How Much Damage Did the Great Recession Inflict on the Productive Capacity of the US Economy?

David W. Wilcox
Federal Reserve Board

Presented at the

Stanford Institute for Economic Policy Research
Stanford University
May 12, 2015

This presentation is based on "Aggregate Supply in the United States: Recent Developments and Implications for the Conduct of Monetary Policy" by Reifschneider, Wascher and Wilcox. The opinions expressed are those of the authors and do not necessarily reflect the views of anyone else in the Federal Reserve System.

Lots of interesting questions about the macro effects of the Great Recession:

1. How much damage did it cause to the productive capacity of the economy?

2. How much unused productive capacity remains?

3. How much damage might be reversible?

4. What are the implications for monetary policy?

Plan for Today

- Address some of these questions based on work with Dave Reifschneider and Bill Wascher:
  - *What happened?*
  - *When could it have been known?*
  - *In what aspects of the economy did it occur?*
  - *What might be implications for monetary policy?*
- Results here are taken from the published version of the paper, based on data through 2014:Q3
- My views only, not an official statement of the FRB or FOMC; views may not be shared by anyone else

Main Takeaways

- Impossible to know with precision how much damage the Great Recession inflicted
  - Uncertainty is pervasive; confidence intervals wide; we're working with just one model—other models would give different answers
- But the one model we worked with suggests the Great Recession inflicted considerable damage
  - Importantly through loss of capital investment
  - MFP may have been affected if R&D was depressed or business formation was limited by credit constraints
  - Evidence on labor market mixed to encouraging
- Whether our results have important implications for monetary policy depends on the details

The basic approach: Following Fleischman and Roberts (2011)…

- We posit a model of the economy:
  - A description of how key elements of the economy evolve
    - A “trend” piece and a “cyclical” piece
  - A description of how inflation evolves
    - Inflation is a function of the cycle and other factors

- … and estimate it using conventional statistical techniques borrowed from engineering
  - Generate estimates of key variables and measures of uncertainty

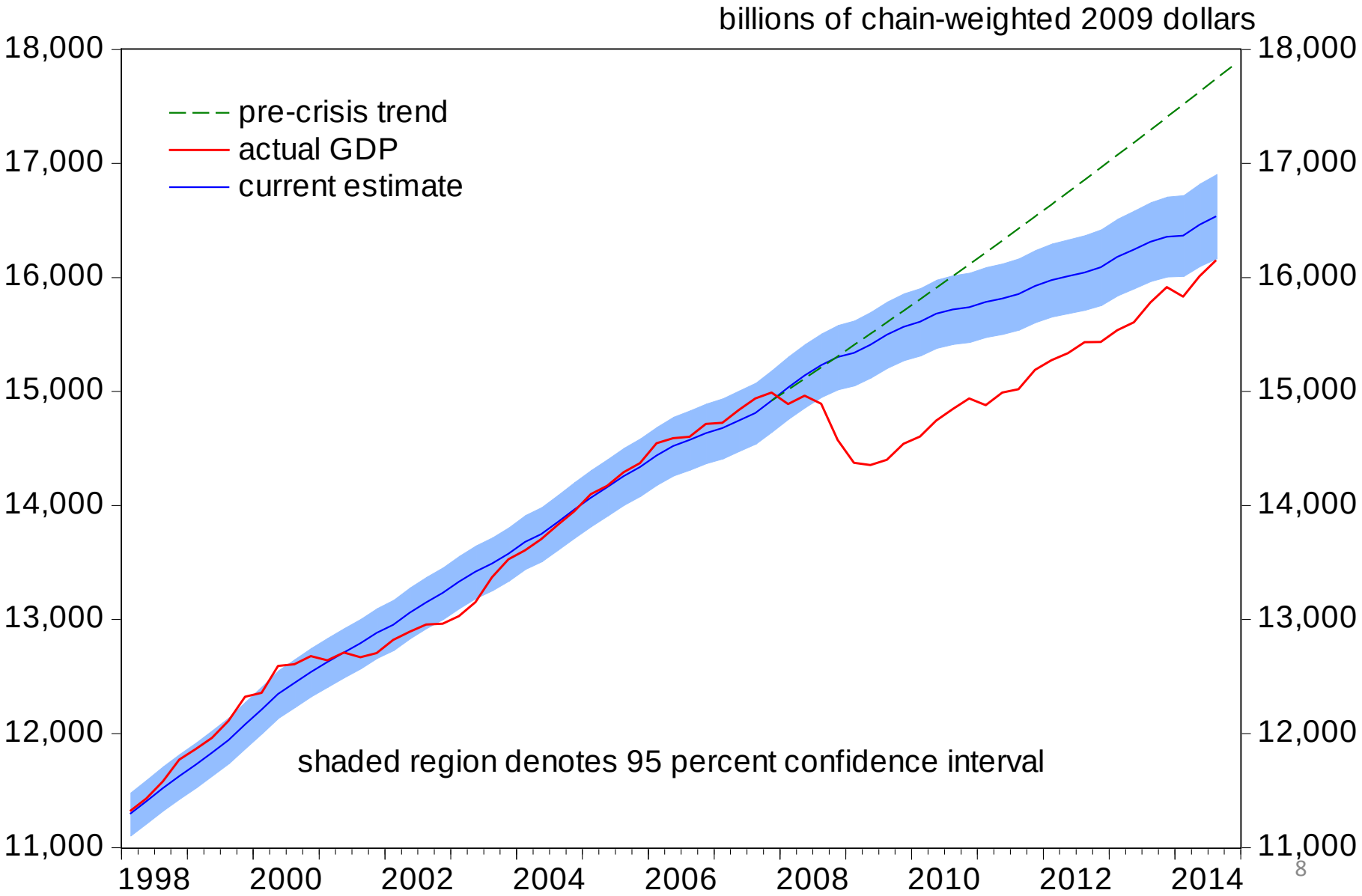
A key feature of the model

- A single “business cycle” drives the behavior of many different variables
  - Possibly with different timing
- Fleischman/Roberts provide a framework for using multiple indicators to sharpen inference about the cycle
  - The most obvious indicators to use are GDP, GDI
  - But also useful are unemployment and inflation
  - Haven’t yet tried indicators built from “big data” or other new sources of info; mixed frequencies?

Plan for presenting model results: According to the model…

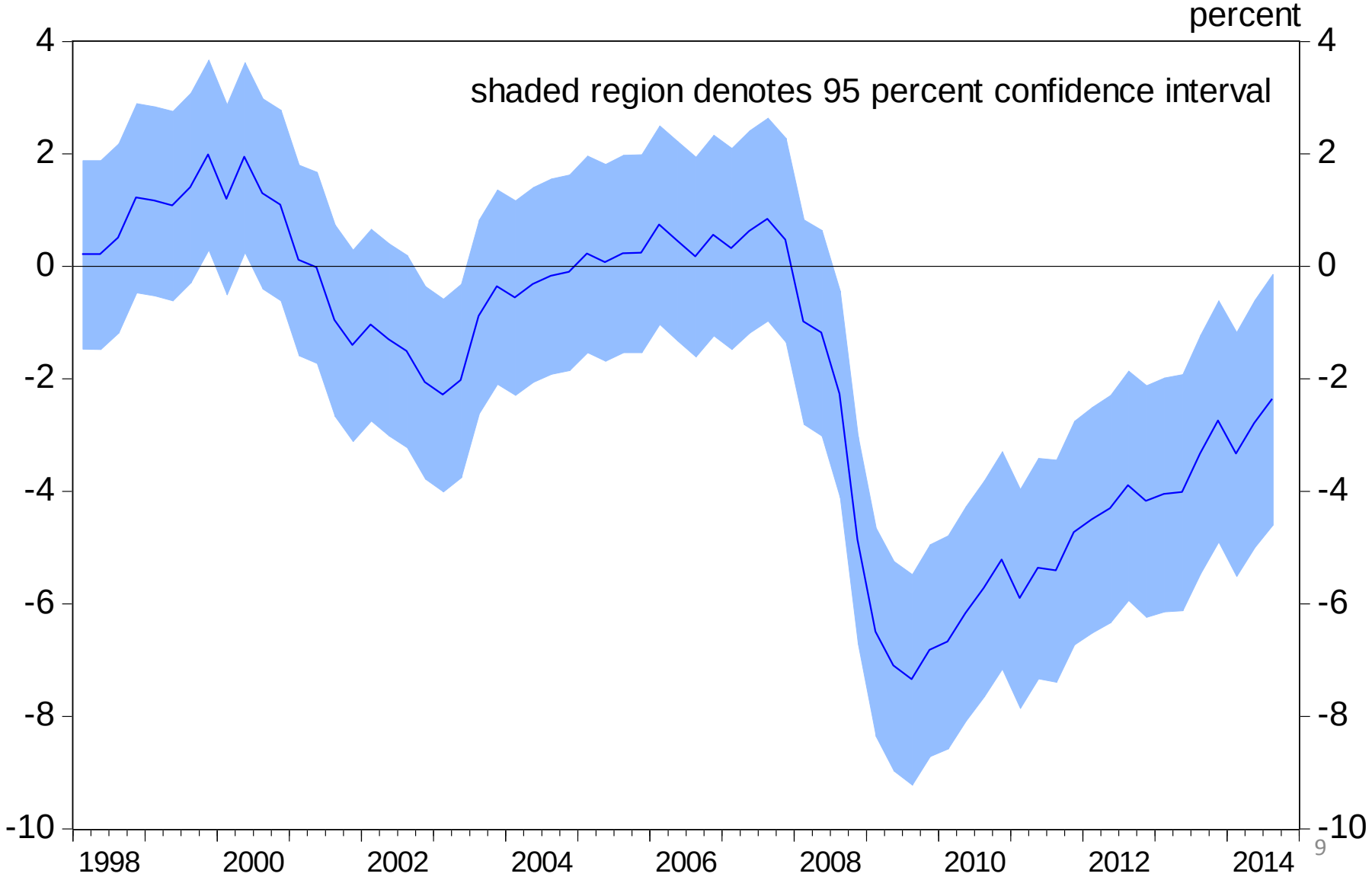
- What happened?
- When could the extent of the damage have been known?
- In what aspects of the economy did the damage occur?

What happened to the productive capacity of the economy?



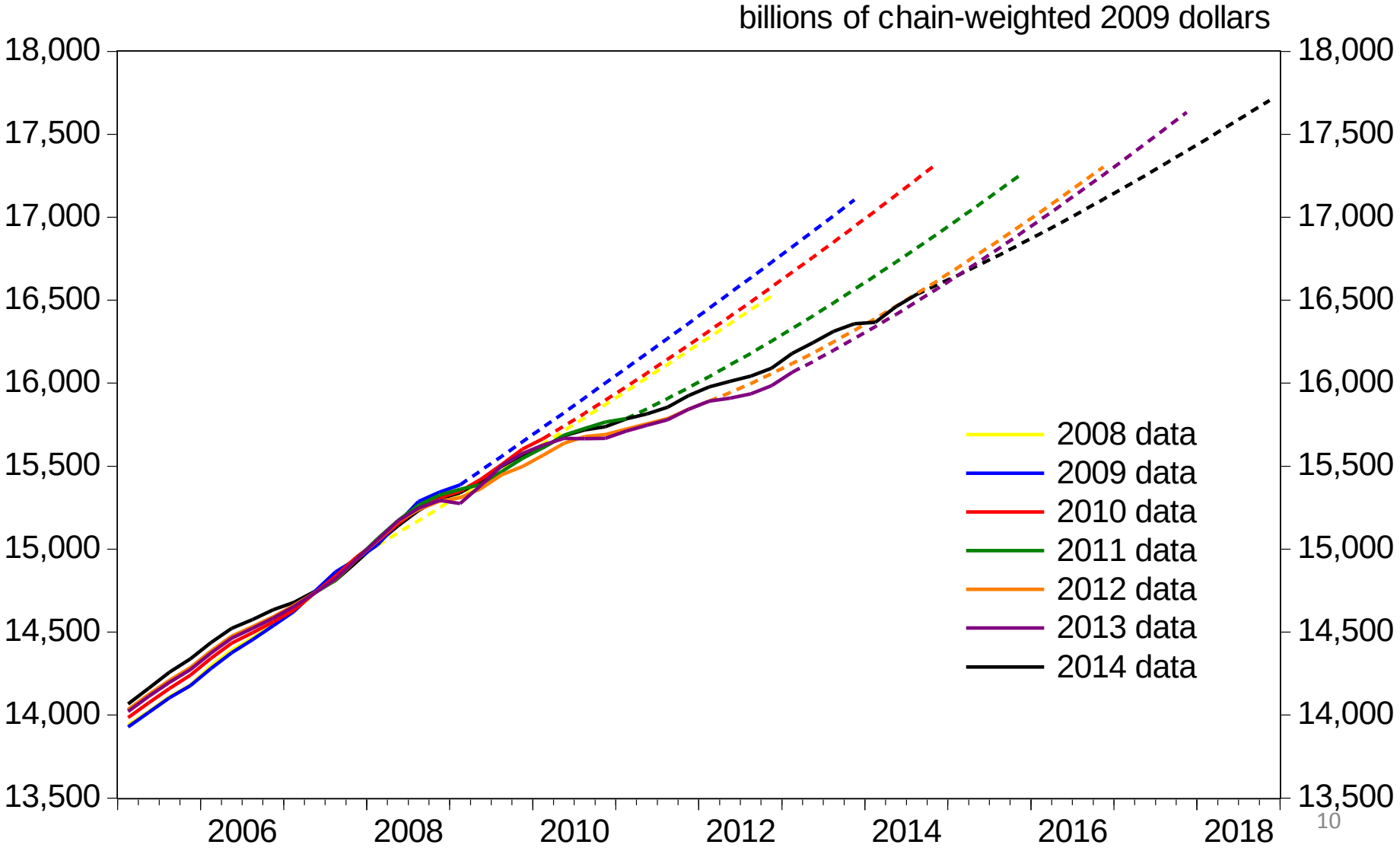
What do these results imply about resource slack?

(estimated percent difference between actual and potential GDP)



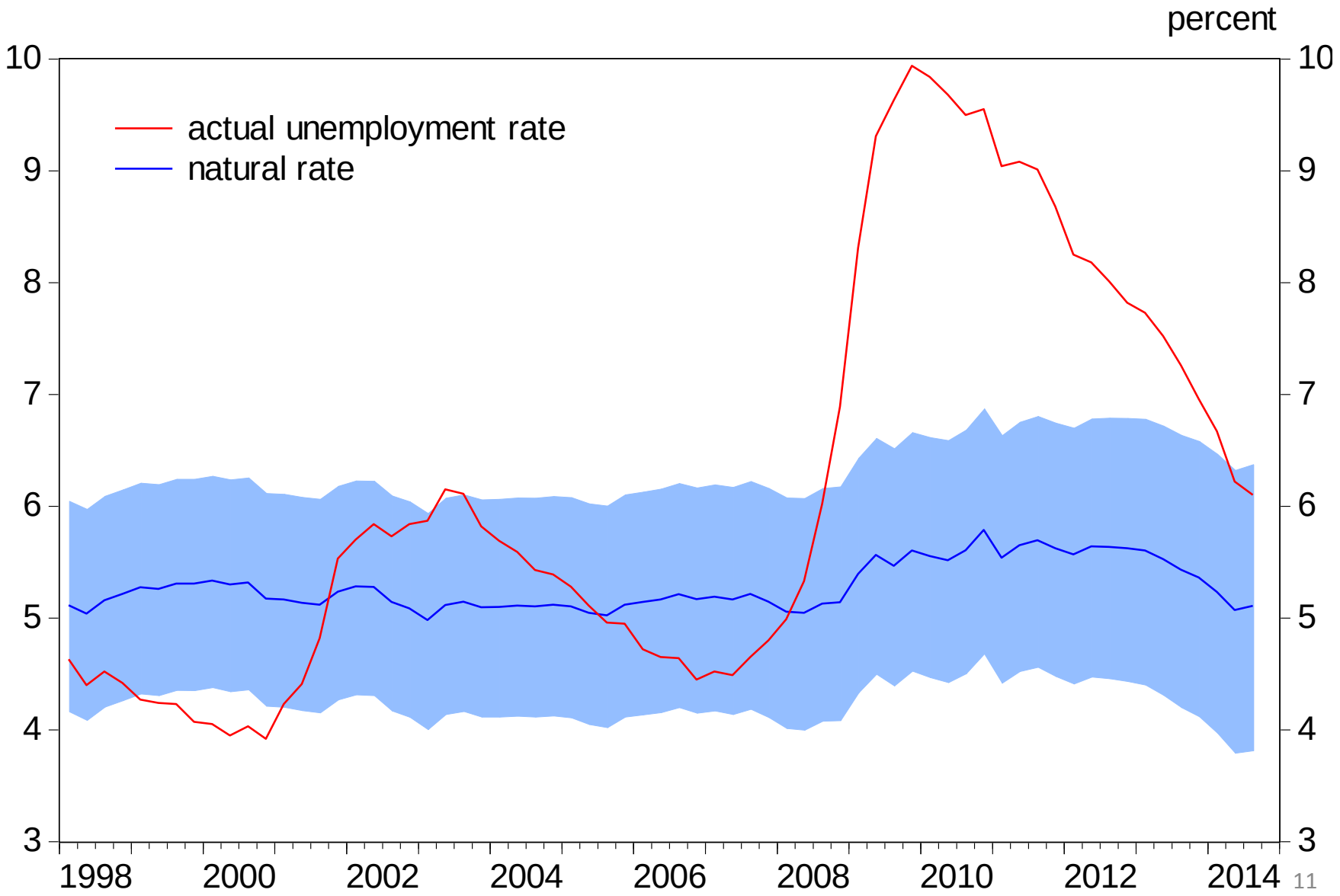
When could the extent of the damage have been known?

(estimates of potential GDP derived from successive vintages of data)



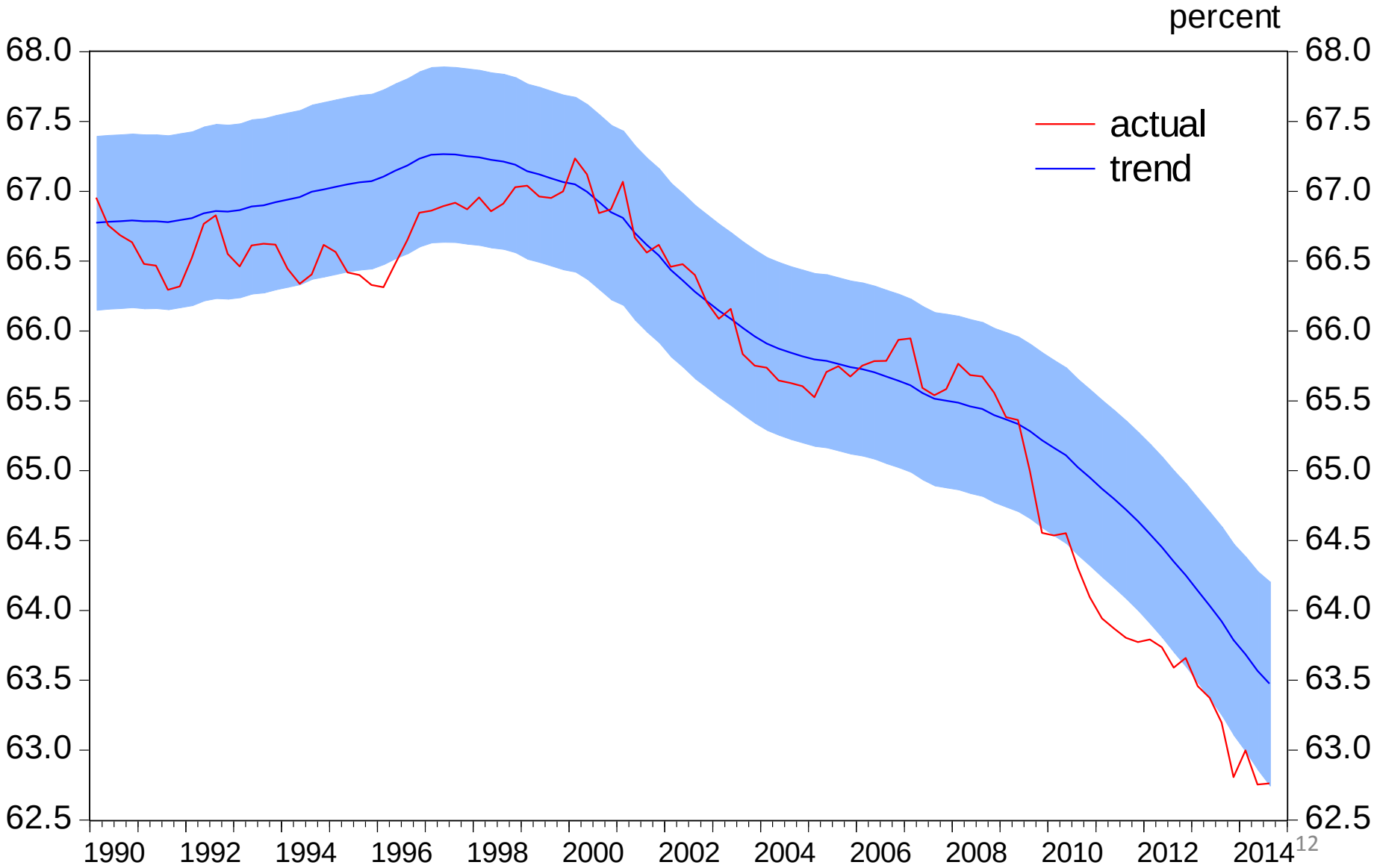
In what aspects of the economy did the damage occur?

Unemployment



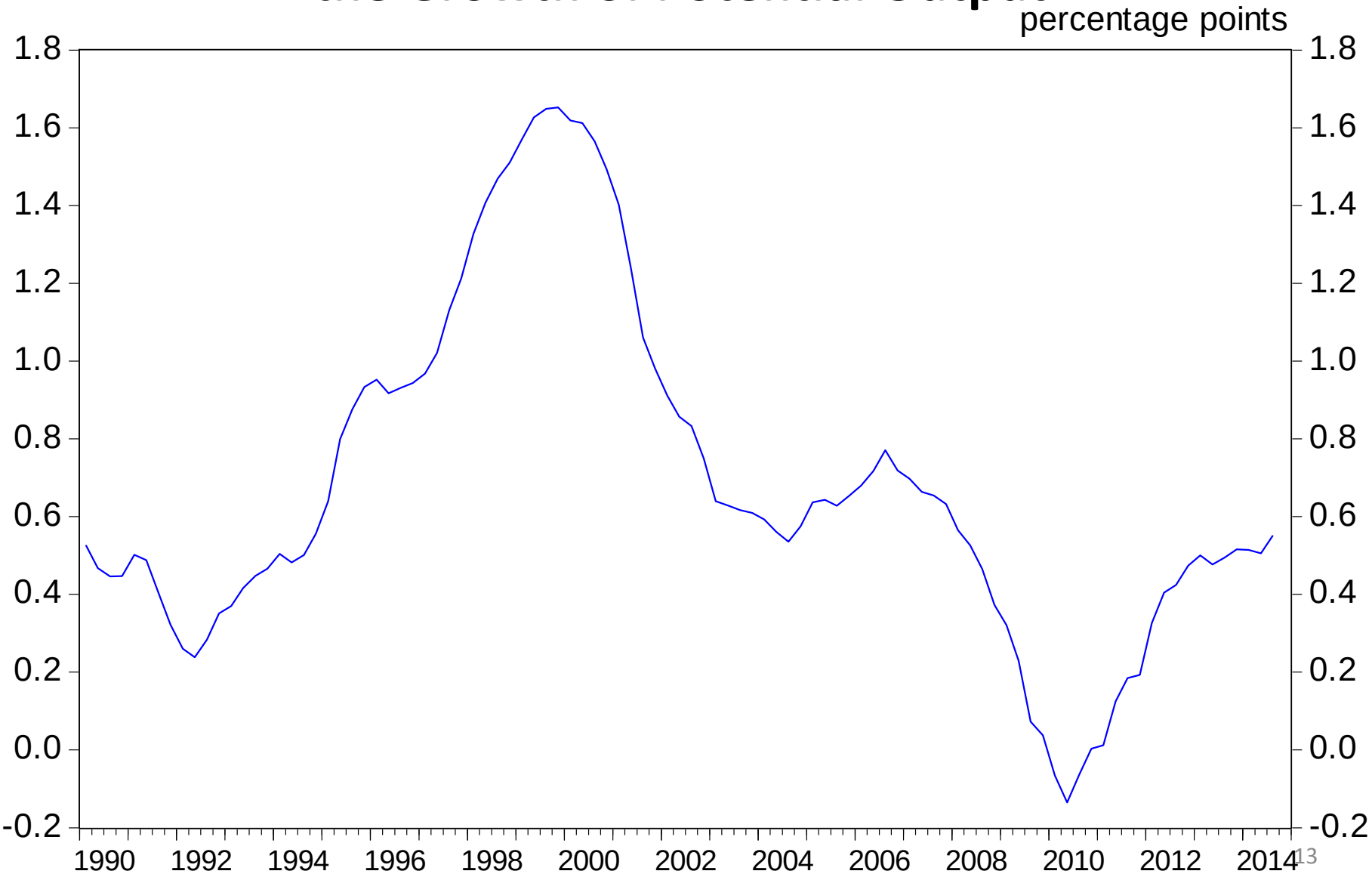
In what aspects of the economy did the damage occur?

Labor force participation



In what aspects of the economy did the damage occur?

Contribution of Capital to the Growth of Potential Output



Implications for monetary policy?
It depends…

- Important to underscore that the stakes for monetary policy are diminished by the following:
  - Uncertainty is pervasive
    - The structure of the economy is perpetually evolving
    - New shocks are always hitting the economy
    - No single model is ever "right"
  - Accordingly, mid-course corrections are part of standard operating procedure

Implications for monetary policy?
It depends…

In an artificial model environment, circumstances that might rationalize an "aggressive" response to cyclical weakness:

- Situation #1:
  - Damage from a cyclical weakening hasn't happened yet;
  - But would happen if cyclical weakness is left unchecked;
  - And would be irreversible once it had occurred
- Situation #2:
  - Damage from a cyclical weakening has already happened
  - But is known to be at least partly reversible

Implications for monetary policy?
It depends…

In an artificial model environment, circumstances that might rationalize a "normal" response:

- Situation #3:
  - The productive capacity of the economy does not depend on the conduct of monetary policy, perhaps because:
    - Damage has already happened and is irreversible;
    - Or because supply conditions never depend on demand

In an artificial model environment, circumstances that might rationalize a "cautious" response:

- Situation #4:
  - An aggressive policy response would have negative ancillary effects, e.g.,
    - Fostering threats to financial stability, or
    - Undermining the anchoring of inflation expectations