

(U.S.) MACROECONOMIC DATA IN REAL TIME

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Why Do We Care About Macro Data?

- “...the American people must be well informed in order to make decisions regarding their lives, and their local and national communities.”
 - Excerpt from the mission of The Society of Professional Journalists
- It's *still* “The economy, stupid”
 - James Carville
- “The 2012 election is all about who's to blame for the economy”
 - Post-Gazette.com
- “economic conditions influence election outcomes”
 - Thomas Holbrook

How Good are U.S. Macro Data?

- Two key issues:
 1. “Accuracy-timeliness” tradeoff.
 - Data released by statistical agencies are typically *estimates*
 - Most macro data are regularly revised.
 2. Different measures can give different pictures.
 - Economists look at **a lot** of data.
- One related question:
 - How good are forecasts?

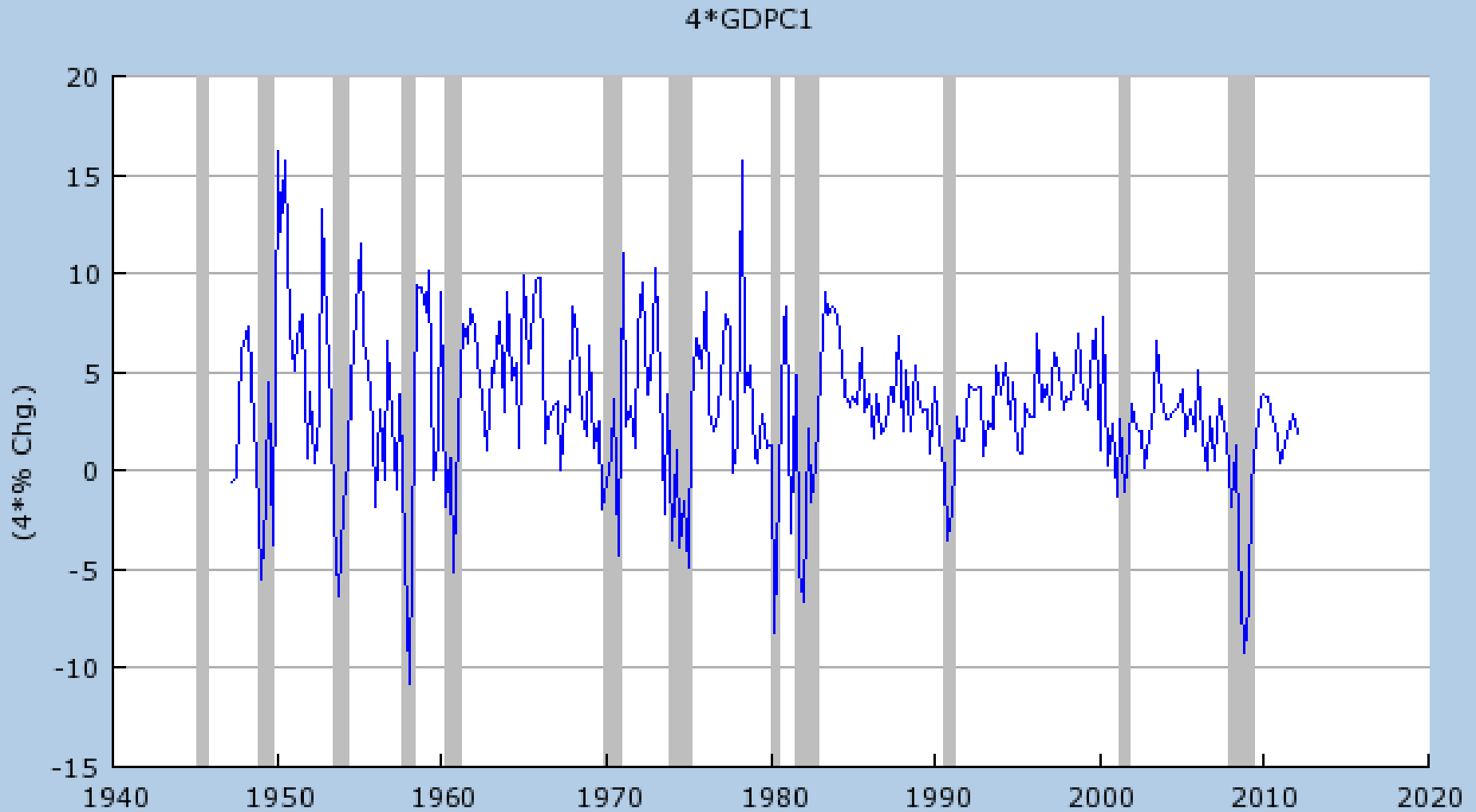
The Big 3: GDP, Inflation, Employment

- Real GDP: how much total output are we producing?
- The inflation rate: how fast are prices rising?
- Employment: how many people are working?

Gross Domestic Product

- Real Gross Domestic Product (GDP)
 - “The output of goods and services produced by labor and property located in the United States”
 - Adjusted for inflation
 - The best measure of how well the economy is performing?
 - Total income = total expenditure
 - Measured quarterly
 - Typically reported as percentage change from preceding quarter at an annual rate.
 - Estimates are produced for the U.S. by the Bureau of Economic Analysis (BEA), U.S. Department of Commerce.
 - Released monthly.
 - Annual revisions each July.
 - Occasional “comprehensive” revisions.

U.S. Real GDP



Shaded areas indicate US recessions.

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U.S. Real GDP Estimates

| | Advance Estimate | Second Estimate | Third Estimate |
|--|-----------------------------|----------------------------|---------------------------|
| 4th Quarter 2011 (Oct – Dec) | 2.8% 1/27/12 | 3.0% 2/29/12 | 3.0% 3/29/12 |
| 1st Quarter 2012 (Jan – Mar) | 2.2% 4/27/12 | 1.9% 5/31/12 | TBA 6/28/12 |

Why So Many Revisions?

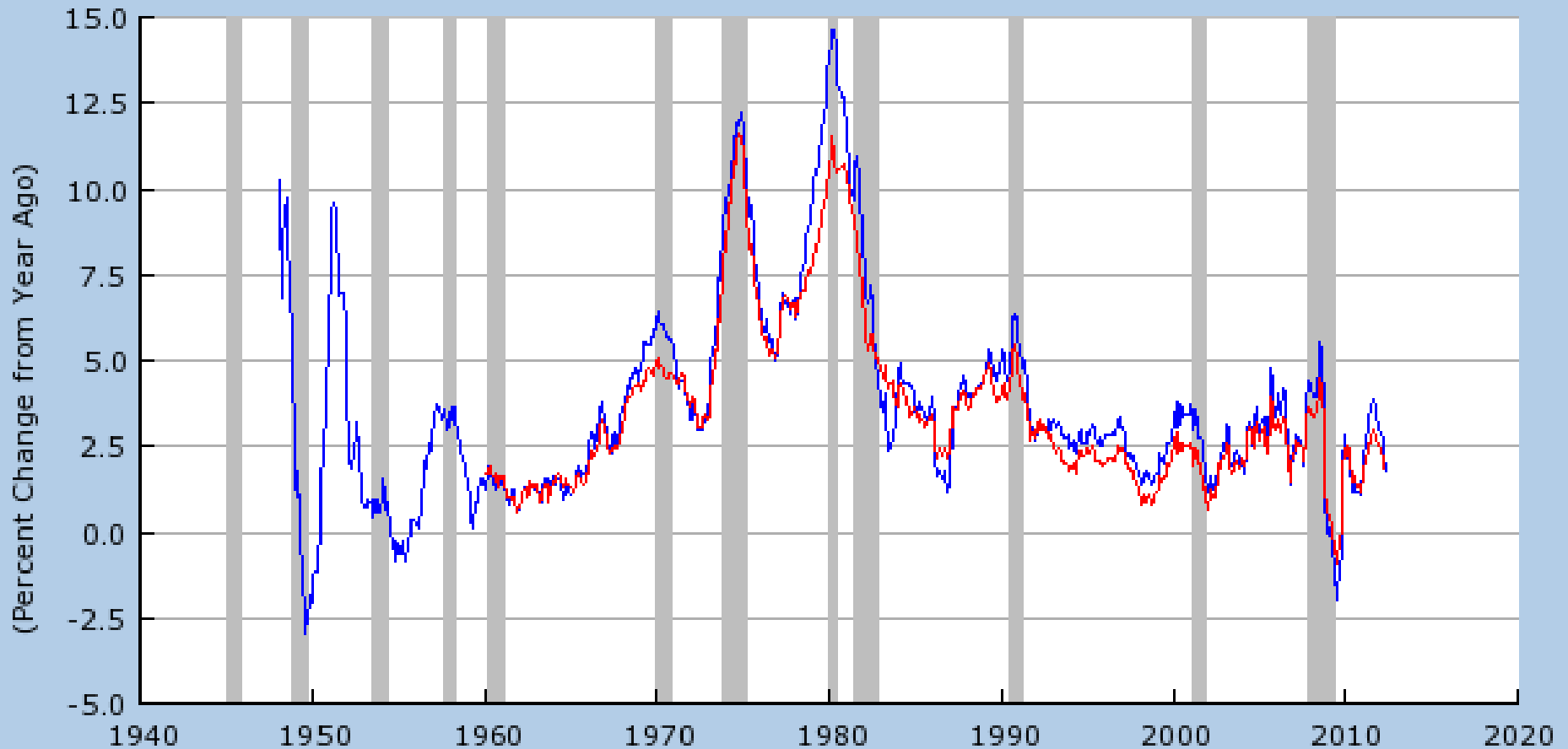
- “The Bureau emphasized that the ... advance estimate ... is based on source data that are incomplete or subject to further revision by the source agency”
- “more complete source data”
- The mean absolute revision in the growth rate of U.S. real GDP has been around one percentage point.
- Seasonal adjustment:
 - Seasonal events affecting the economy follow a more or less regular pattern each year.
 - Statistics are regularly adjusted to make it easier to observe the longer term movements in the series.
 - Big deal with weather in early 2012.
 - We need to adjust the seasonal adjustments regularly.

Prices and Inflation

- Overall/Headline: General rise in the price level.
- Consumer Price Index (CPI)
 - Produced by the Bureau of Labor Statistics (BLS)
 - Used to make cost-of-living adjustments to Social Security benefits.
- Personal Consumption Expenditures (PCE) price index
 - Produced by the Bureau of Economic Analysis (BEA)
 - As of January, 2012, the Fed has a target of 2% inflation as measured by the PCE price index.
- CPI is generally about 0.5% points higher than PCE
- Core measures exclude food and energy
 - Reduces volatility.
 - May be a better forecast of future inflation than overall/headline inflation.

CPI and PCE

Consumer Price Index for All Urban Consumers: All Items (CPIAUCSL)
Personal Consumption Expenditures: Chain-type Price Index (PCEPI)

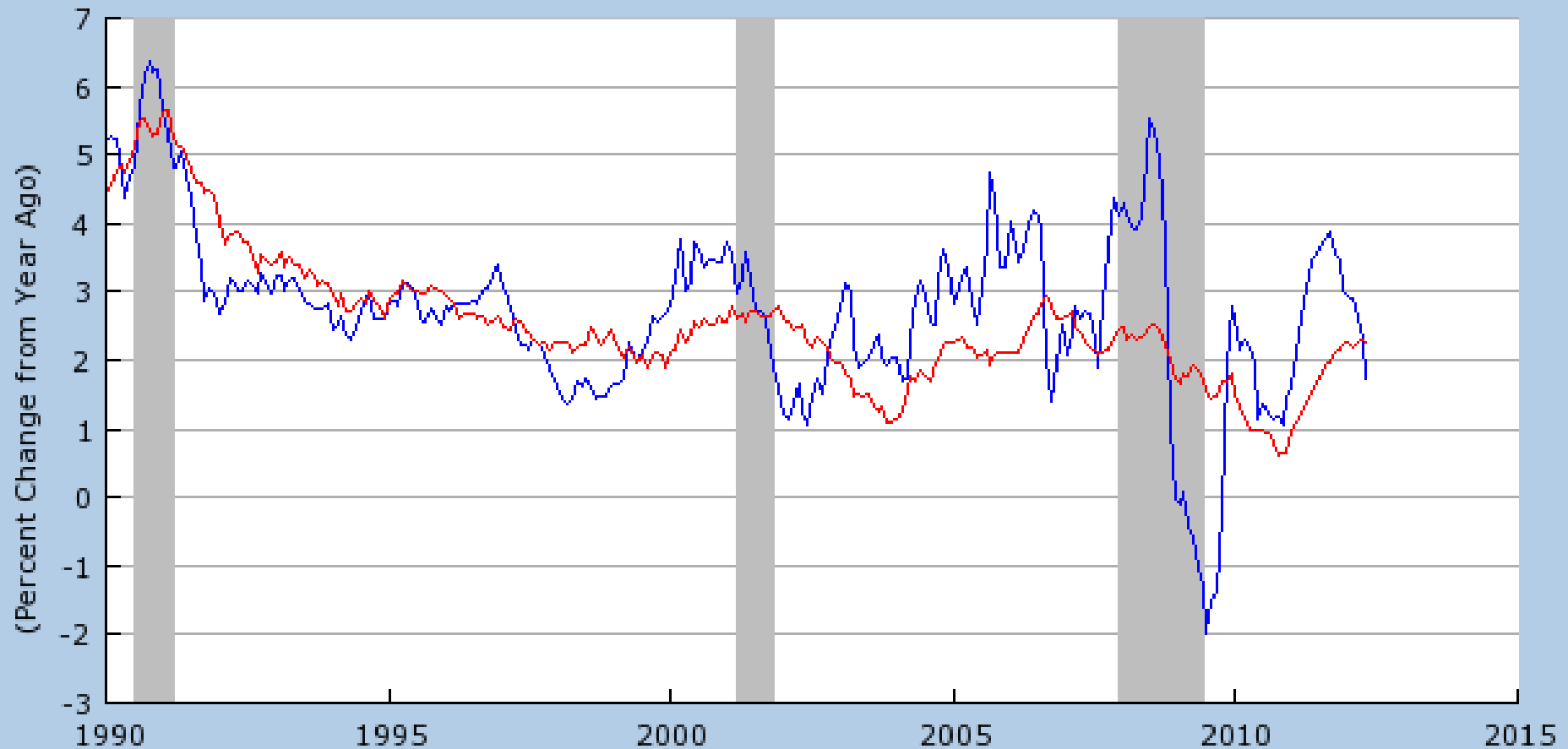


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CPI and “Core” CPI

Consumer Price Index for All Urban Consumers: All Items (CPIAUCSL)

Consumer Price Index for All Urban Consumers: All Items Less Food & Energy (CPIILFESL)



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— CPIAUCSL
— CPIILFESL

Employment and Unemployment

- Most labor market data are collected by the Bureau of Labor Statistics (BLS)
- Monthly Survey Data
 - Current Population Survey (CPS)
 - A Joint Effort Between the BLS and the Census Bureau
 - Household survey
 - Key data: Unemployment Rate
 - Current Employment Statistics (CES)
 - Establishment survey
 - Eventually “benchmarked” to the “universe” of employed persons
 - Key data: Payroll employment
- Population = employed + unemployed
+ not in the labor force

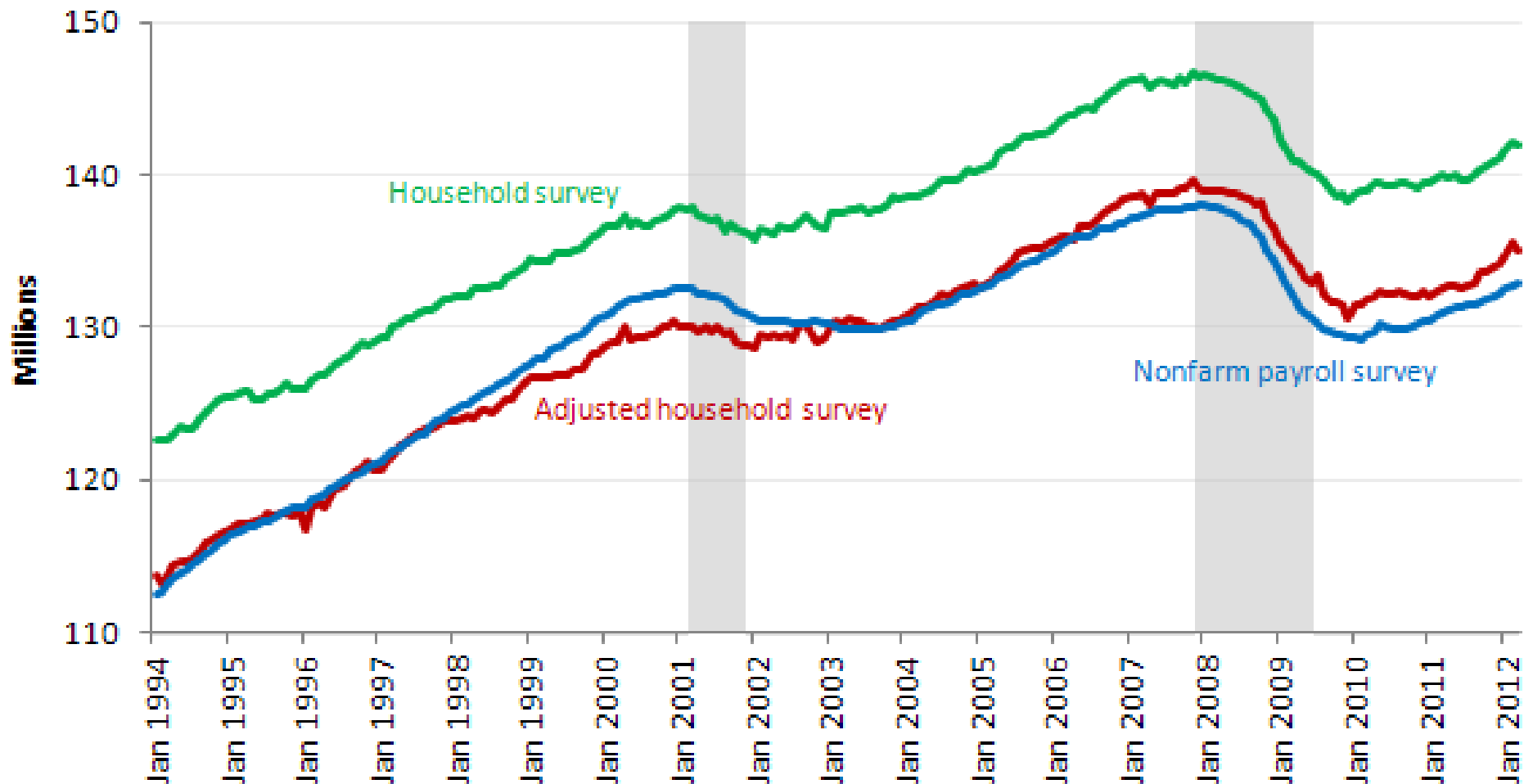
Statistical Significance

- Estimates of monthly changes in employment or unemployment are often not “statistically different” from zero.
- BLS language:
 - “changed little”
 - “basically unchanged”
- The estimates may look big.
 - But, if we can’t say they’re different from zero then we need to look for more information.
- We may not even be sure of the direction of the change!

Two Monthly Measures of Employment

| | Establishment Survey | Household Survey |
|--|------------------------------------|------------------------------------|
| Approx. Sample Size | 486,000 establishments | 60,000 households |
| “Statistically Significant” Change | 100,000 | 400,000 |
| Demographic Groups? | No | Yes |
| Includes self employed, agriculture, etc? | No | Yes |
| Most Recent Value | 133,009,000 Persons (May, 2012) | 142,287,000 Persons (May, 2012) |

Household and nonfarm payroll survey employment, in millions, seasonally adjusted, January 1994–March 2012



Source: U.S. Bureau of Labor Statistics; shaded areas represent recessions.

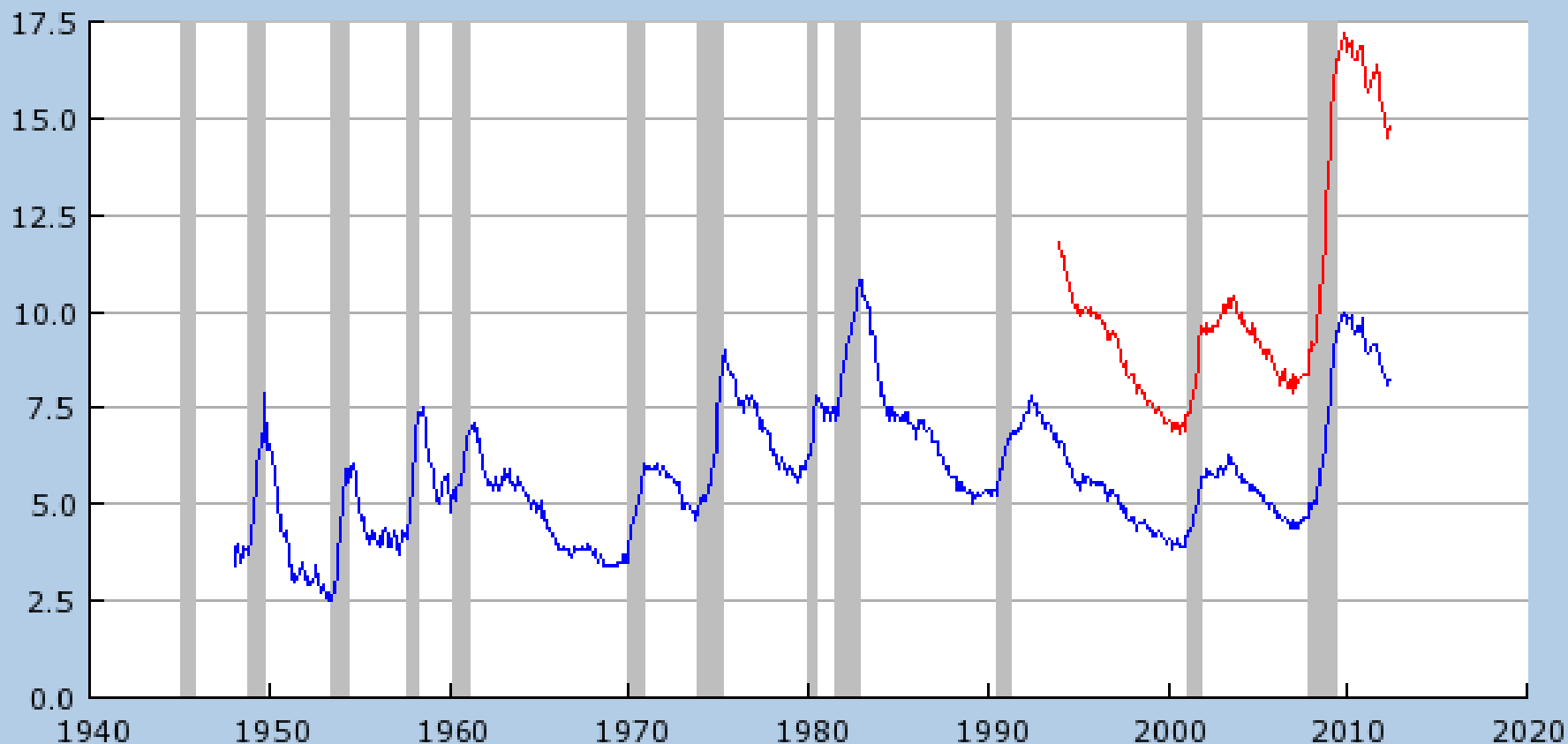
Measures of Unemployment

- U3: Civilian Unemployment Rate
 - Conventional unemployment rate
 - “Total unemployed persons, as a percent of the civilian labor force.”
- U6: Total unemployed, plus ...
 - The broadest Bureau of Labor Statistics (BLS) measure of unemployment
 - “Total unemployed persons, plus all ‘marginally attached’ workers, plus all persons employed part time for economic reasons, as a percent of the civilian labor force plus all ‘marginally attached’ workers.”

U3 and U6 Unemployment Rates

Civilian Unemployment Rate (UNRATE)

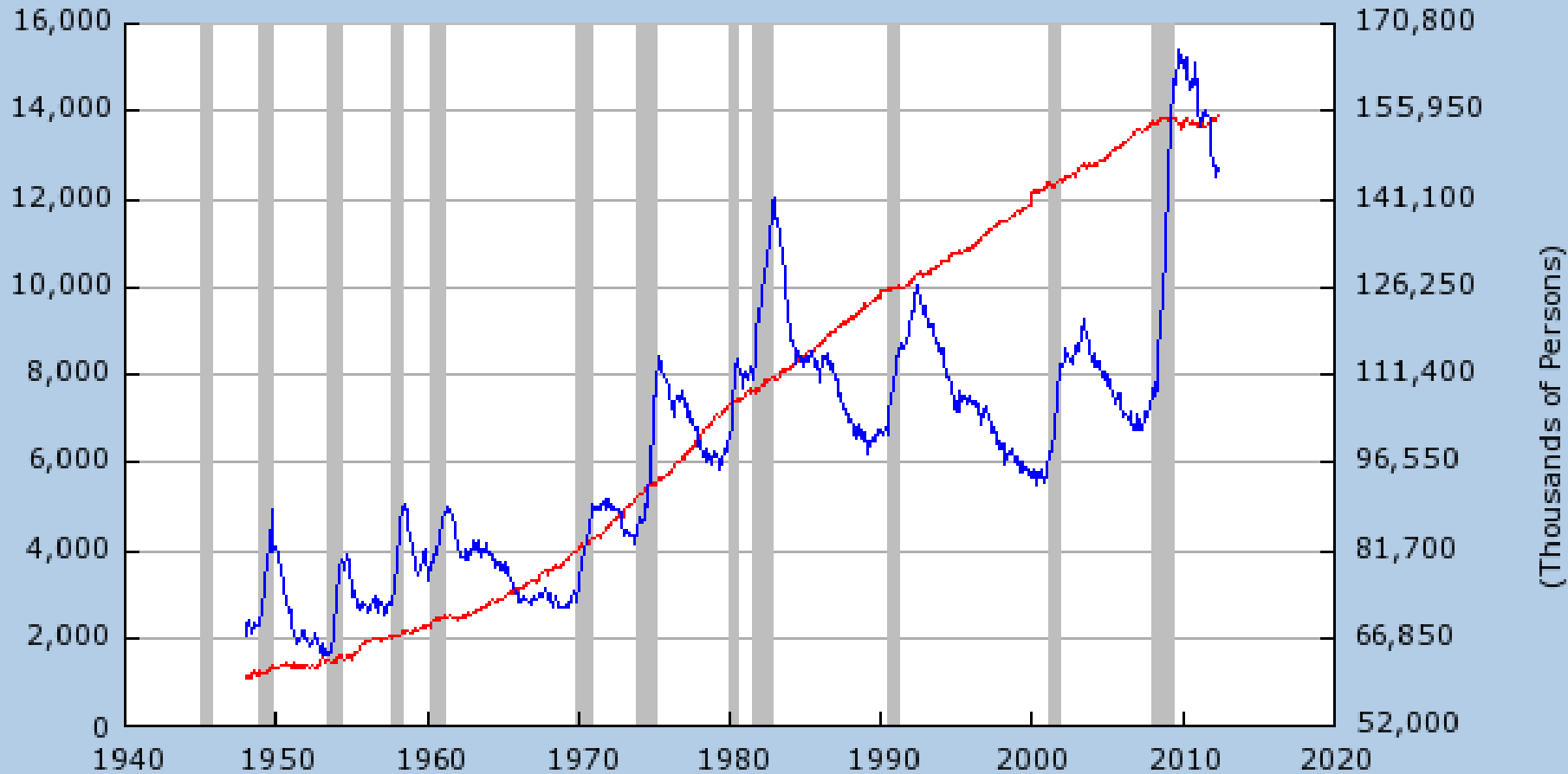
Total unemployed, plus all marginally attached workers plus total employed part time for economic reasons (U6RATE)



Shaded areas indicate US recessions.
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UNRATE
U6RATE

Unemployed (UNEMPLOY) Civilian Labor Force (CLF160V)



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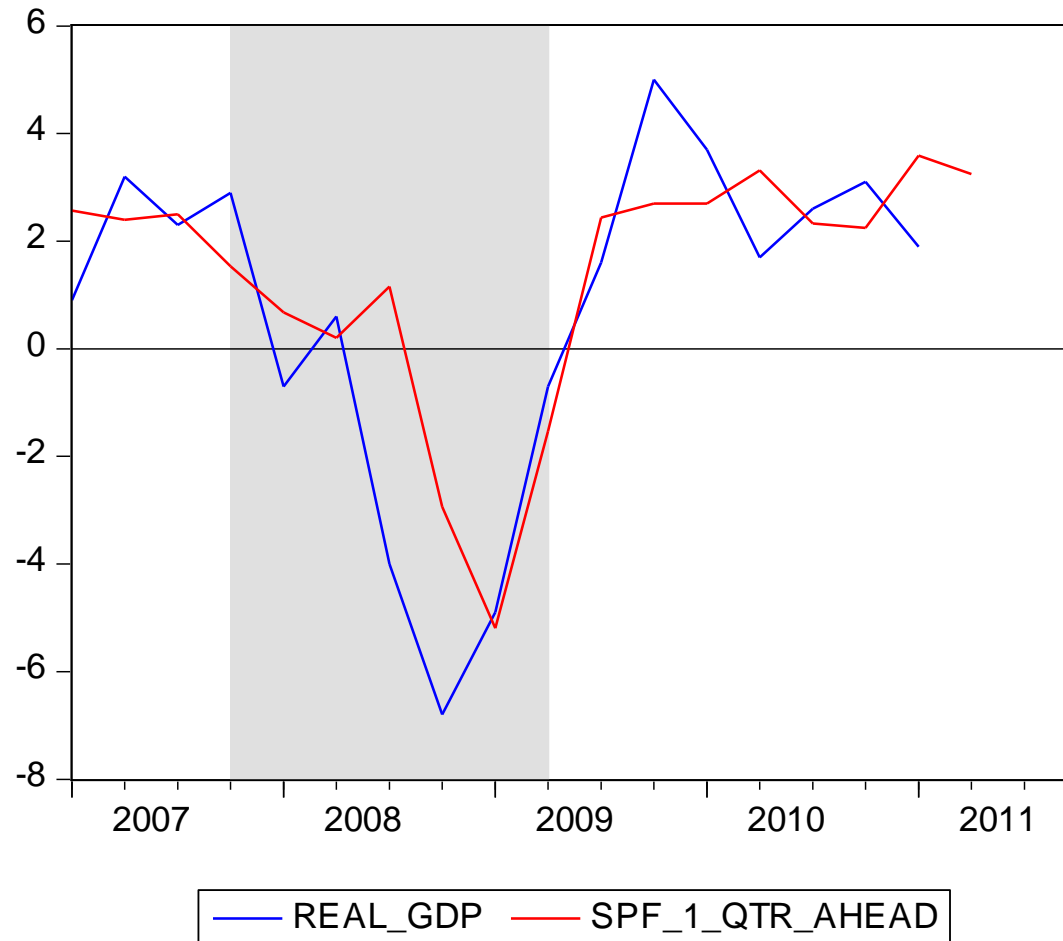
- UNEMPLOY (Left)
- CLF160V (Right)



Forecasts?

- “An economist is an expert who will know tomorrow why the things he predicted yesterday didn't happen today.”
 - Laurence J. Peter
- The Federal Reserve Board's staff is generally the best forecaster for the U.S. economy
 - The best does not mean good, particularly for recessions
 - Forecasts only released with a 5 year lag
 - Forecasts released from the FOMC (the committee at the Fed responsible for making monetary policy decisions) are not as good.
- Recently surveys of professional forecasts have mostly caught up to the Fed
 - Survey of Professional Forecasters (SPF)

Example Forecast



A Note about Recessions

- When is the U.S. in a recession?
 - No rule of thumb
 - Determined by (NBER) Business Cycle Dating Committee
 - Only know in hindsight
 - NBER didn't call peak of 12/2007 until December of 2008.
- Fed may know when we're in one and when we're out of one, but not what is going to happen next...
- End of a recession doesn't mean good times are here again!
- Data revisions larger
- Forecasts worse

Final Takeaways

- Macroeconomic data can send mixed signals as it arrives in real time.
- Macroeconomic forecasts are even less reliable than the incoming current data.
- It is unfortunately even harder to produce correct estimates and forecasts in downturns.
- But, U.S. statistical agencies are hard at work to produce the best and most useful data possible.
- So...
 - don't be surprised when the data and the forecasts change.
 - don't rely on a single number.
 - Be careful to watch for statistical significance.

Contact Information

- Feel free to contact me for interviews, background research, or just curiosity questions about:
 - Macroeconomic data and forecasts for the U.S. and around the world; U.S., Euro-Area, China, Canada, Australia, or global macro events; Federal Reserve actions; government macro policy or impacts; interaction of the elections with the economy; etc.
- How to reach me:

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- Also feel free to check my website and blog for new research:
 - Web: <http://home.gwu.edu/~tsinc/>
 - Blog: <http://internationaleconpolicy.wordpress.com/author/taramsinclair/>

Data Sources

- BEA Website: <http://www.bea.gov/index.htm>
 - Data and methodology for:
 - GDP
 - PCE
- BLS Website: <http://www.bls.gov/>
 - Data and methodology for:
 - CPI
 - PPI
 - Employment and unemployment measures
- Business Cycle Dates: <http://www.nber.org/cycles/>
- St. Louis Federal Reserve
 - Most recently revised data: Federal Reserve Economic Data (FRED):
 - <http://research.stlouisfed.org/fred2/>
 - “Vintage” data: Archival Federal Reserve Economic Data (ALFRED)
 - <http://alfred.stlouisfed.org/>
- Philadelphia Federal Reserve
 - Real Time Data:
 - <http://www.philadelphiafed.org/research-and-data/real-time-center/real-time-data/>
 - Forecasts:
 - Greenbook data:
 - <http://www.philadelphiafed.org/research-and-data/real-time-center/greenbook-data/>
 - **FOMC forecasts**
 - <http://www.philadelphiafed.org/research-and-data/real-time-center/monetary-policy-projections/>
 - Survey of Professional Forecasters:
 - <http://www.philadelphiafed.org/research-and-data/real-time-center/survey-of-professional-forecasters/>

Background Research

- More on GDP Estimates:
 - Landefeld et al (2008, *Journal of Economic Perspectives*)
 - http://www.bea.gov/about/pdf/jep_spring2008.pdf
 - BEA's National Income and Product Accounts (NIPA) Primer
 - http://www.bea.gov/national/pdf/nipa_primer.pdf
- Federal Reserve Speeches:
 - <http://federalreserve.gov/newsevents/speech/2012speech.htm>
- Real time data analysis:
 - Croushore (2011, *Journal of Economic Literature*)
 - <http://www.aeaweb.org/articles.php?doi=10.1257/jel.49.1.72>
- Fed's forecasting ability generally:
 - Romer and Romer (2000, *American Economic Review*)
 - http://elsa.berkeley.edu/wp/c+dromer_aer2000.pdf
- Data Revisions in Recessions:
 - Swanson and van Dijk (2006, *Journal of Business and Economic Statistics*)
 - <http://amstat.tandfonline.com/doi/abs/10.1198/073500105000000036>
 - Haltom et al (2005, Federal Reserve Bank of Atlanta *Economic Review*)
 - http://www.frbatlanta.org/filelegacydocs/erq205_haltom.pdf
- Fed's forecasting ability in recessions:
 - Sinclair et al (2010, *Economic Letters*)
 - <http://www.sciencedirect.com/science/article/pii/S0165176510001278>
- Comparing the Fed Staff and the FOMC for forecasting:
 - Romer and Romer (2008, *American Economic Review*)
 - http://elsa.berkeley.edu/~dromer/papers/aer_98_2.pdf

Other Great Places to Check for Economic Stories

- NBER Working Paper Series:
 - <http://federalreserve.gov/newsevents/speech/2012speech.htm>
- Shameless Plugs:
 - GWU Research Program on Forecasting:
 - <http://research.columbian.gwu.edu/cer/research/forecasting>
 - GWU Institute for International Economic Policy:
 - <http://www.gwu.edu/~iiep/>
- A few of my favorite blogs:
 - <http://internationaleconpolicy.wordpress.com/>
 - <http://econbrowser.com/>
 - <http://macroblog.typepad.com/>
 - <http://economistsview.typepad.com/>
 - <http://marginalrevolution.com/>
 - <http://blog.bea.gov/>