The Credit Crisis

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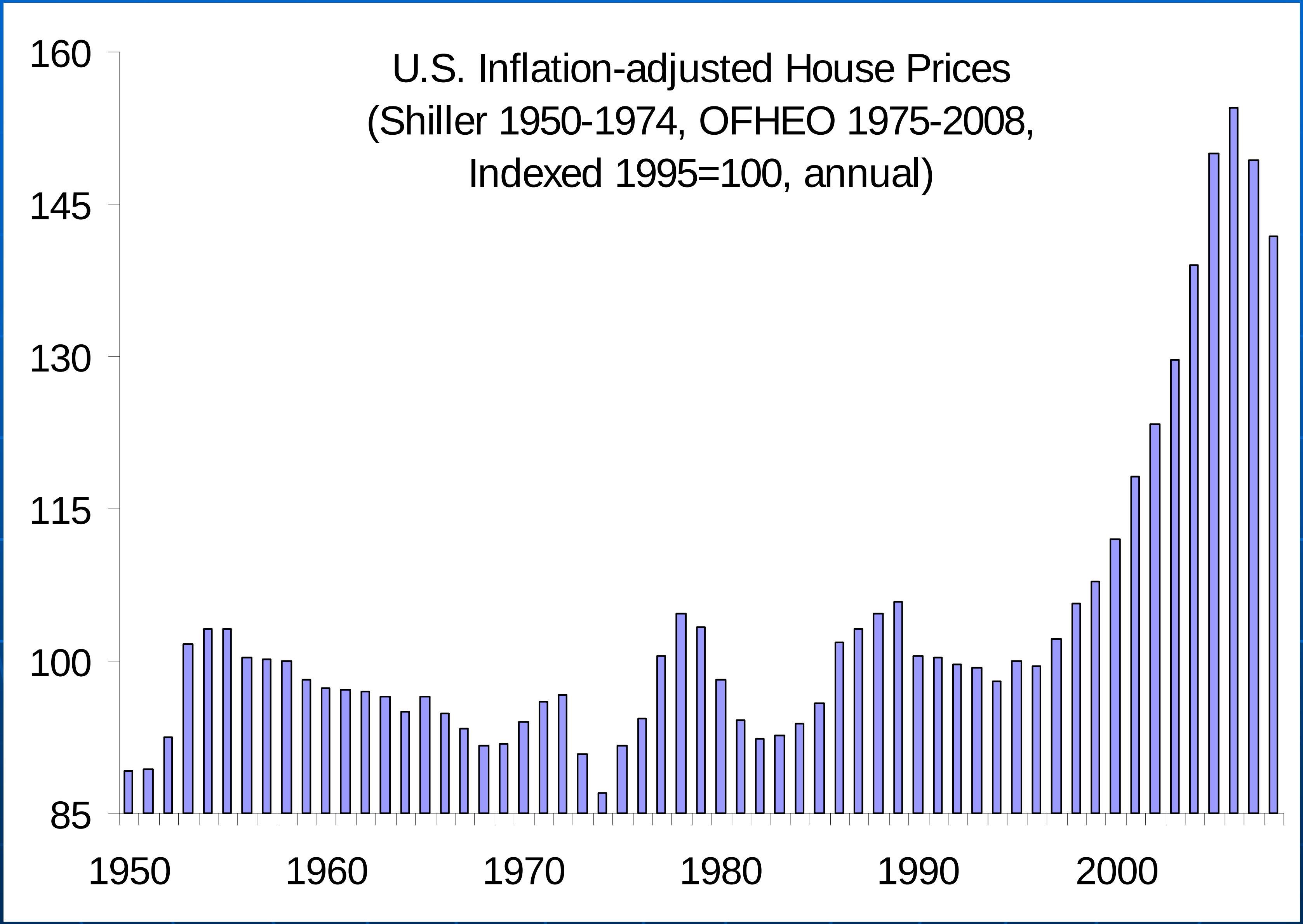
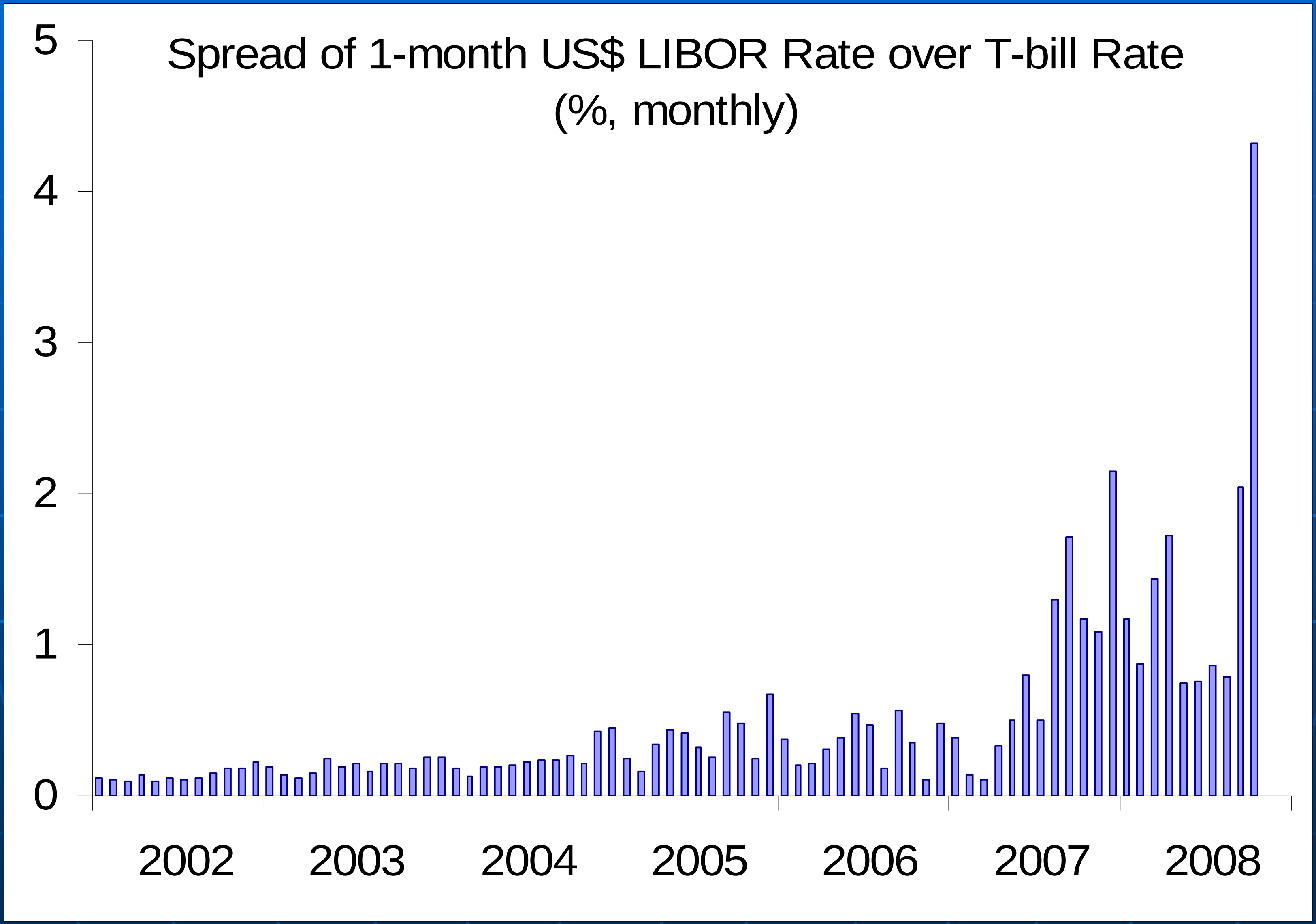
Prelude to the Credit Crisis

- Increase in worldwide supply of funds
- Stimulative monetary policy in the U.S.
- Lax lending
  - Perceived risk reduction due to Great Moderation?
- House prices bubbled up… a lot
  - In the U.S.
  - In Ireland, Spain, U.K.
- House prices fell…quite a lot …in some places


U.S. Inflation-adjusted House Prices
(Shiller 1950-1974, OFHEO 1975-2008,
Indexed 1995=100, annual)
160
145
130
115
100
85
1950
1960
1970
1980
1990
2000

Intertwined Solvency and Liquidity Concerns about FIs

- Now, mortgage loan losses loom large at financial institutions (FIs)
  - Banks, hedge funds, bond funds, investment banks, pension funds, insurance companies, etc.
- Still, great uncertainties
  - About how large and which FIs have losses
  - About how large losses might become
- Uncertainties reduced FIs’ lending to each other
  - Markets for LIBOR, fed funds, commercial paper, etc.

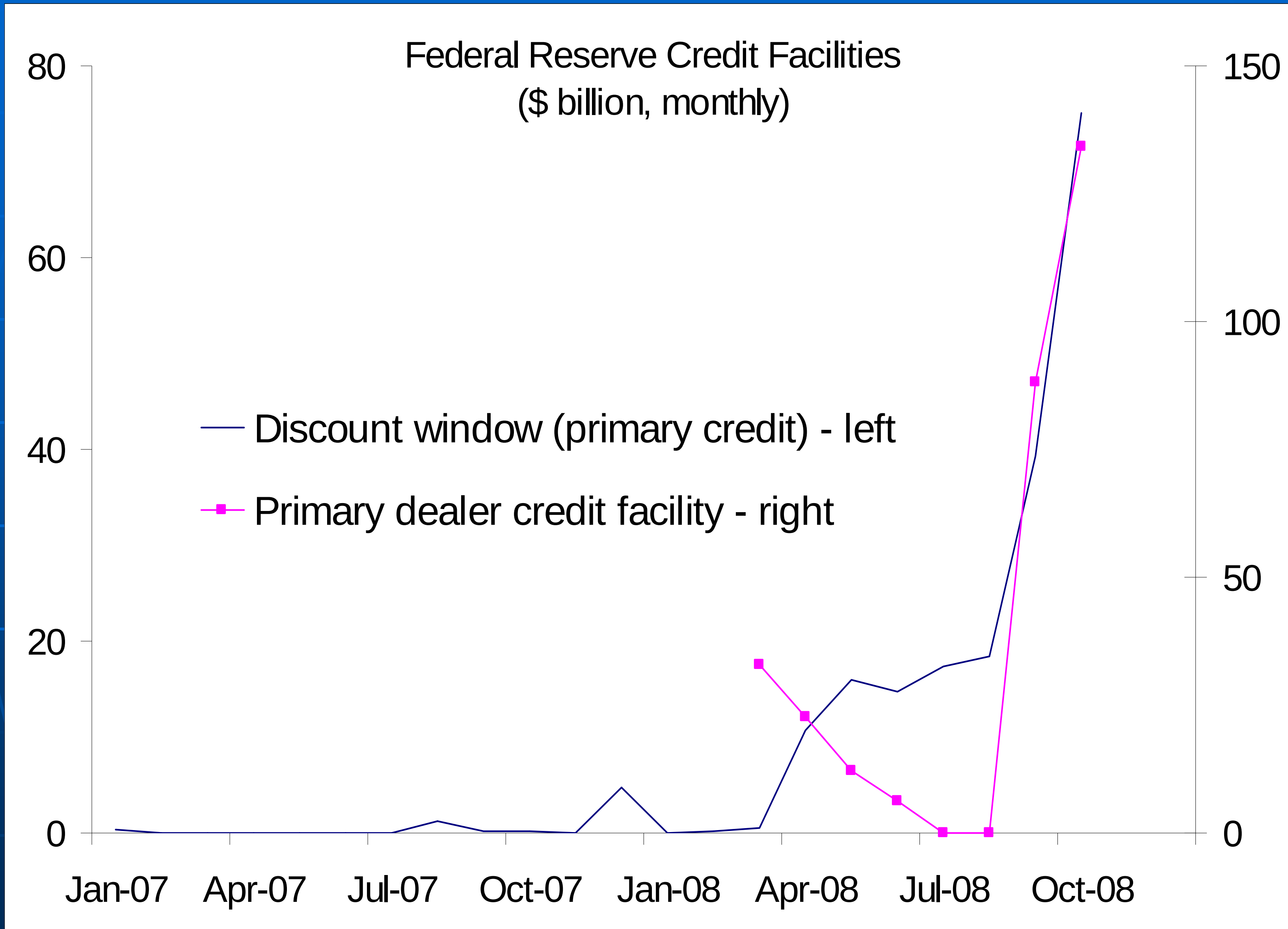

Spread of 1-month US$ LIBOR Rate over T-bill Rate
(%, monthly)
5
4
3
2
1
0
2002
2003
2004
2005
2006
2007
2008

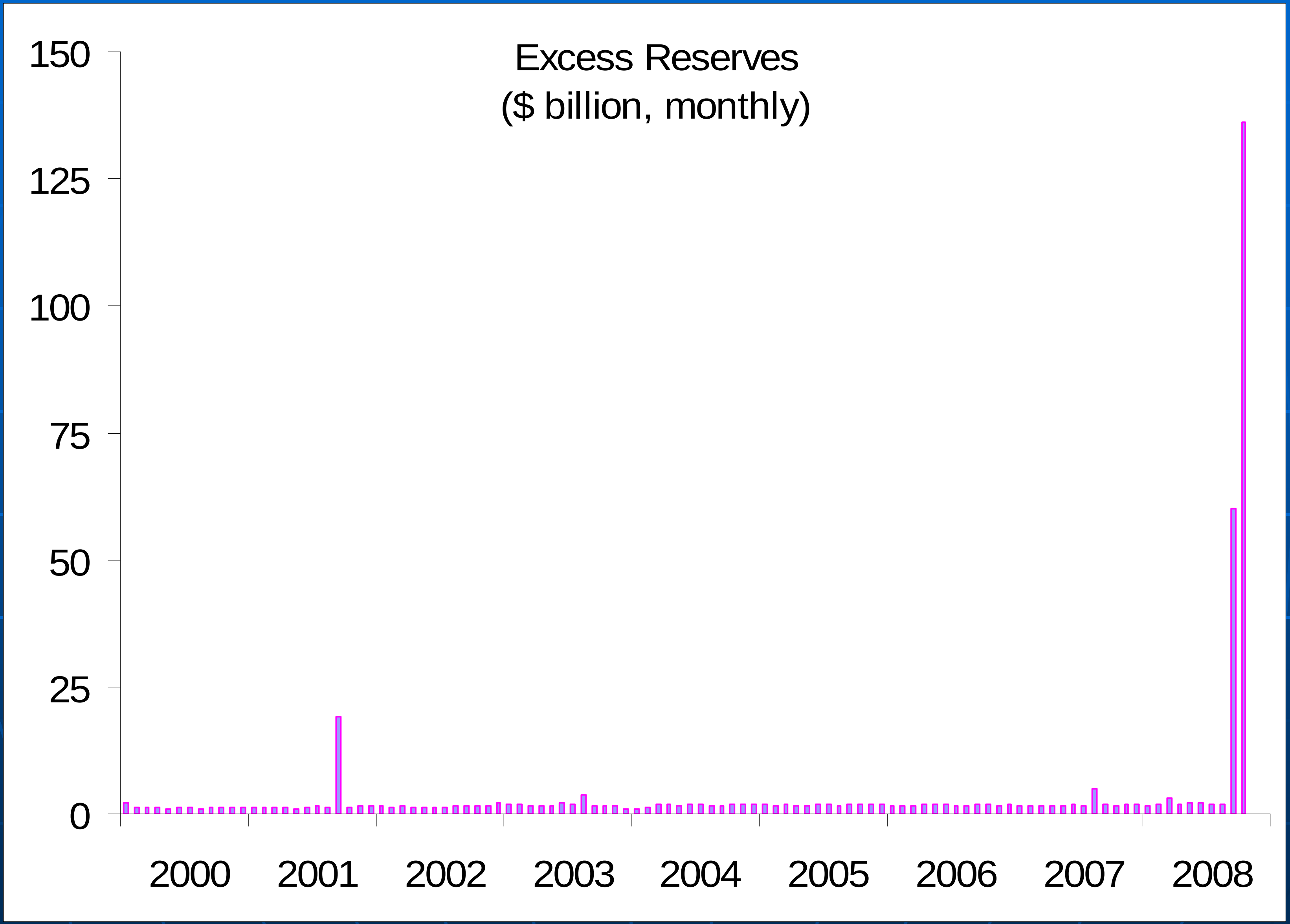
Old-Fashioned Runs on "New-Fashioned Banks"

- Insolvency risk has raised liquidity risk
  - Raises risk that funds run
    - à la "It's a Wonderful Life"
- Runs on banks, MMMFs, hedge funds, bond funds
- Runs can convert illiquidity into insolvency
  - Selling assets to raise cash leads to lower, "fire-sale" prices
    - At fire-sale values, FIs are likely insolvent
  - Billions "ran" from Schwab Ultra-short bond fund
    - Last out maybe got less than 80, first got about 100 cents per dollar

Scramble for Liquidity

- Many fear that everyone else will run
  - Via withdrawals or not renewing short-term loans
- Incentive for each of us to run before other guy
  - Everyone can't run before the fire sale
- Fear of runs led FIs to scramble for liquidity
  - Hold more "cash" just in case (such as T-bills)
    - Banks can trade loans for cash at Federal Reserve
  - Replace running funds with stable funds from Fed


Federal Reserve Credit Facilities
($ billion, monthly)
80
60
40
20
0
150
100
50
0
Discount window (primary credit) - left
Primary dealer credit facility - right
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08
Oct-08



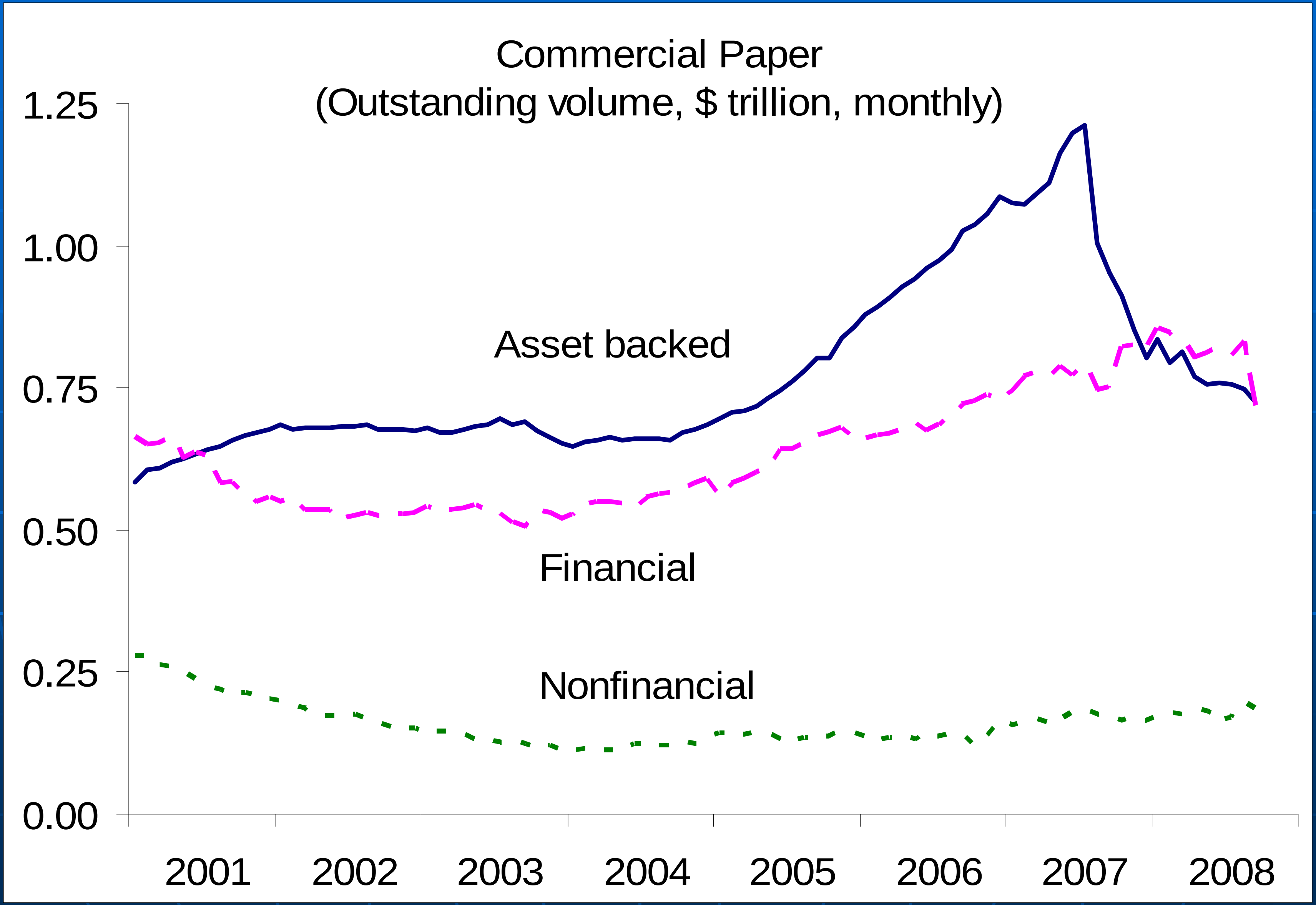
Excess Reserves
($ billion, monthly)
150
125
100
75
50
25
0
2000
2001
2002
2003
2004
2005
2006
2007
2008

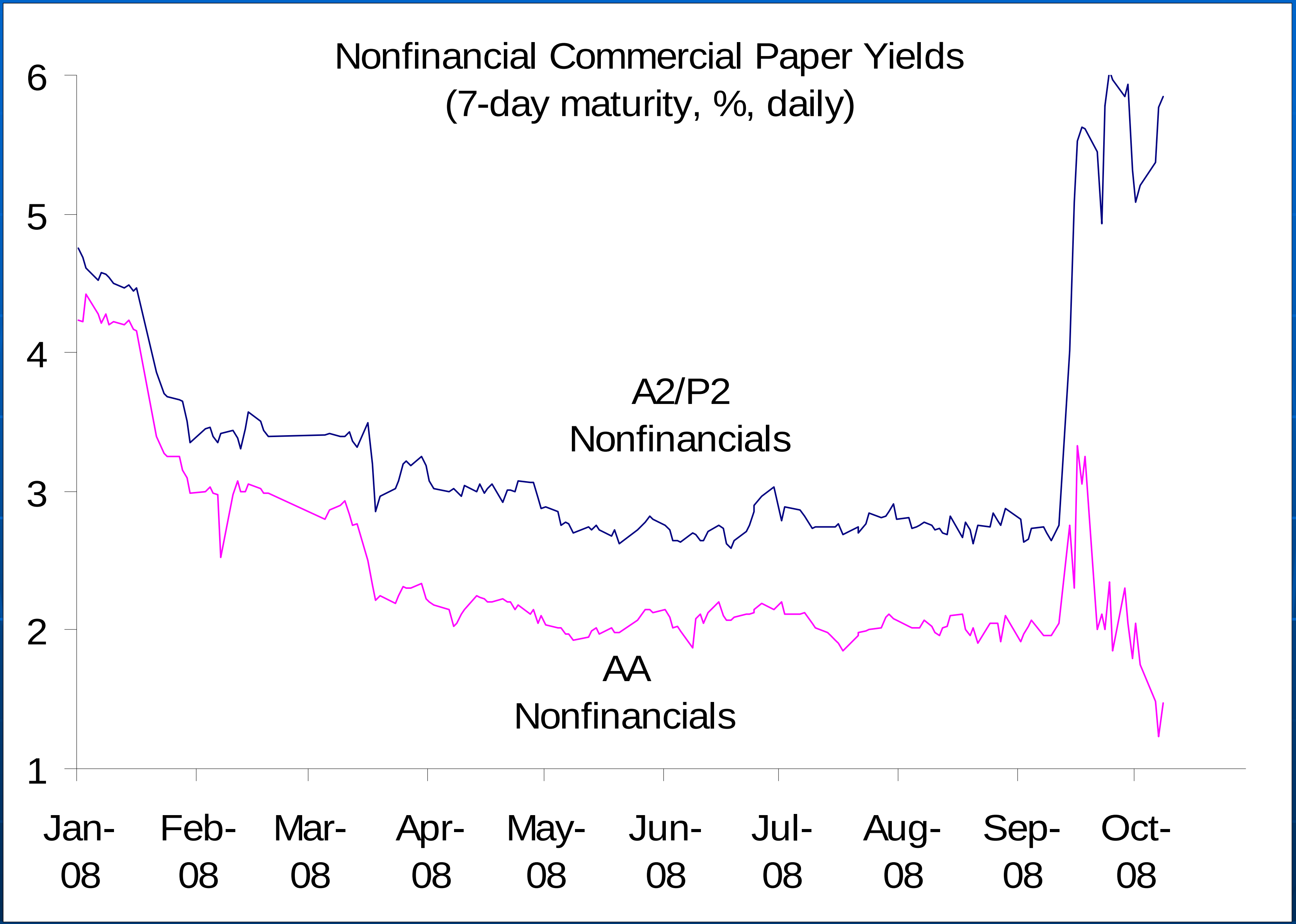
"De-leveraging" and "Re-capitalizing"

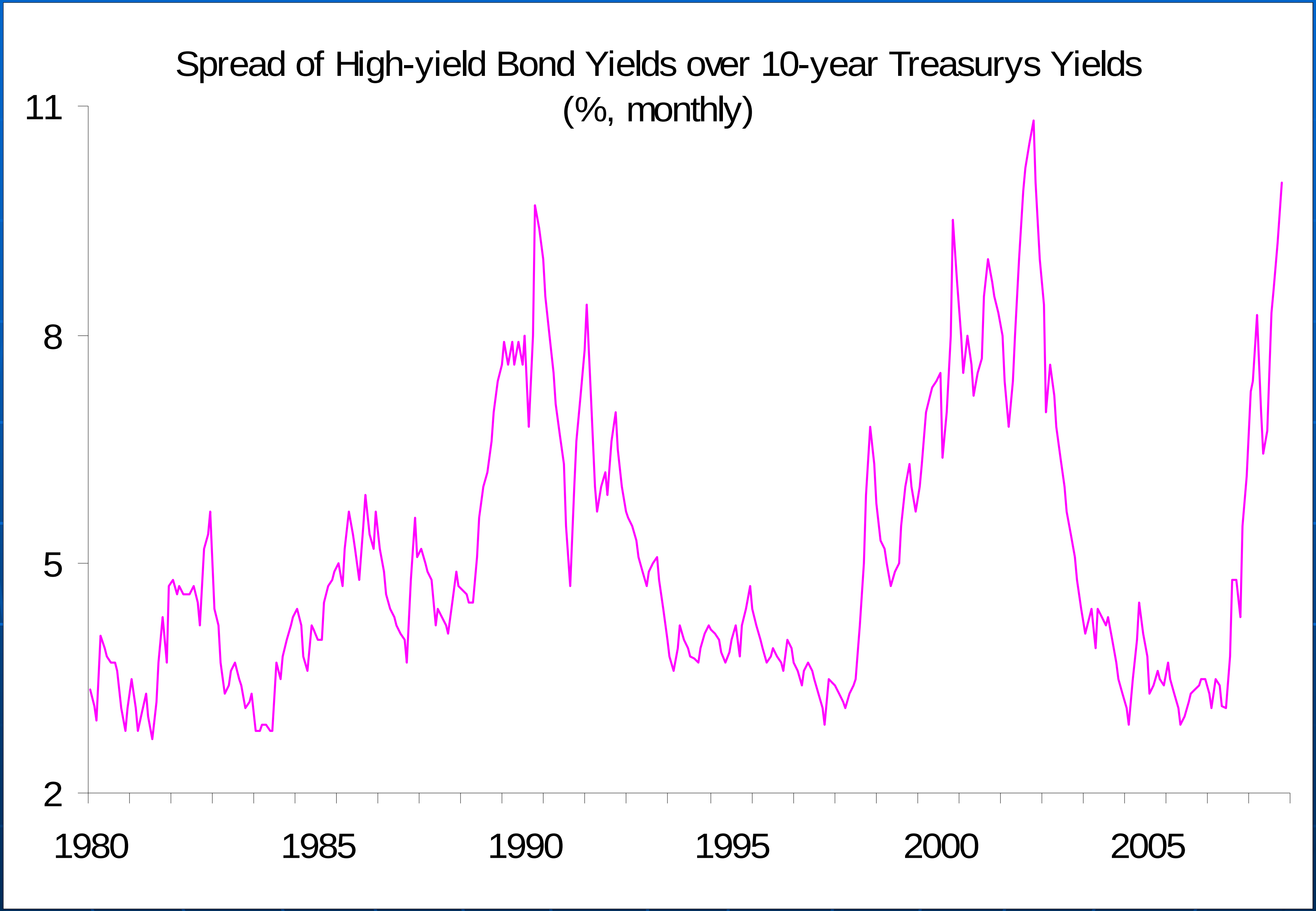
- In addition, FIs are aiming for less debt
  - Now, leverage seems riskier than it did before
  - Reduces FIs' borrowing of funds-and thus lending
- More capital can avert less lending
  - Add equity, rather than subtract debt
- Taxpayers want some upside from Rescue Plan
  - Can get it by buying shares or warrants in banks
    - Via outright purchases
    - Via Treasury auctions

Freezes: Credit Markets and Loans

- Banks reluctant to make or buy loans
  - Making loans means letting go of cash
  - If can't sell assets, FIs reluctant to acquire them
  - FIs can build liquidity by not re-loaning the funds as loans are paid
- FIs less willing to lend to FIs--and to non-FIs
- "Loan run" now on fear of less lending later
  - Precautionary, not productive, borrowing


Commercial Paper
(Outstanding volume, $ trillion, monthly)
1.25
1.00
0.75
0.50
0.25
0.00
Asset backed
Financial
Nonfinancial
2001
2002
2003
2004
2005
2006
2007
2008


Nonfinancial Commercial Paper Yields
(7-day maturity, %, daily)
6
5
4
3
2
1
A2/P2
Nonfinancials
AA
Nonfinancials
Jan-08
Feb-08
Mar-08
Apr-08
May-08
Jun-08
Jul-08
Aug-08
Sep-08
Oct-08

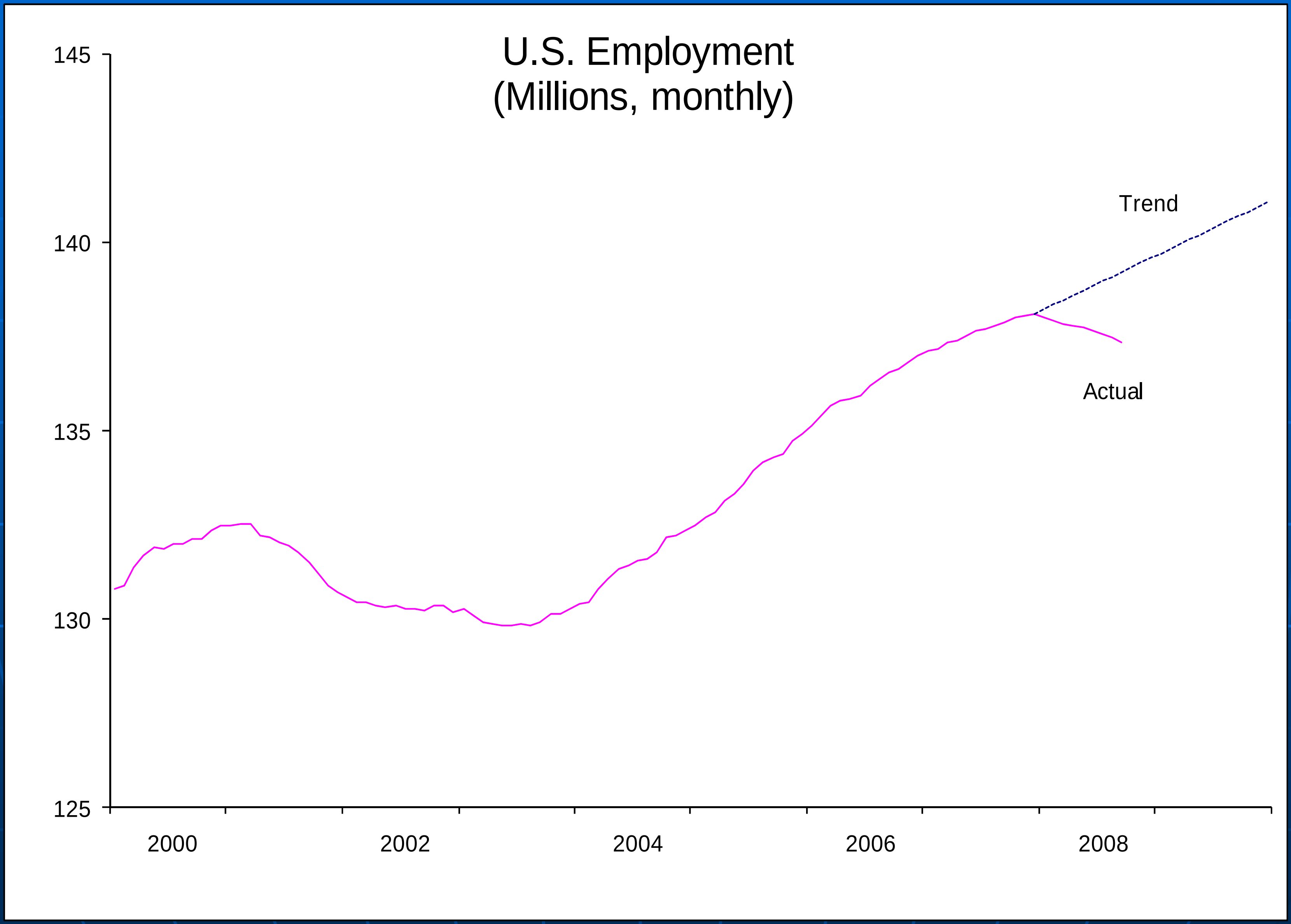

Spread of High-yield Bond Yields over 10-year Treasurys Yields
(%, monthly)
11
8
5
2
1980
1985
1990
1995
2000
2005

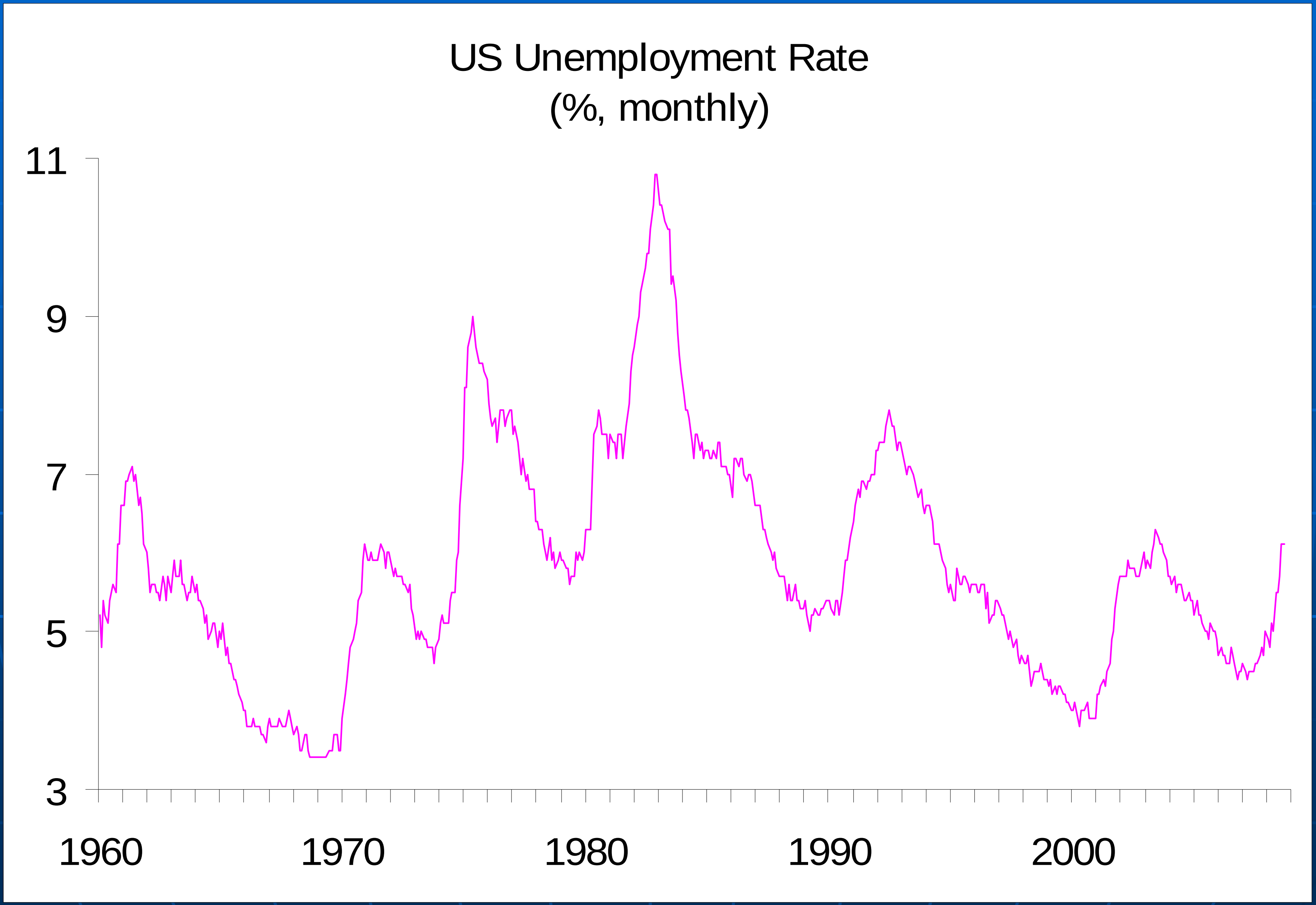
2½ Cheers for the Rescue Program (so far)!

- Quelled credit market panic of mid-September
- Authorizes Treasury to buy assets
  - Designed to "prime the pump"
    - More lending if loans are liquid when markets thaw
  - To produce prices "fair" to sellers and buyers
    - More clarity re: solvency: Some strong, some gone
  - When assets sold, cash perhaps then lent out
  - Apparently, will include purchases of bank stock
  - Later, like RTC, Treasury sells off all assets

Next, Expensive Programs?

- Mortgage balance reductions?
  - Via bankruptcy law changes?
- Rate reductions via refinancing?
- Tax credits for buying a house during 2009?


U.S. Employment
(Millions, monthly)
145
140
135
130
125
2000
2002
2004
2006
2008
Trend
Actual


US Unemployment Rate
(%, monthly)
11
9
7
5
3
1960
1970
1980
1990
2000

The Outlook: Look Out!

	2007 (Actual)	2008 (Estimated)	2009 (Projected)
GDP (growth, real, %)	2.0	1.5	1.0
Unemployment rate (%)	4.6	5.7	7.3
Federal funds rate (%)	5.0	2.0	1.5
Federal budget deficit ($ billion)	162	450	720
Inflation rate (%)	2.9	4.2	2.2
Residential investment (growth, real, %)	-19	-20	-2