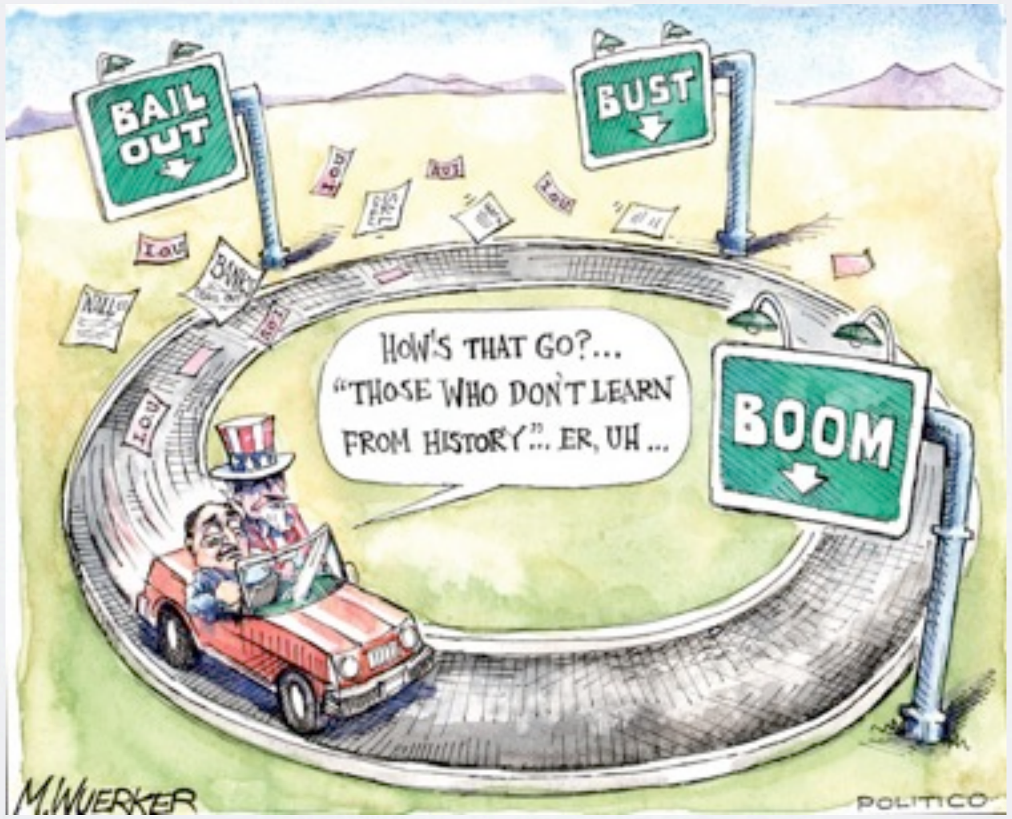
TOPIC 6

Real Business Cycles

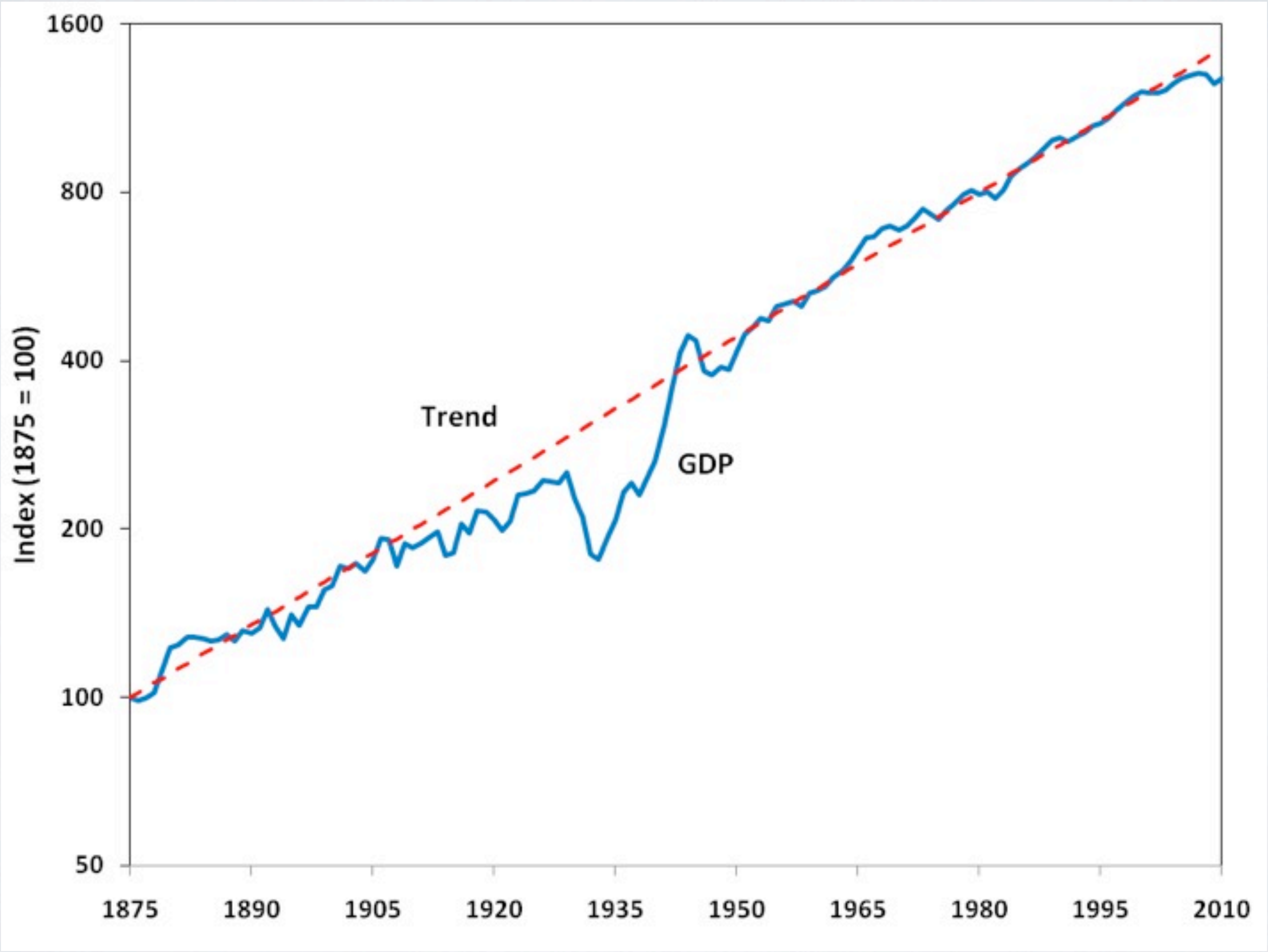
BIG PICTURE QUESTIONS

- What are business cycles?
- How does the current recession fit into this picture?
- What causes business cycles?
- What should the government do about them (if anything)?

TRENDS AROUND GDP GROWTH

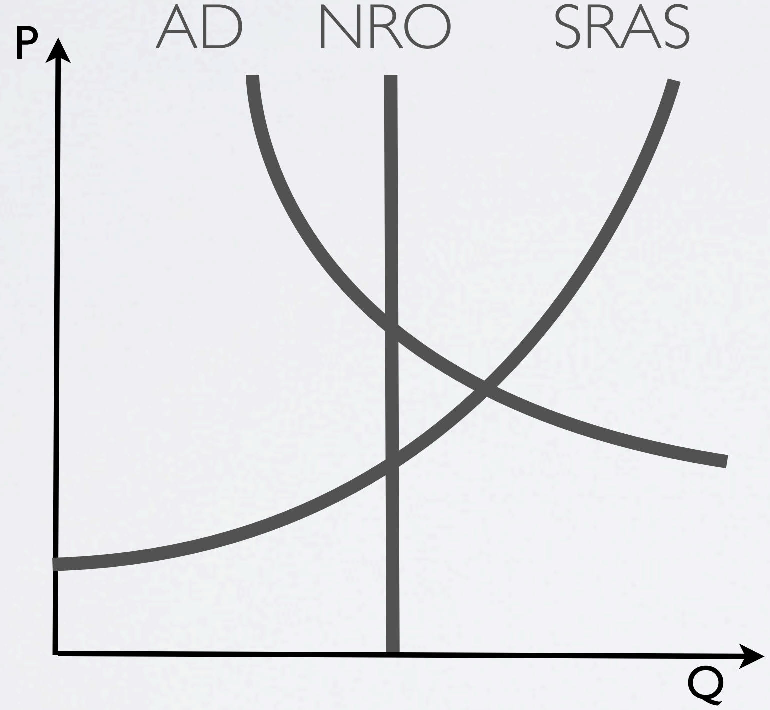


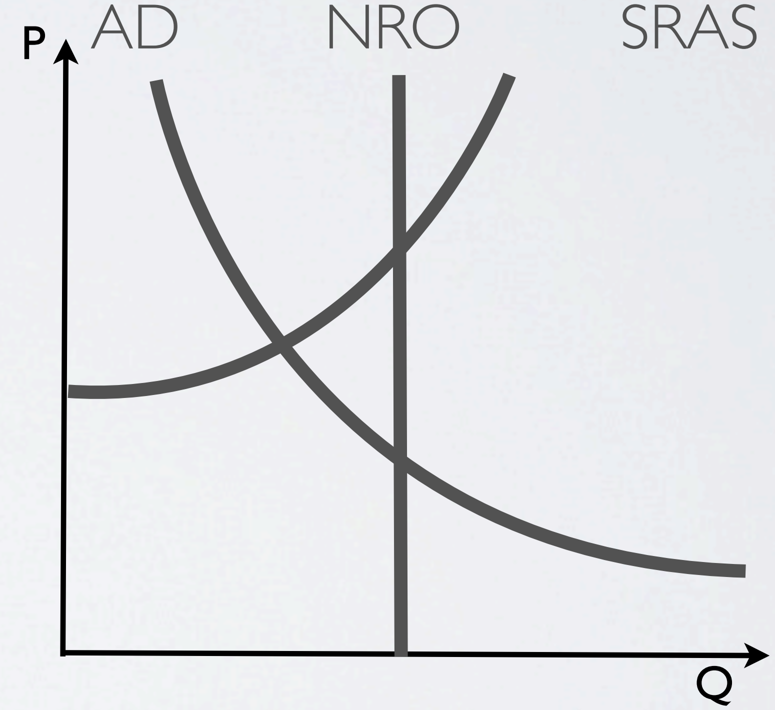
GDP IS NOT STEADY



THE BUSINESS CYCLE

- Growth is not smooth
- Recall

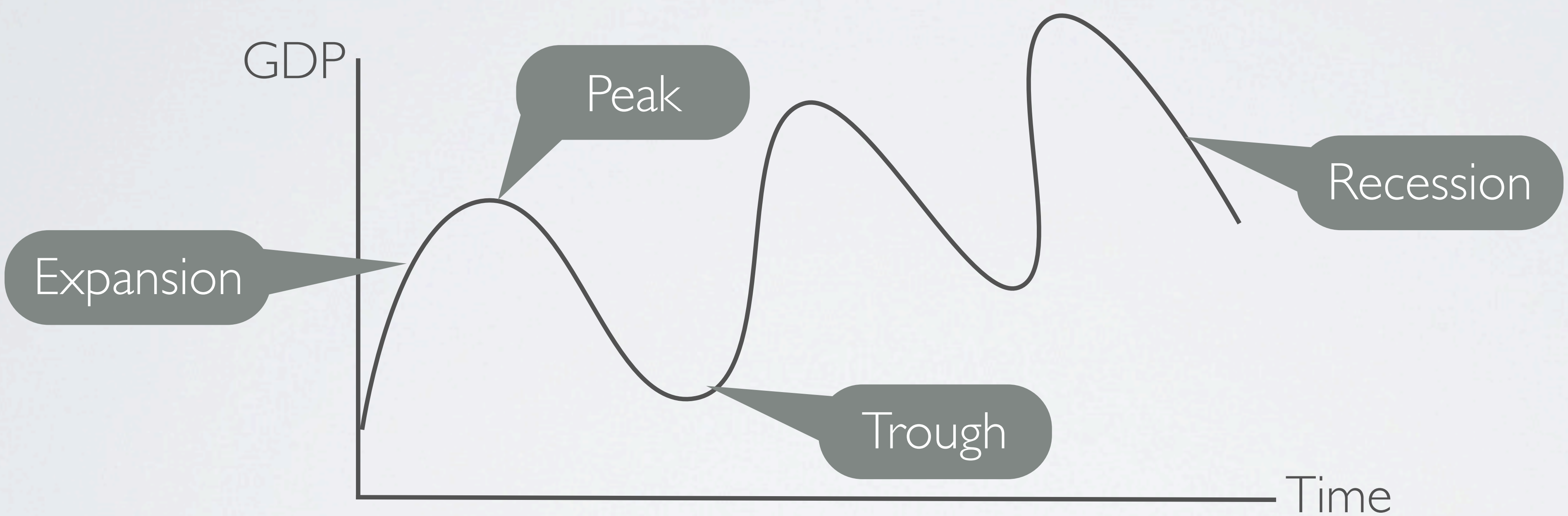




- There are periods of booms and recessions around the *natural rate*

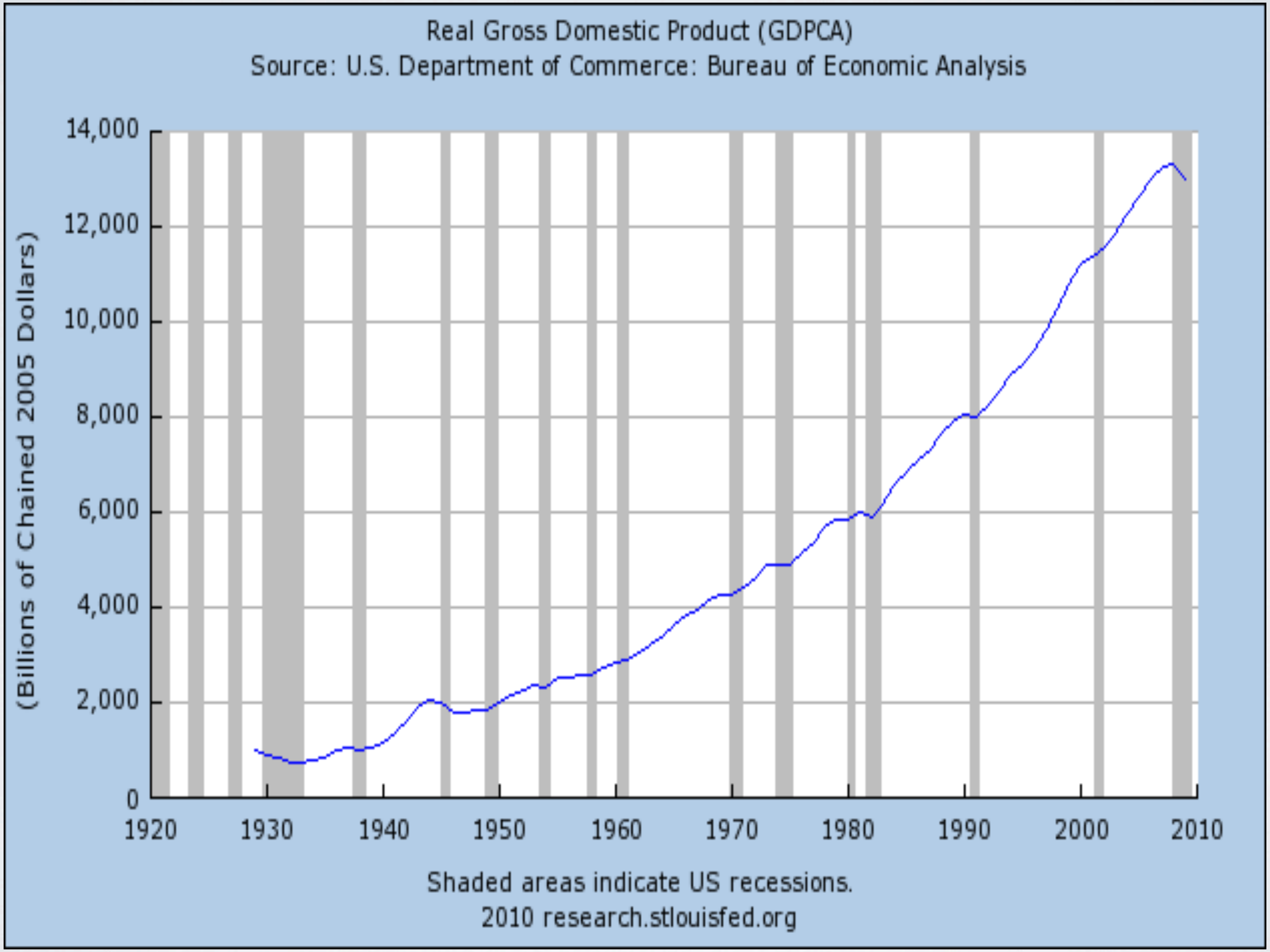
BUSINESS CYCLE

- Business cycle: Recurring increases and decreases in the level of economic activity over periods of years

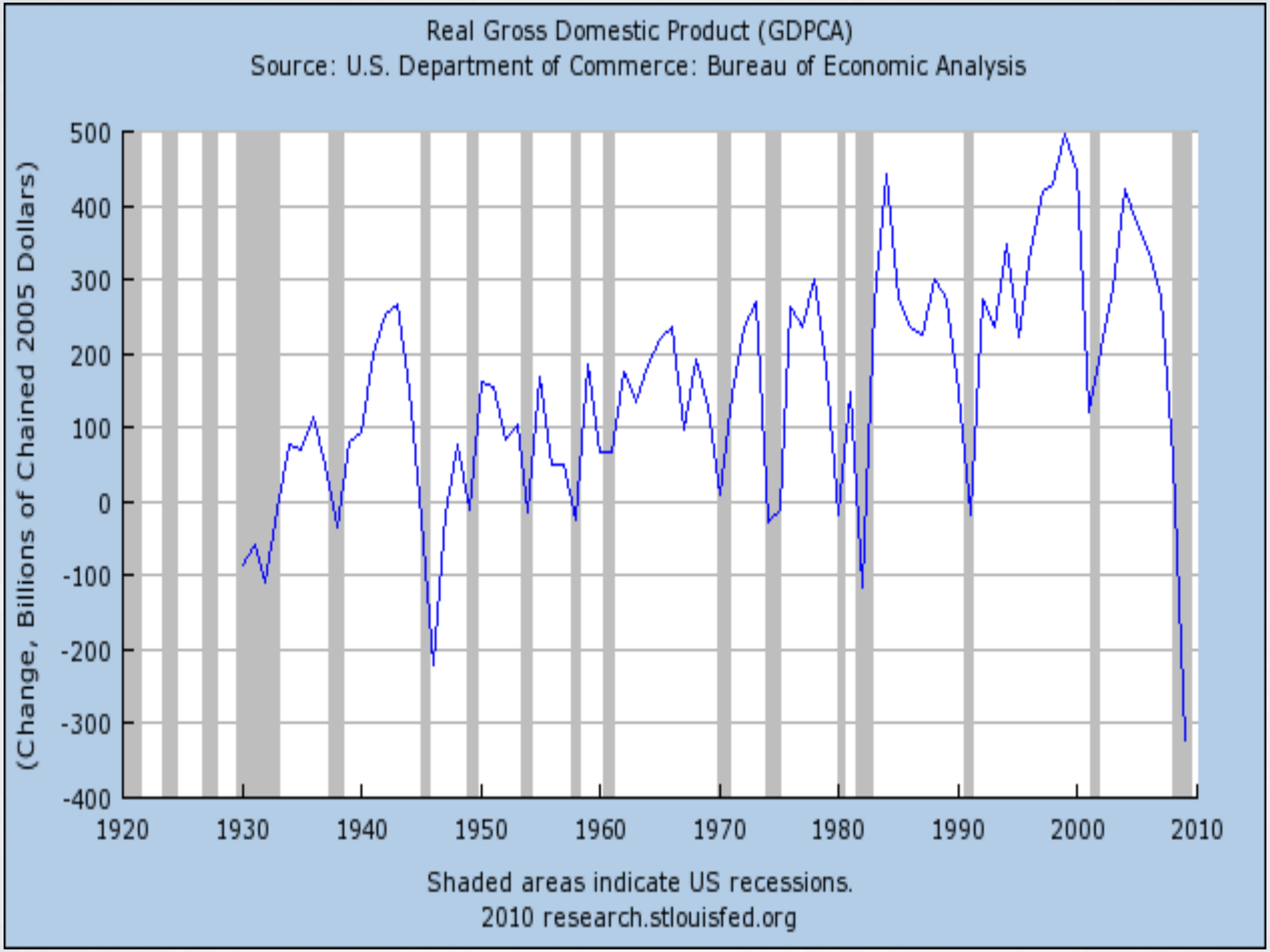


- Expansion: real GDP, income, and employment increase (why not nominal?)
- Recession: real GDP, income, and employment decrease
- Depression: very serious recession

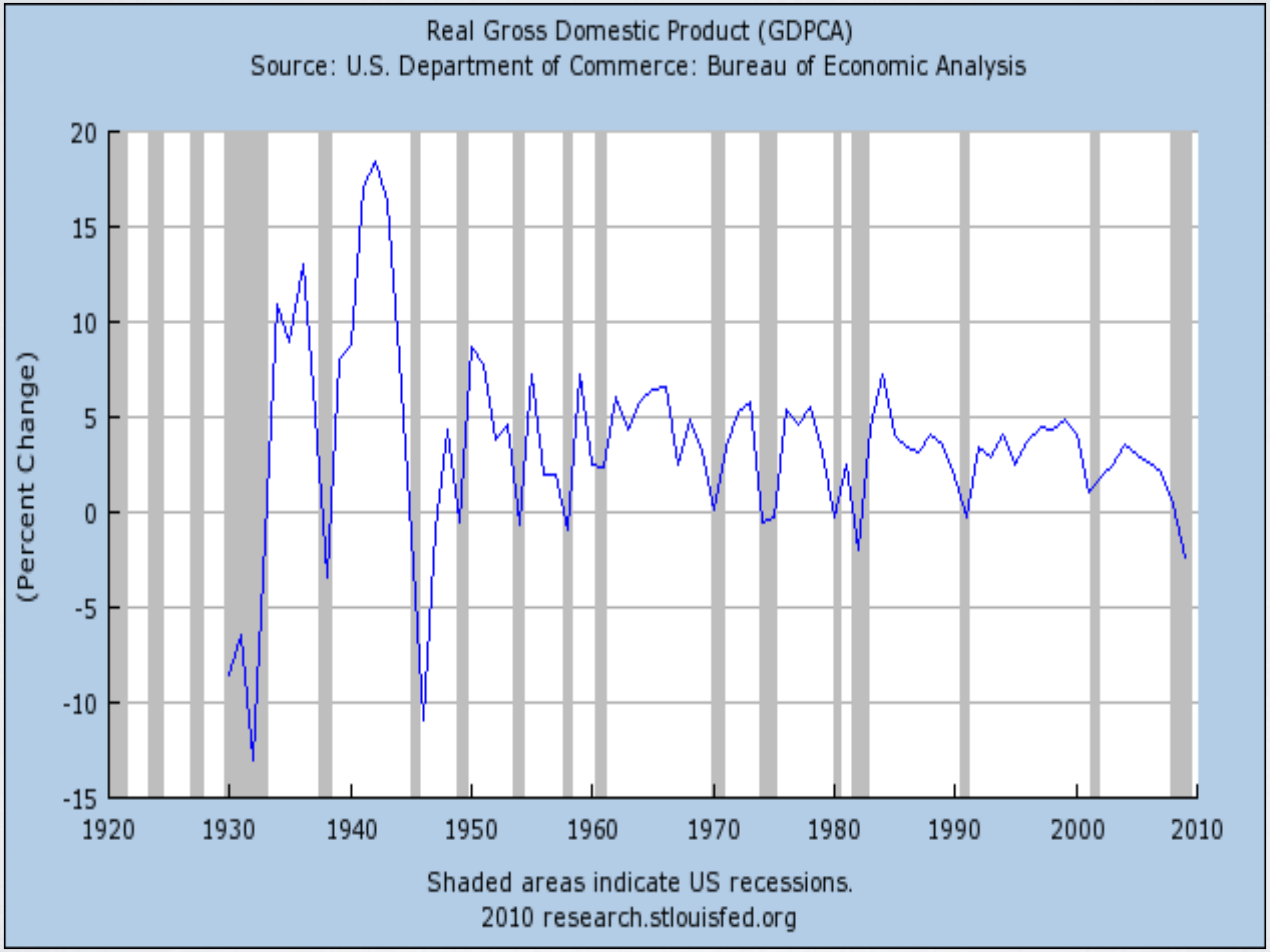
GDP IN RECESSIONS



CHANGE IN RGDP



PERCENT CHANGE IN RDGP



SOME CHARACTERISTICS

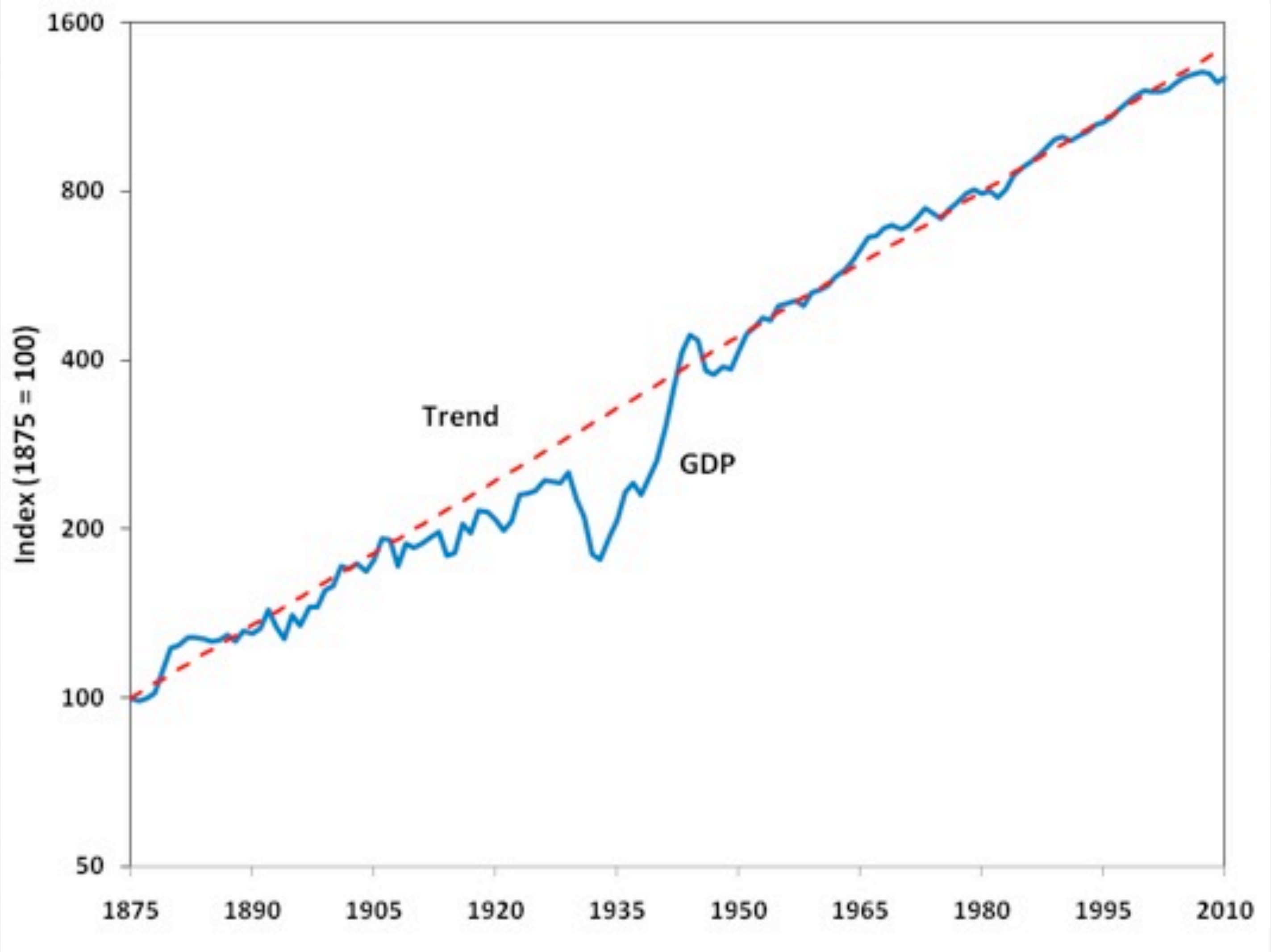
- Business cycles are generally irregular
- Many variables move together during the business cycle:
  - Counter-cyclical: Move against GDP
  - Pro-cyclical: Move with GDP
  - What are some examples of both?
- As output falls, unemployment rises

BUSINESS CYCLE POLICY

- Business cycles are short, but growth is steady

- What could be the role of government in regulating business cycles?

- How do policies toward business cycles differ from policies toward growth?



THE GREAT RECESSION

DEFINING RECESSION

- Recessions officially measured by the NBER in the US
- Recession: "Two quarters of negative RGDP growth;" currently includes more economic variables such as production, sales, employment
- Declaring a recession has begun or is over is not immediate
- What, if any, impact does this official term have on a recession's real damage?

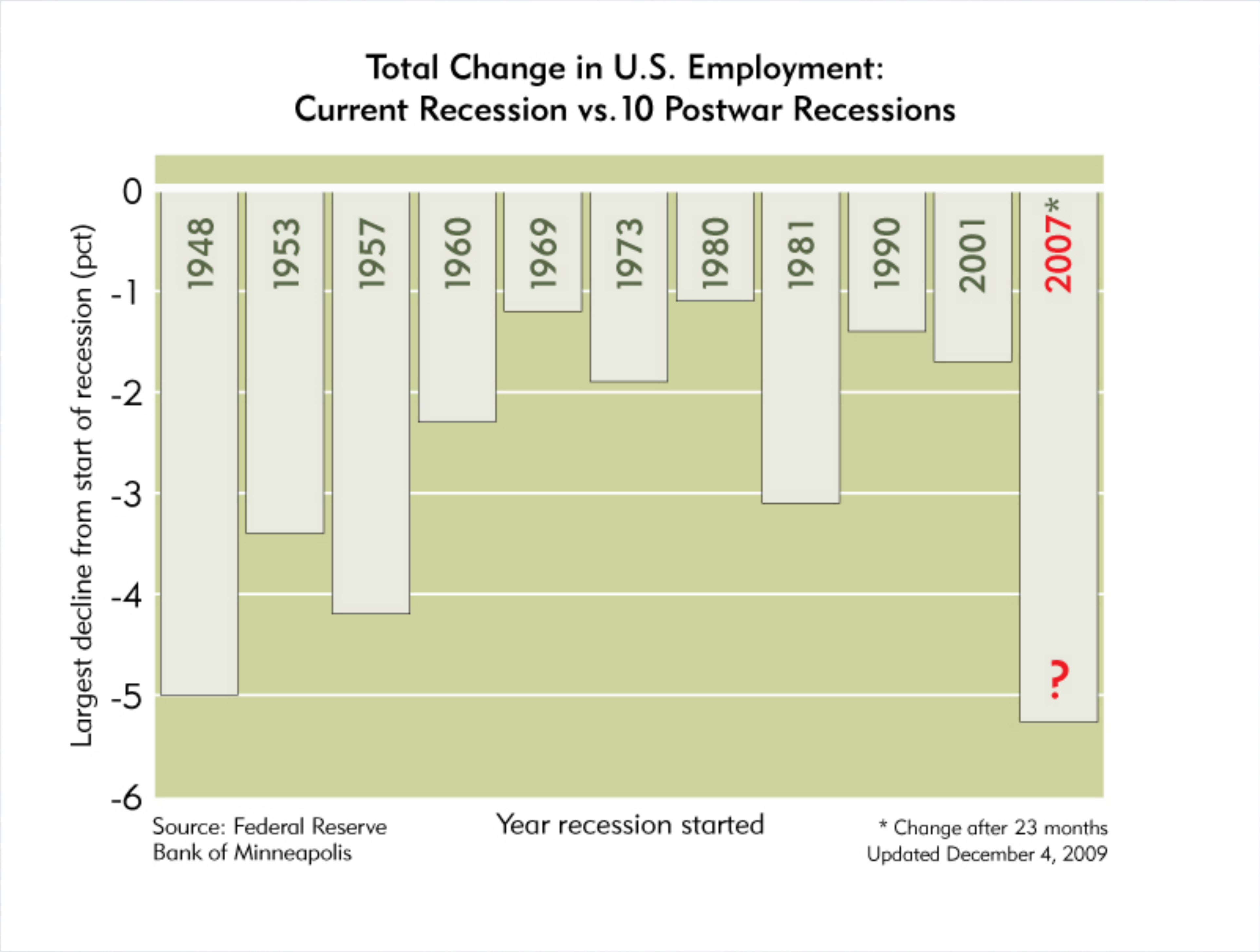
HISTORY OF RECESSION IN THE US

Period	Duration, Months	Depth, % RGDP
1922-1933	43	-27.0%
	...	
1953-54	10	-3.7%
1957-58	8	-3.9%
1960-61	10	-1.6%
1969-70	11	-1.0%
1973-75	16	-4.9%
1980	6	-2.3%
1981-82	16	-3.3%
1990-91	8	-1.8%
2001	8	-0.5%
12/2007-03/2009	18	-4.5% (as of 9/2009)

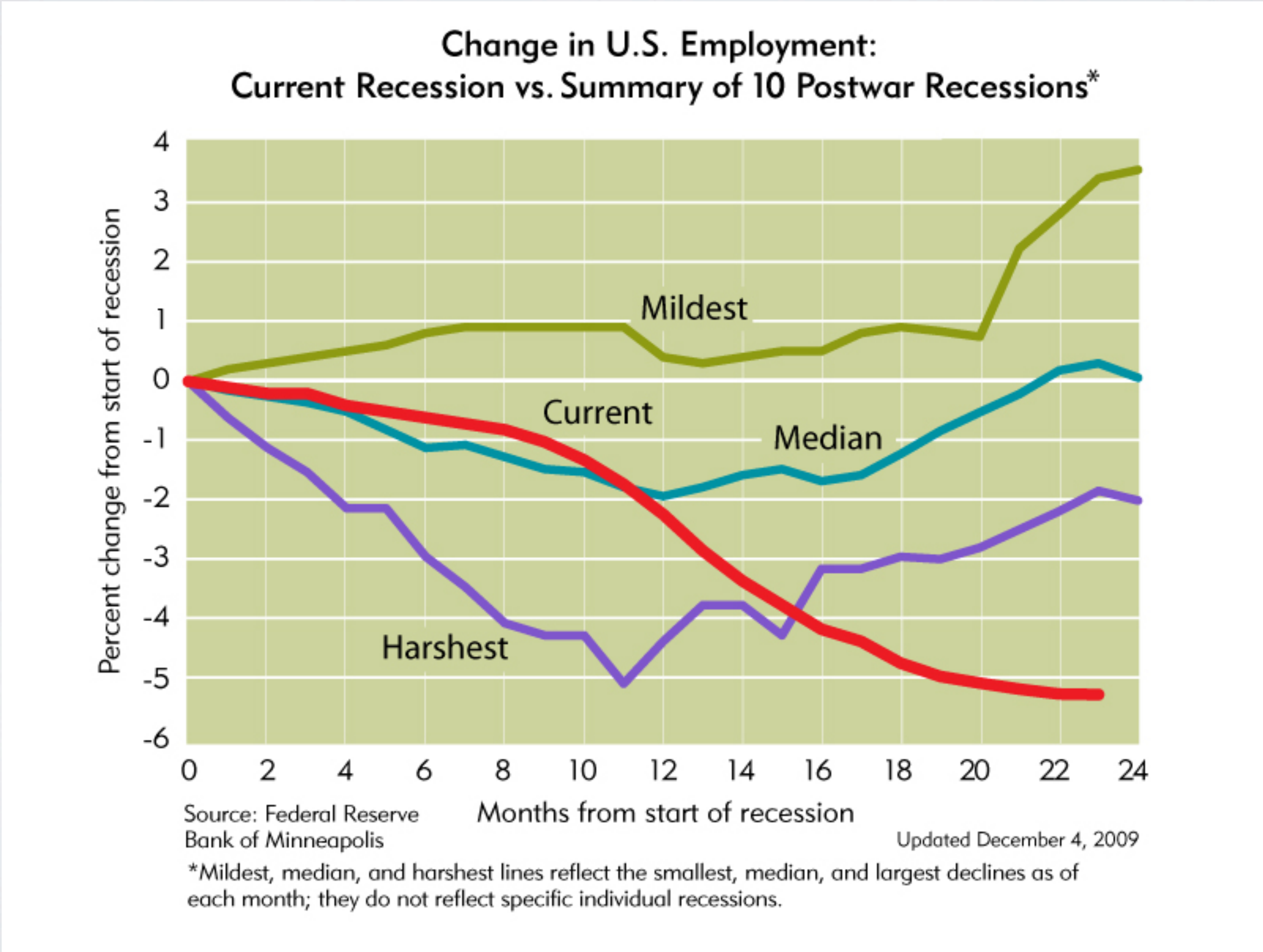
Source: BEA NIPA Table 7.1, Per Capita 2005 Chained GDP

CHANGE IN UNEMPLOYMENT AFTER 23 MONTHS

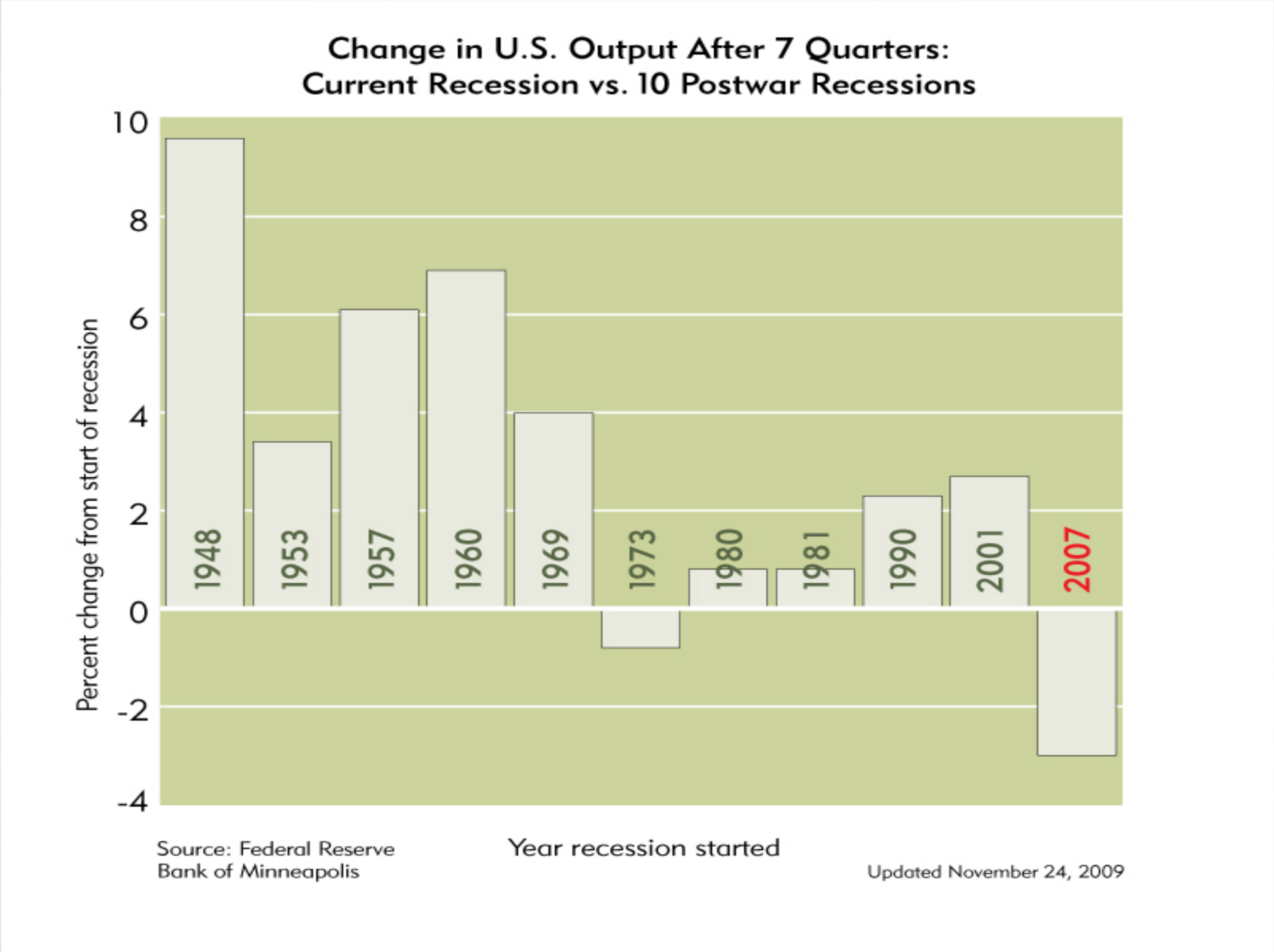
PEAK CHANGE IN UNEMPLOYMENT BY RECESSION



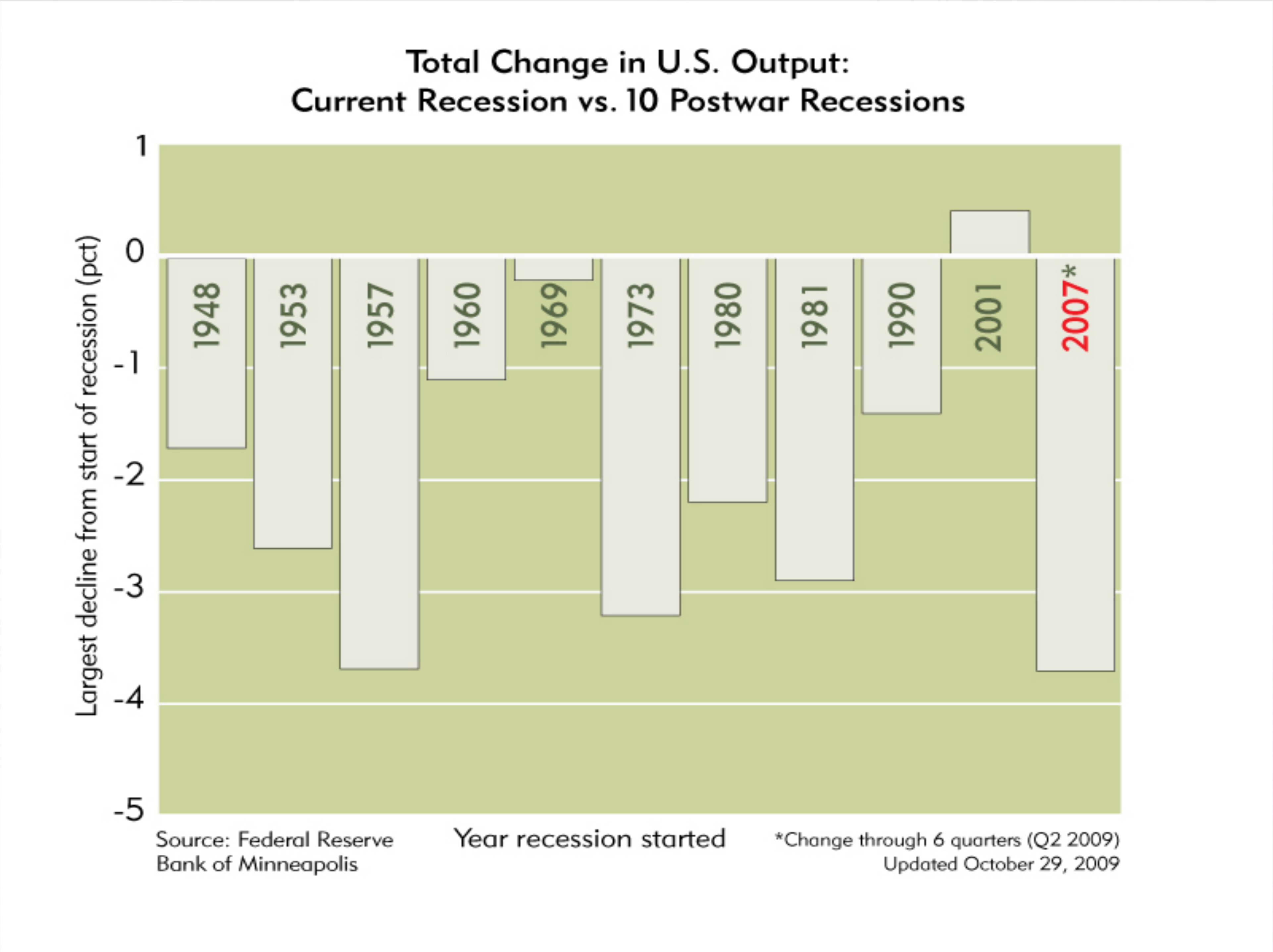
EMPLOYMENT COMPARISON



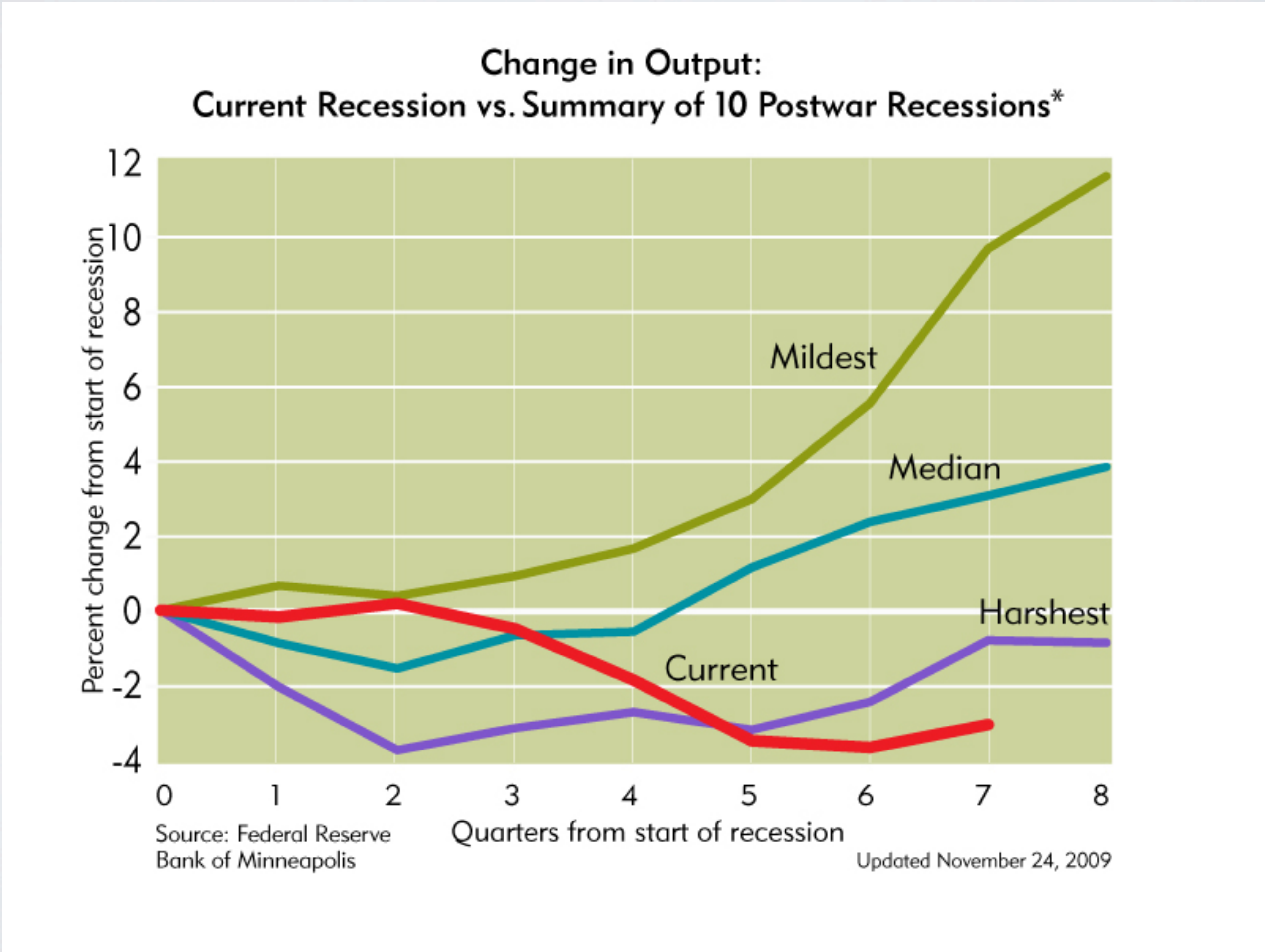
CHANGE IN OUTPUT AFTER 21 MONTHS



PEAK OUTPUT DECLINE BY RECESSION



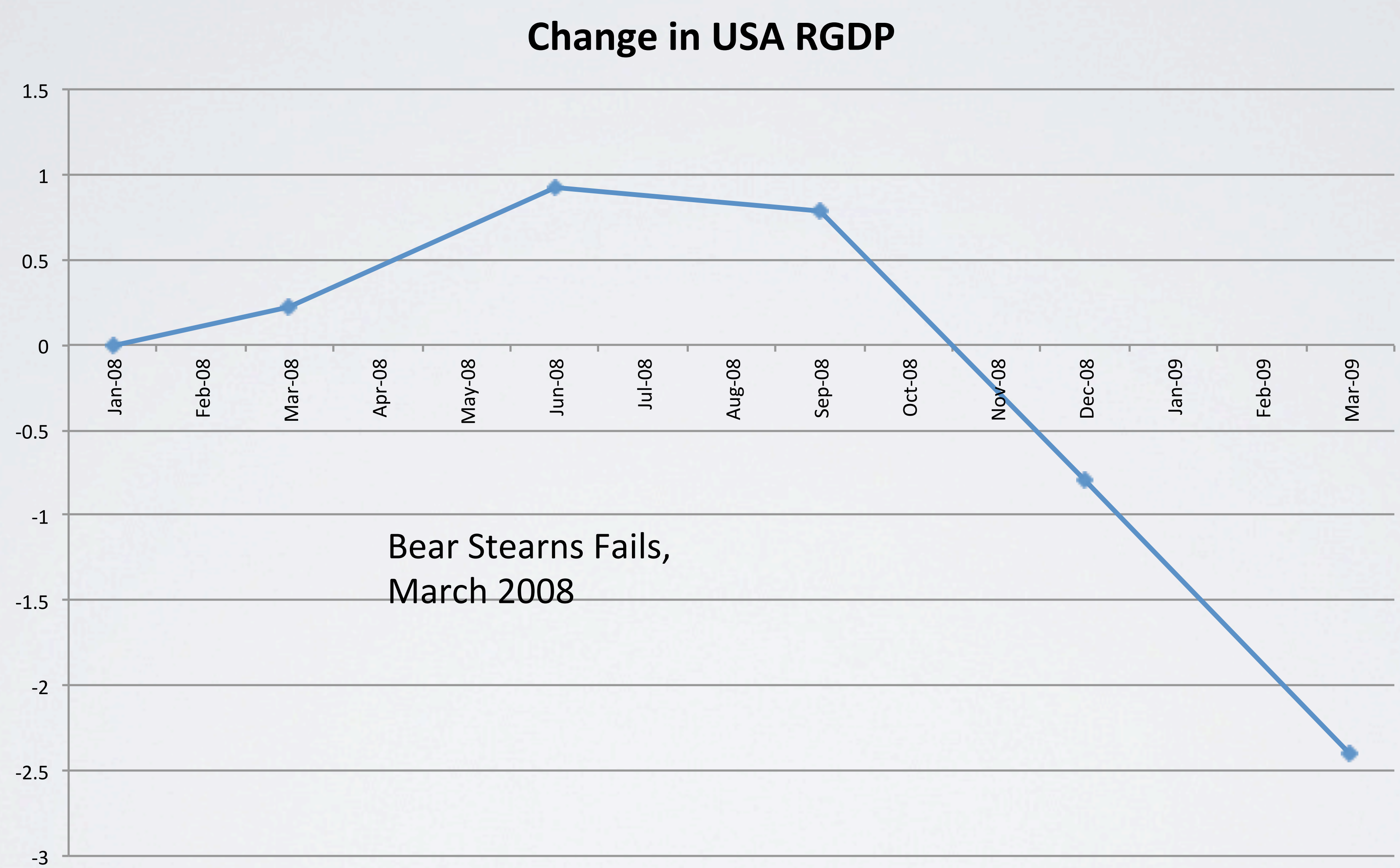
OUTPUT COMPARISON



TRENDS IN RECESSIONS

- Recessions have become less frequent and shorter
- Why did the last recession end in June 2009? (see BEA)
- Comparing recoveries
  - Most recent recession marked by depth of loss
  - Very slow recovery

CAUSES OF THE RECESSION



Lehman Bros Fails, September 2008

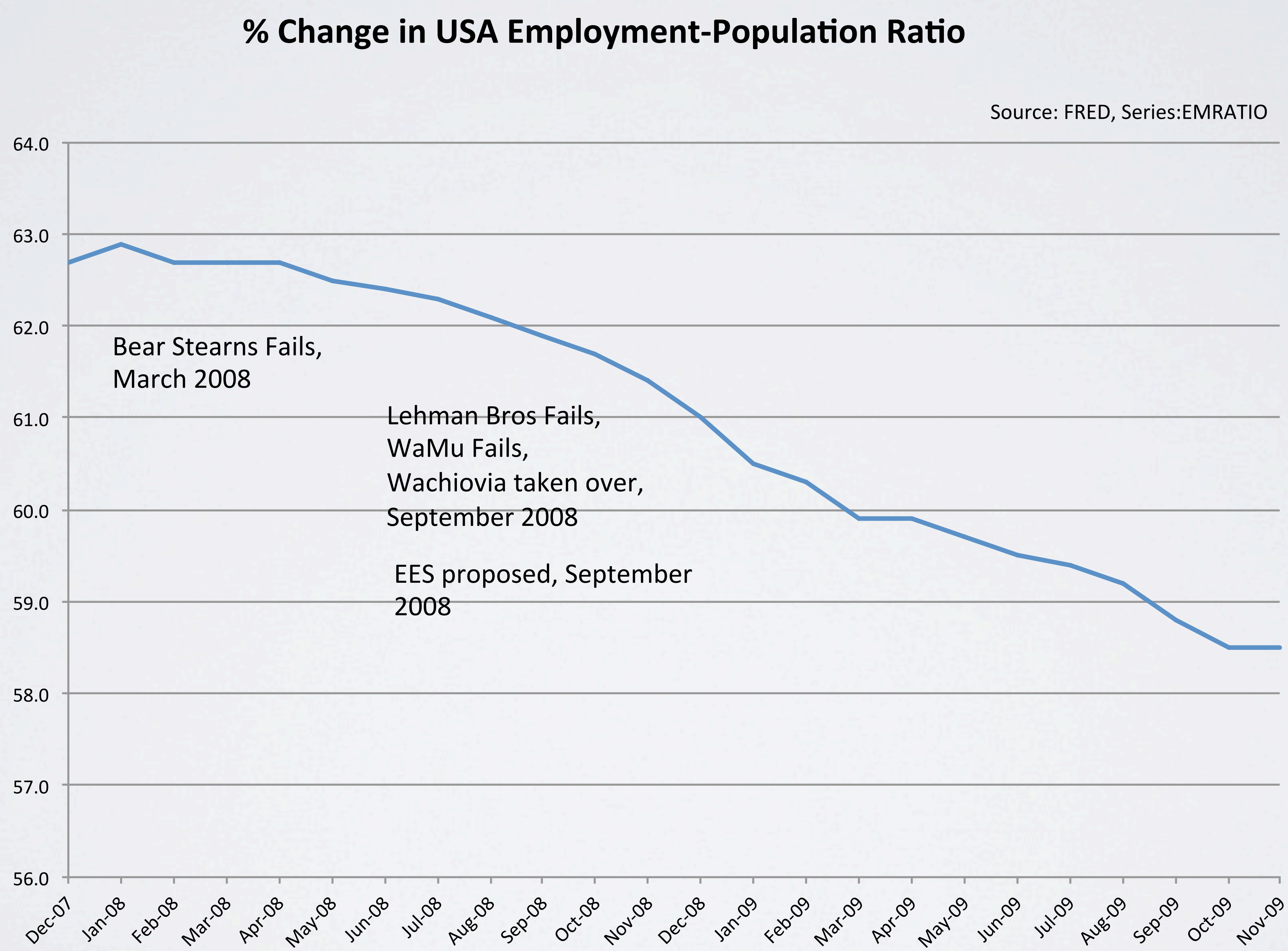
WaMu Fails, September 2008

Wachiovia taken over, September 2008

EES proposed, September 2008

Emergency Economic Stabilization

CAUSES OF THE RECESSION



CAUSES OF THE RECESSION

- Most blame falls on the financial crisis; what are other factors and what led to crisis?
  - Oil Prices
  - Financial crisis
    - Subprime lending
    - Cheap credit
    - Low interest rates
    - Over-leveraging, credit default swaps, collaterized debt obligations
    - Government legislation

SUBPRIME LENDING

- Very risky loans to those who can barely afford to borrow
- Collapse of housing bubble led to house price decreases and caused asset value loss for risky borrowers who then defaulted
- High default rates caused issues for bank solvency and confidence

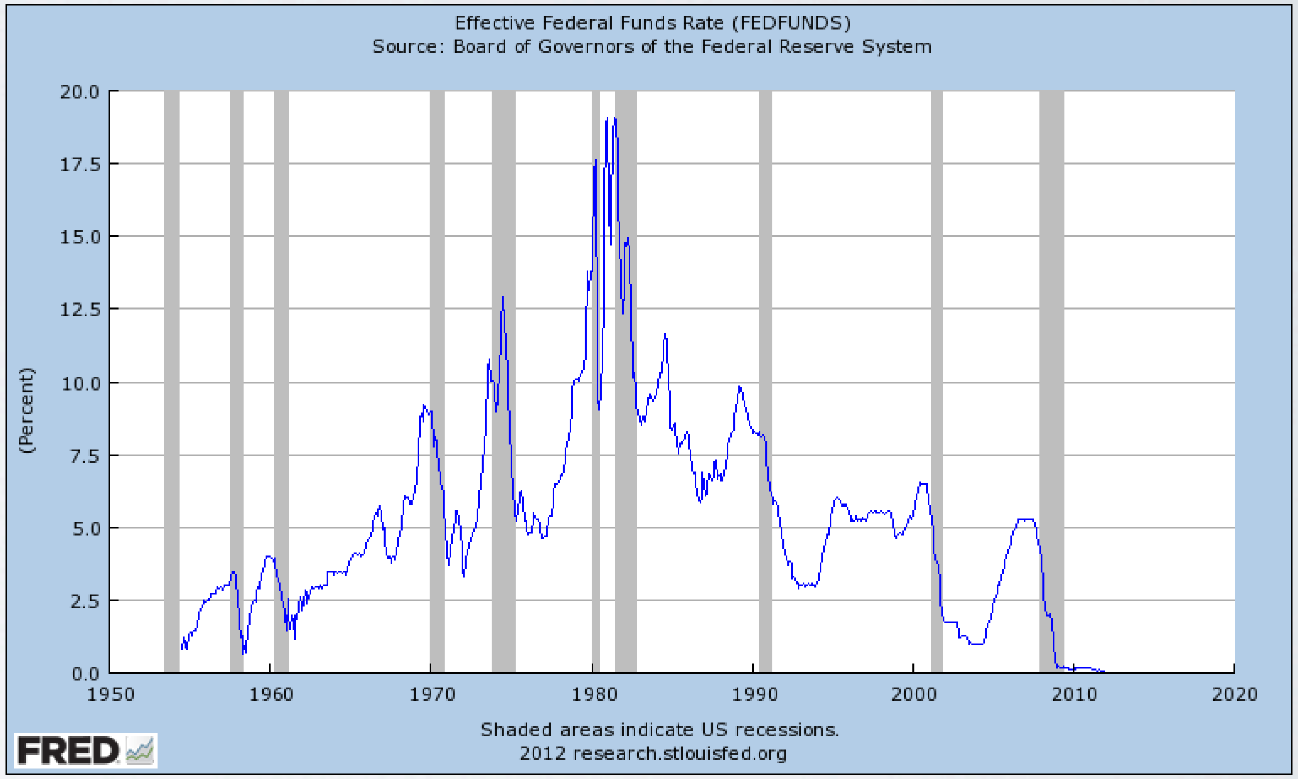
CHEAP CREDIT

- Too easy to get loans
- Symptomatic of borrowing culture and low interest rates
- Low-priced international borrowing (low return on US bonds) further induced borrowing

LOW INTEREST RATES

- Low interest rates -> less saving, more consumption, more borrowing

- Increased rates in the mid-2000s made adjustable rate mortgages more expensive and contributed to deflating the housing bubble



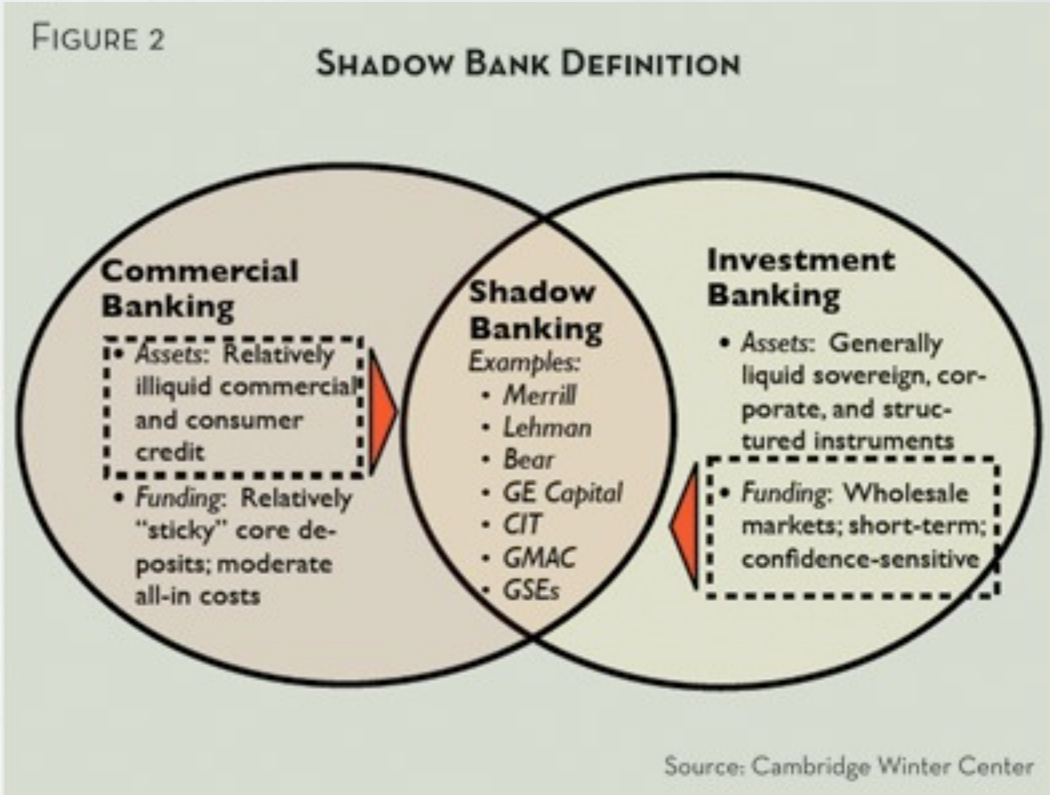
OVER-LEVERAGING, CDS, CDO

- Credit default swap - buying protection in event of default
- CDO - debt packages consisting of assets of different risk
- Pricing of assets did not reflect risk (known as Li Gaussian copula model) and specifically did not take into the fact that risky events are correlated
- Bought in large quantities (CDS was a 60+ trillion dollar market) and believed to be safe

GOVERNMENT LEGISLATION

- Many activities not under regulation of normal banking systems

- "Shadow banking system" carries important role in providing credit but also operates with higher risk and lack of oversight



WH ESS

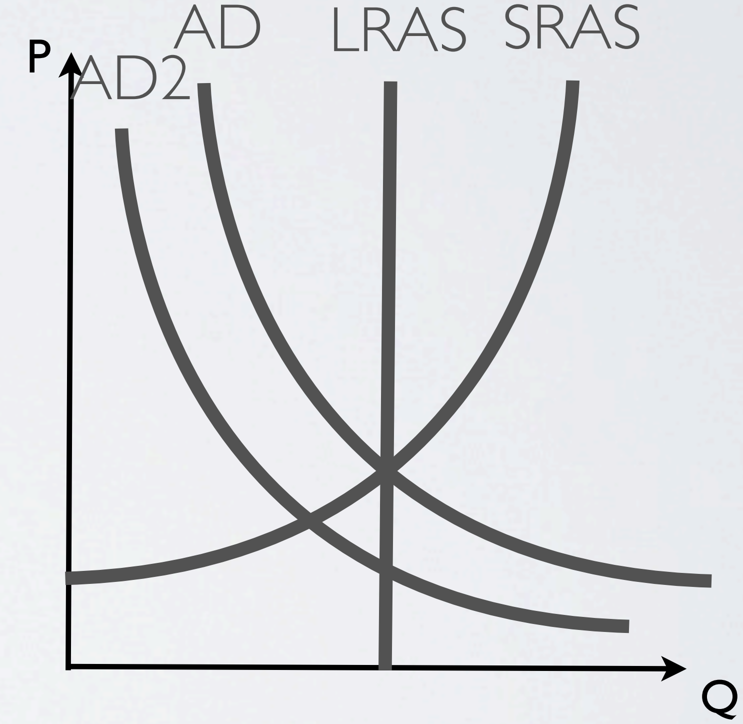
"Paul Krugman wants to be the czar of the world" – 1/13/10
Eugene Fama University of Chicago Booth School of Business
The Context: Cochrane's dismissal of government intervention, which Krugman says fueled resentment, came in a 2009 Bloomberg interview
"Fairy tales" – 11/27/09
"[Fama and Cochrane] commit one of the most basic fallacies in economics" – 1/27/09
"[The Chicago] brand of economics has turned into a hermetic cult" – 1/2/12
"[That spending can spur the economy] is not part of what anybody has taught graduate students since the 1960s" – 11/27/09
The Context: The so-called Chicago economists–also known as the "freshwater school"–reject the Keynesianism that Krugman espouses
"Notice the rank-pulling, by the way" – 1/5/12
"I've never gone ad hominem" – 1/3/12
"Mr. I-have-a-Nobel-Prize-so-you're-a-moron?" – 1/19/12
John Cochrane University of Chicago Booth School of Business
"Lucas/Cochrane made simple, fail-an-undergrad-quiz-level, errors" – 1/10/12
"I'm tempted to go on and say something about being overrun by barbarians in the grip of an obscurantist faith, but I guess I won't. Oh wait, I guess I just did" – 1/27/09
"Krugman ... regularly demonizes his opponents" – 1/1/12
Paul Krugman New York Times columnist, insult comic
On Keynesians: "schlock economists" – 8/6/09
"The great Lucas made a nonsense argument" – 12/30/11
"I only treat people as mendacious idiots if they are mendacious idiots" – 1/3/12
The Context: This response wasn't directed at Cowen but rather at Cochrane and his acolytes, who made what Krugman calls "howling, basic errors"
"Paul Krugman really is brilliant, but he's also his own worst enemy" – 1/18/12
Tyler Cowen Founder of marginalrevolution.com
Scott Sumner Bentley University
Robert Lucas University of Chicago; Nobel Prize winner

"A better interpretation of the behavior of U.S. real GDP over the last five years may be that the economy was disrupted by a permanent, one-time shock to wealth. In particular, the perceived value of U.S. real estate fell substantially with the 30 percent decline in housing prices after 2006. This shaved trillions of dollars off of the wealth of the nation. Since housing prices are not expected to rebound to the previous peak anytime soon, that wealth is simply gone for now. This has lowered consumption and output, and lower levels of production have caused a significant disruption in U.S. labor markets."

-James Bullard, President of the St. Louis Fed

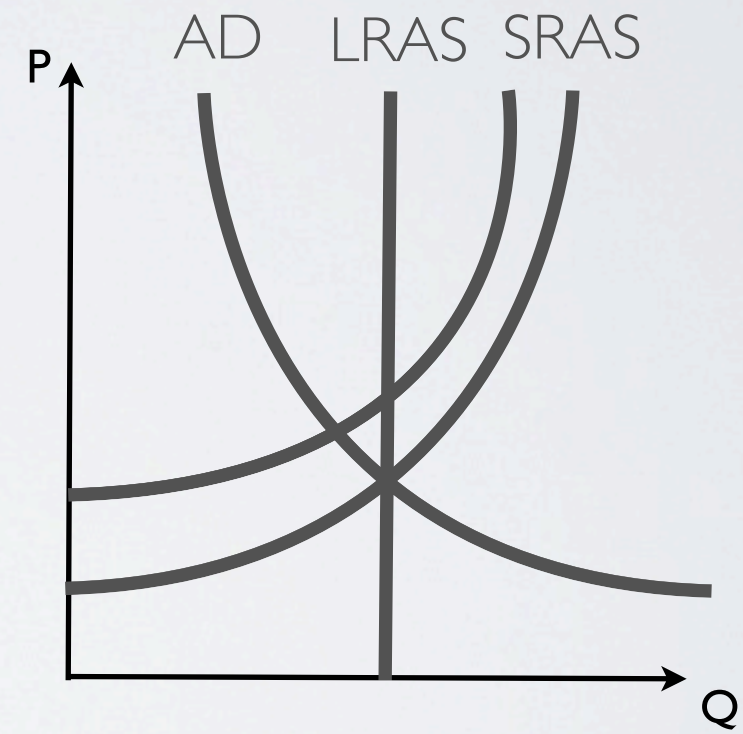
NEW KEYNESIANS

- **Cause: Unexpected shocks to AD or AS**
- Recall *sticky prices*: prices do not adjust immediately (e.g. salaries increase after prices do or vice-versa)
- Demand Shocks: What happens to GDP if NX, C, I, or G suddenly change? (e.g. NX quickly plummets because the Panama Canal collapses)
  - How do we return to equilibrium growth path?
  - Note that new Keynesians generally believe swings in I to be the source of instability



NK: SUPPLY SHOCKS

- Suppose the price of oil skyrockets:
- What side of the economy does this impact and how does it affect GDP?
- How does the economy recovery to equilibrium growth rates?



MONETARISTS

- **Cause: Inappropriate Government Policy**
- Markets are competitive and thus *should* produce optimal quantities of output
- Suppose oil prices increase and there are minimum wage laws
  - What do firms want to when costs increase?
  - What impact do minimum wage laws have on what the firm *wants to do?*
- Ideally, the government should use monetary policy only (to be studied) to control price stability

REAL BUSINESS CYCLES

- **Cause: Shocks to "real factors"** (think factors of production)
- Consider an oil shock (prices increase)
  - Why does does price increase?
  - Demand must exceed supply
  - Machines that need oil cannot produce
  - Output falls

COORDINATION FAILURE

- **Cause: People cannot coordinate their actions so shocks are caused by expectations rather than real factors in the economy**
- Price of oil increases:
    - Firms and consumers expect prices will remain high
    - Firms expect consumption will be reduced and so reduce output and consumers expect that less spending will lead to income shocks, which reduces spending
    - Firms layoff works based on expectation of less spending
    - Workers spend less because they have spent less, etc.
- Acting on expectations makes these expectations true

SHOULD WE STABILIZE?

Should:

- Stabilization curbs household and firm pessimism, which leads to deeper recessions and wasted resources

- Why suffer?

Should Not:

- Monetary policies take a long time to take effect, fiscal policies have to deal with political distortions and lags

- Being wrong can exacerbate conditions

REVIEW

- Business cycles are short-term divergences from the natural rate of output or long-term growth rate
- Macroeconomists disagree on how recessions are caused
- Different schools of thought propose different solutions on how to manage (if we manage) business cycles