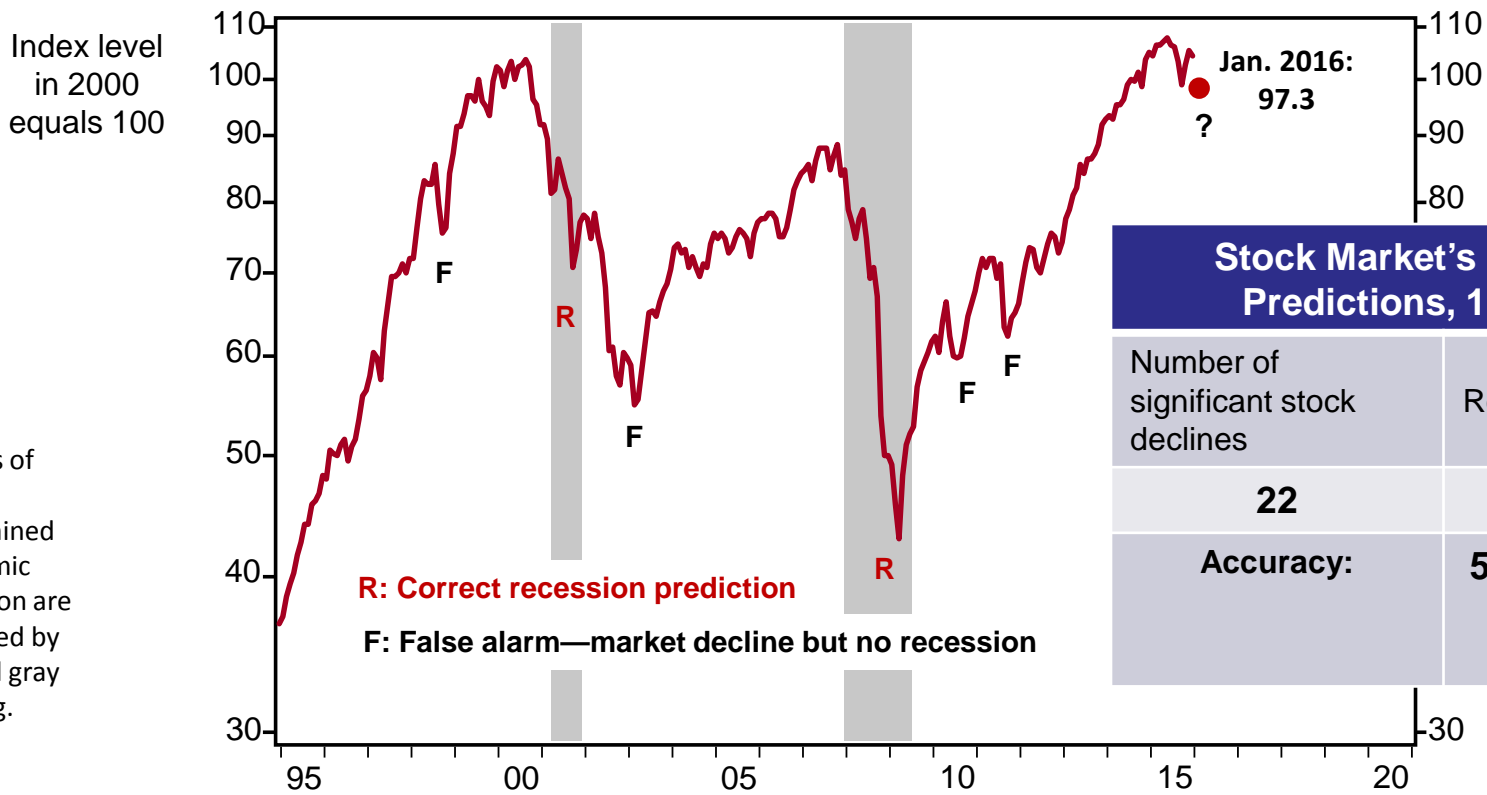
Monthly thru Dec. 2015; estimated for Jan. 2016



Stock Market Predicted 6 of the 2 Recessions Between 1995 and 2015

Inflation-Adjusted Level of S&P 500

Index level equals 100 in 2000



Stock Market's Recession Predictions, 1947-2012	
Number of significant stock declines	Recessions
22	11
Accuracy:	50% of declines followed by recessions

Periods of NBER-determined economic recession are indicated by vertical gray shading.

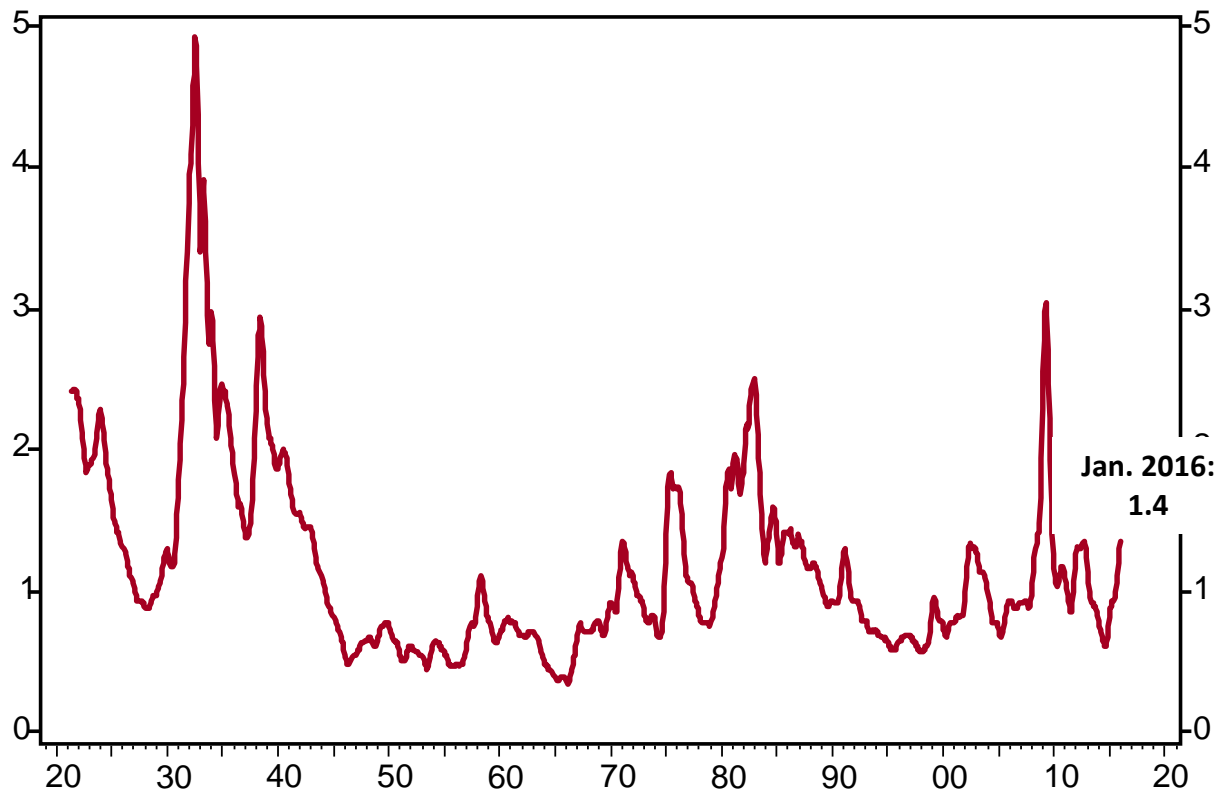


Corporate Credit Spreads Have Spiked

Investment-Grade Corporate-Bond Spread: Baa Minus Aaa

6-month moving average percentage points

Percentage points



Source: Moody's

Monthly thru Jan. 2016

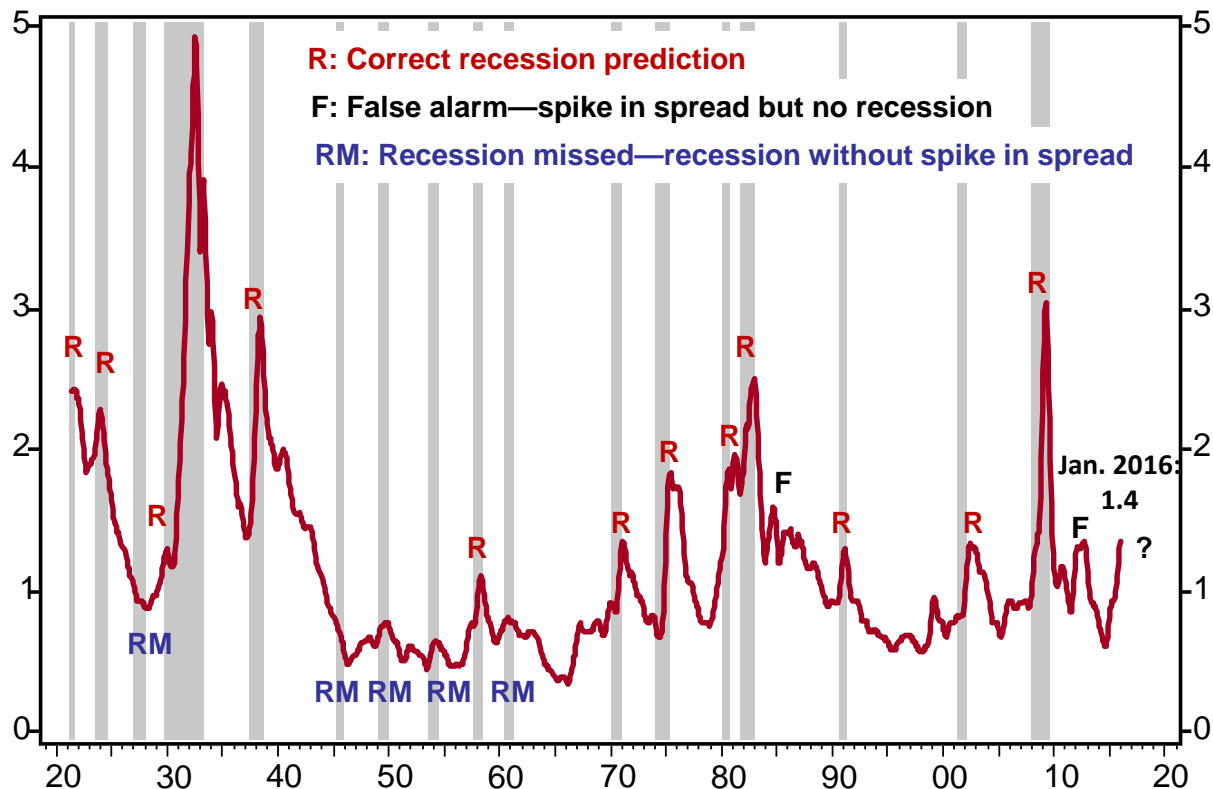


Credit Spreads Track Economy (78% Correct Since 1970) But Give Scant Warning

Investment-Grade Corporate-Bond Spread: Baa Minus Aaa

6-month moving average percentage points

Percentage points



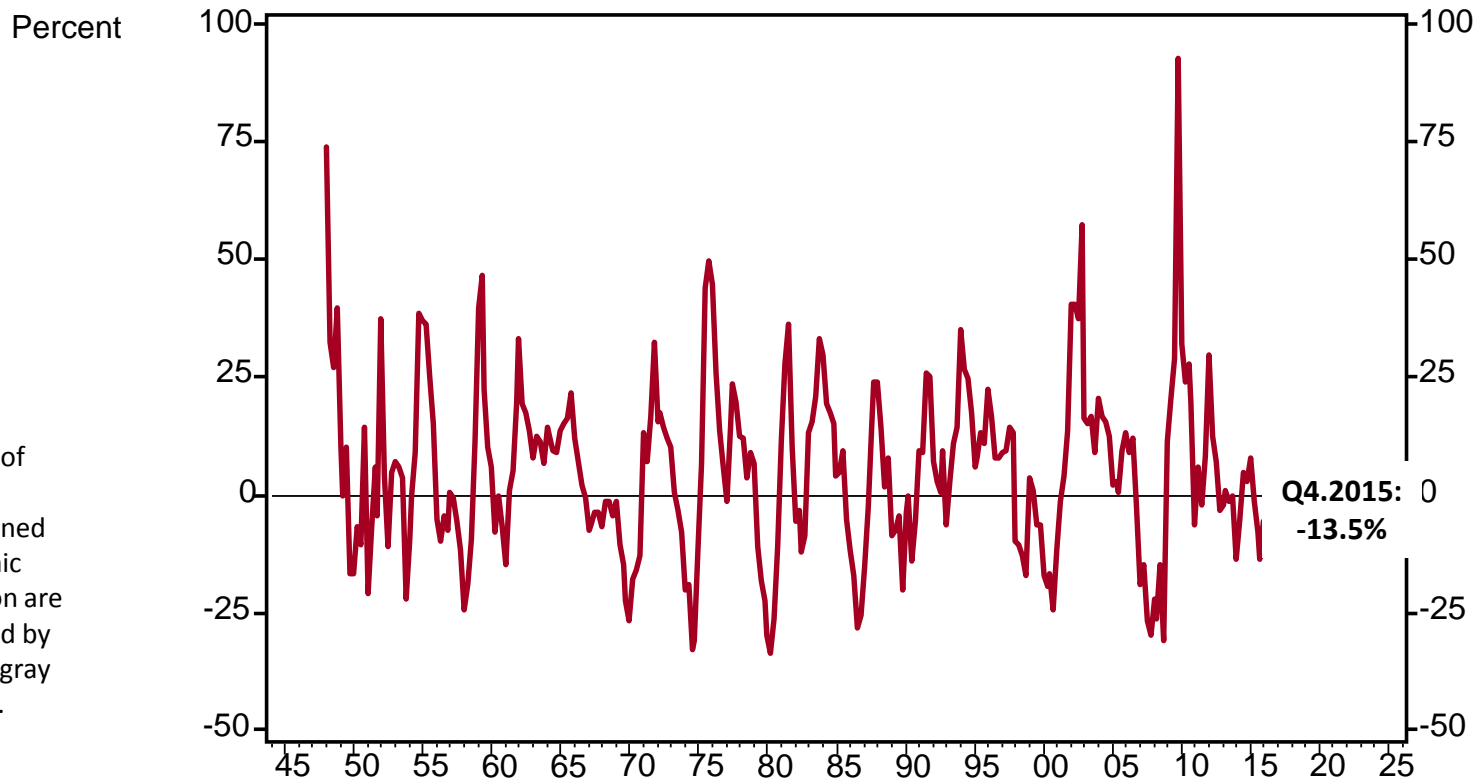
Periods of NBER-determined economic recession are indicated by vertical gray shading.



How Reliable Are Corporate Profits in Predicting Recessions?

1-Year Change in Inflation-Adjusted After-Tax Corporate Profits

Annualized percent





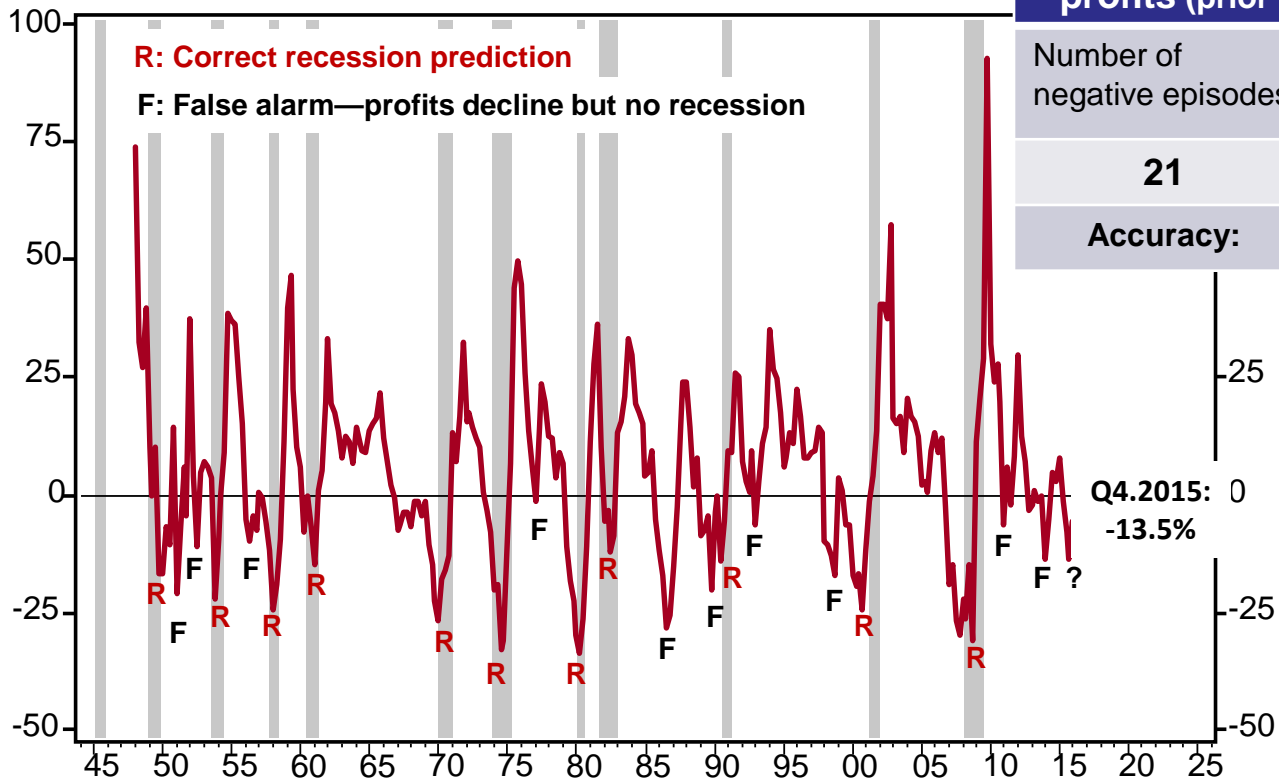
One-Year Corporate-Profits Decline Accurately Predicts Recession About 50% of the Time

1-Year Change in Inflation-Adjusted After-Tax Corporate Profits

Annualized percent

1-year change in real corporate profits (prior to current episode)	
Number of negative episodes	Recessions correctly predicted
21	11
Accuracy:	52%

Percent



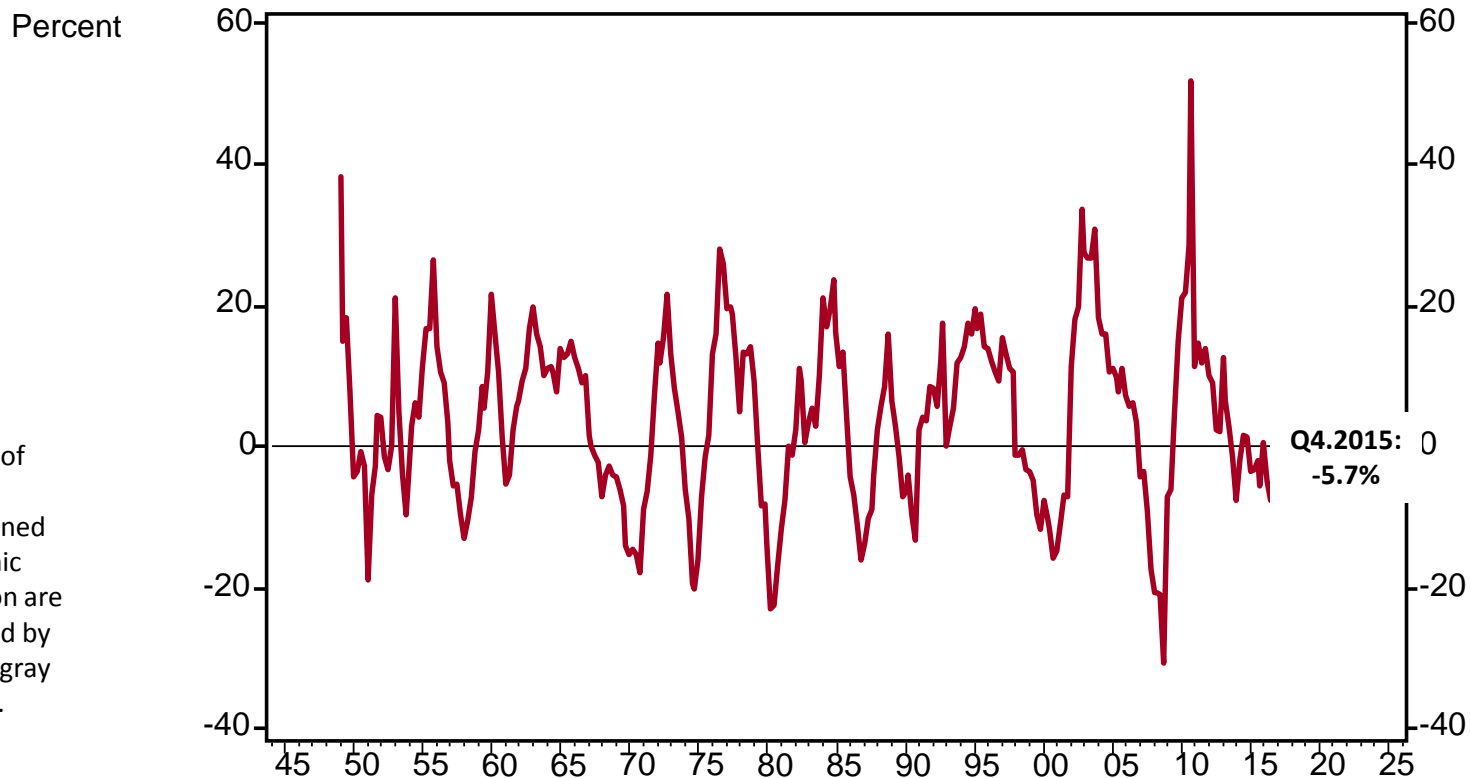
Periods of NBER-determined economic recession are indicated by vertical gray shading.



How Reliable Are Two-Year Corporate-Profits Declines in Predicting Recessions?

2-Year Change in Inflation-Adjusted After-Tax Corporate Profits

Annualized percent





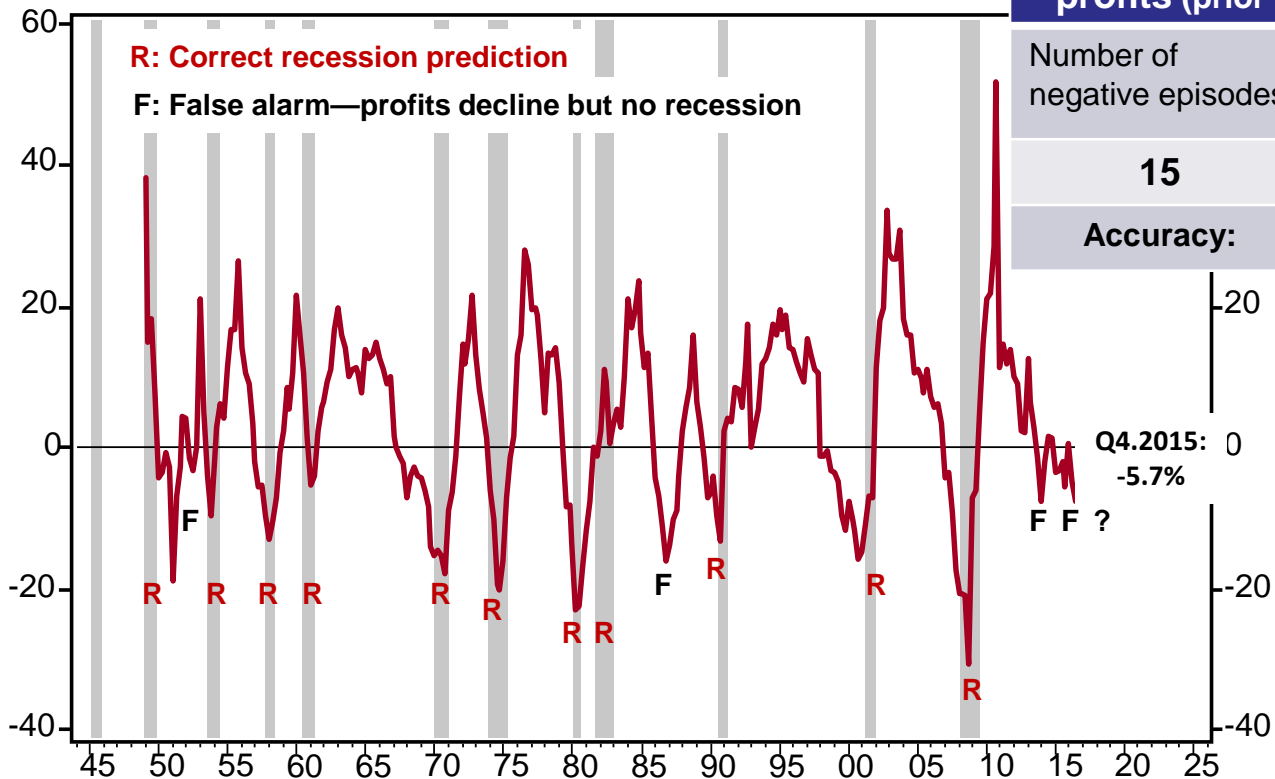
Two-Year Corporate-Profits Decline Is About 73% Accurate

2-Year Change in Inflation-Adjusted After-Tax Corporate Profits

Annualized percent

2-year change in real corporate profits (prior to current episode)	
Number of negative episodes	Recessions correctly predicted
15	11
Accuracy:	73%

Percent



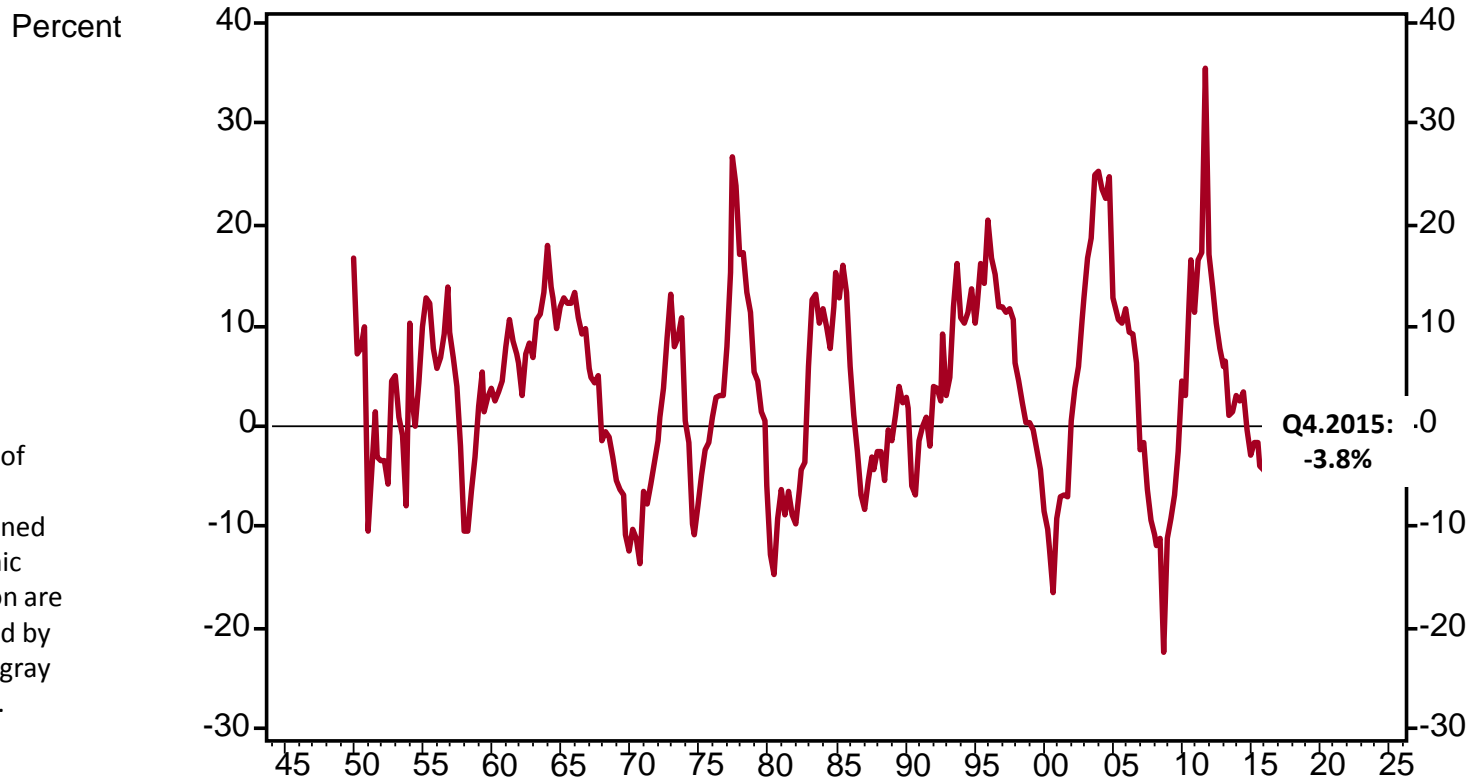
Periods of NBER-determined economic recession are indicated by vertical gray shading.



How Reliable Are Three-Year Corporate-Profits Declines in Predicting Recessions?

3-Year Change in Inflation-Adjusted After-Tax Corporate Profits

Annualized percent





Three-Year Corporate-Profits Decline Is About 75% Accurate

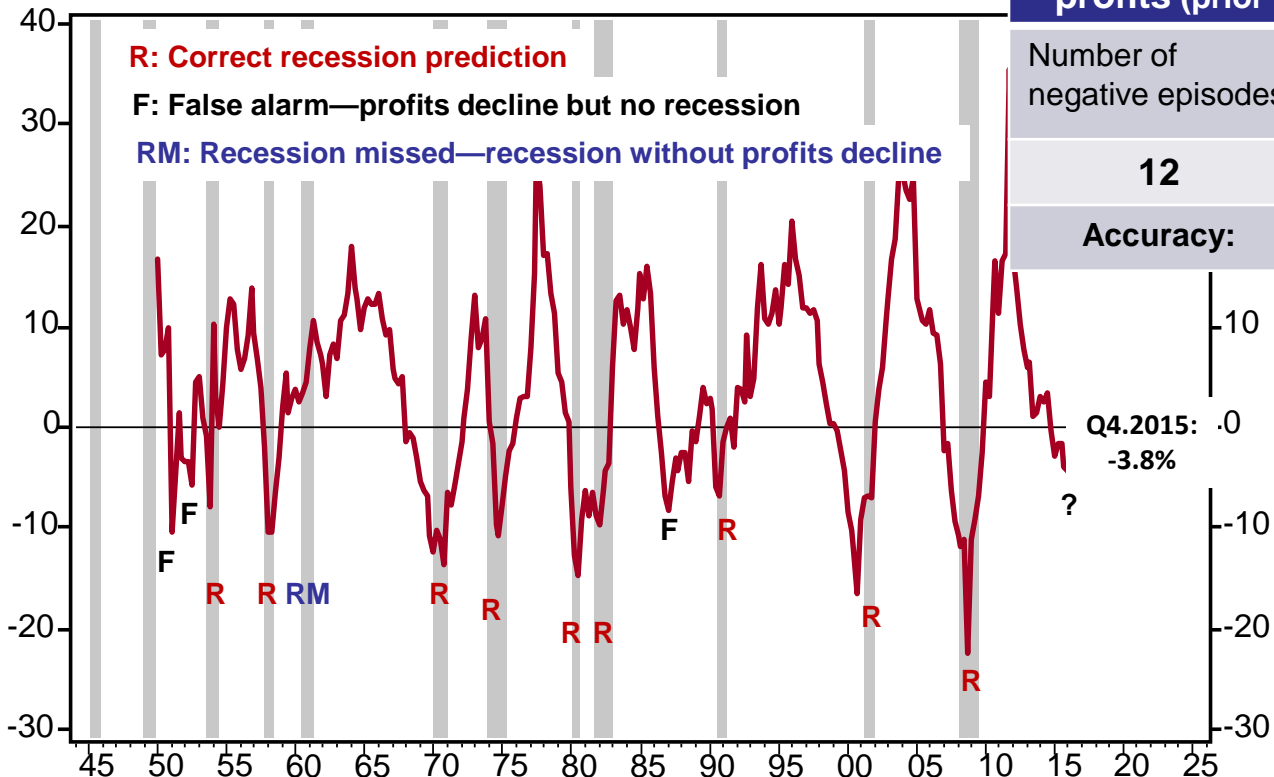
3-Year Change in Inflation-Adjusted After-Tax Corporate Profits

Annualized percent

3-year change in real corporate profits (prior to current episode)

Number of negative episodes	Recessions correctly predicted
12	9
Accuracy:	75%

Percent



Plus one recession that was not preceded by a profits decline.

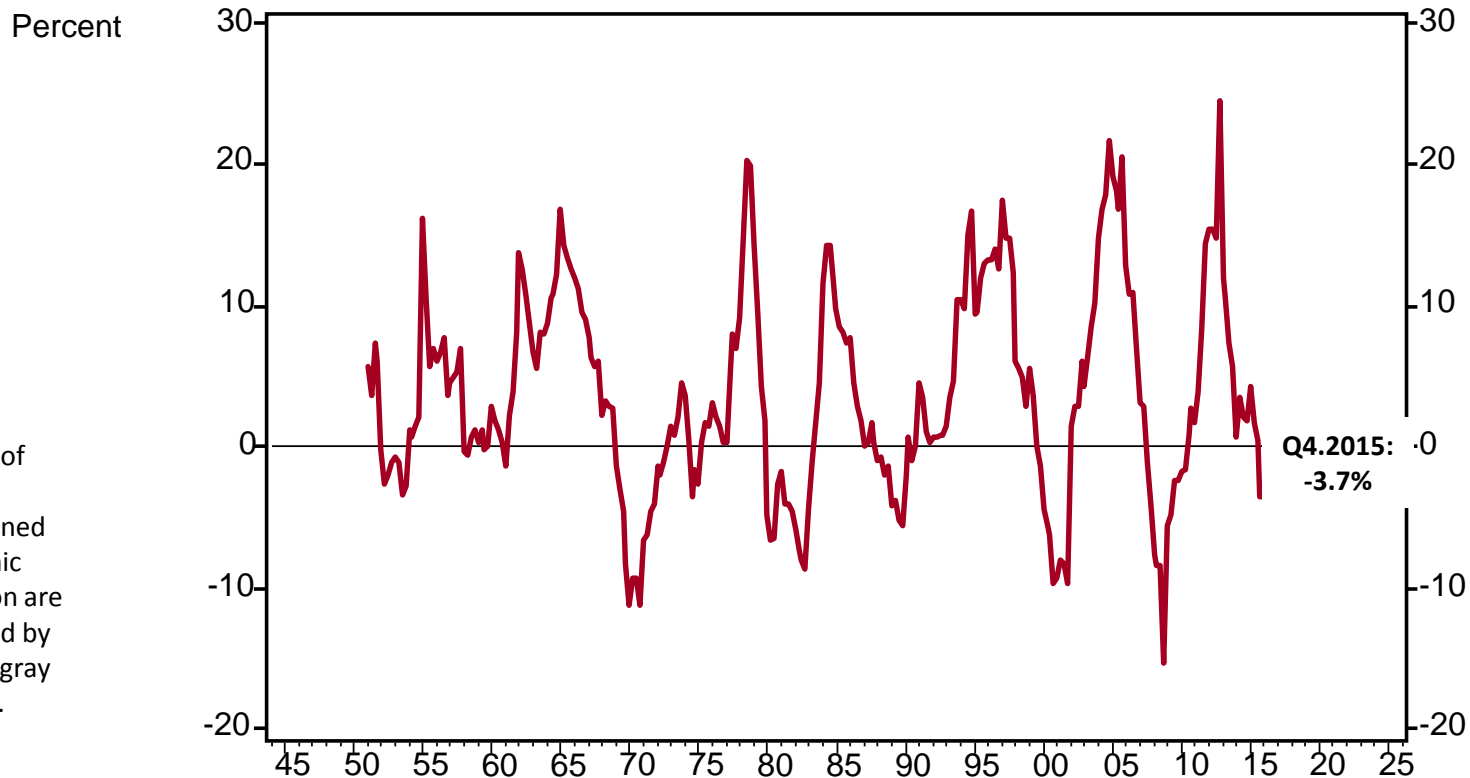
Periods of NBER-determined economic recession are indicated by vertical gray shading.



How Reliable Are Four-Year Corporate-Profits Declines in Predicting Recessions?

4-Year Change in Inflation-Adjusted After-Tax Corporate Profits

Annualized percent





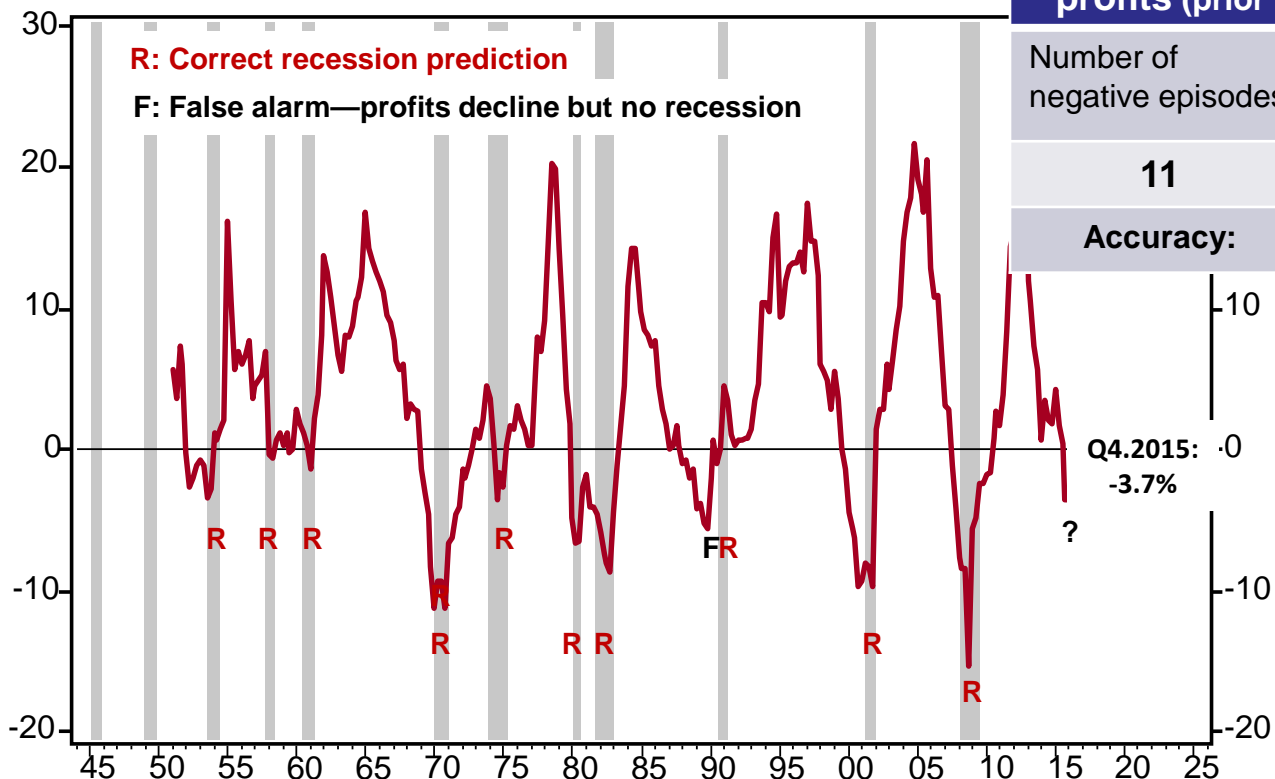
Four-Year Corporate-Profits Decline Is About 91% Accurate

4-Year Change in Inflation-Adjusted After-Tax Corporate Profits

Annualized percent

4-year change in real corporate profits (prior to current episode)	
Number of negative episodes	Recessions correctly predicted
11	10
Accuracy:	91%

Percent



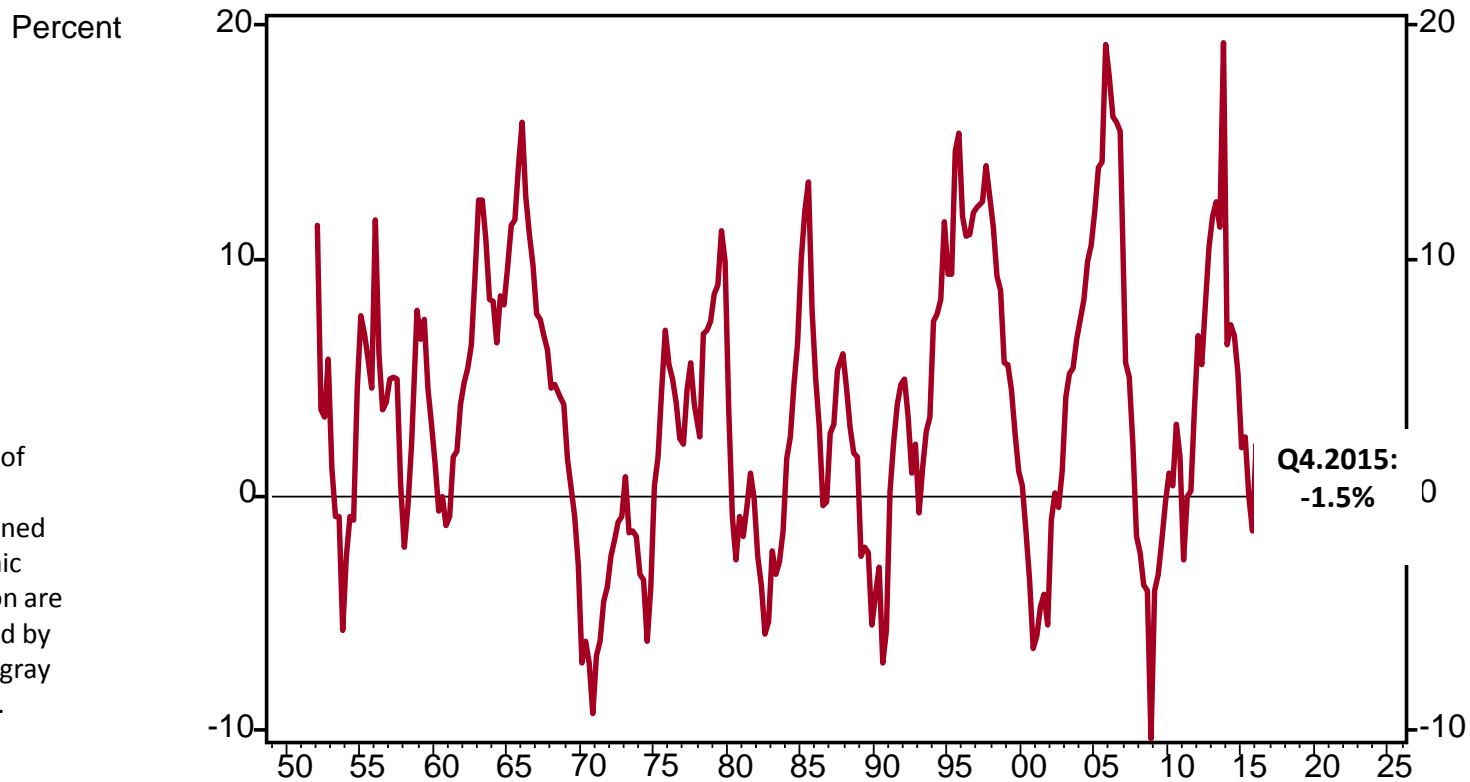
Periods of NBER-determined economic recession are indicated by vertical gray shading.



How Reliable Are Five-Year Corporate-Profits Declines in Predicting Recessions?

5-Year Change in Inflation-Adjusted After-Tax Corporate Profits

Annualized percent





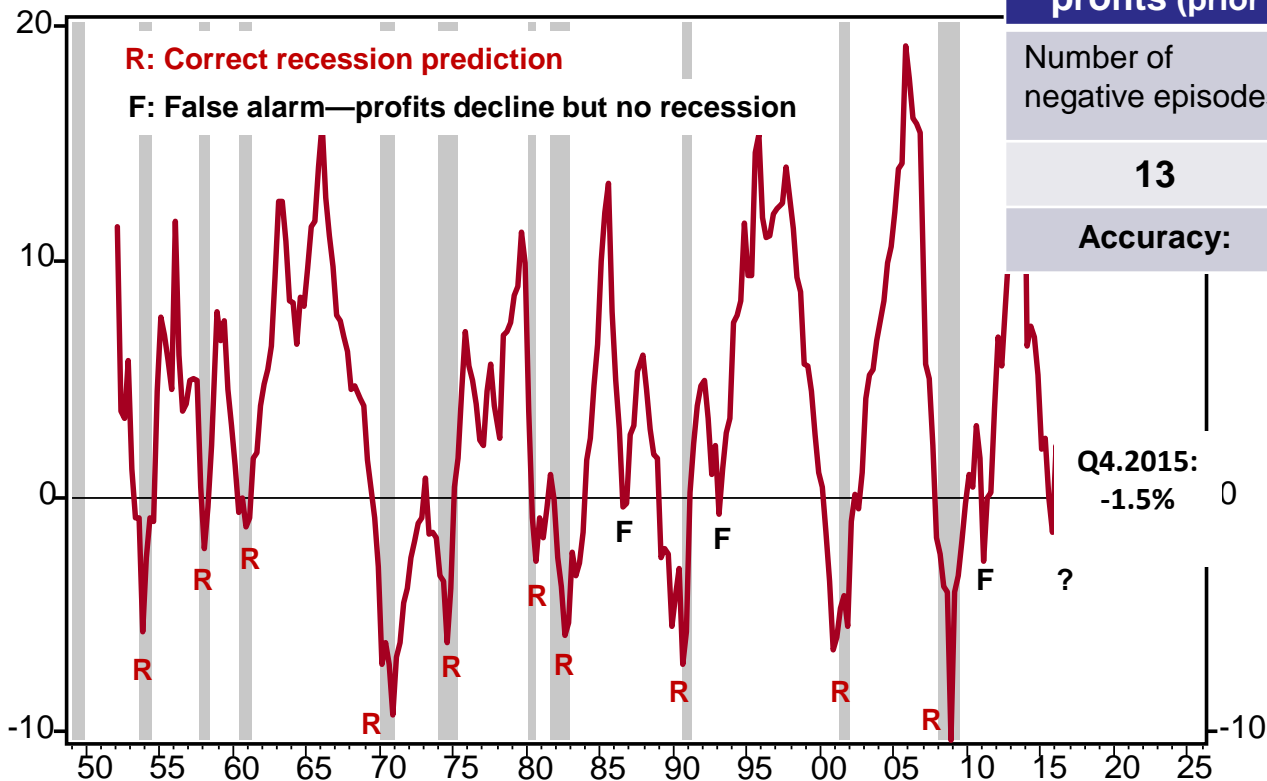
Five-Year Corporate-Profits Decline Is About 77% Accurate

5-Year Change in Inflation-Adjusted After-Tax Corporate Profits

Annualized percent

5-year change in real corporate profits (prior to current episode)	
Number of negative episodes	Recessions correctly predicted
13	10
Accuracy:	77%

Percent



Periods of NBER-determined economic recession are indicated by vertical gray shading.



In Sum: Soft Corporate Profits Are Signaling An Elevated Risk of Recession

Recession Predictions Based on Declines in Corporate Profits

Time horizon ending in Q4.2015	Annualized change in real after-tax corporate profits	Accuracy of a profits decline as predictor of recession
One year	-13.5%	52%
Two years	-5.7%	73%
Three years	-3.8%	75%
Four years	-3.7%	91%
Five years	-1.5%	77%

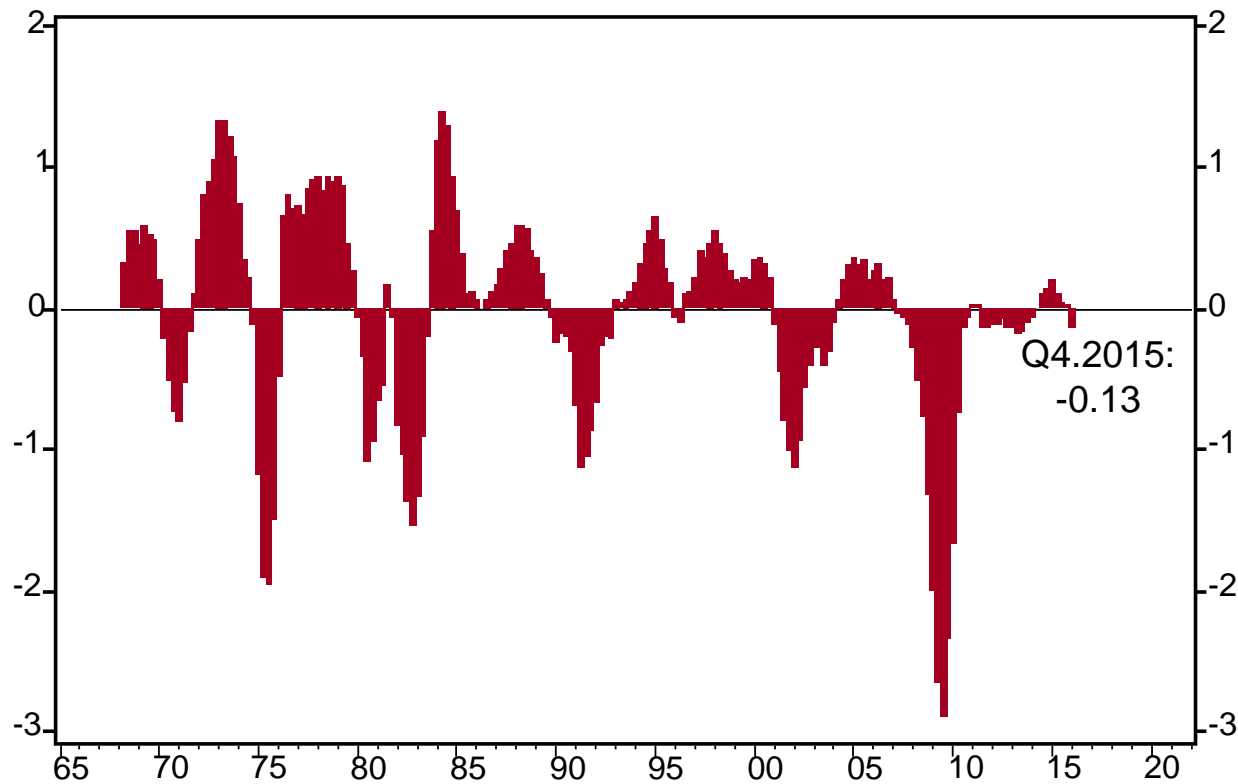


Chicago Fed's Business-Cycle Tracking Model Is Very Accurate

Chicago Fed National Activity Index
Four-quarter moving average

- Major components of CFNAI
- Personal consumption and housing
 - Employment, unemployment and hours
 - Production and income
 - Sales, orders and inventories

Index levels:
Zero is growth at trend rate; positive is growth above trend; negative is growth below trend



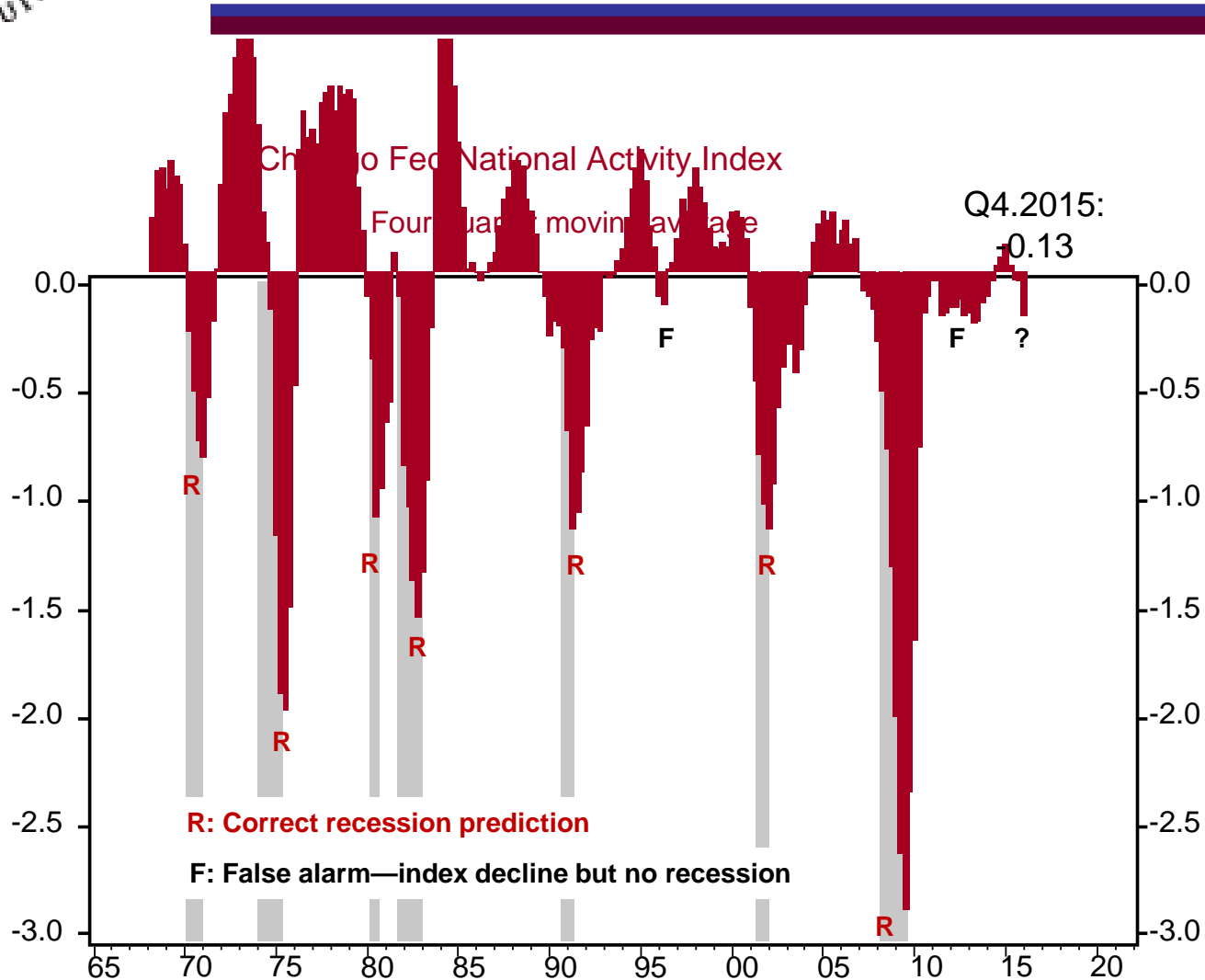
Source: Federal Reserve Bank of Chicago

Quarterly through Q4.2015



CFNAI Growth Below Trend Rate Usually Leads to Recession: 7 of 9 Times (78%)

Index levels:
Zero is growth at trend rate;
negative is growth below trend



Periods of NBER-determined economic recession are indicated by vertical gray shading.

Source: Federal Reserve Bank of Chicago

Quarterly through Q4.2015



In Sum: Several Recession Indicators Are Flashing Yellow

Recession Predictions Based on Four Indicators

Indicator	Reliability	Strength of current warning
Stock market	50%	Moderate
Credit spread	80%	Moderate
Corporate profits (4-year trend)	90%	Moderate
Chicago Fed model	80%	Small
Overall evaluation	Moderate risk of recession beginning in 2016.	



In Conclusion: Elevated Recession Risk in 2016

- **The U.S. economy's momentum has faltered; consumers are the only source of strength.**
- **Several reliable recession indicators are flashing yellow.**
- **Recession risks are perhaps 1 in 4 during 2016.**