

Lecture 5

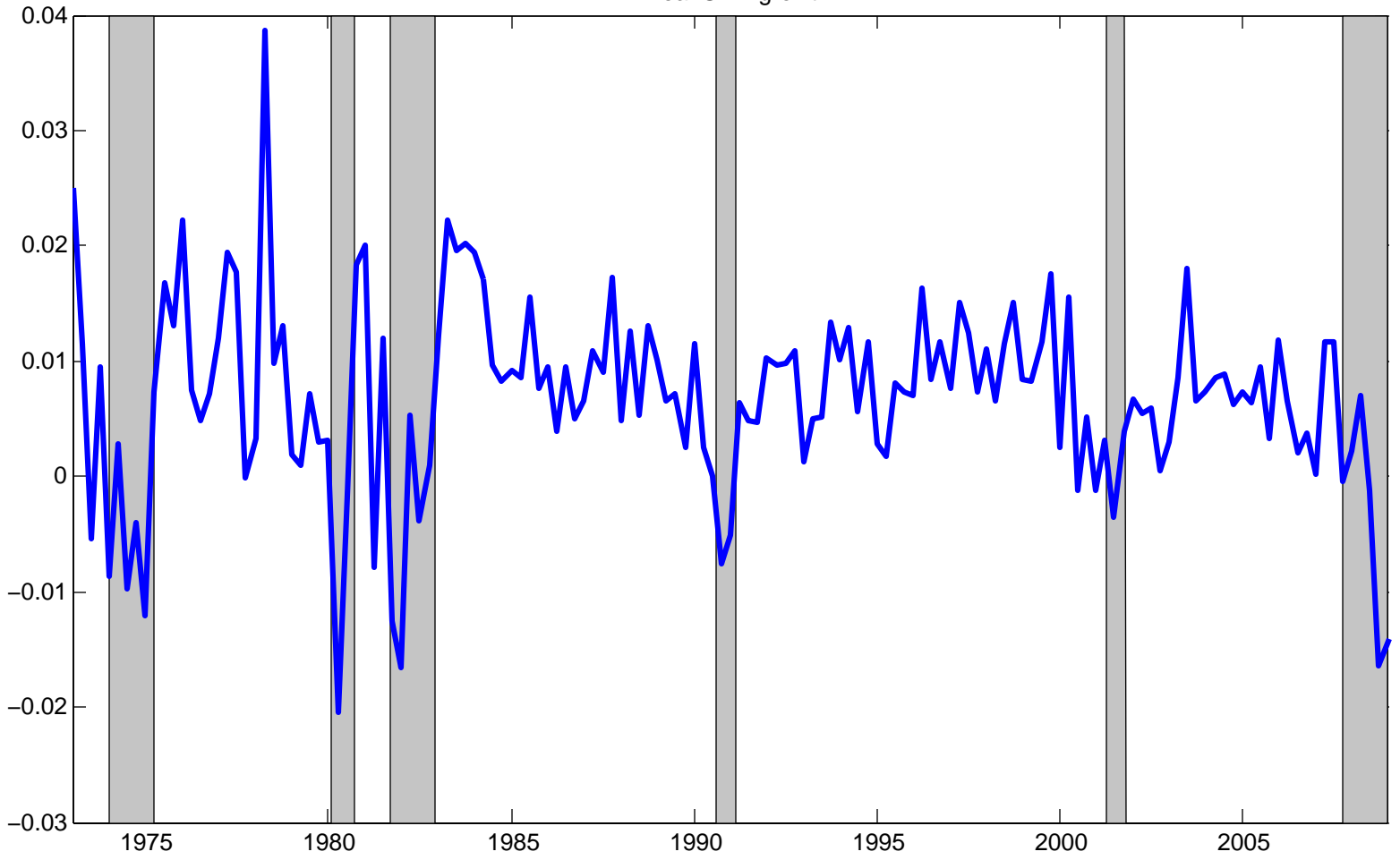
Notes on the Current Crisis

Mark Gertler

NYU

June 2009

Real GDP growth



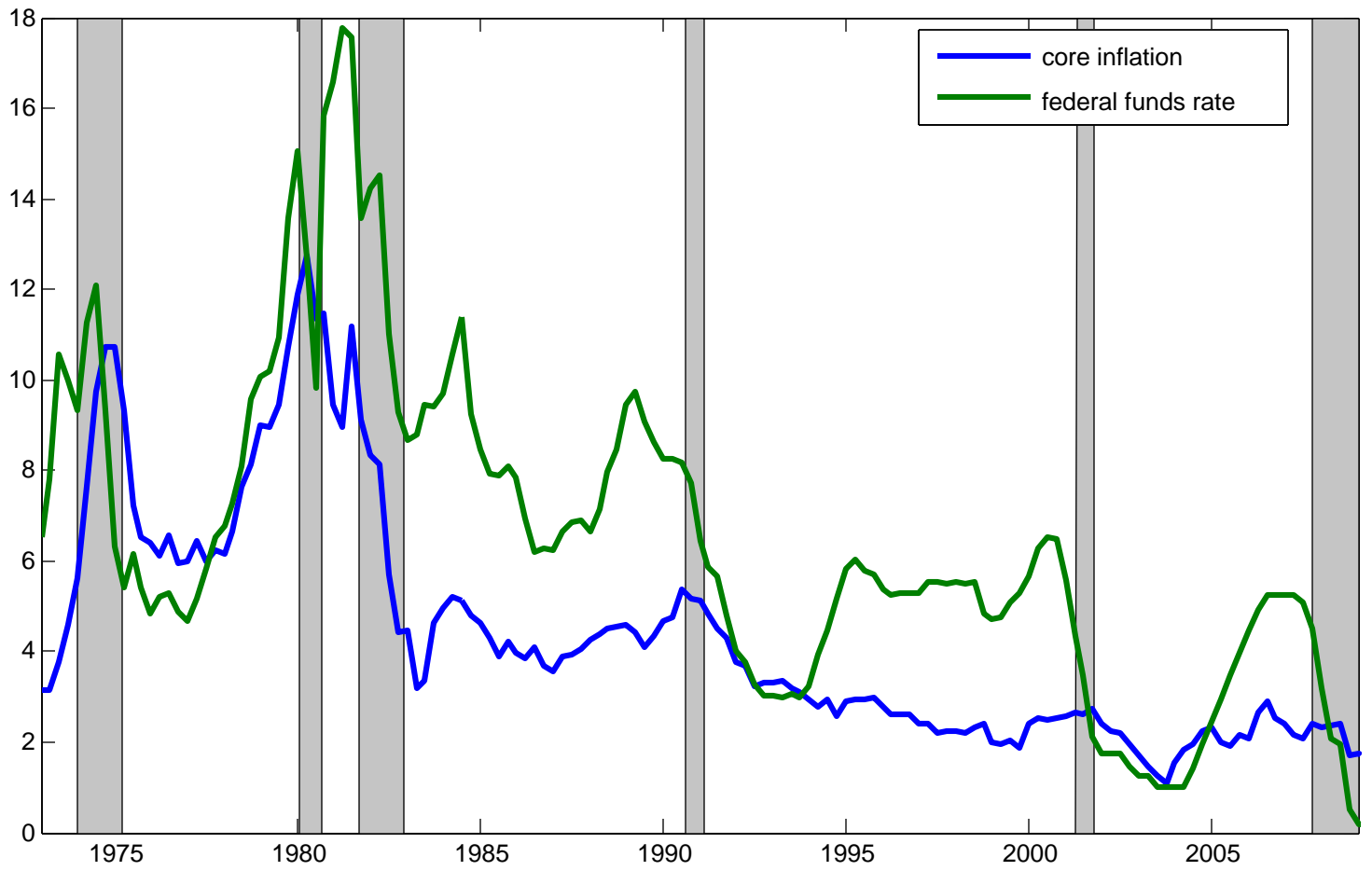
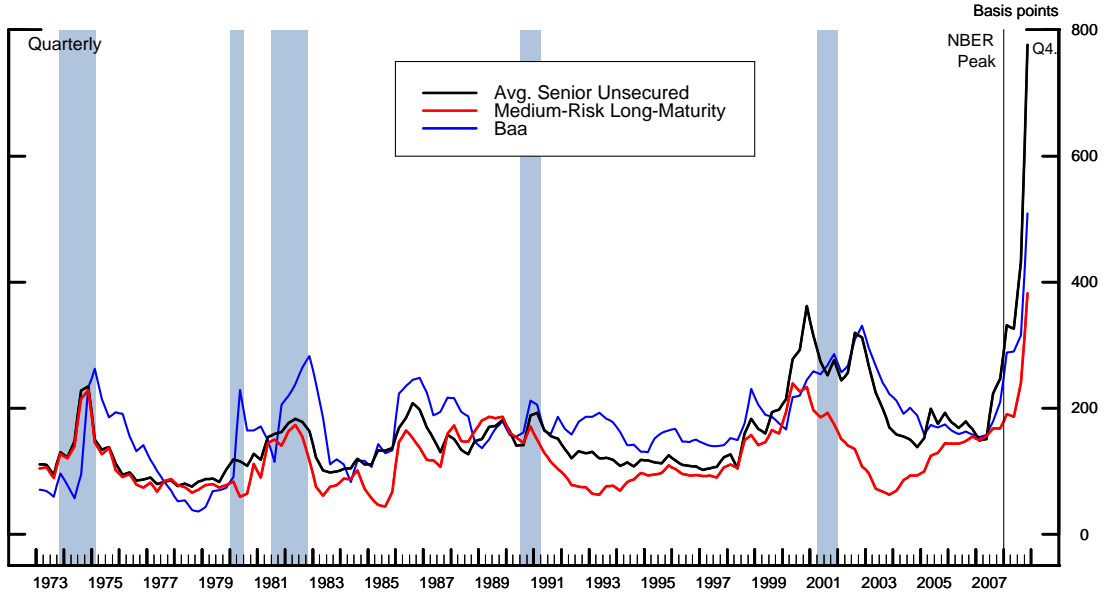
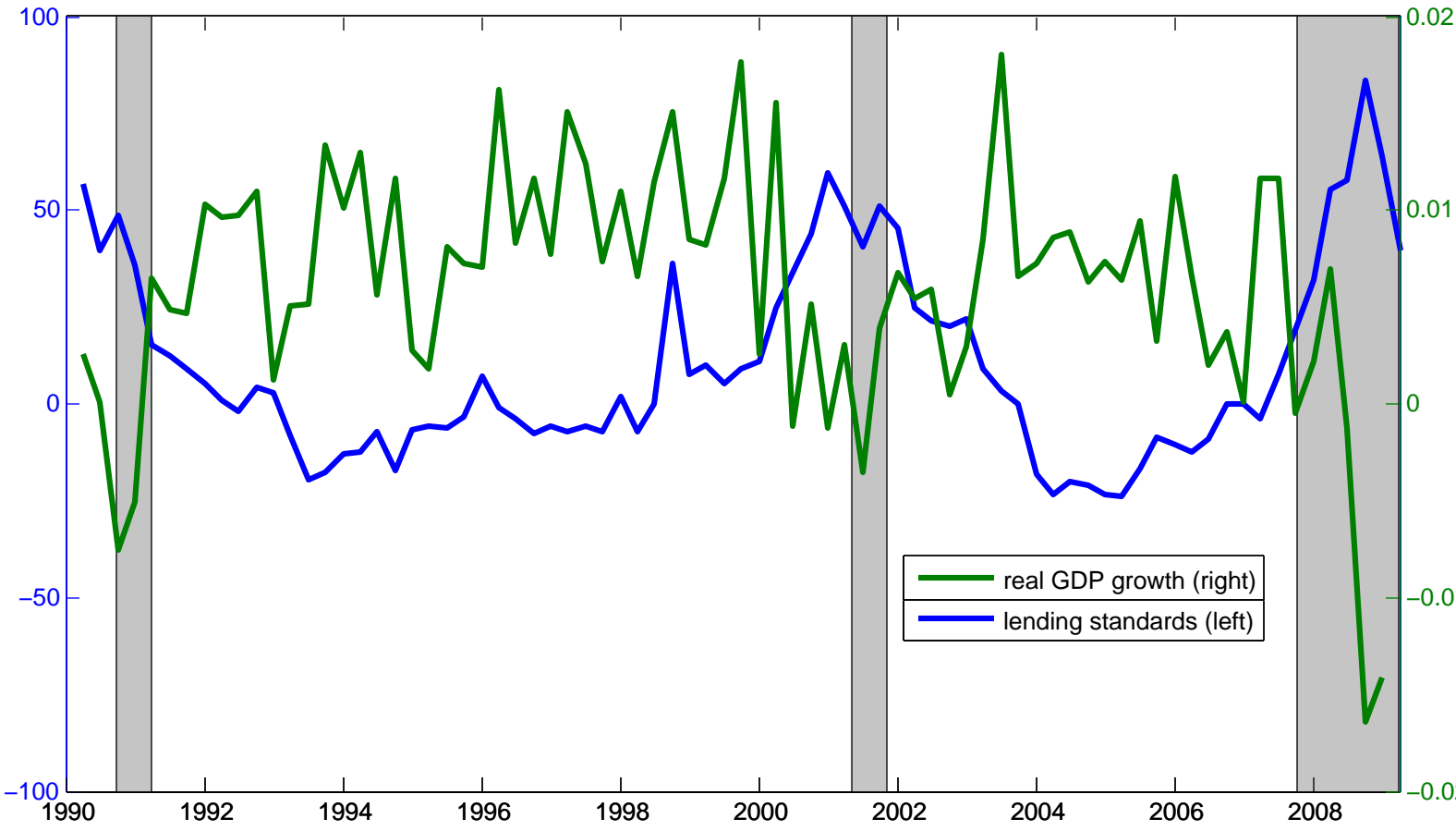


Figure 1: Selected Corporate Bond Spreads



NOTE: The black line depicts the average credit spread for our sample of 5,269 senior unsecured corporate bonds; the red line depicts the average credit spread associated with very long maturity corporate bonds issued by firms with low to medium probability of default (see text for details); and the blue line depicts the standard Baa credit spread, measured relative to the 10-year Treasury yield. The shaded vertical bars denote NBER-dated recessions.



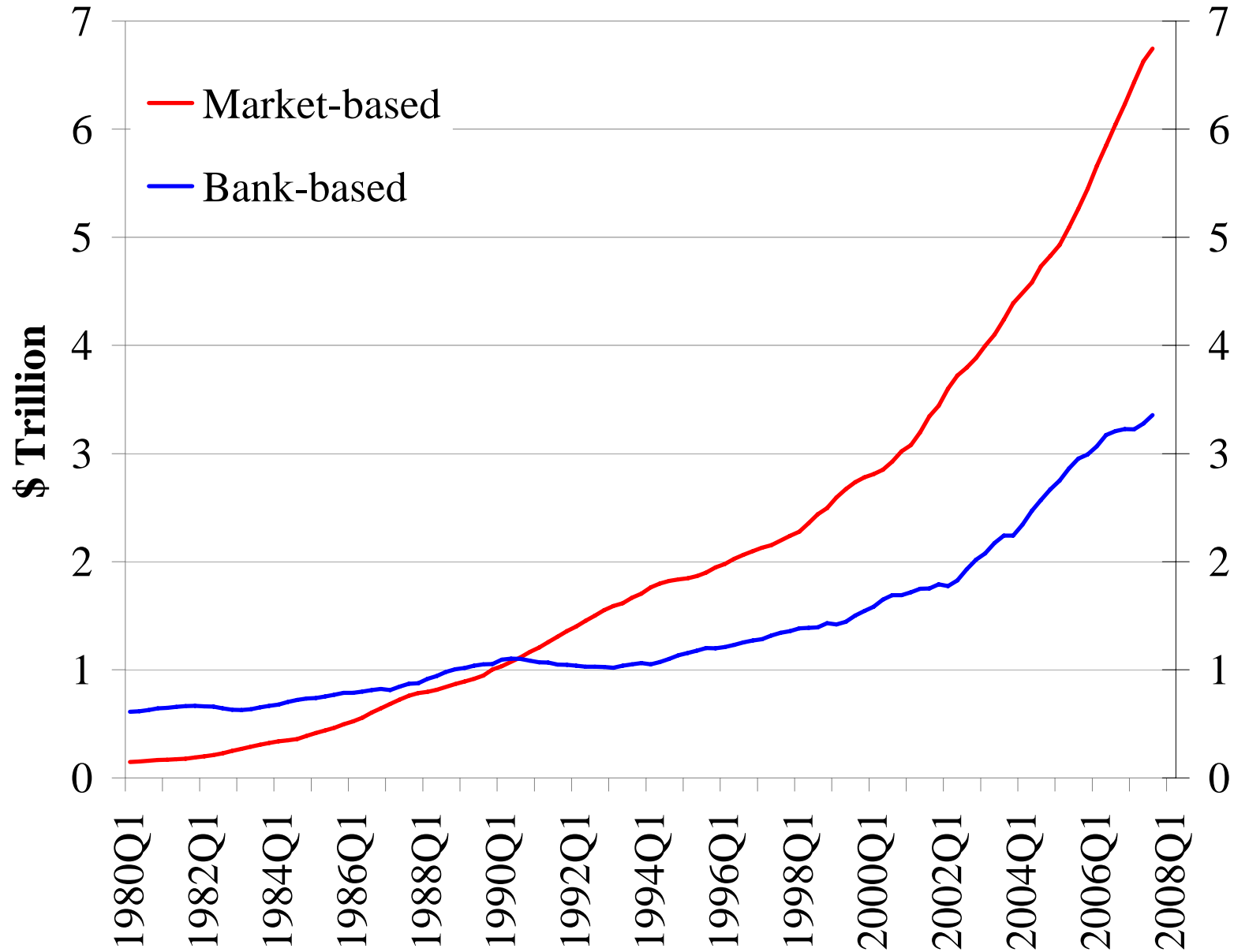
Three Aspects of the Current Crisis

1. Disruption of Financial Intermediation
2. Unconventional Monetary and Fiscal Interventions in Credit Markets
3. Antiquated Regulation and the Need for Regulatory Reform

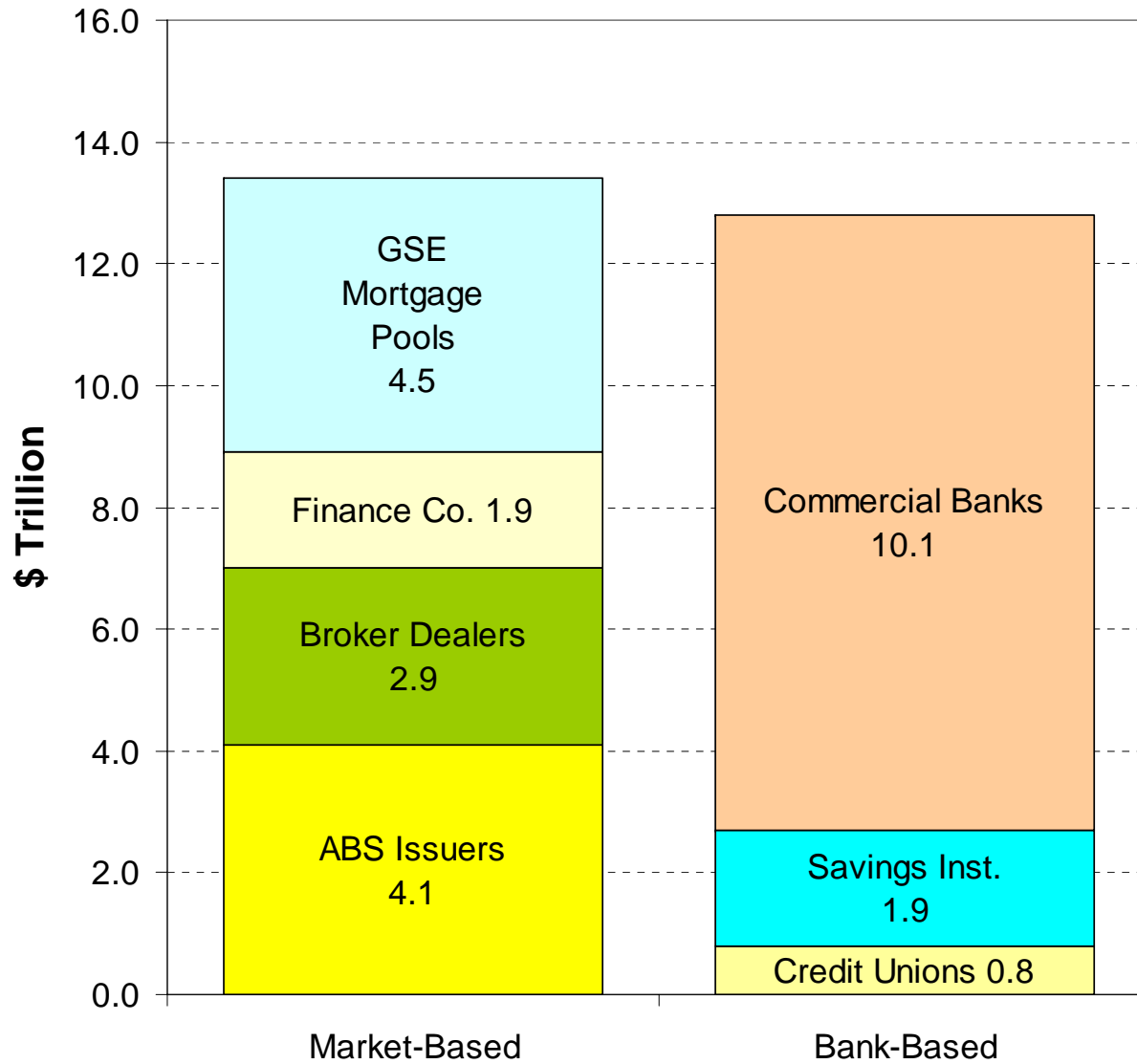
Disruption of Financial Intermediation

- From the late 1980s, Remarkable Rise in Highly-leveraged Securitized Lending (i.e. the Shadow Banking System)

Market-Based and Bank-Based Holding of Home Mortgages



Market-Based Assets (2007Q2)



Disruption of Financial Intermediation (con't)_≥

- Factors underlying this increase:
 - Basel capital standards
 - Relaxation of credit standards
 - Low interest rates
 - Complacency about risk due to Great Moderation

Disruption of Financial Intermediation (con't)

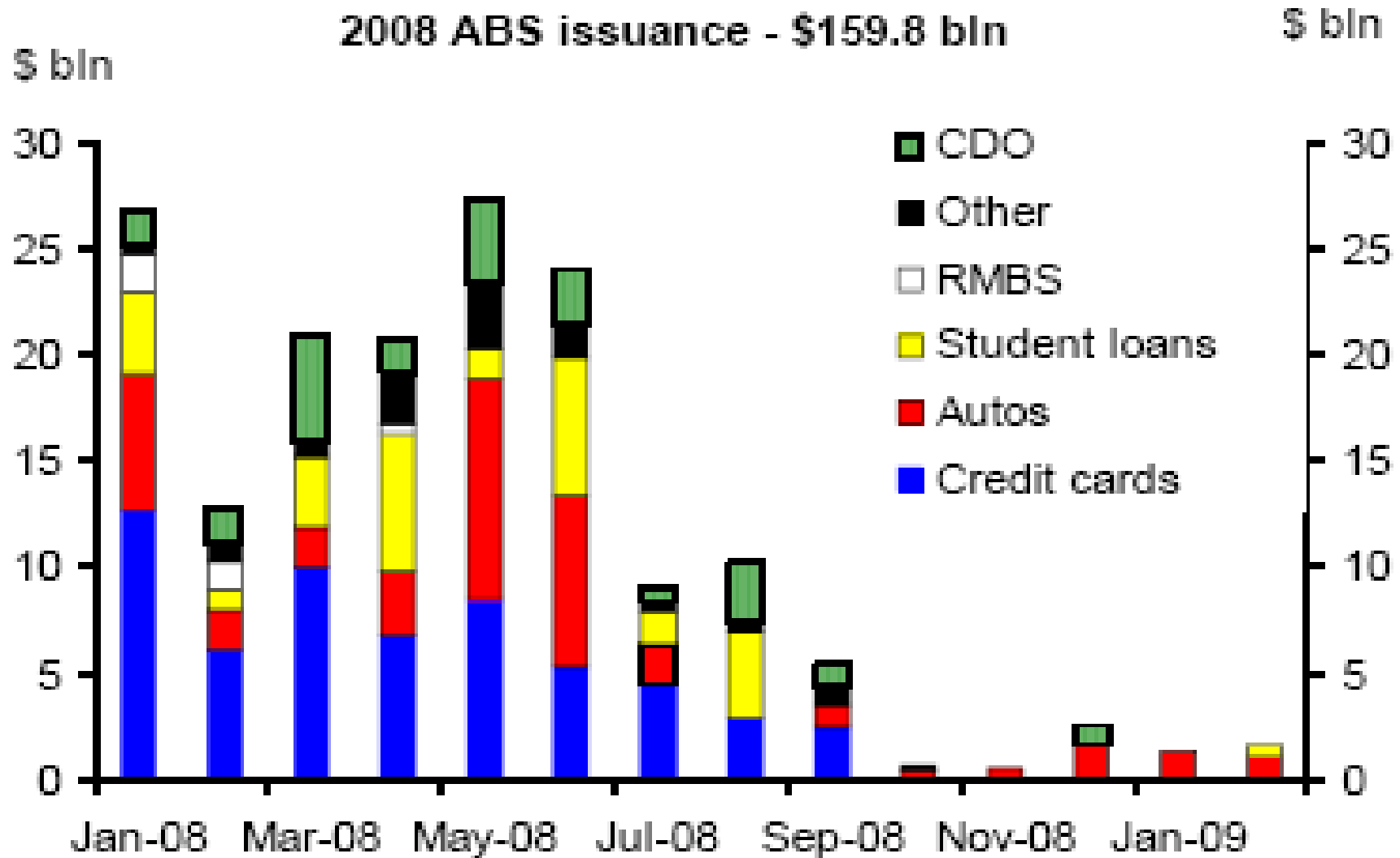
"You can't tell who is naked until you drain the swimming pool."

(Warren Buffett)

Disruption of Financial Intermediation (con't)

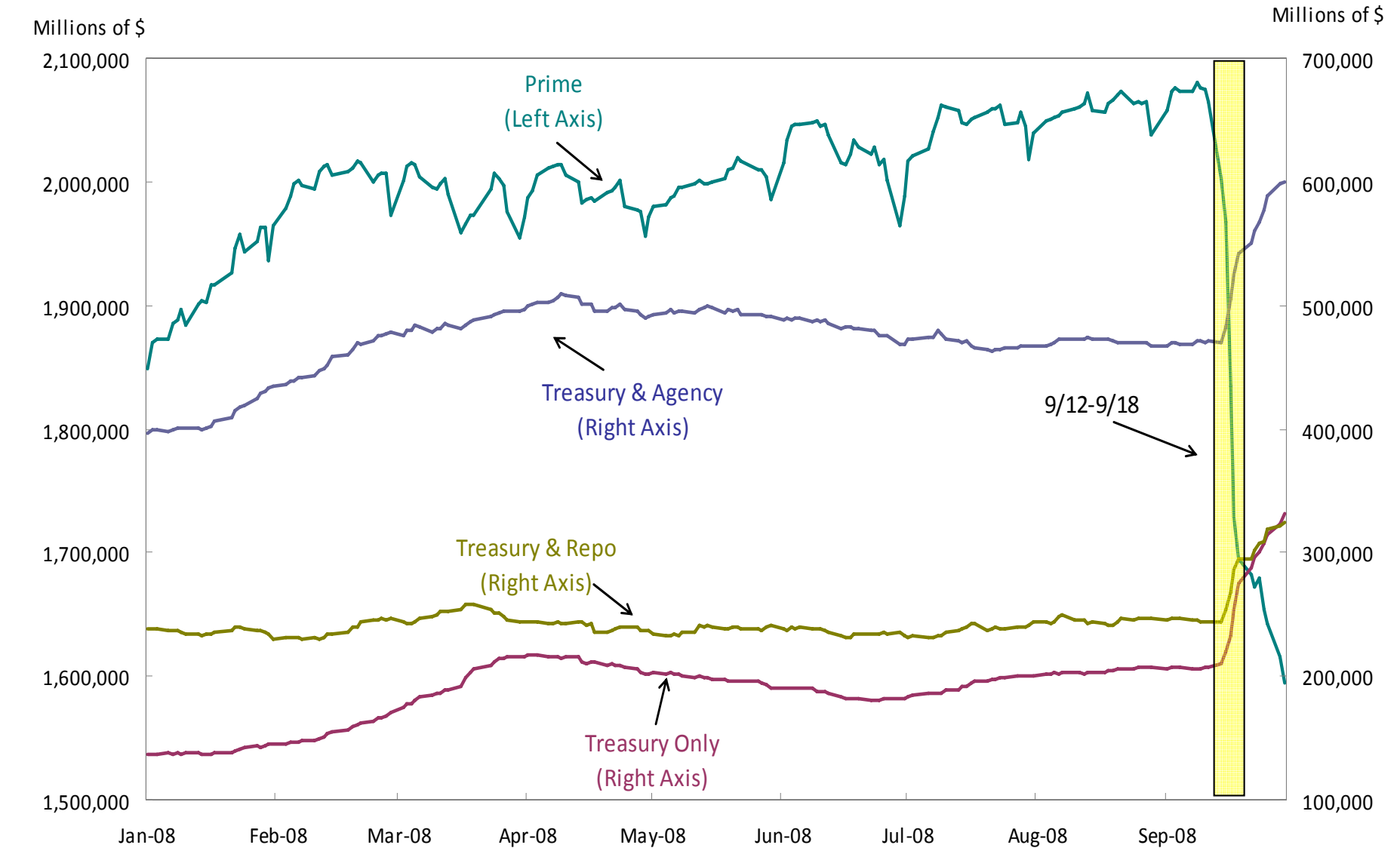
- Sub-prime defaults in August 2007 expose the weakness of the system
- Difficult to value many securitized assets: exposed to falling housing prices
- Term lending in money and interbank markets begins to dry up
- Global deleveraging process begins \Rightarrow losses from asset firesales that fuel further losses
- Culiminates in Lehmann Brothers collapse

Securitized Lending Collapse Post-Lehman



Source: DB Global Markets Research

Assets by Money Fund Type: Jan 1 - Sep 30, 2008



Source: iMoneyNet

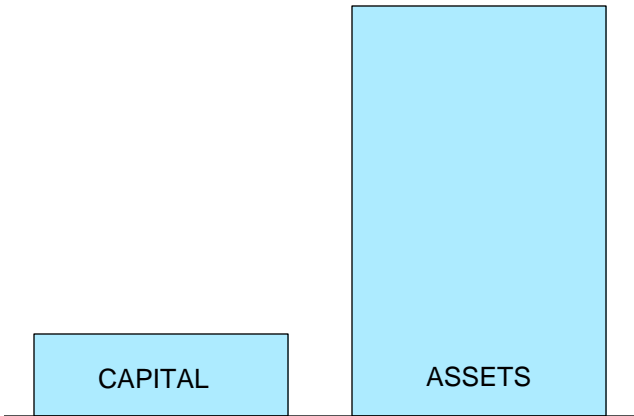
Disruption of Financial Intermediation (con't)

Transmission to Real Economy:

- Deleveraging leads to increasing credit spreads.
- Distress spread broadly as commercial banks come under stress
 - Banks have some direct exposure to sub-prime loans
 - Banks absorb some of the decline off-balance sheet assets.

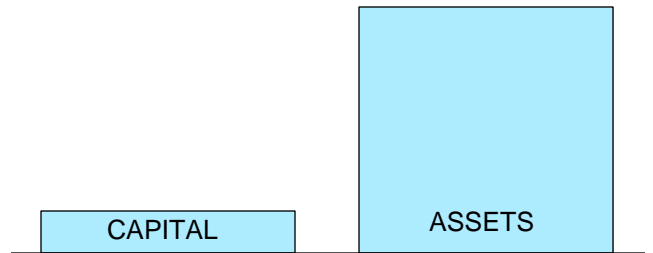
Before

Investment Banks

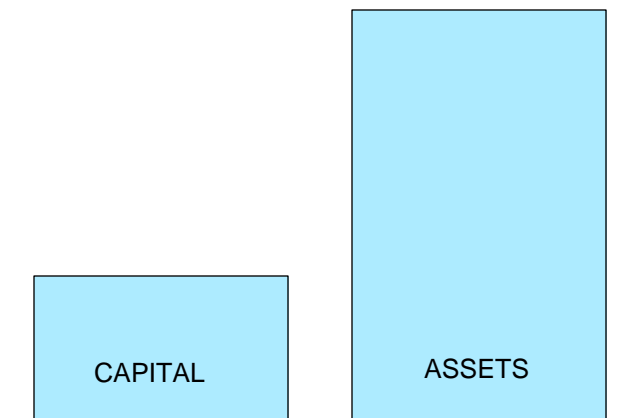


After

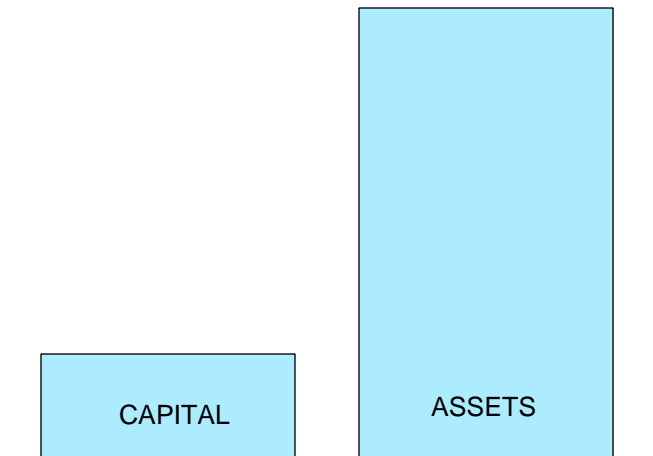
Investment Banks



Commercial Banks

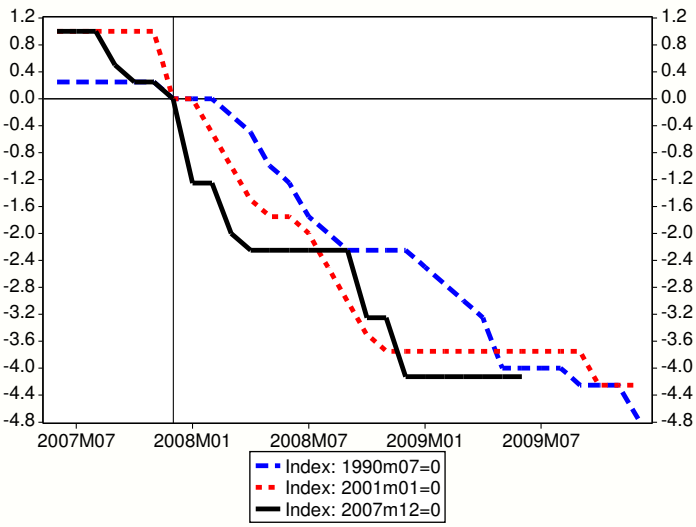


Commercial Banks

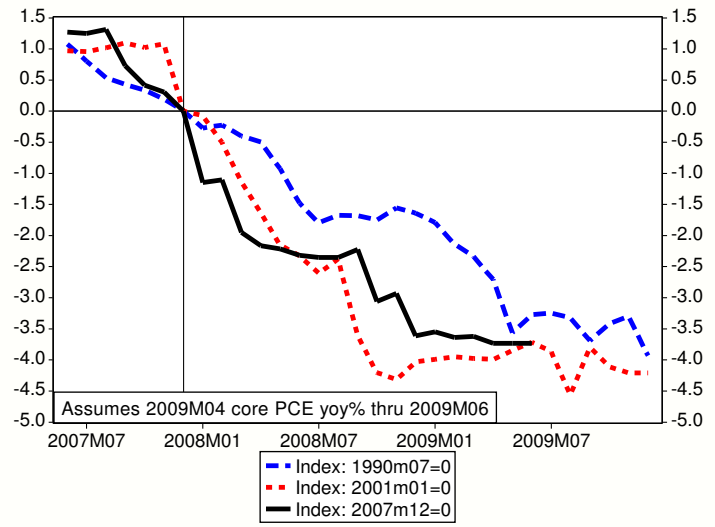


Financial Conditions: Butterfly Charts (1 of 2)

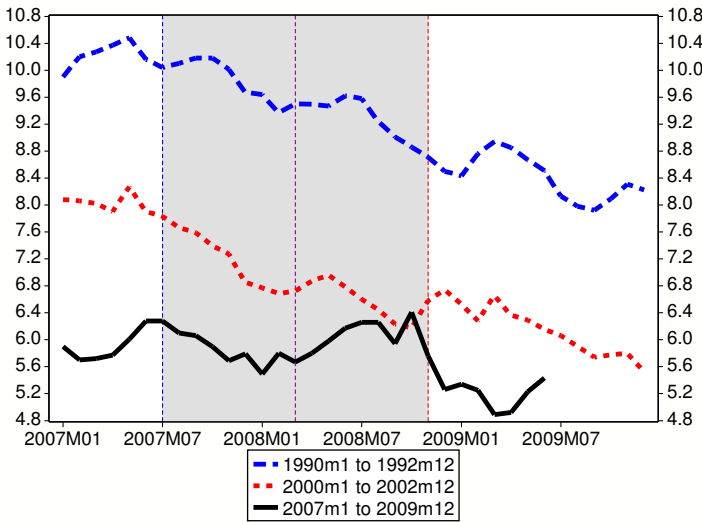
Target Fed Funds Rate



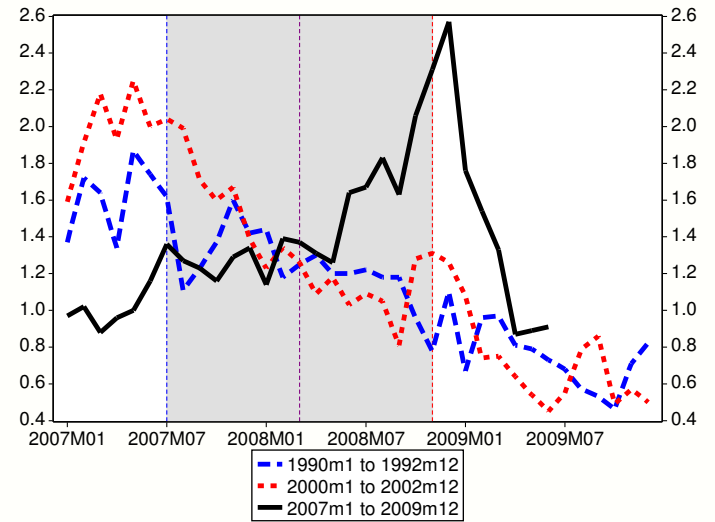
Real Fed Funds Rate



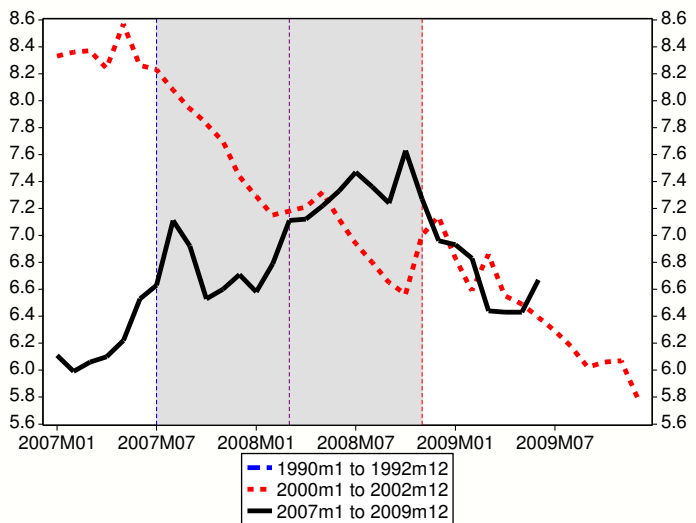
Conforming 30yr Fixed Rate Mortgage



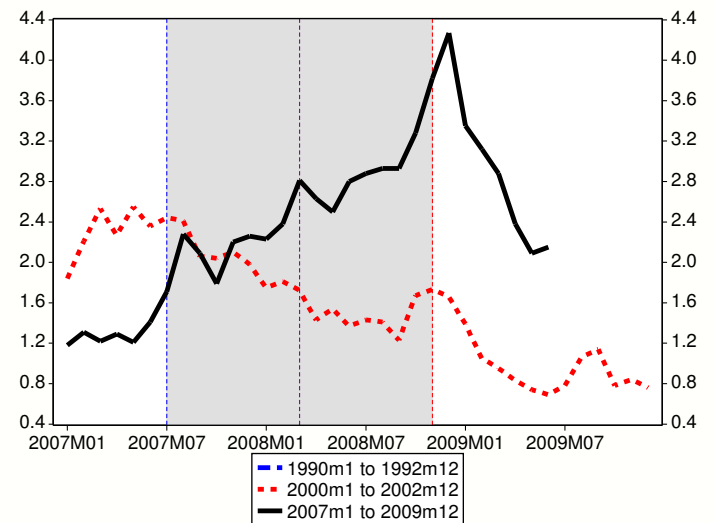
Spread: 30yr Tsy & Conforming 30yr FRM



Jumbo Mortgage Rate



Spread: 30yr Tsy & Jumbo Mortgage Rate



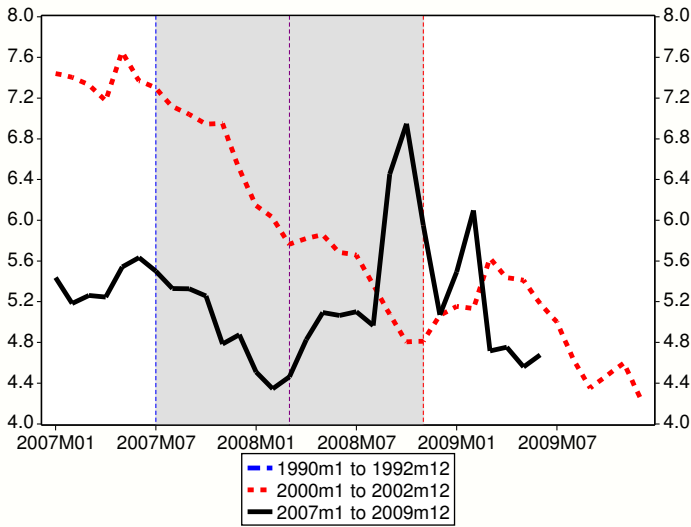
1990-91 recession: 1990m7 (peak) to 1991m3 (trough)

2001 recession: 2001m3 (peak) to 2001m11 (trough)

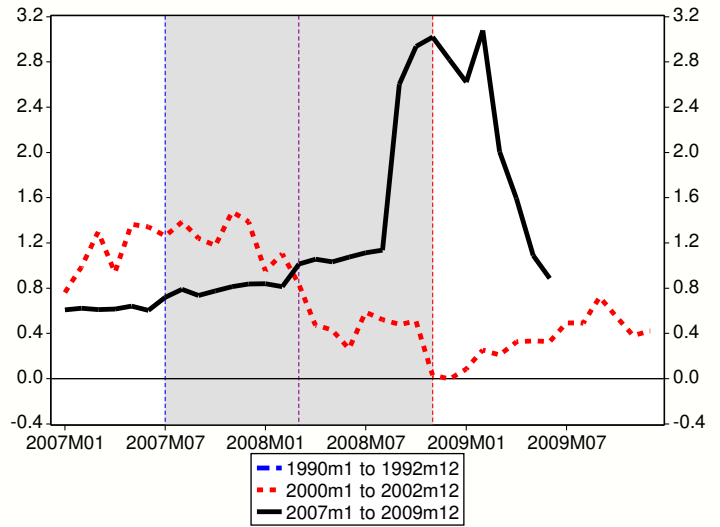
Monthly charts using last daily data where available

Financial Conditions: Butterfly Charts (2 of 2)

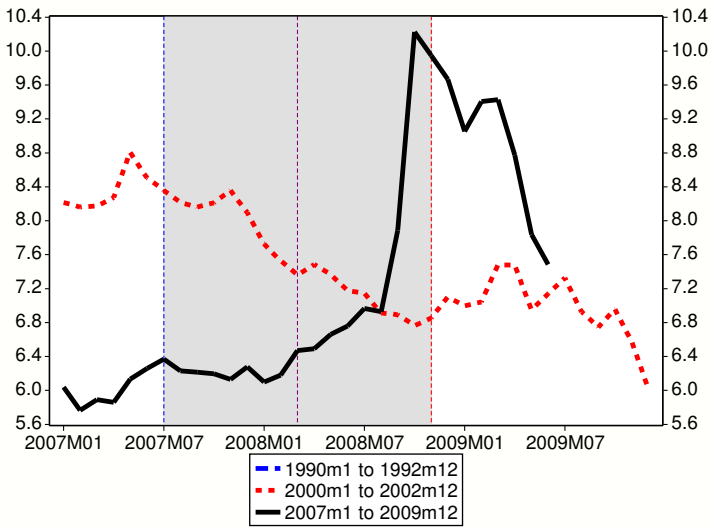
ML AAA corporate bond yield



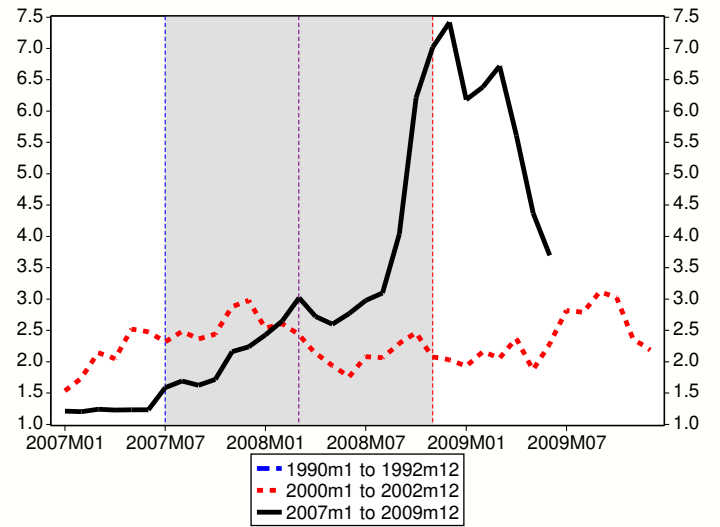
Spread: 10yr Tsy & ML AAA corp bond yield



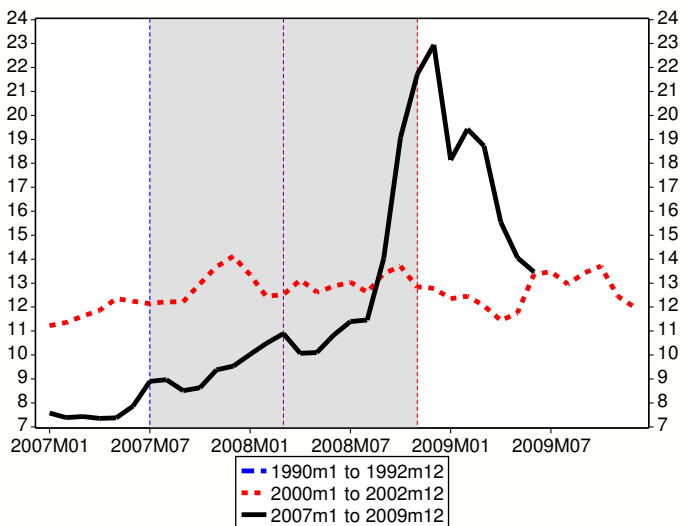
ML BBB corporate bond yield



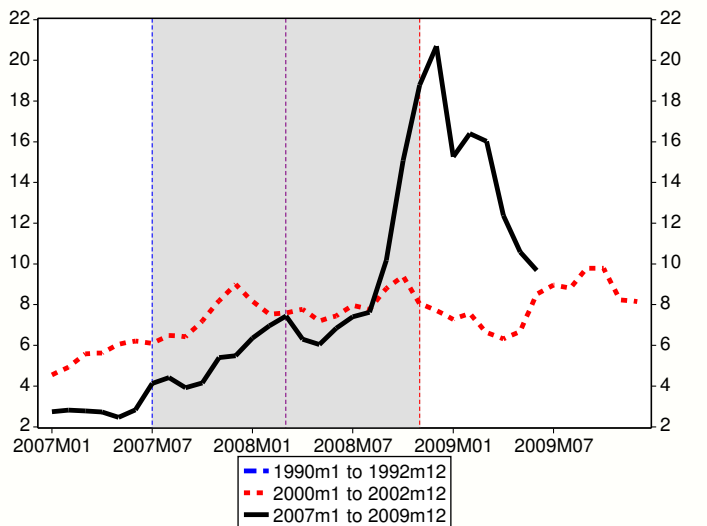
Spread: 10yr Tsy & ML BBB corp bond yield



ML Junk bond yield



Spread: 10yr Tsy & ML Junk bond yield



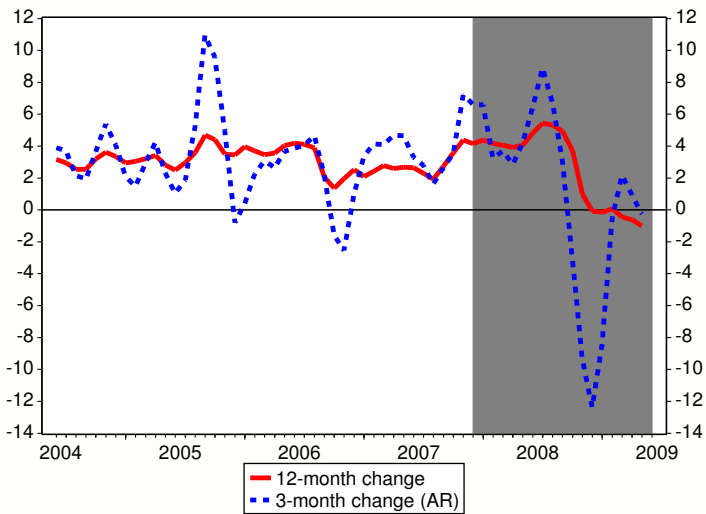
1990-91 recession: 1990m7 peak (blue vertical line) to 1991m3 trough (purple vertical line)

2001 recession: 2001m3 peak (purple vertical line) to 2001m11 trough (red vertical line)

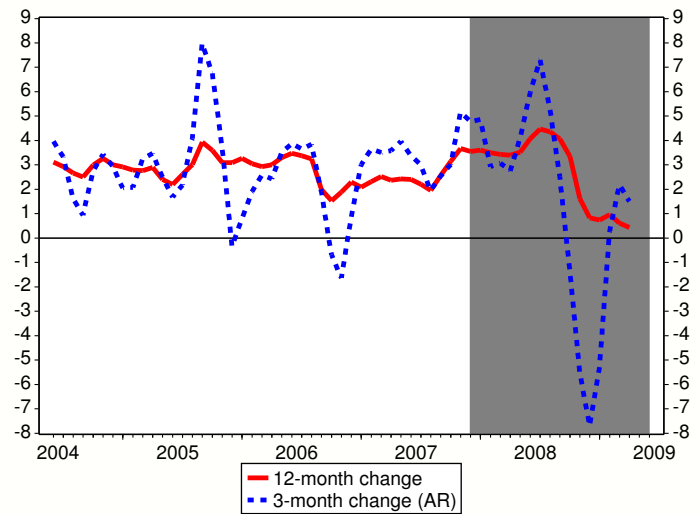
Monthly charts using last daily data where available

United States: Prices

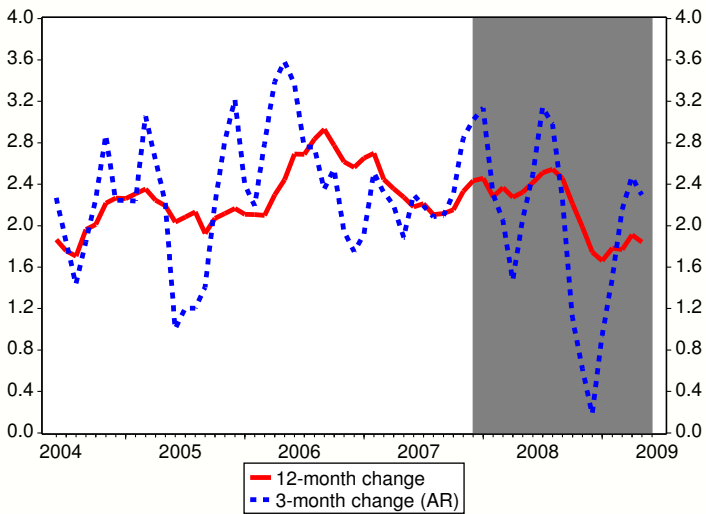
Total CPI



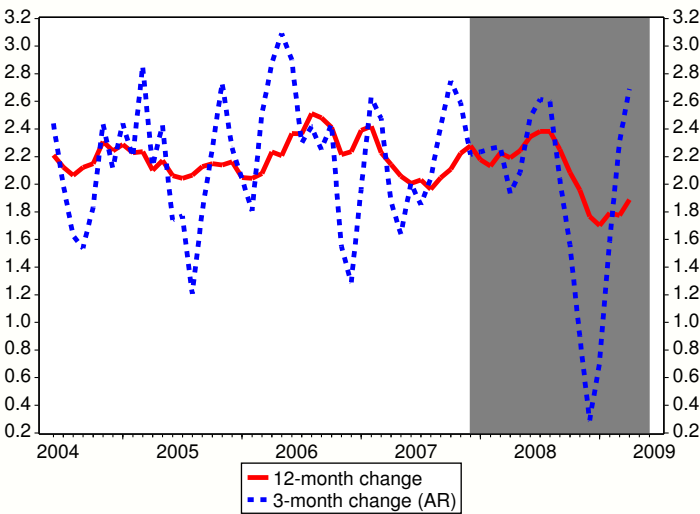
Total PCE



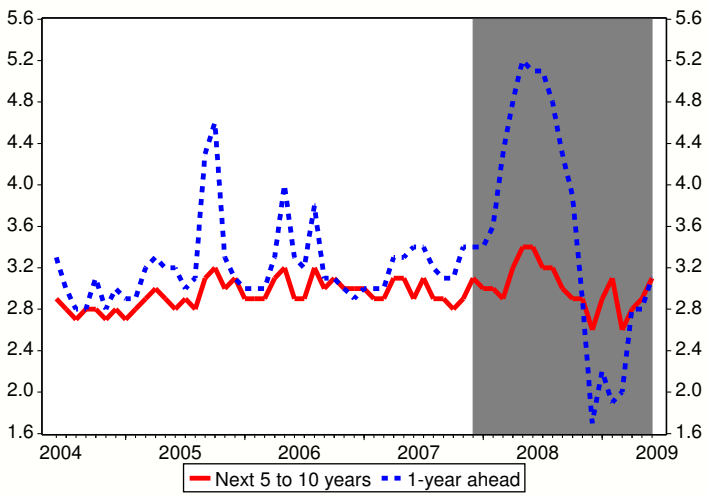
Core CPI



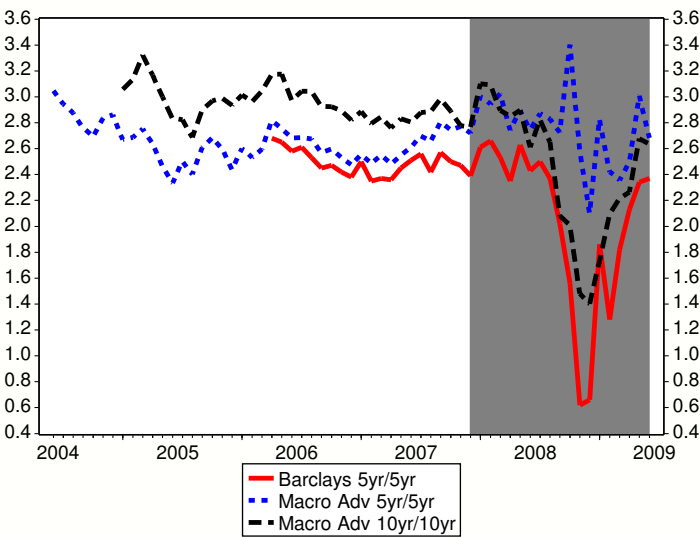
Core PCE



Michigan Inflation Expectations (median)



Breakeven Inflation



Disruption of Financial Intermediation (con't)

Implications for research:

- Existing literature (BGG, CMR, etc.) focuses on capital market constraints faced by non-financial firms and households
 - Intermediaries are simply veils.

Disruption of Financial Intermediation (con't)

On the one hand:

- Financial Accelerator mechanism extends naturally to financial institutions.
 - Motivates capital constraints on the ability to obtain funds
- Also provides way to think about how the wave of sub-prime defaults disrupted financial intermediation
 - Especially given the high leverage of these firms.

Disruption of Financial Intermediation (con't)

On the other hand:

- Need to do more than re-label non-financial firms as financial:
- Financial Firms exhibit a much higher degree of leverage and a much shorter maturity structure of debt.
- It is this feature that made the system so vulnerable to a housing pricing collapse. (Contrast with the equity price collapse of 2000-2001.)
- Understanding how such a high degree of leverage could emerge is an important policy question.
- Primitive Features of Financial Institutions vs. Moral Hazard from Government Protection

Disruption of Financial Intermediation (con't)

- Related Issue: Not only did the average amount of intermediary capital decline precipitously, the degree uncertainty over asset values skyrocketed.
- This increase in uncertainty had the effect of further tightening balance sheet constraints..
- Not only a first moment effect on intermediation from the contraction in intermediary capital, there was as well second moment effect from the rise in uncertainty over the value of this capital. ("Toxic Assets")
- The paper by Christiano et. al. gets at this, but clearly much more work needs to be done.

Unconventional Monetary and Fiscal Interventions in Credit Markets.

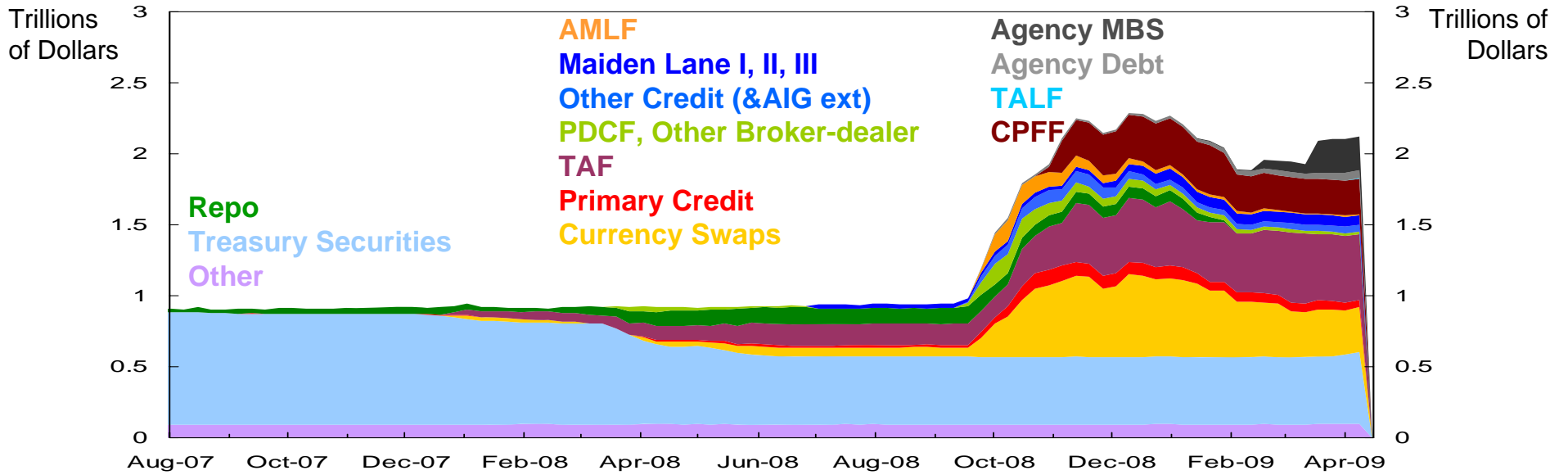
Unconventional vs. Conventional Monetary Policy

Conventional: The central bank adjusts the short term rate to affect the market structure of interest rates.

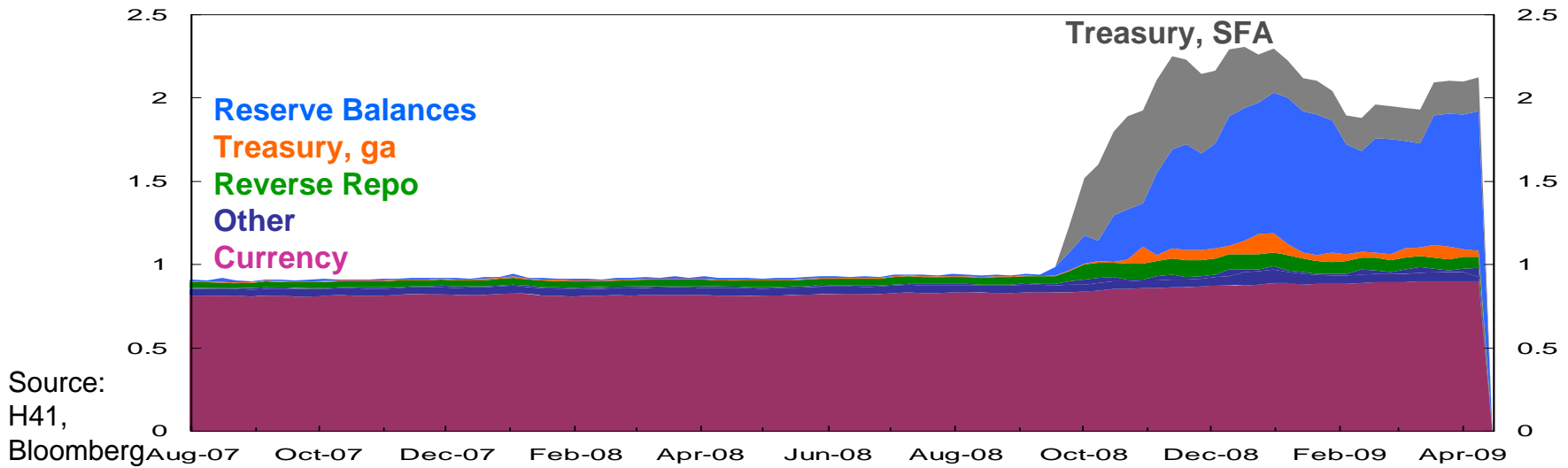
Unconventional: The central bank lends directly in private credit markets.

Section 13.3 of the Federal Reserve Act: "In unusual and exigent circumstances.. the Federal Reserve may lend directly to private borrowers to the extent it judges the loans to be adequately secured."

Federal Reserve Assets



Federal Reserve Liabilities



Unconventional Monetary and Fiscal Interventions in Credit Markets.

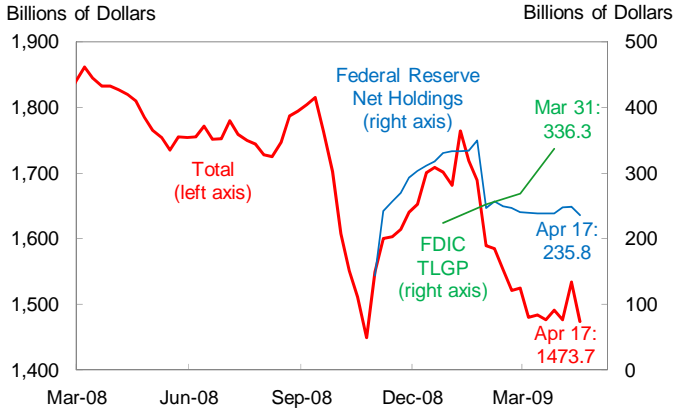
- Fed's expansion of its balance sheet to directly channel credit to the private sector:
Injection of equity capital into the banking the system by Treasury
Along with expansion of various guarantees by the Treasury and the FDIC.
- Need to expand models so that we can offer advice on these kinds policies.

Unconventional Monetary and Fiscal Interventions in Credit Markets.

- Gertler and Karardi (2009): These policies reflect a vary natural response to the disruption of financial intermediation that this crisis has featured.
- Unlike private intermediaries, the Fed is not balanced sheet constrained (or at least not yet.).
- As a lender of last resort, Fed should directly lend in markets where private intermediaries are constrained due to financial distress but credit risks are moderate.
- The evidence suggests that these kinds of policies have had some success in reducing credit spreads.

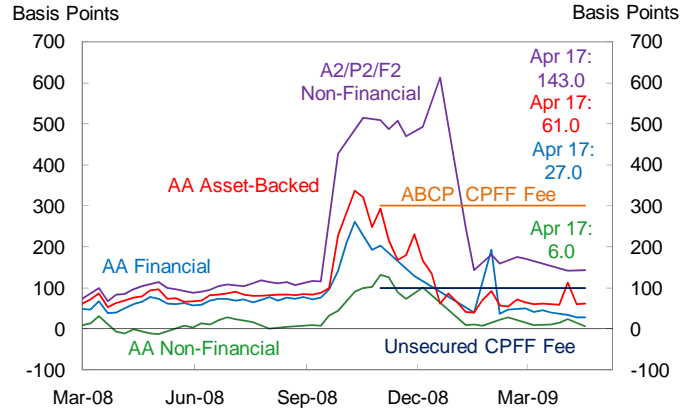
Liquidity Facilities

CPFF and Commercial Paper Outstanding



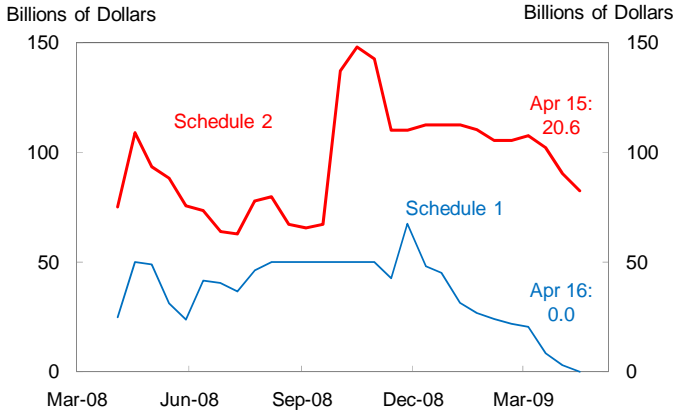
Source: Federal Reserve Board, Haver, FDIC

3-month CP Rates over OIS



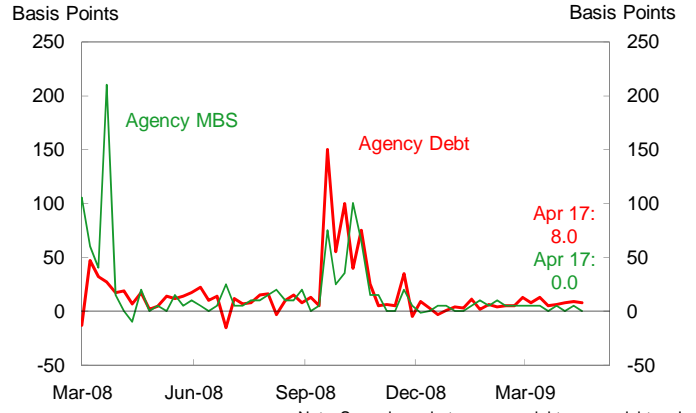
Source: Federal Reserve Board, Haver, Bloomberg

TSLF Schedule 1 & 2 Total Outstanding



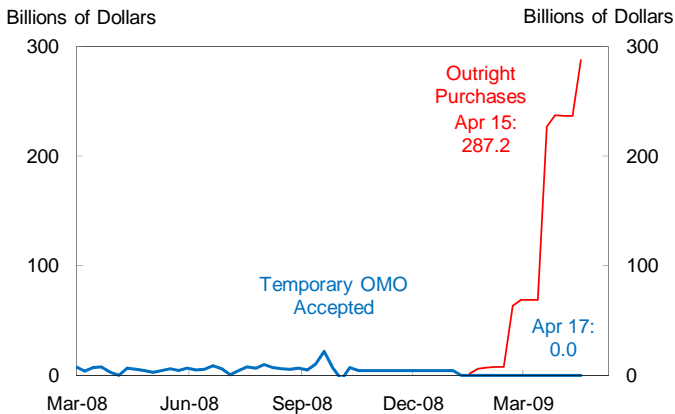
Source: Federal Reserve Board

Overnight Financing Spreads



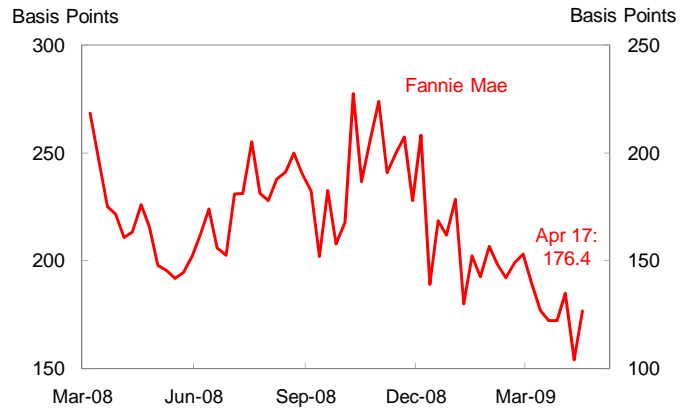
Source: Bloomberg
Note: Spreads are between overnight agency debt and MBS and Treasury general collateral repo rates

Agency MBS Transactions



Source: Federal Reserve Board, Haver

Agency MBS to Average 5y and 10y Yields



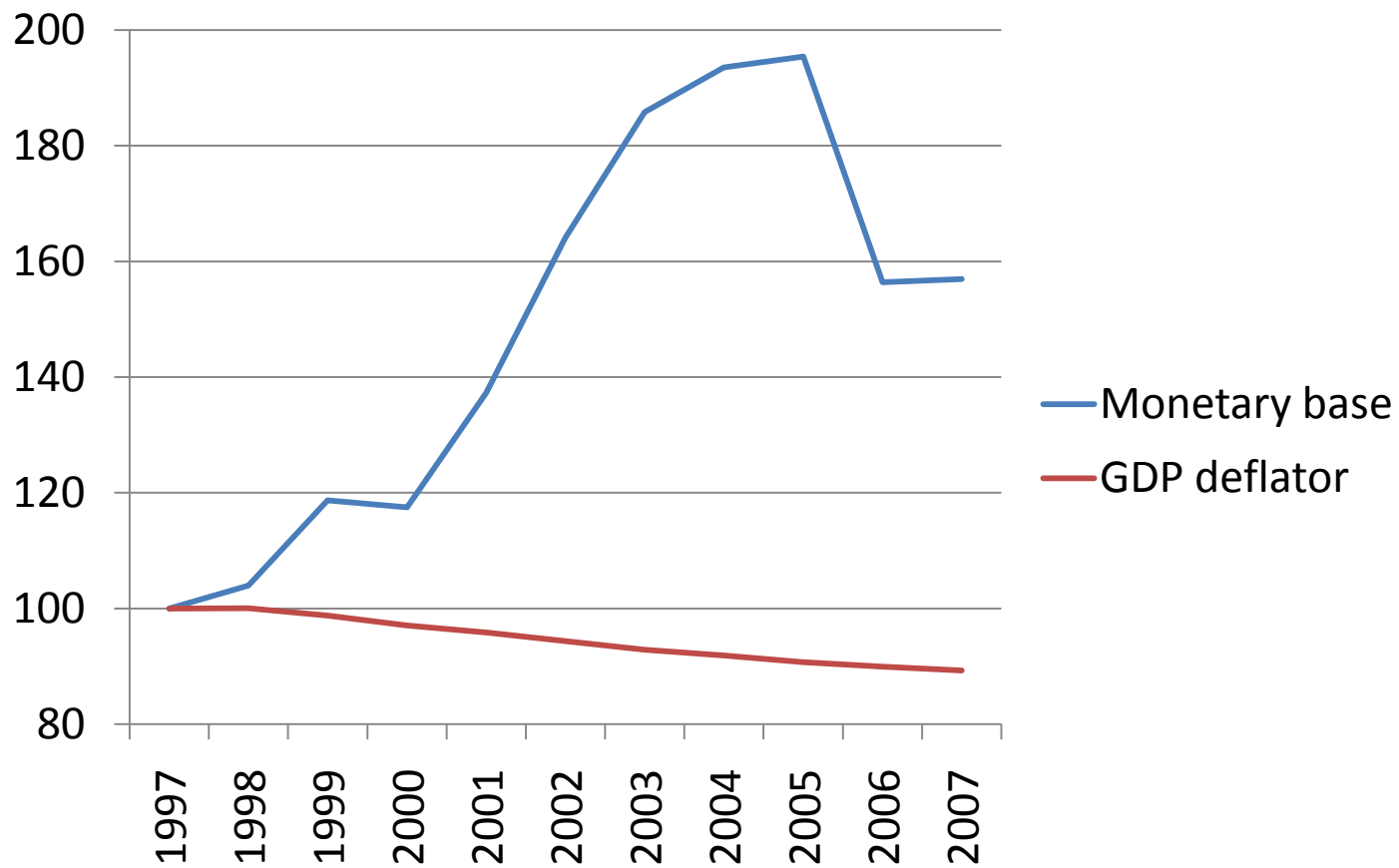
Source: FRB, Haver, Bloomberg
Note: Spreads are agency 30 year on-the-run coupon to average of 5 and 10 year yields

Unconventional Monetary and Fiscal Interventions in Credit Markets (con't).

Additional Issues

- Asset Purchases vs. Equity Injections:
- Inflation Risks From Fed Balance Sheet Operations?
 - Vastly overblown, in my view

Japanese money and prices



Source: Bank of Japan, IMF

Inadequate Regulatory Structure and Regulatory Re-Design

- Emergence of the highly leveraged shadow banking system was facilitated by the existing regulatory structure.
- Now an across the board consensus for regulatory re-design.
- Research should contribute to this endeavor.
- Should build models where we can not only stress the banking system, but also stress test the overall macroeconomy.

Inadequate Regulatory Structure and Regulatory Re-Design (con't)

- Need to better understand the moral hazard consequences of different types of regulatory design.
- We have developed an impressive machinery to study credibility issues in policy-making but have mostly applied this machinery to the inflation bias problem.
- Time to shift to studying the consequences of different types of financial regulatory design.

Now have an impressive literature on the optimal inflation target:.

- I look forward when we the we attack the problem of optimal financial regulatory design with the same degree of energy..