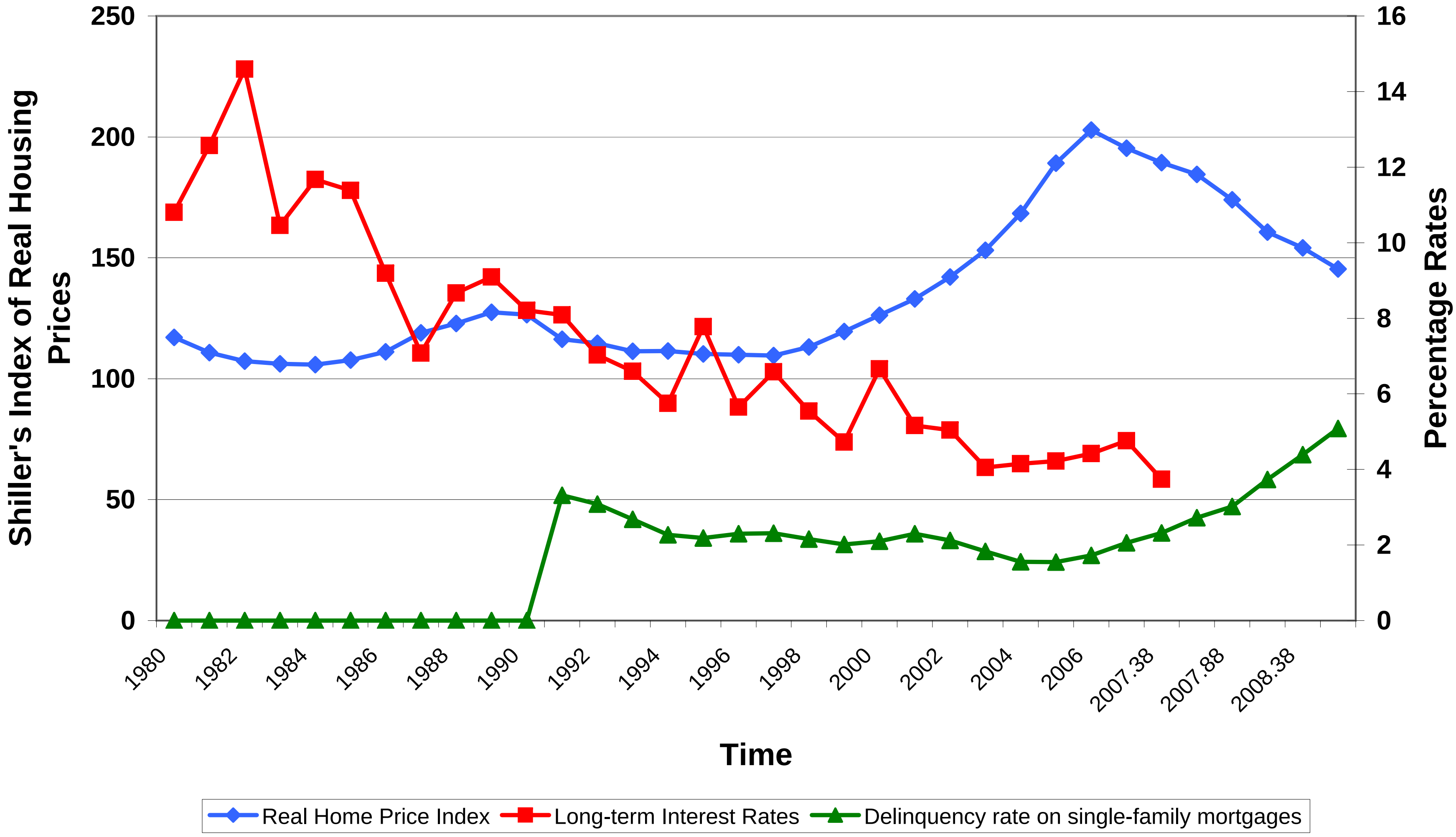
Historical Context

- Prior to Great Depression mortgages were short term – 5 years
  - Households rolled them over
  - Worked well if financial markets were calm, Leads to rollover crisis and mass evictions if not
  - Banks were unwilling to lend long because they had short-term liabilities – deposits
- So Government created a buyer of last resort – FMNA or Fannie Mae
  - Created a well functioning secondary market for mortgages.
  - Banks would like to dump their bad mortgages, so FMNA would only accept prime mortgages
  - Prime = high credit score (FICO) + good loan-value-ratio (<.80)
- Privatized in the 1960s
  - Created a competitor in FHLMC or Freddie Mac
  - No one believed they would be allowed to default, so could borrow very cheaply
  -

- Securitization in the 1970s
    - To allow other institutions to hold prime mortgages, created mortgage backed securities
    - MBS were sold with a guarantee by Freddie and Fannie.
- Sub-Prime market developed
    - There were good borrowers who were just below Prime
    - Hedge funds and Investment banks began to sell Sub-Prime MBS securities of their own
    - Initially worked well – had low loan-to-value ratios and pretty good borrowers
    - This lead to good ratings by the ratings agencies and huge increase in size in 2000s.
- During the 1990s and 2000s Fannie and Freddie directed to increase lending to below median income households.
- Low Interest Rates and large foreign inflows fuel increasing in homeownership and prices.
- 2004 SEC relaxes leverage limitations on largest 5 investment banks leading to a sharp rise in their leverage ratios. Paulson was then the CEO of Goldman Sachs.

Figure 1: Real Home Prices, Interest Rates and Home Mortgage Deliquency Rates



Timeline of the Last 17 months

8/9/07	Liquidity crisis – Fed and European Central bank begin injecting capital
3/08	Fed rescues Bear Stearns
9/8/08	Treasury nationalizes Fannie and Freddie
9/15/08	Lehman Brothers files for bankruptcy – largest in U.S. history ($600 billion in assets)
9/16/08	Fed makes bridge loan to A.I.G., the largest insurance company in the world.
10/3/08	Government passes bailout – authorizes Treasury to spend up to $700 billion
1/30/08	S&P 500 is down 46% since its peak last October
	Real housing prices are down 28% from their 2006 peak.

Current Thinking

- Over-leveraging and over-valued assets lead to a financial meltdown.
- Cross-over impact on the real economy is bad but not yet very bad.
    - Employment down a lot (down 2.6%, in ’81 went down 3.1% at min)
        - Unemployment is 7.6% in 1/09. Above 10% in 9/82 – 6/83.
    - But output is barely down (down 0.2%, in ’81 went down 2.9% at min)
    - January retail sales rose 1% after December’s fall (SA), sales of existing homes went up in Dec.
    - Blue chip forecasters (February survey) predicting economy to turn around in 2009.
- On the real side, households are now poorer and want less housing
    - Double whammy since both stocks and housing prices have fallen – very bad for retired or near-retired
    - Leads to a shift from consumption to savings, change in composition of cons.
- Unclear how much of real side fall out is coming from this rather than lack of access to finance.
    - Commercial Bank lending is up relative to a year ago (1/09 vs. 1/08):

Figure 2: Employment in Postwar Recessions

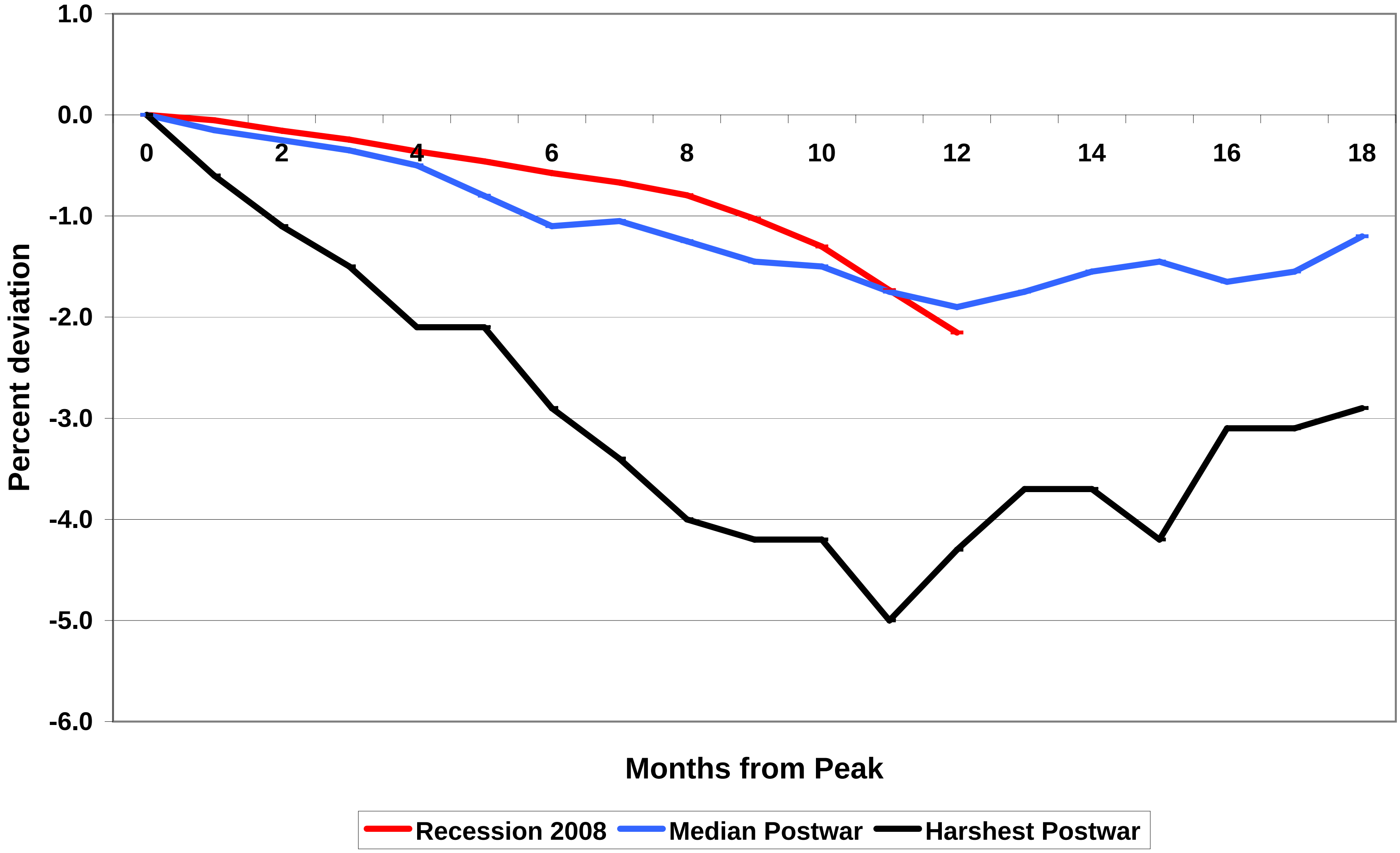


Figure 3: Real GDP in Postwar Recessions

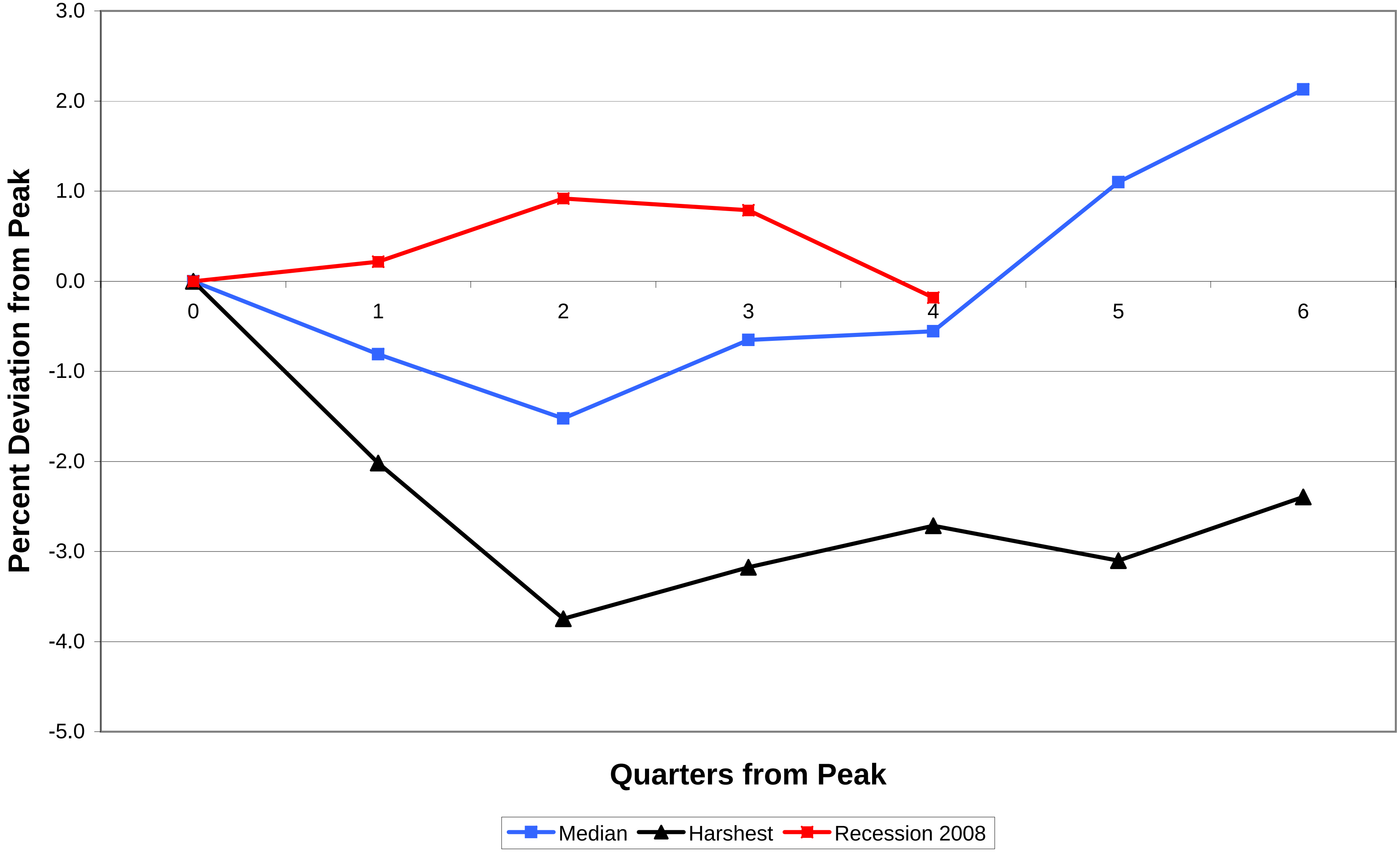
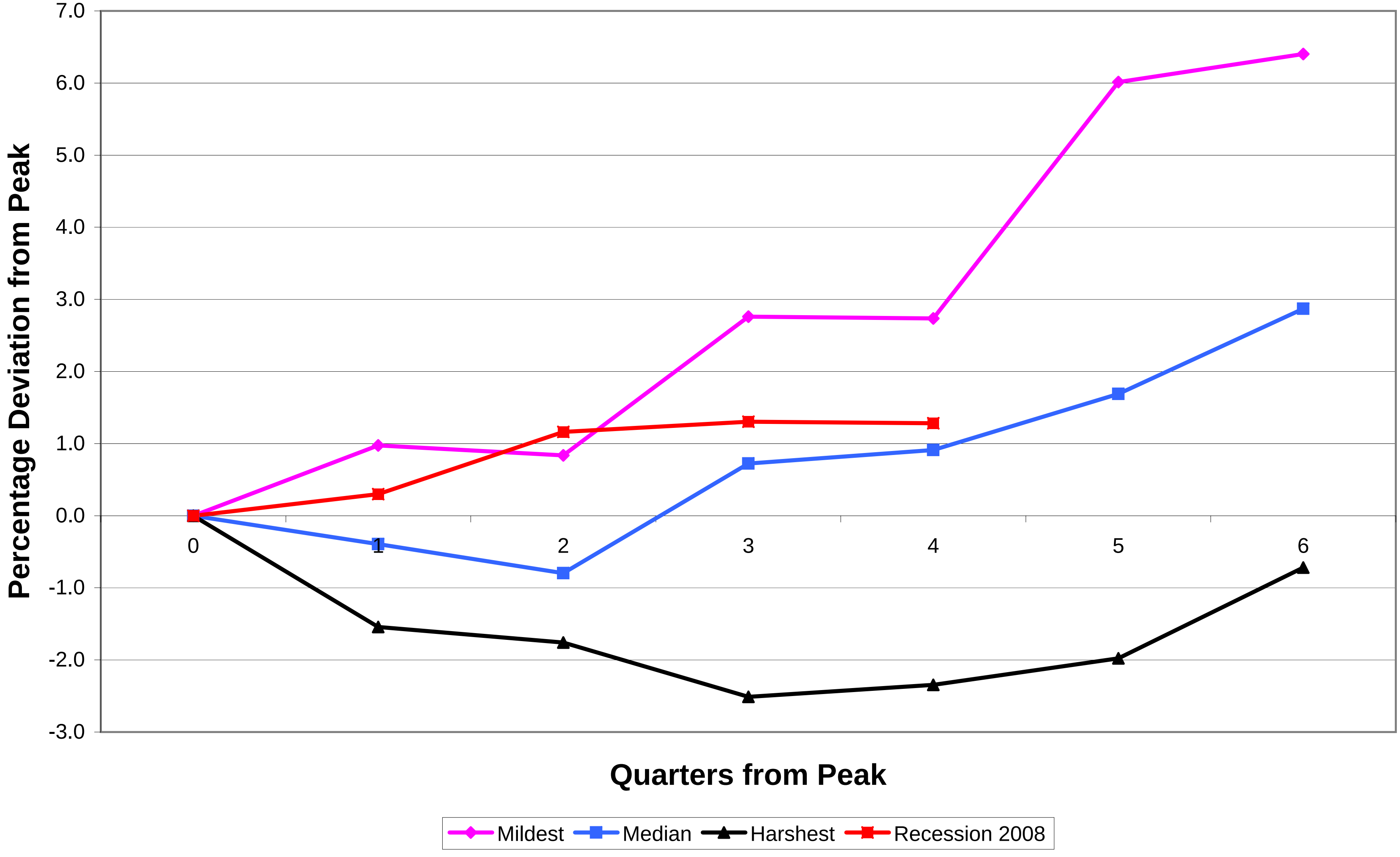


Figure 4: Real Labor Productivity in Postwar Recessions



        - Consumer Lending + 10%, Commercial & Industrial + 8%
        - Real Estate lending is up 5%!
        - Interbank lending is now down slightly (1%) but was down 21% in Nov.
    - Volume of commercial paper is down 13% from peak, but nonfinancial is up 28% rel to peak
        - Nonfinancial discount rates, were quite high, but now are down sharply and low relative 2001 on
        - AA Financial discount rates are also low.
        - Asset-backed is also down sharply – securitization no longer efficient given default rates?
    - Residential fixed investment share of GDP has dropped sharply, but nonresidential hasn't. (Q4)
- Not clear stimulus package is warranted – slow to get started and economy could turn around without it.
- International fallout is large
    - Japan is down 3.3% in Q4/Q3, marking 3rd straight quarter of decline. Much worse than US. (not annualized)
    - South Korea is down 5.25% in Q4/Q3, etc.

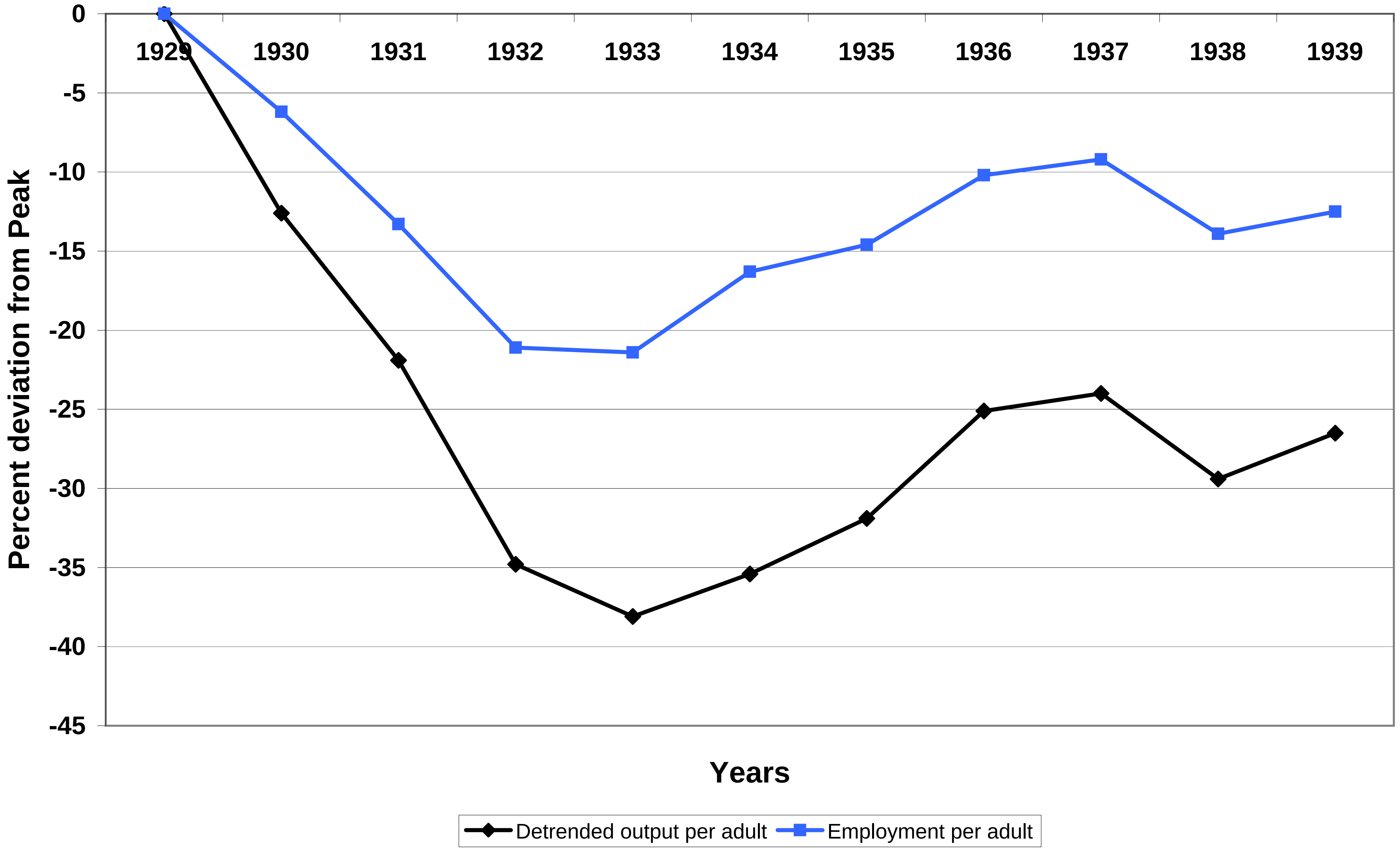
Financial Recovery Sector Plan

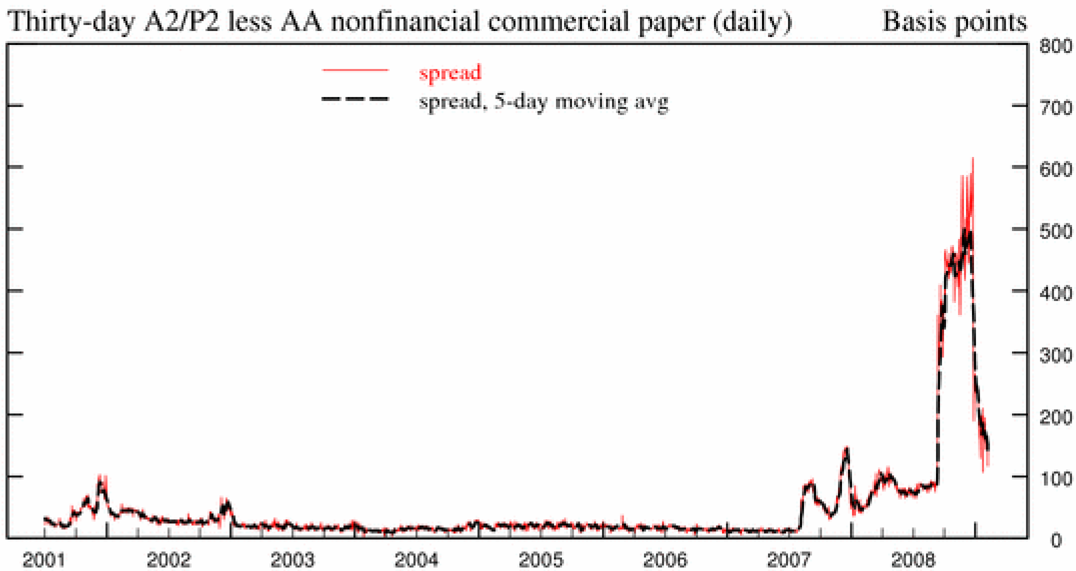
- Key to turn around is resolving the financial crisis.
- Financial Problem is big: Economist argues bigger than Japan's
  - Combination of large price run up and collapse and large run up in private debts – both banks and households. Japan was a creditor nation. Real estate run up bigger here than Japan.
  - Economist claims American banks hold troubled loans = 40% of GDP, Japan had 35% of GDP in their crisis.
  - Economist claims many Alt-A (between prime and sub-prime) securities have been sharply down graded in their ratings. Prime mortgage problems may be coming.
- Number of Banks and other financial institutions are probably insolvent.
  - Generates terrible incentives if allowed to operate.
  - Don't undertake pos. NPV projects because don't get enough of returns, don't want to redesign capital structure since lose value of govt debt guarantees (receiving a subsidy for high prob of bankruptcy)

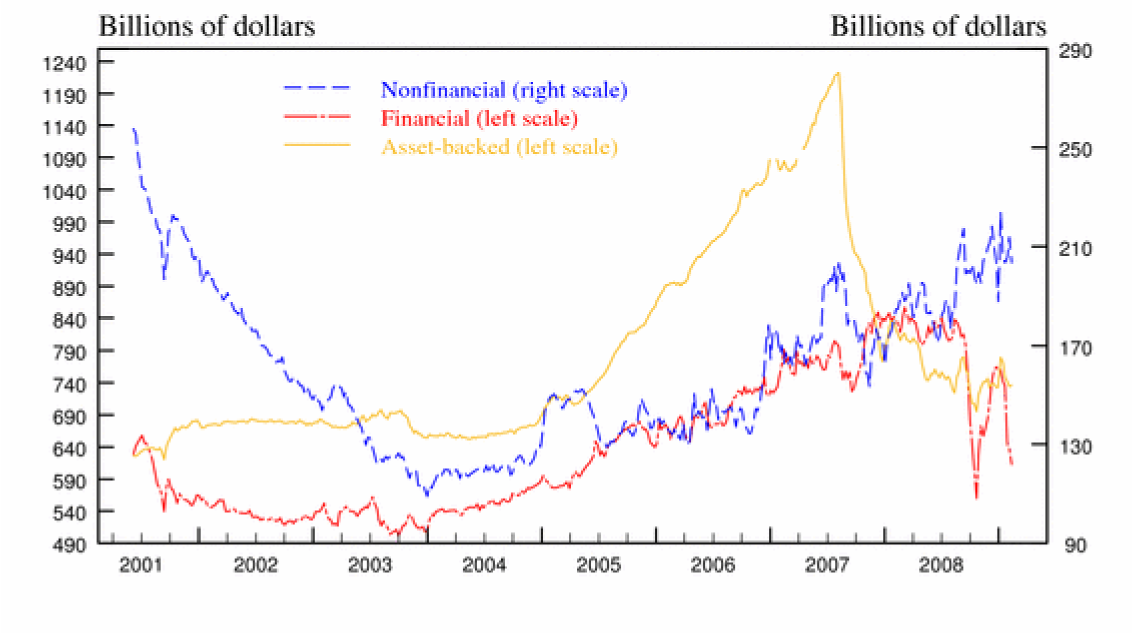
- Geithner's plan seems uninspired (so far).
    - TARP 700B funds well spent ?
    - Paulson's $125b stock purchase in 9 big banks funded $25b in first year (Scharfstein and Stein)
- For Banks all short debt creates a run problem, not just deposits
    - Need to insure this short-term debt too as a result, and hence regulate
    - Need long-term creditors to take the hit and price the risk
- **Comparison to Great Depression**
    - Detrended GDP/Adult was down 42% in 1933 rel to 1929 (in 1939 still down 26.5%)
    - Employment/Adult down 21.4%, Total Hours/Adult down 27.3% (in 1939 still down 21%)
    - Detrended Nonresidential Investment/Adult down 75%
    - Detrended Government Purchases / Adult down 8% (rises to 1% above in 1934)
    - S&P / CPI down 87.4% relative to peak

- National Industrial Recovery Act tossed aside the nation's antitrust acts and permitted industry collusion if wages were raised.
    - Lead to artificially high wages and prices, and restricted output and investment
    - Cole and Ohanian estimate that it substantially prolonged and worsed the Great Depression.
- So, no comparison on real side – Great Depression much worse – however similar bad numbers on the financial side.
  - Cautionary note – Obama's plan to end secret ballot for unionization and executive order to allow unions only in public works projects has some elements of NIRA.

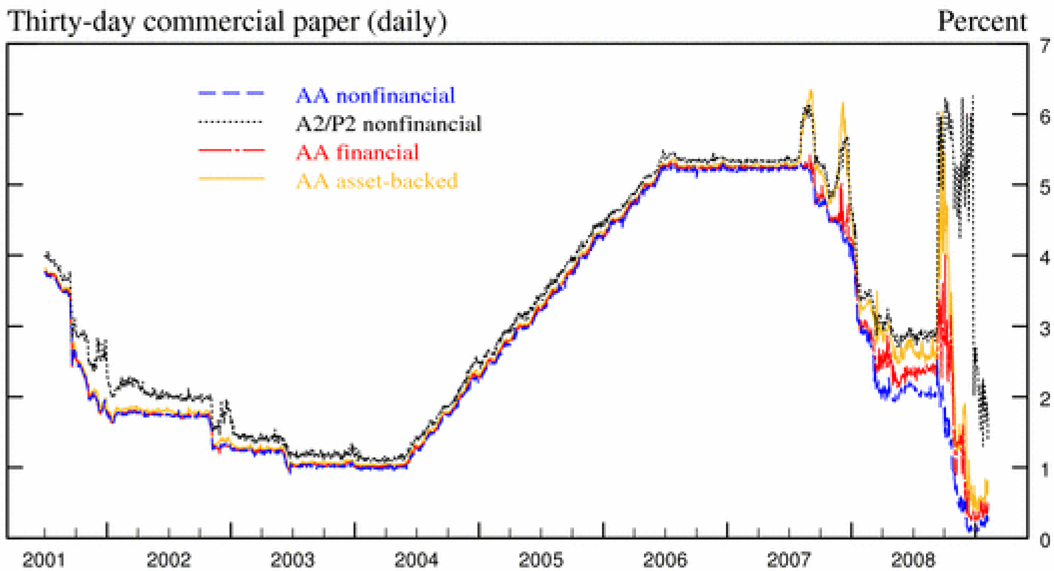
Figure 4: Output and Employment during the Great Depression




Thirty-day A2/P2 less AA nonfinancial commercial paper (daily)
Basis points
spread
spread, 5-day moving avg
800
700
600
500
400
300
200
100
0
2001
2002
2003
2004
2005
2006
2007
2008



Billions of dollars
Billions of dollars
Nonfinancial (right scale)
Financial (left scale)
Asset-backed (left scale)
1240
1190
1140
1090
1040
990
940
890
840
790
740
690
640
590
540
490
290
250
210
170
130
90
2001
2002
2003
2004
2005
2006
2007
2008


Thirty-day commercial paper (daily)
Percent
AA nonfinancial
A2/P2 nonfinancial
AA financial
AA asset-backed
7
6
5
4
3
2
1
0
2001
2002
2003
2004
2005
2006
2007
2008

Current Stimulus Plan

- Propose to spend around $787 billion to stimulate the economy
    - 240B in tax breaks, 140B in health care, 100B in education, 48B transportation
    - Temporary tax breaks tend to have no stimulus effect – see Bush tax rebates 168B in 2008.
- How large is this?
    - This is about 5.5% of 2008 GDP and
    - 73% of federal spending on goods and services in 2008
    - Supporters say it will save or create 3.5 million jobs = $224,860 (unfair since multi year)
- In WWII, federal government spending increased from
    - 6.4% of GDP in 1940 to
    - 44% of GDP in 1944
    - GDP rose by roughly .80 times ΔG

- Infrastructure vs. Military spending
  - Japanese experience in the 1990s doesn't bode well, but may be able to do better.
  - Barro estimates multiplier on peacetime at 0 – very hard to estimate since no natural experiments.

Figure 5: US Data 1929-47