

“Global Financial Crisis of 2007 – 2009: Theoretical and Empirical Perspectives”

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Summer Economics at SNU 2009

and

Korea Economic Association

Outline of Lectures

- **Topic 1.** Overview of the issues and evidence
 - Stages of crisis
 - Financial structure and intermediation
- **Topic 2.** Financial intermediation and the price of risk
 - Theoretical model
 - Application to risk-taking channel of monetary policy
- **Topic 3.** Securitization and Financial Structure
 - Securitization and financial stability
 - Global imbalances
 - Size of financial sector
- **Topic 4.** Policy Issues from the Crisis
 - Finance and international trade
 - Financial regulation

Three Stages of the Crisis

- Stage 1: July 2007 – Dec 2007
- Stage 2: Jan 2008 – June 2008
- Stage 3: July 2008 – March 2009
- Recovery Stage

Stage 1

Financial System

**Subprime
Liquidity Crisis**

Real Economy

July 2007 – December 2007

Stage 2

Financial System

Real Economy

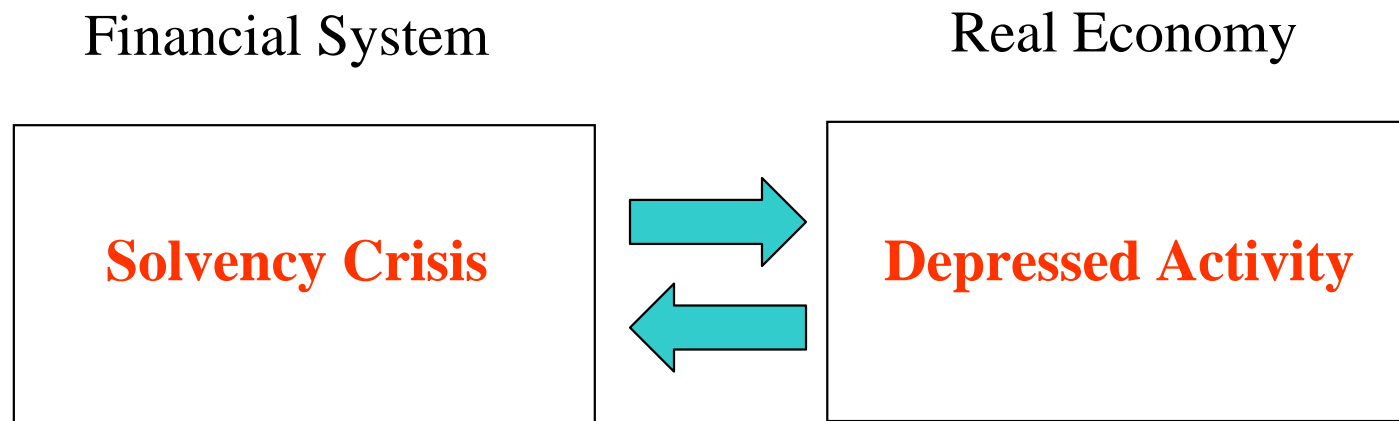
**Liquidity Crisis
Credit Crunch**



**House Price Decline
Depressed Activity**

January 2008 – June 2008

Stage 3



July 2008 – ...

Order

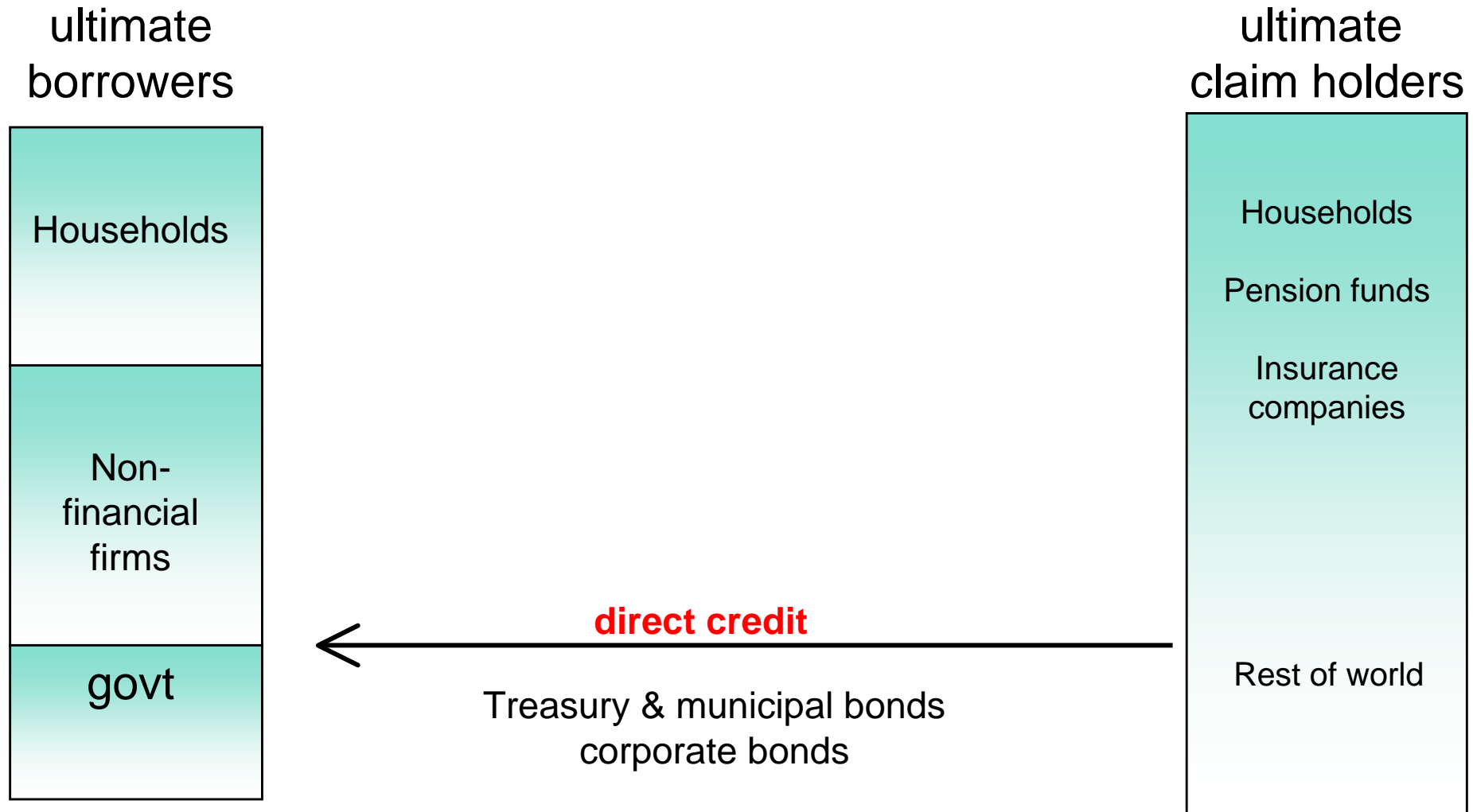
- Financial Sector
- Real Sector
- U.S. Fiscal outlook

Financial Intermediation and Policy Response in the Crisis

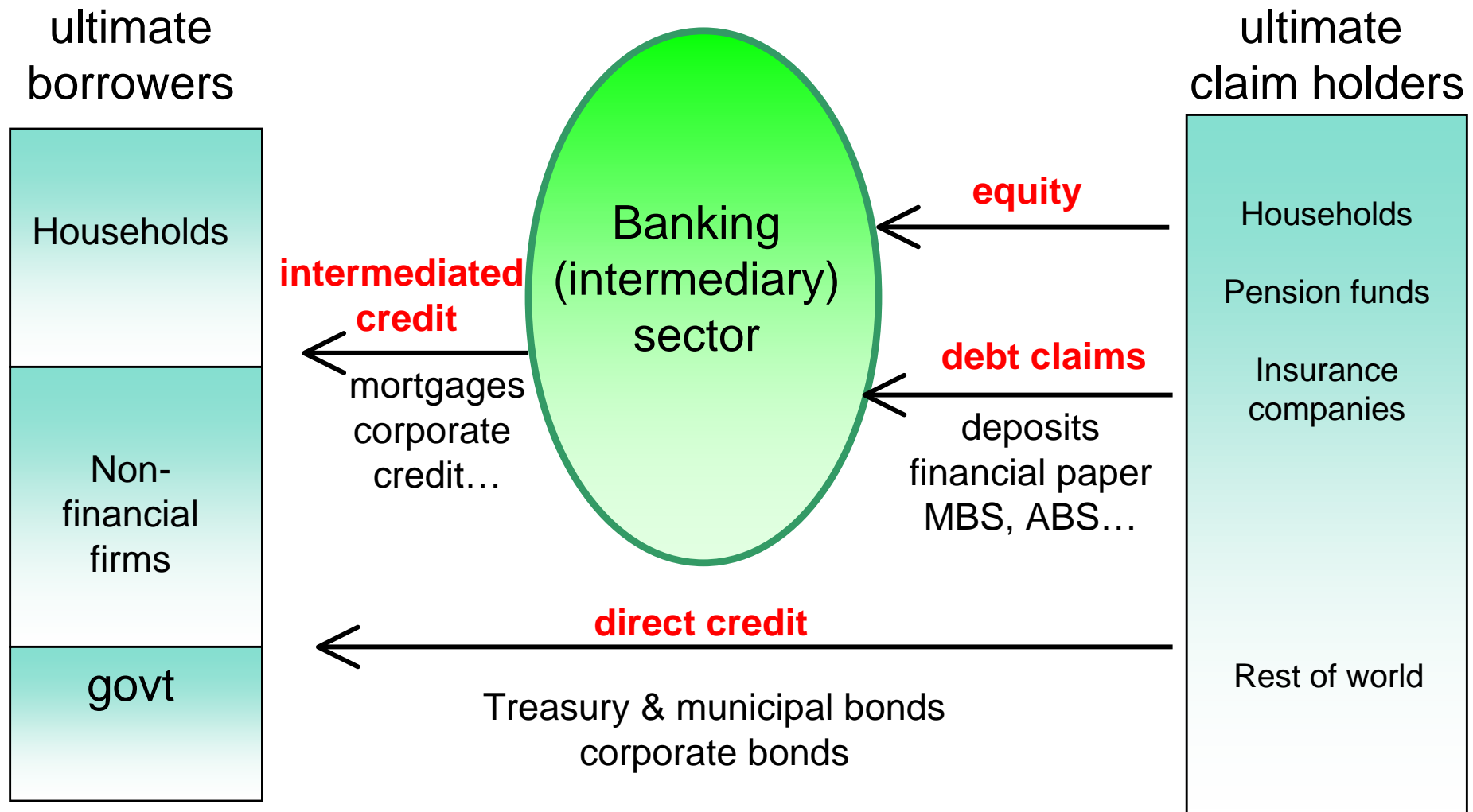
Tobias Adrian,
Federal Reserve Bank of New York

Hyun Song Shin
Princeton University

Stylized Financial System

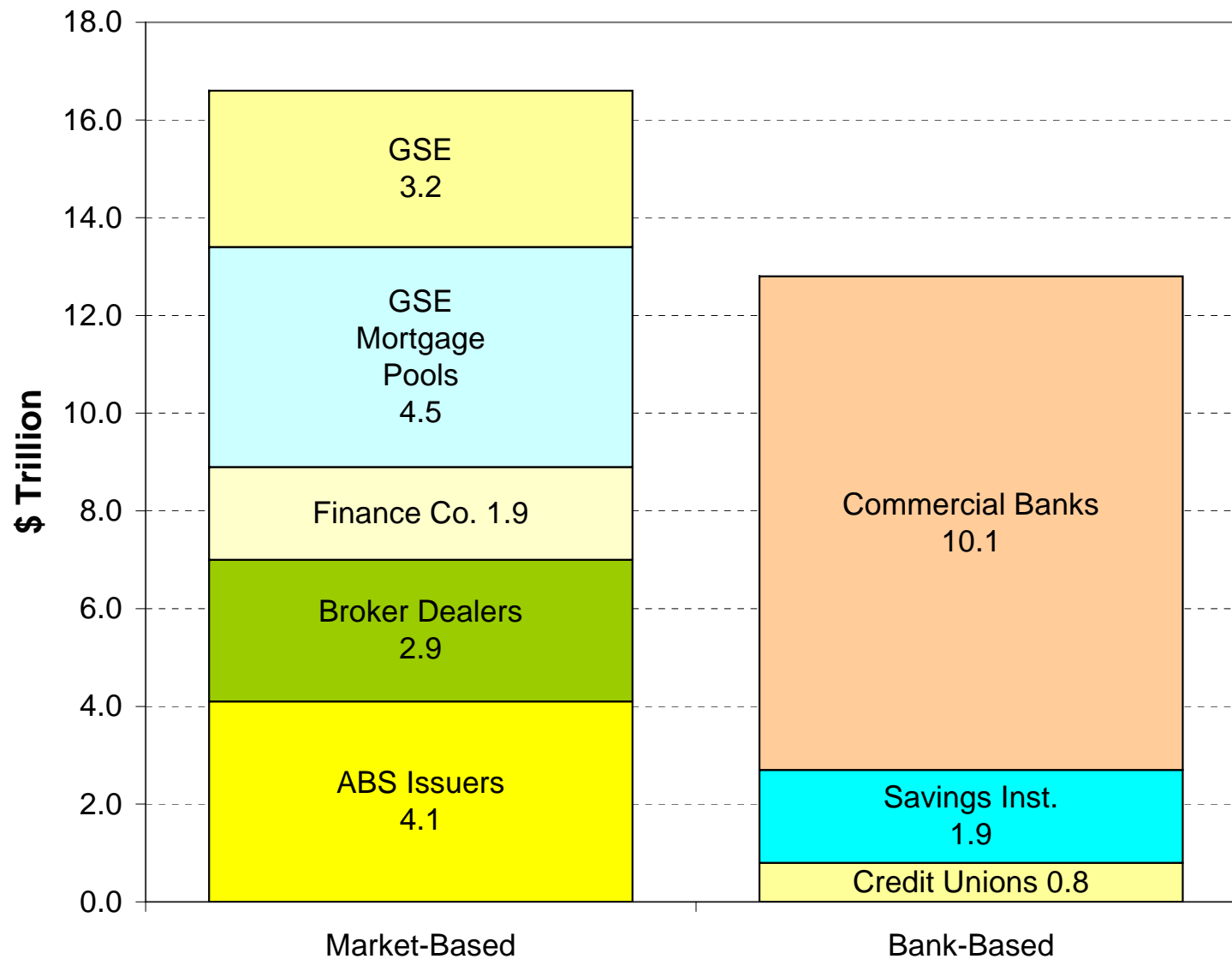


Stylized Financial System

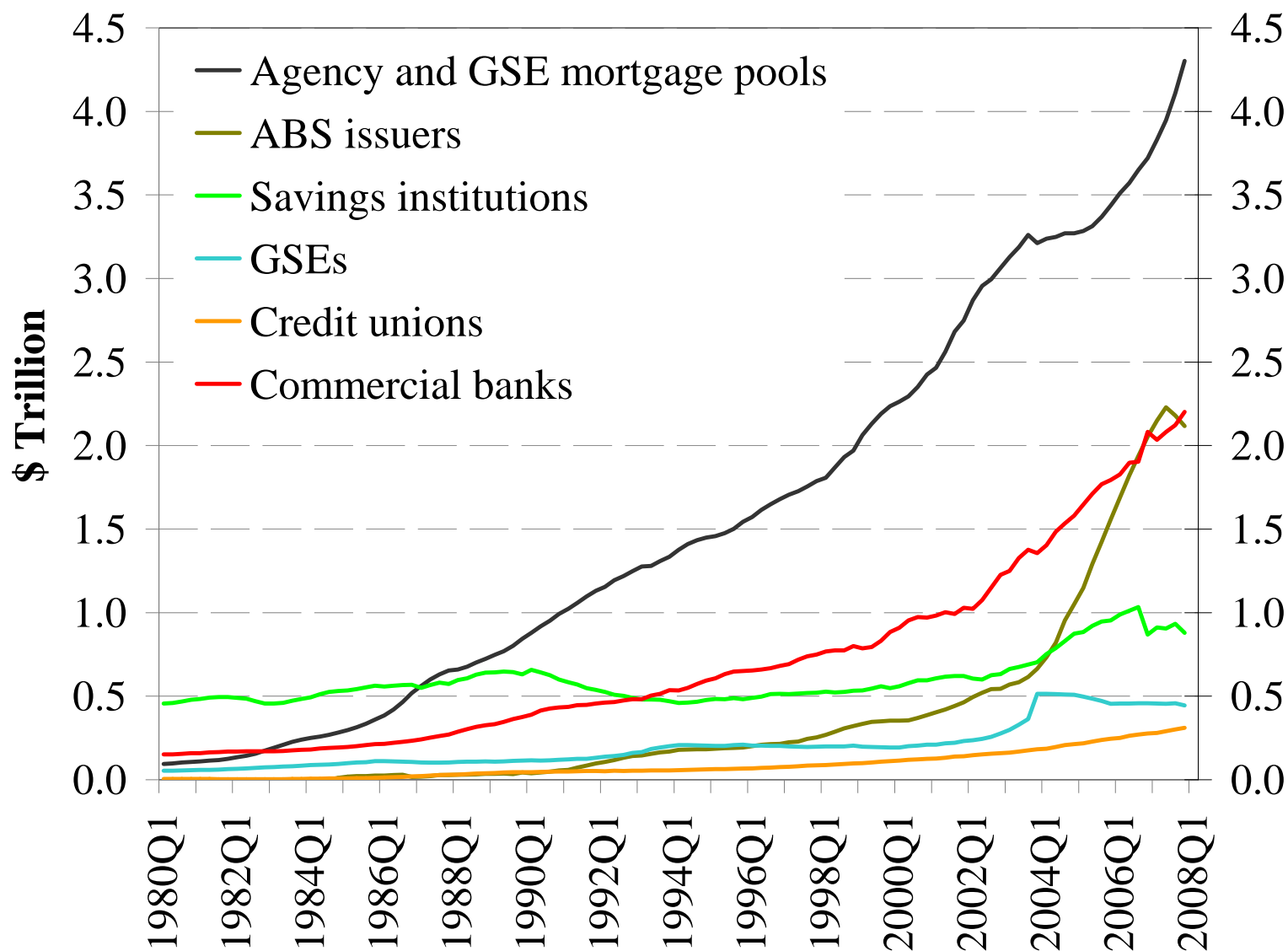


US Financial Intermediaries

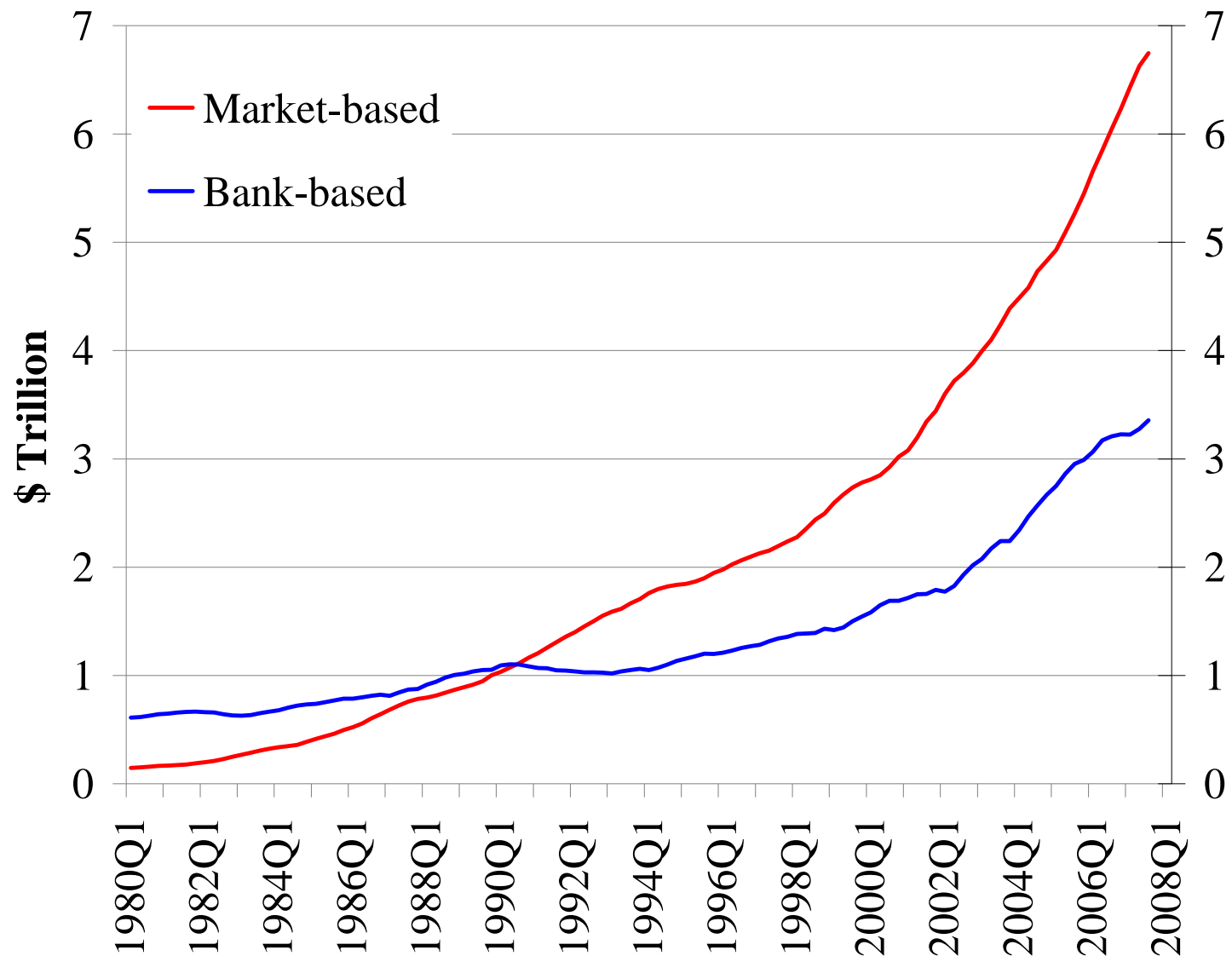
Total Assets (2007Q2)



Holding of US Home Mortgages by Type of Financial Institution



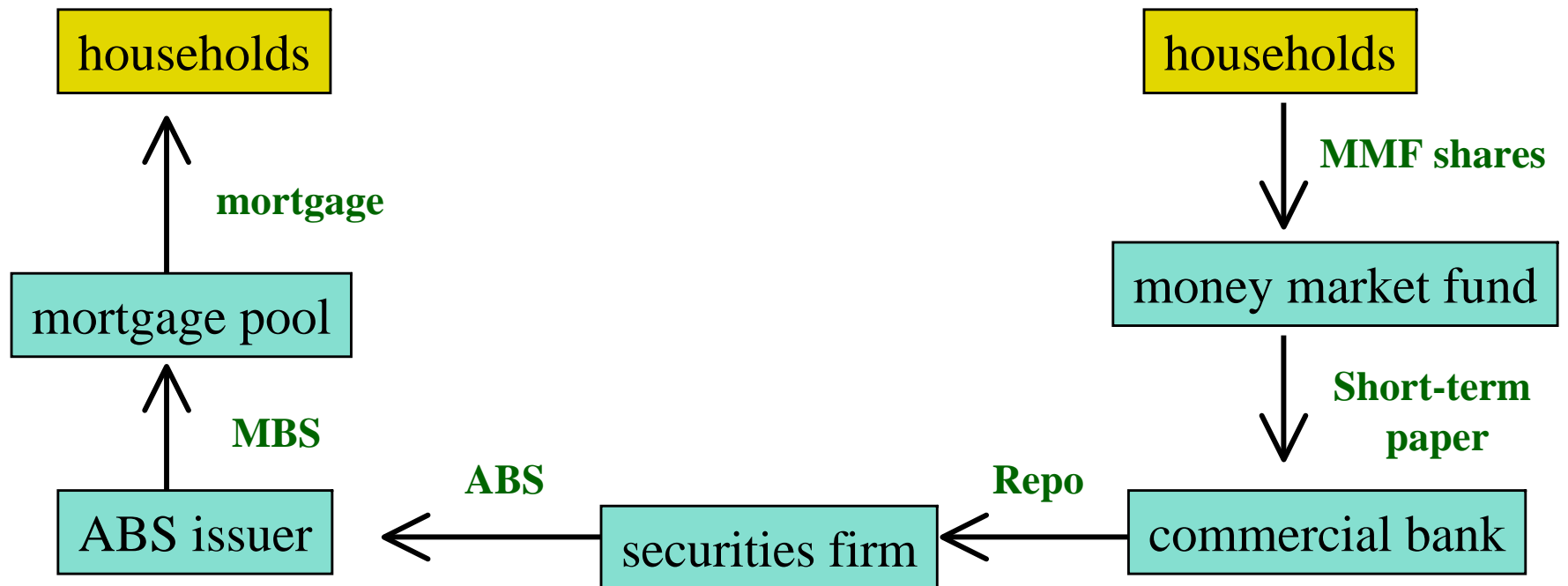
Market-Based and Bank-Based Holding of Home Mortgages



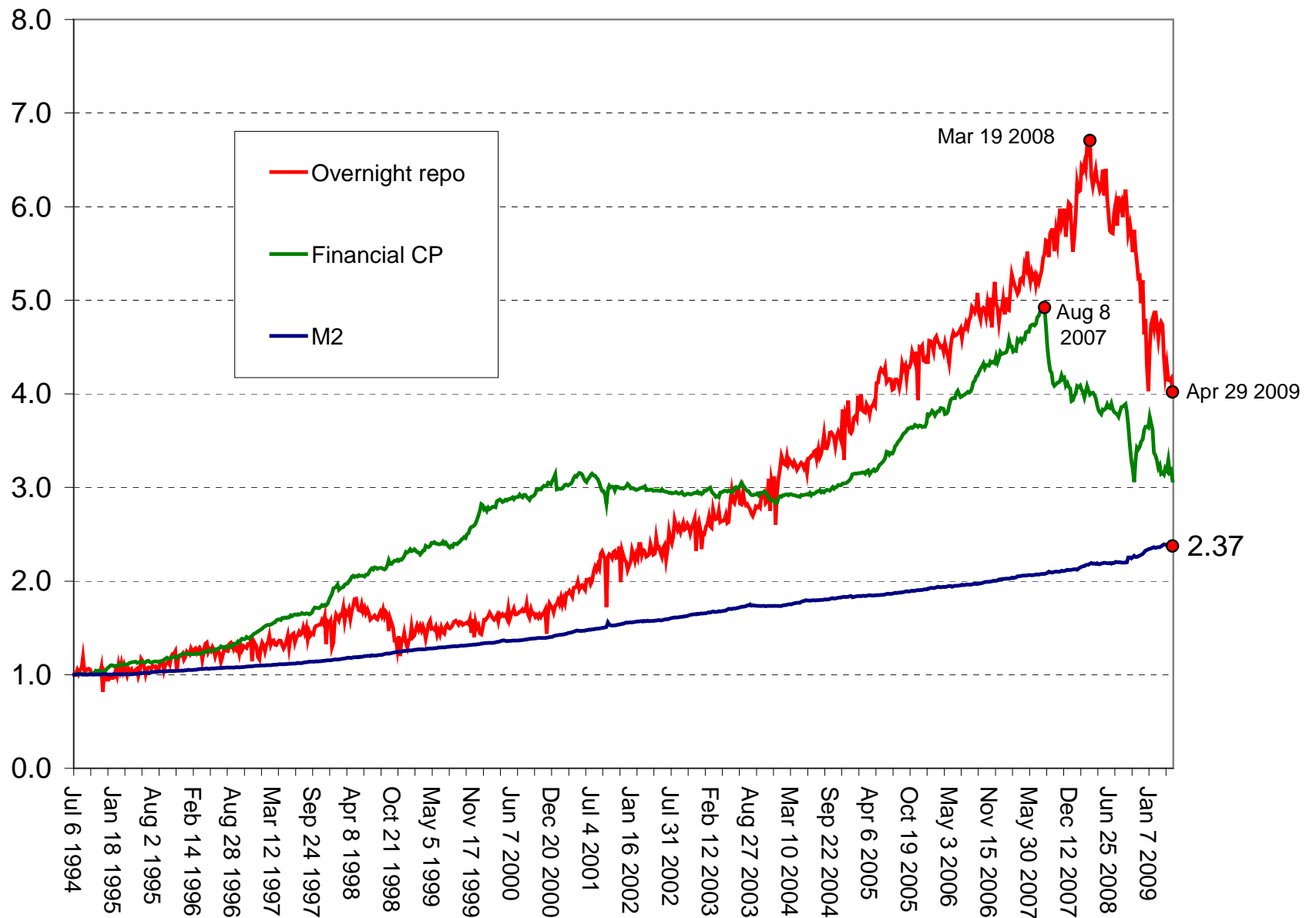
Short Intermediation Chain



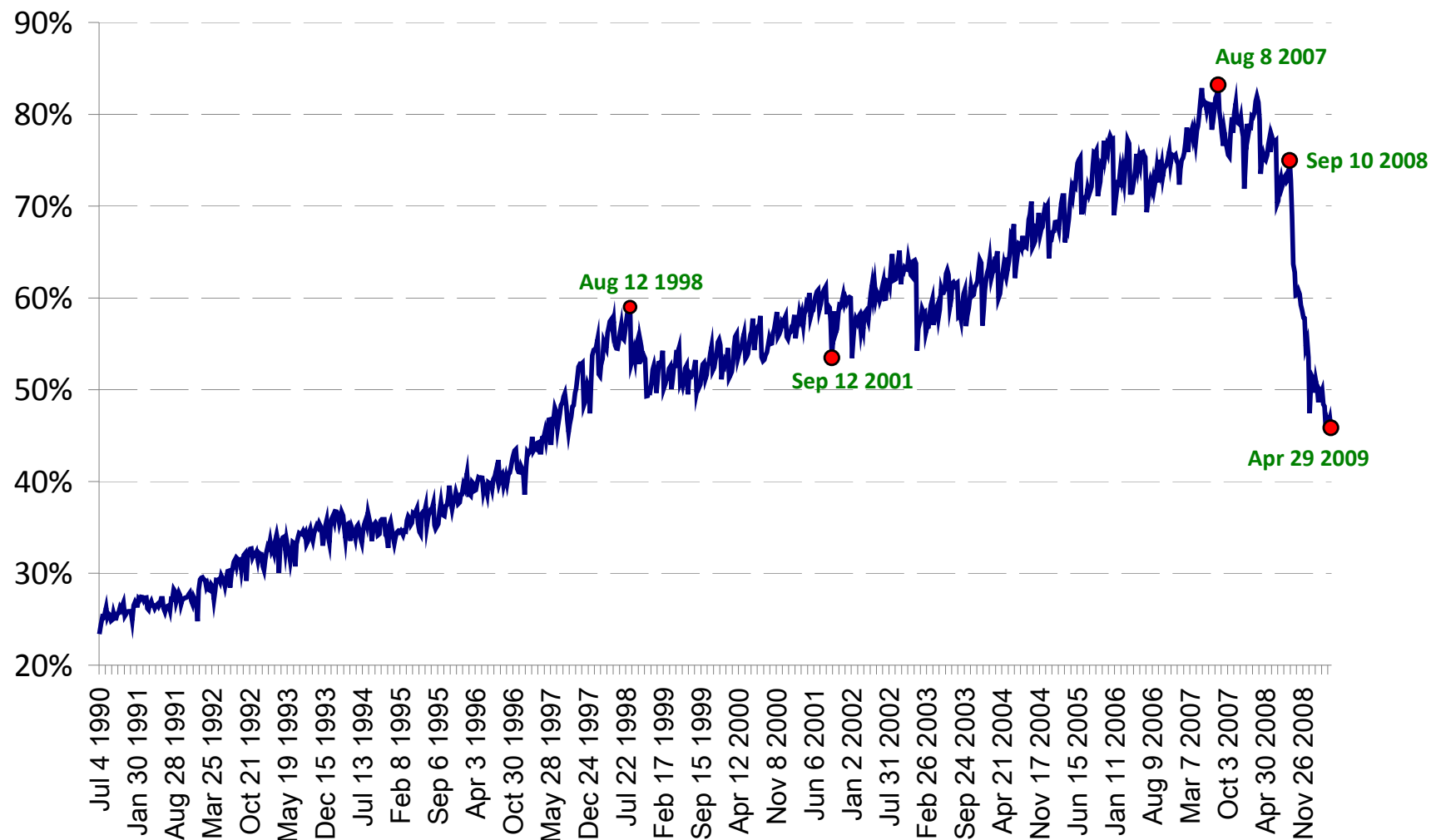
Long Intermediation Chain



Overnight repos, Financial CP and M2 (weekly, July 6 1994 as base date)



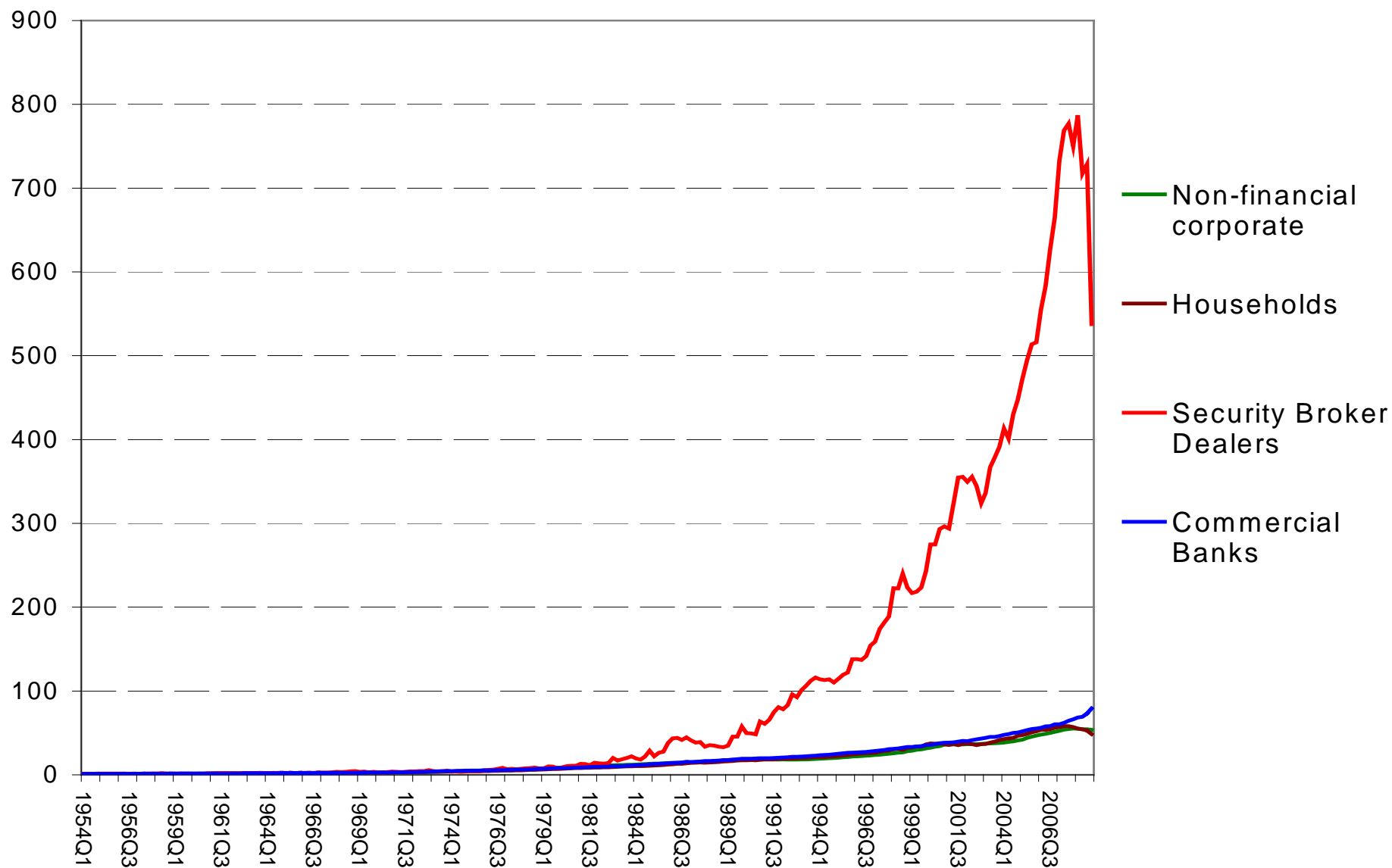
Repos and Financial CP as Fraction of M2 (weekly)



Source: Adrian and Shin (2009)

Relative Size of Intermediary Sector

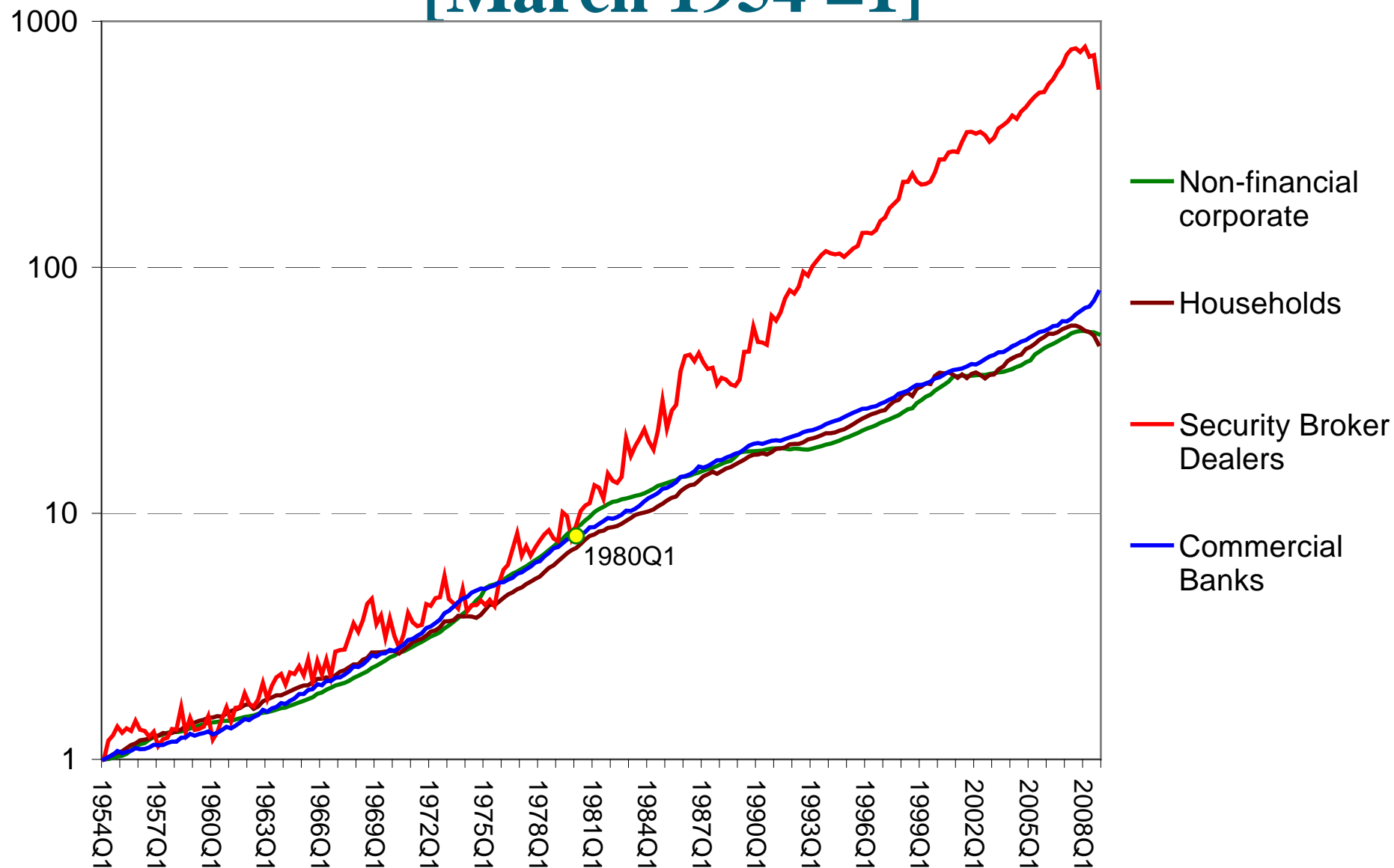
Total Assets of Four Sectors [March 1954 = 1]



(Source: Federal Reserve, Flow of Funds)

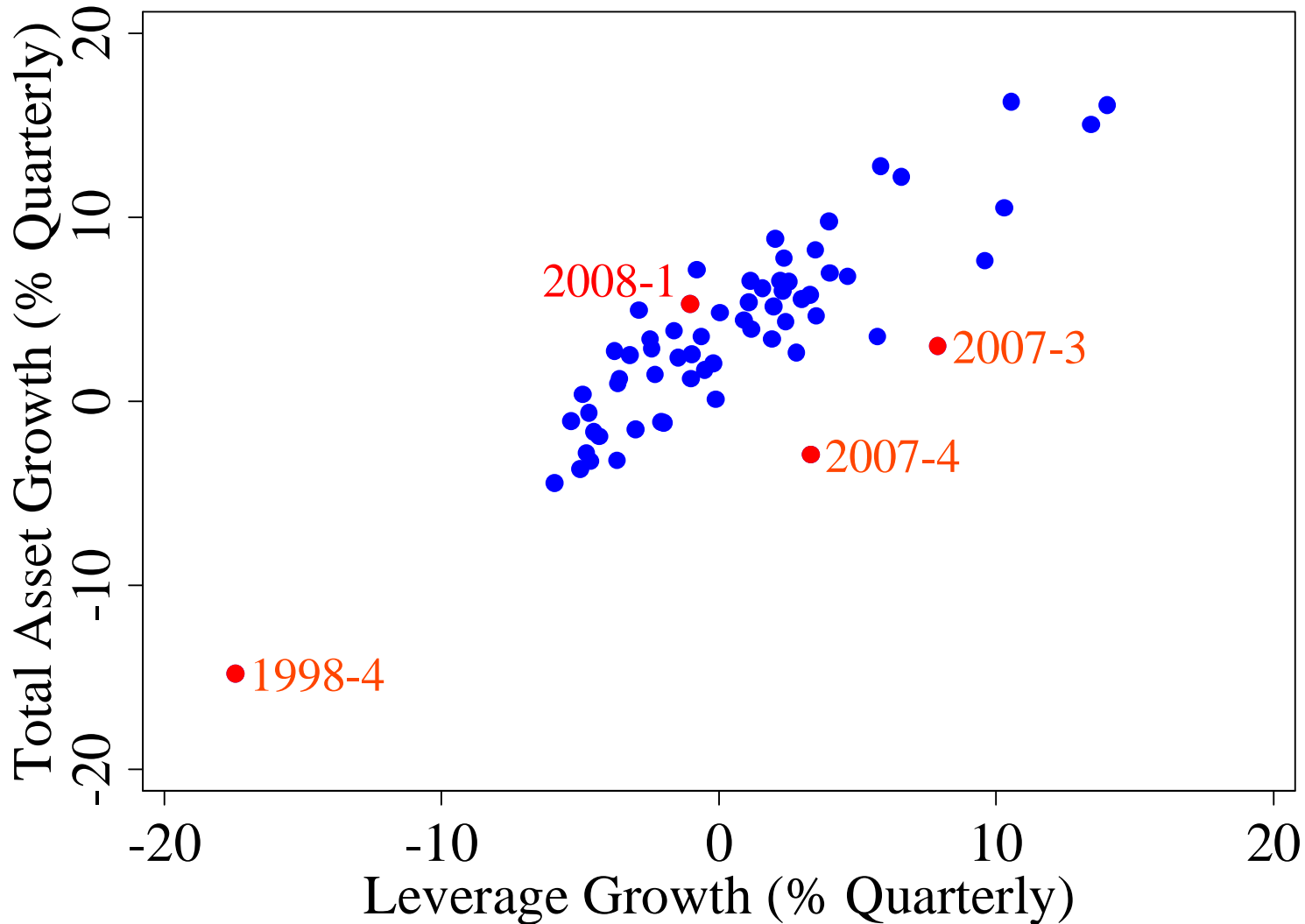
Total Assets (Log Scale)

[March 1954 = 1]



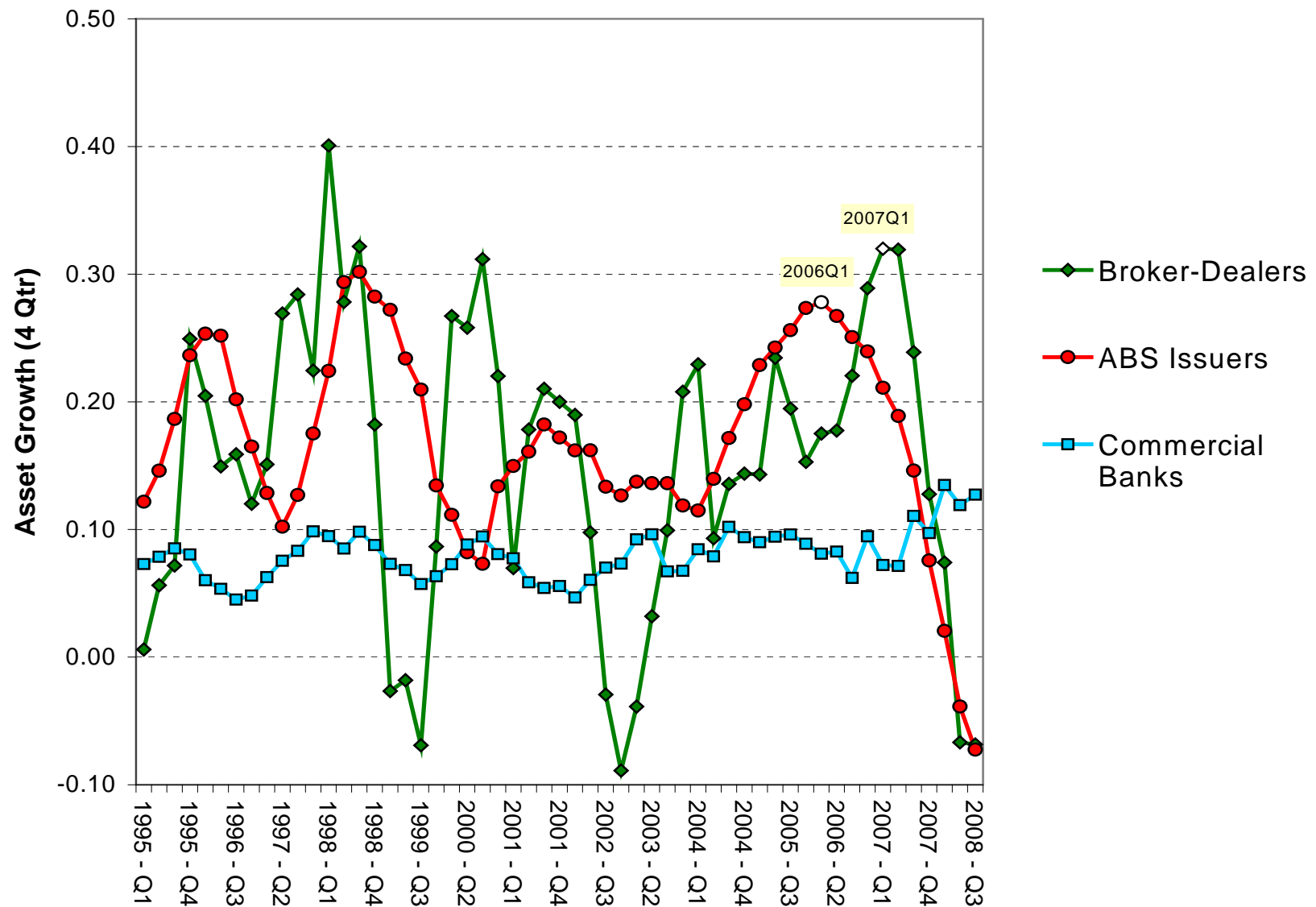
(Source: Federal Reserve, Flow of Funds)

Procyclical Leverage of Five US Investment Banks

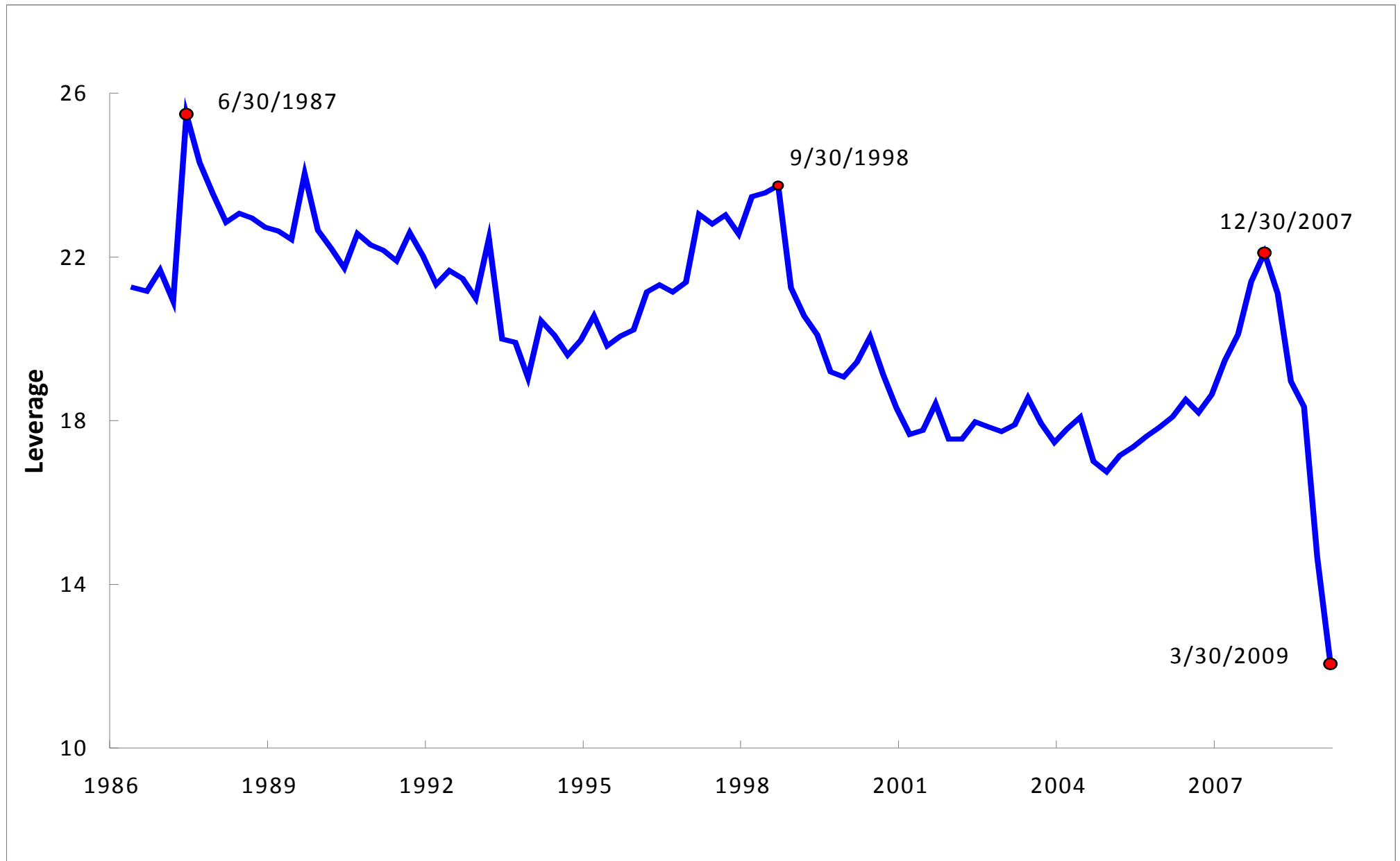


Source: Adrian and Shin (2007)

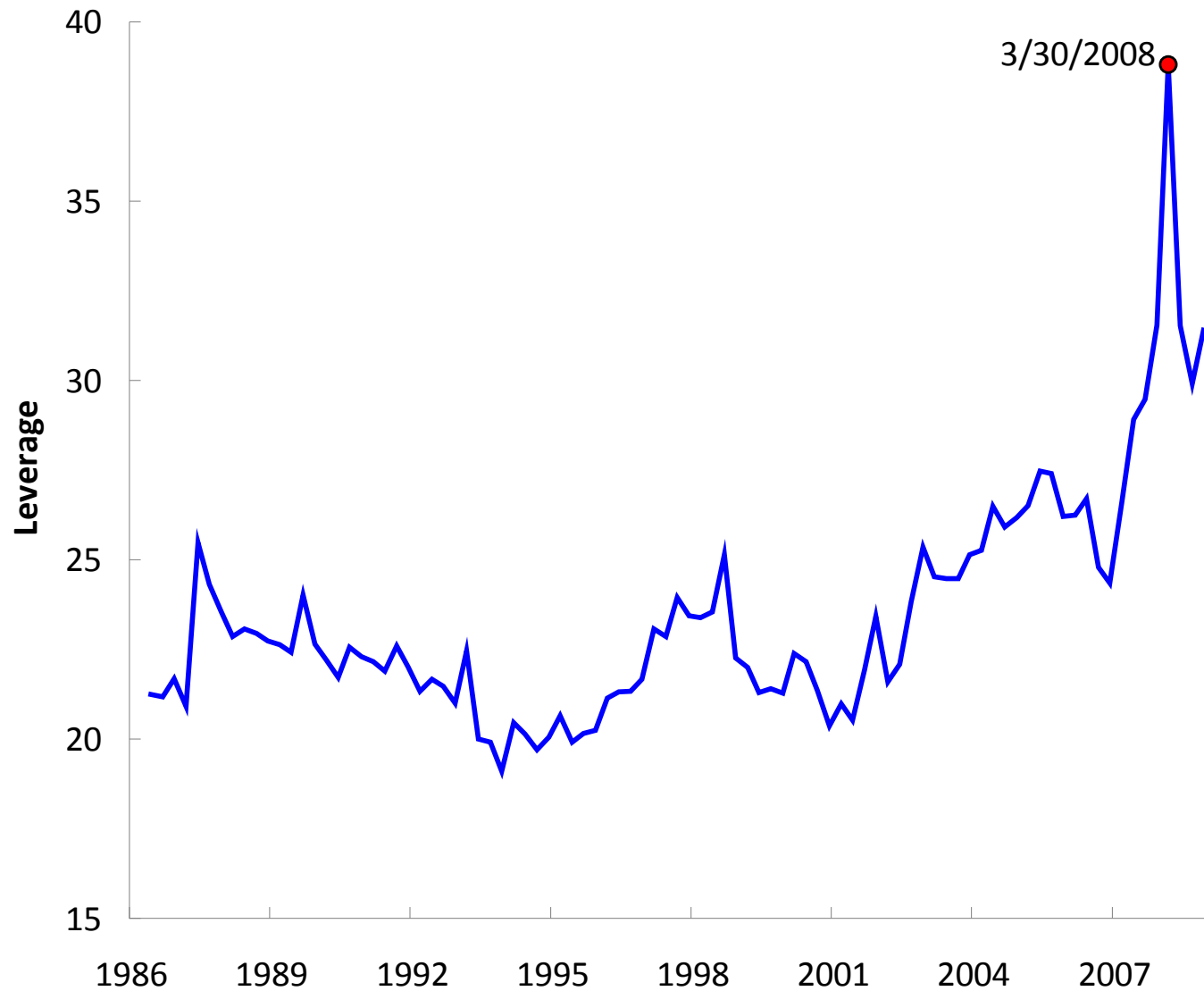
Focusing on bank lending only would be a mistake...



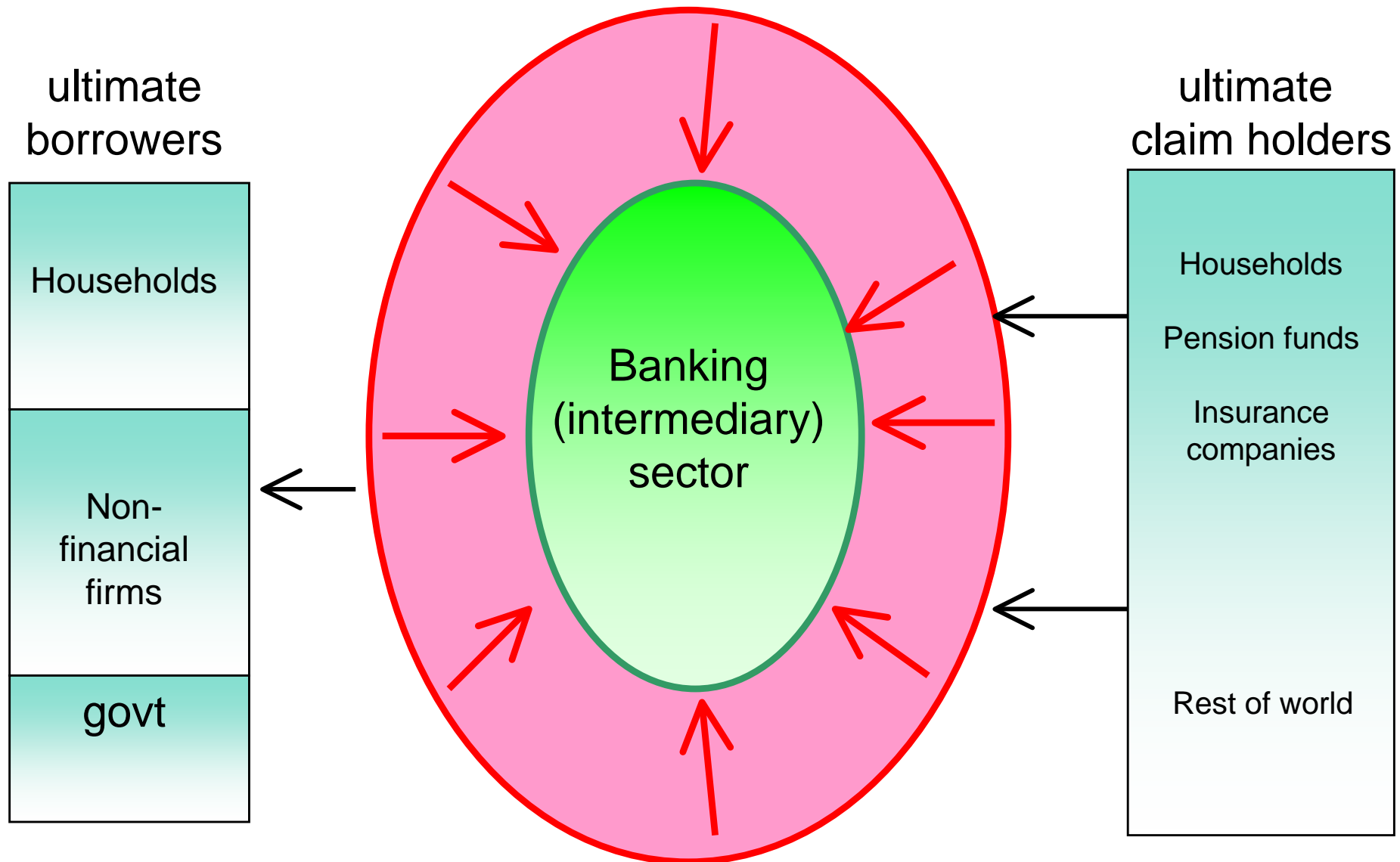
US Primary Dealer Mean Leverage



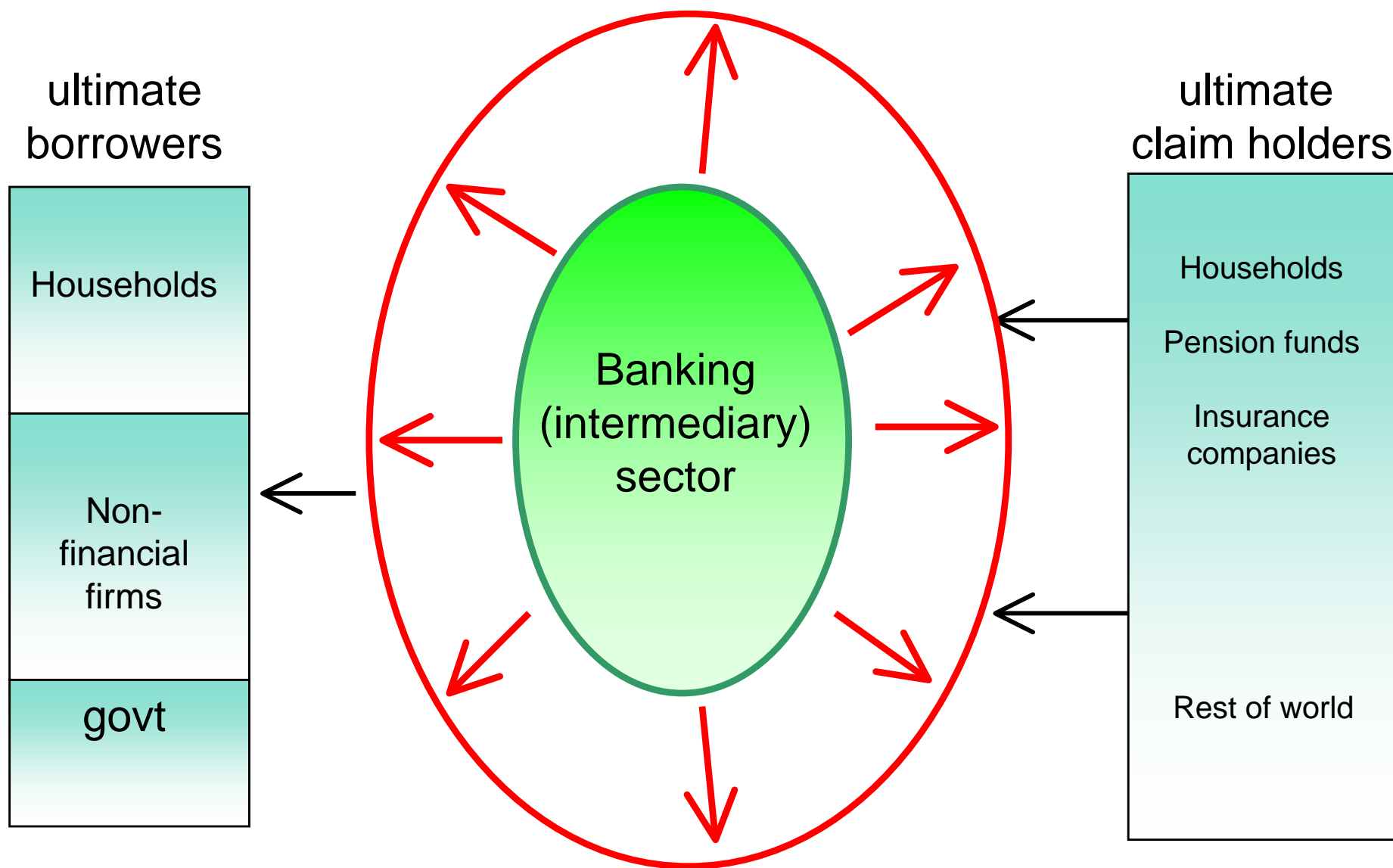
All Primary Dealer Mean Leverage



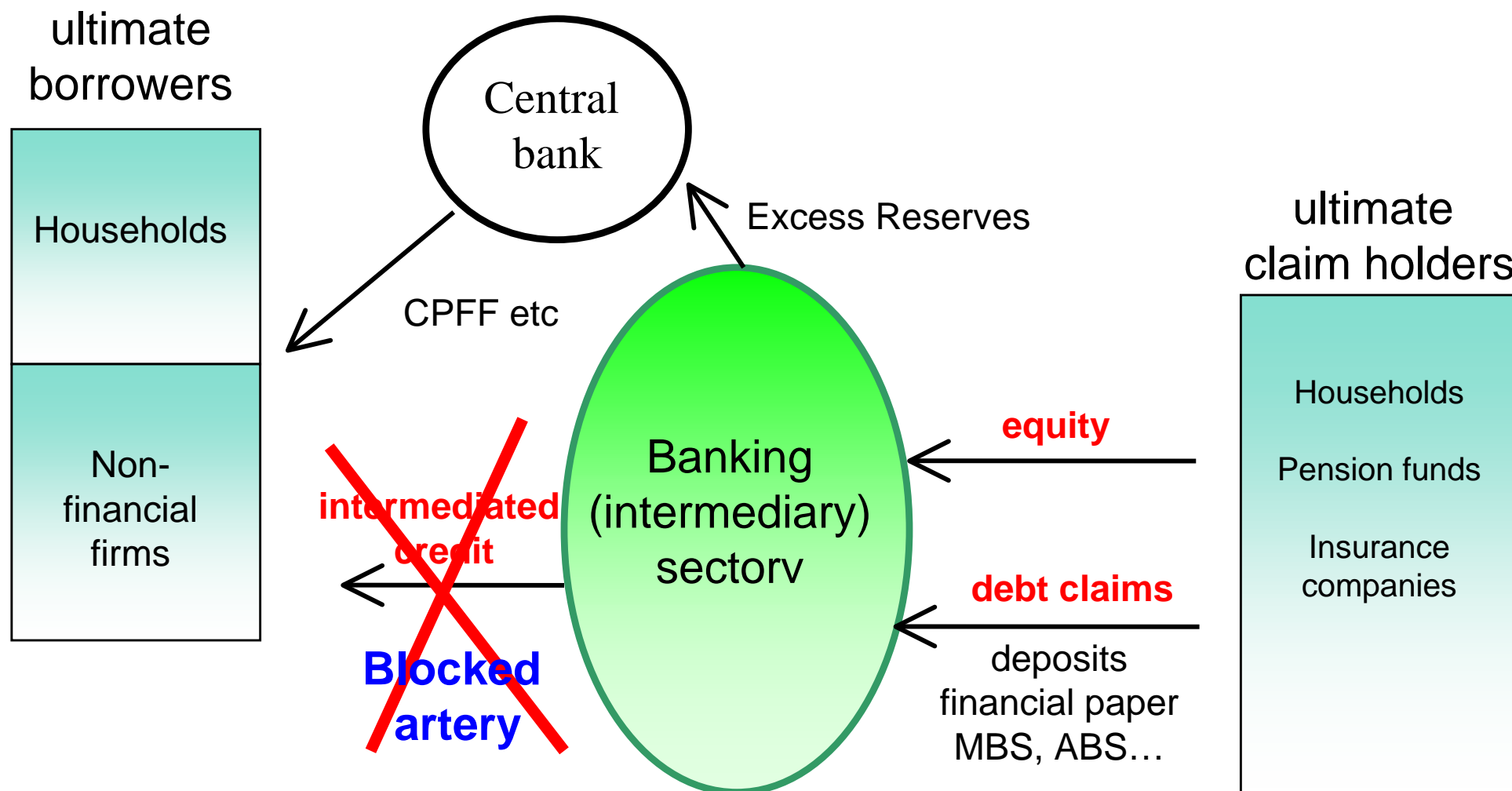
Biggest Damage is Done in Contractions



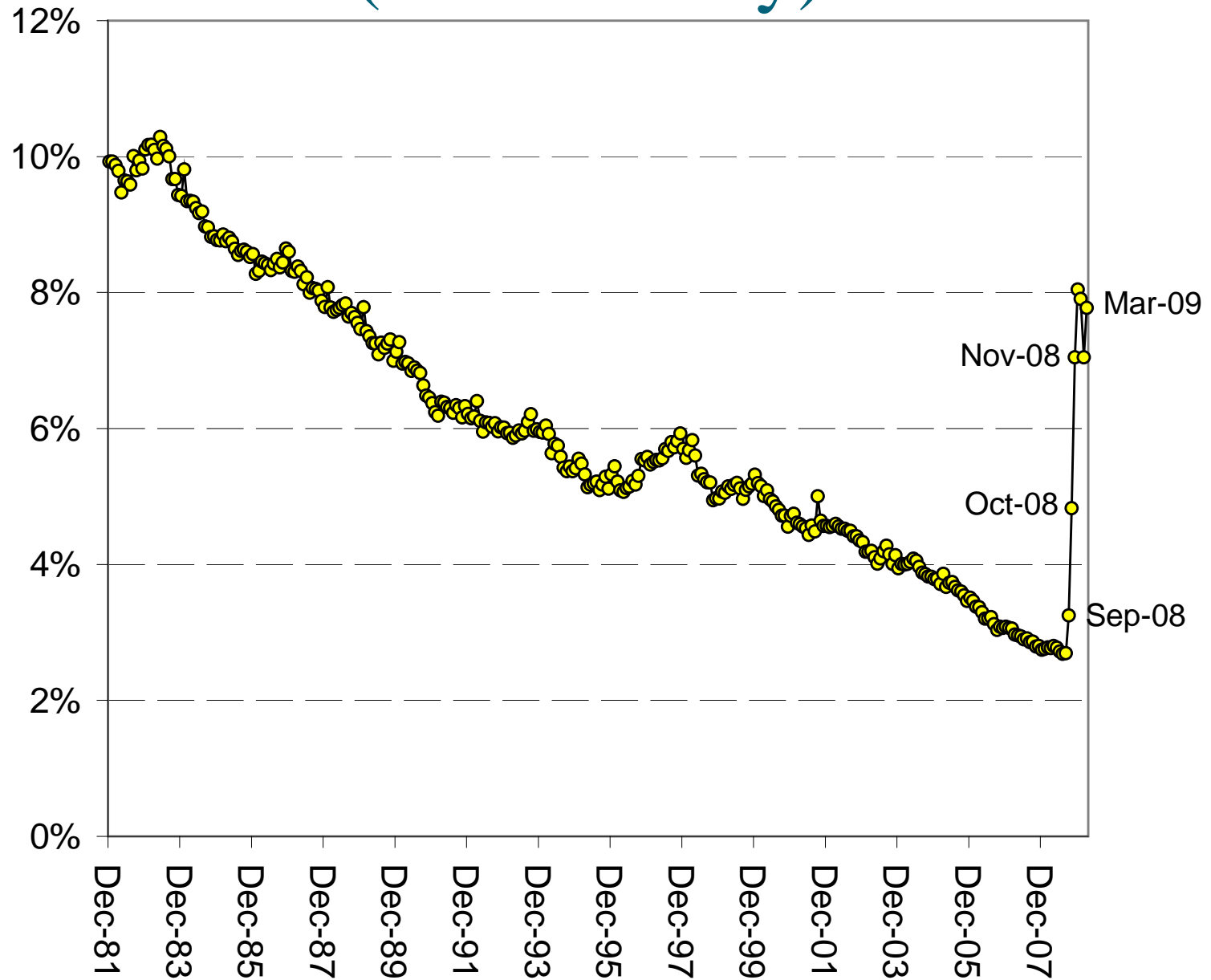
But Seeds of Crises Are Sown in Expansions



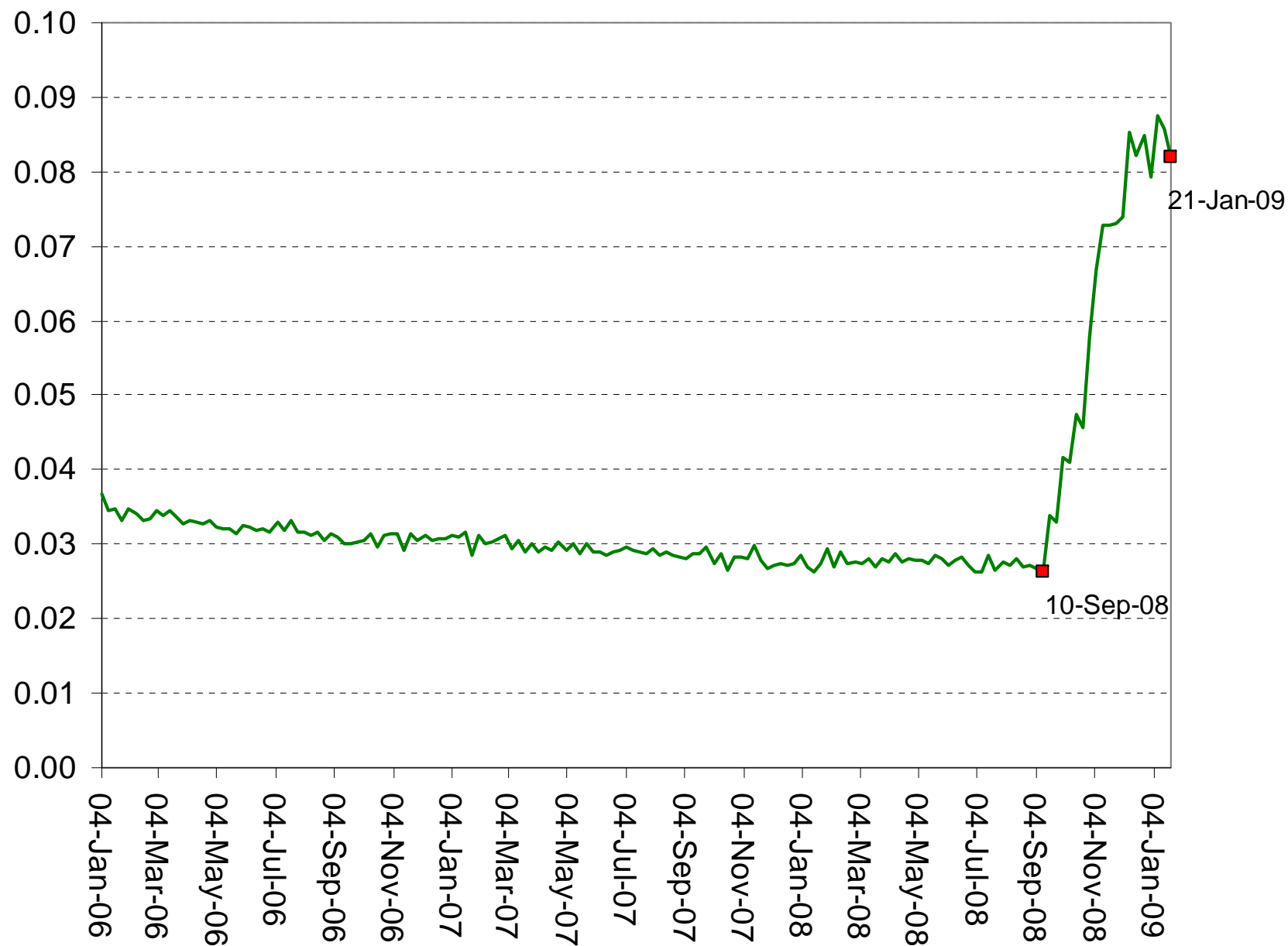
By-pass Surgery



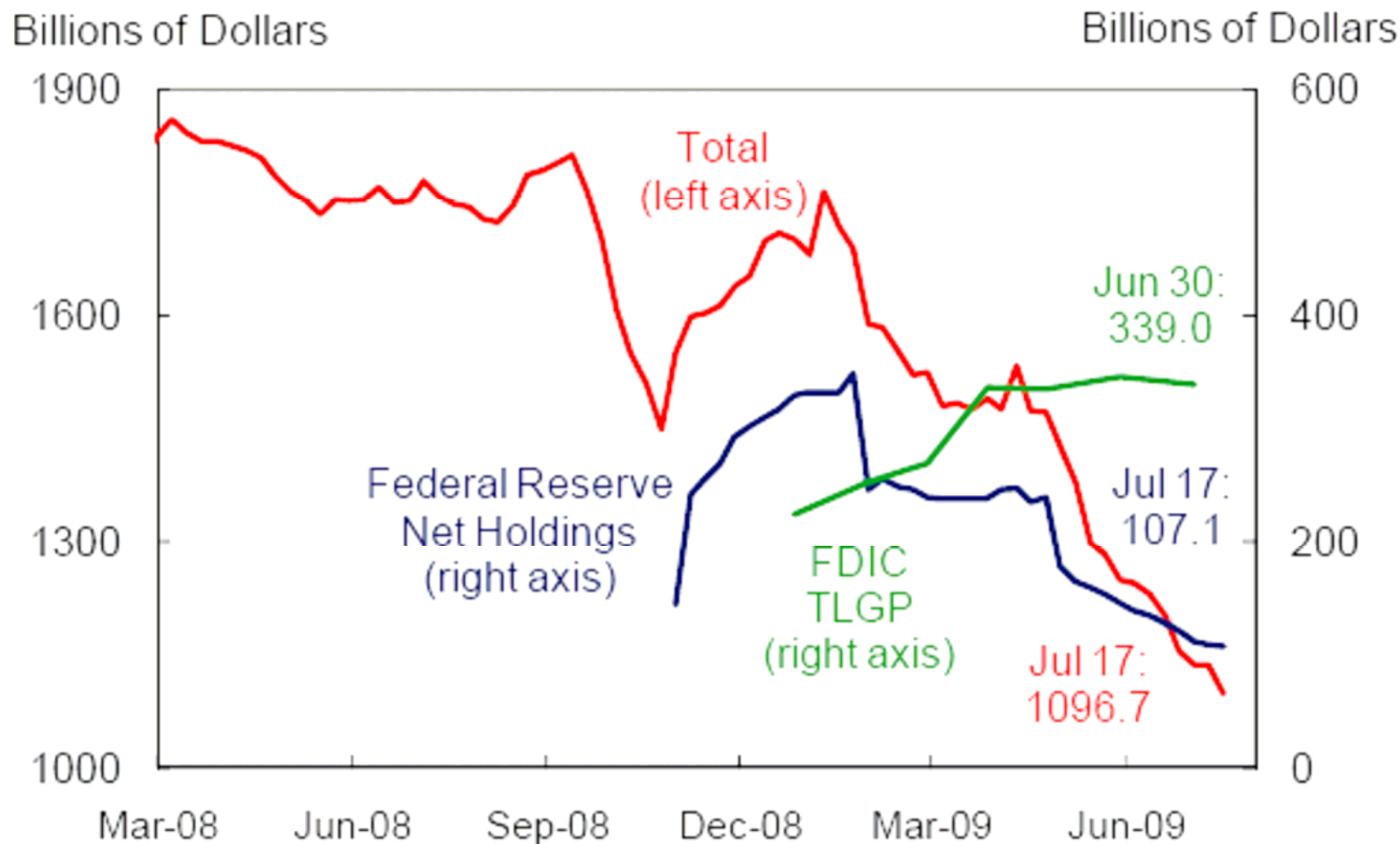
US Commercial Bank Cash/Assets Ratio (H8 Monthly)



Cash/Assets Ratio (Weekly)

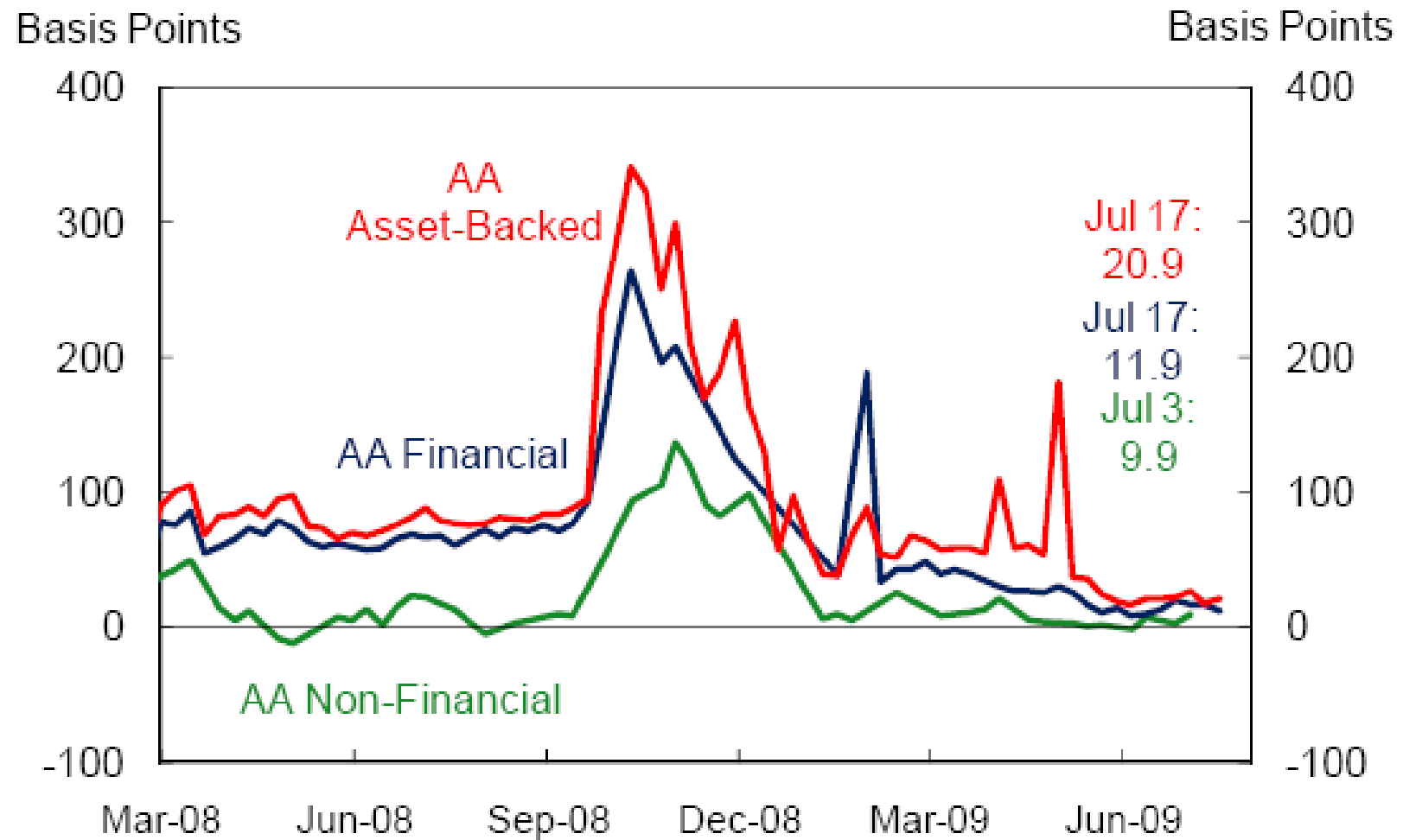


CPFF and Commercial Paper Outstanding



Source: Adrian and Shin (2009)

3-month CP Rates over OIS

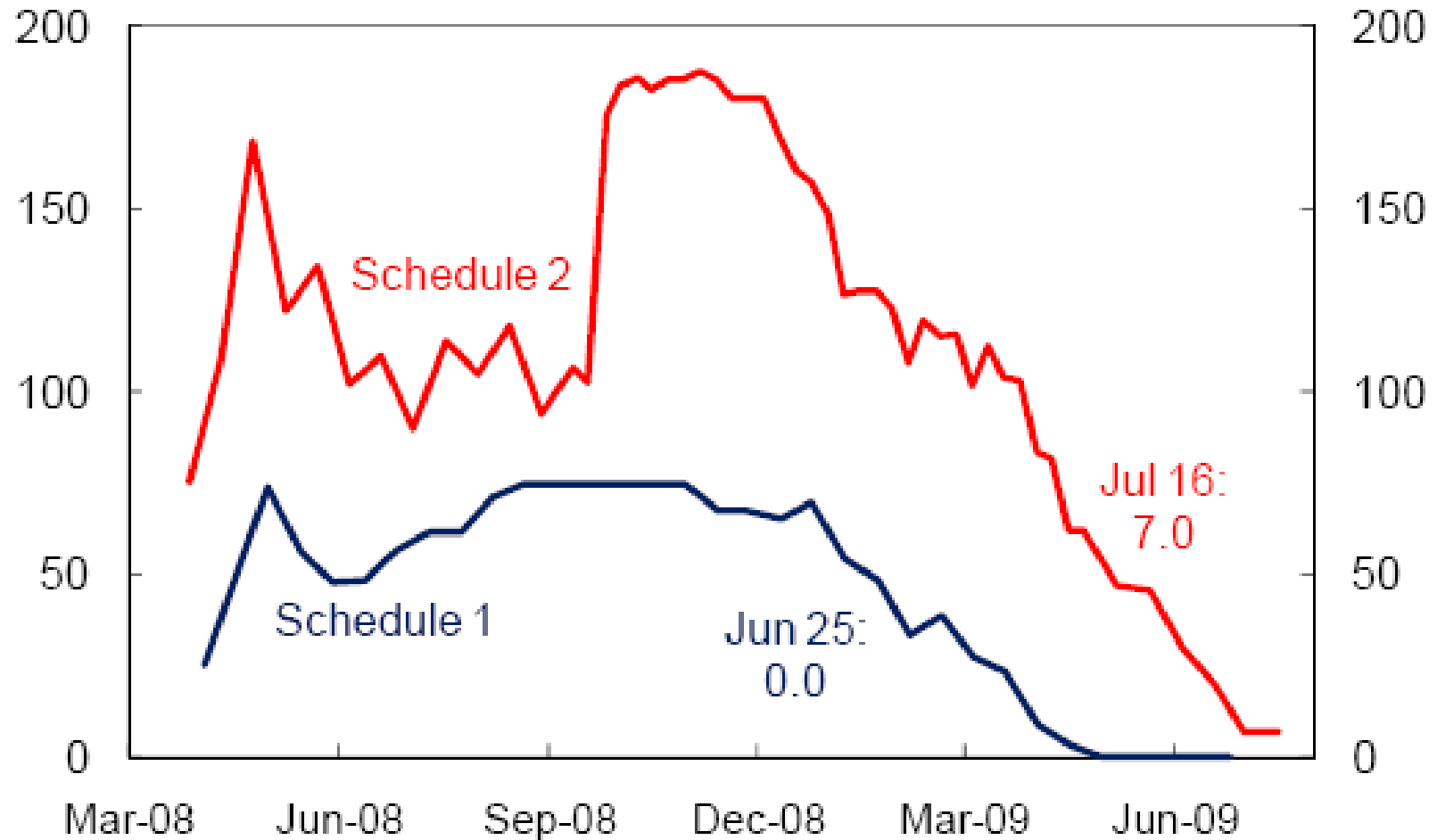


Source: Adrian and Shin (2009)

TSLF Total Outstanding

Billions of Dollars

Billions of Dollars

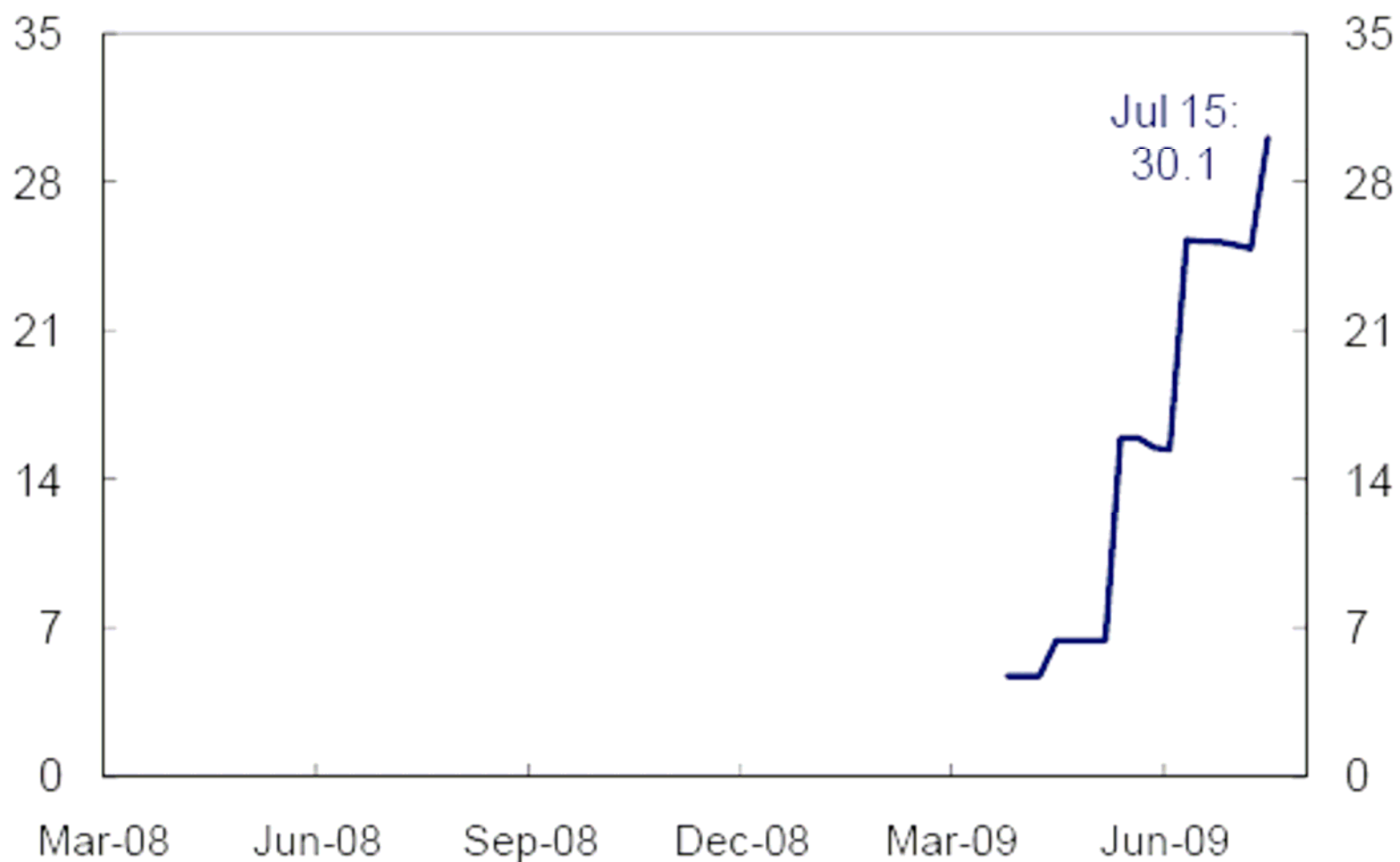


Source: Adrian and Shin (2009)

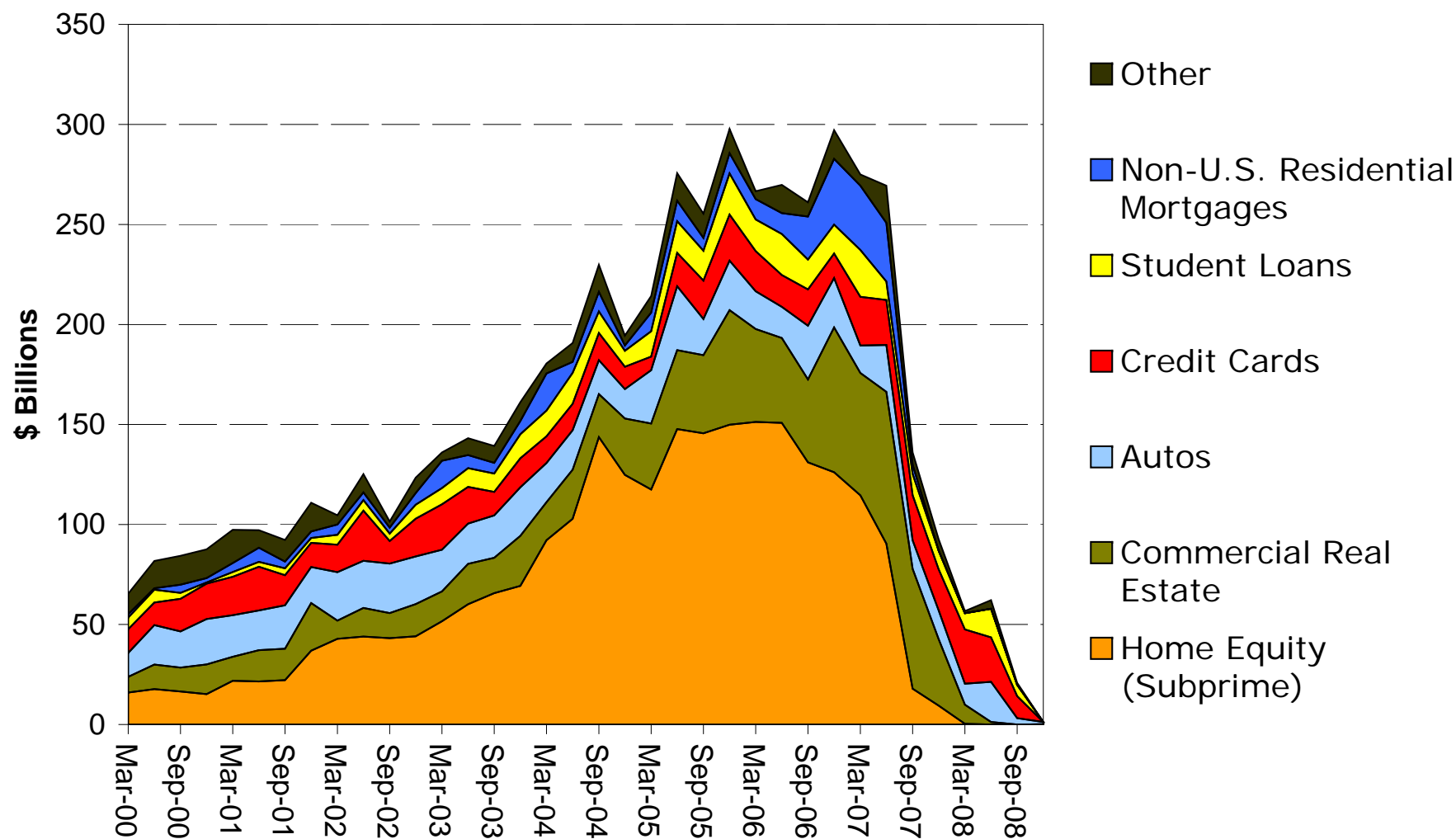
TALF Total Outstanding

Billions of Dollars

Billions of Dollars

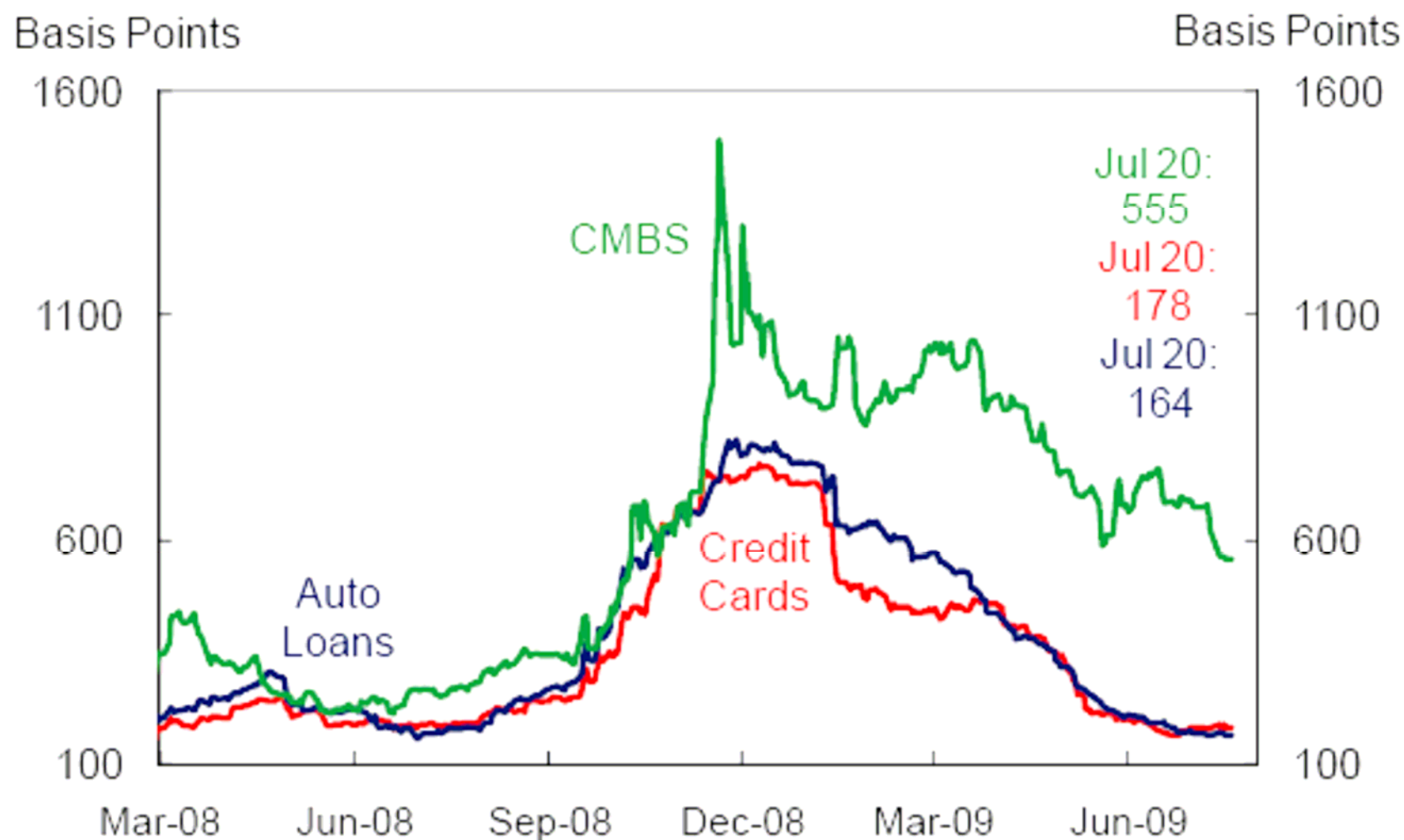


New Issuance of Asset Backed Securities in Previous Three Months



Source: JP Morgan

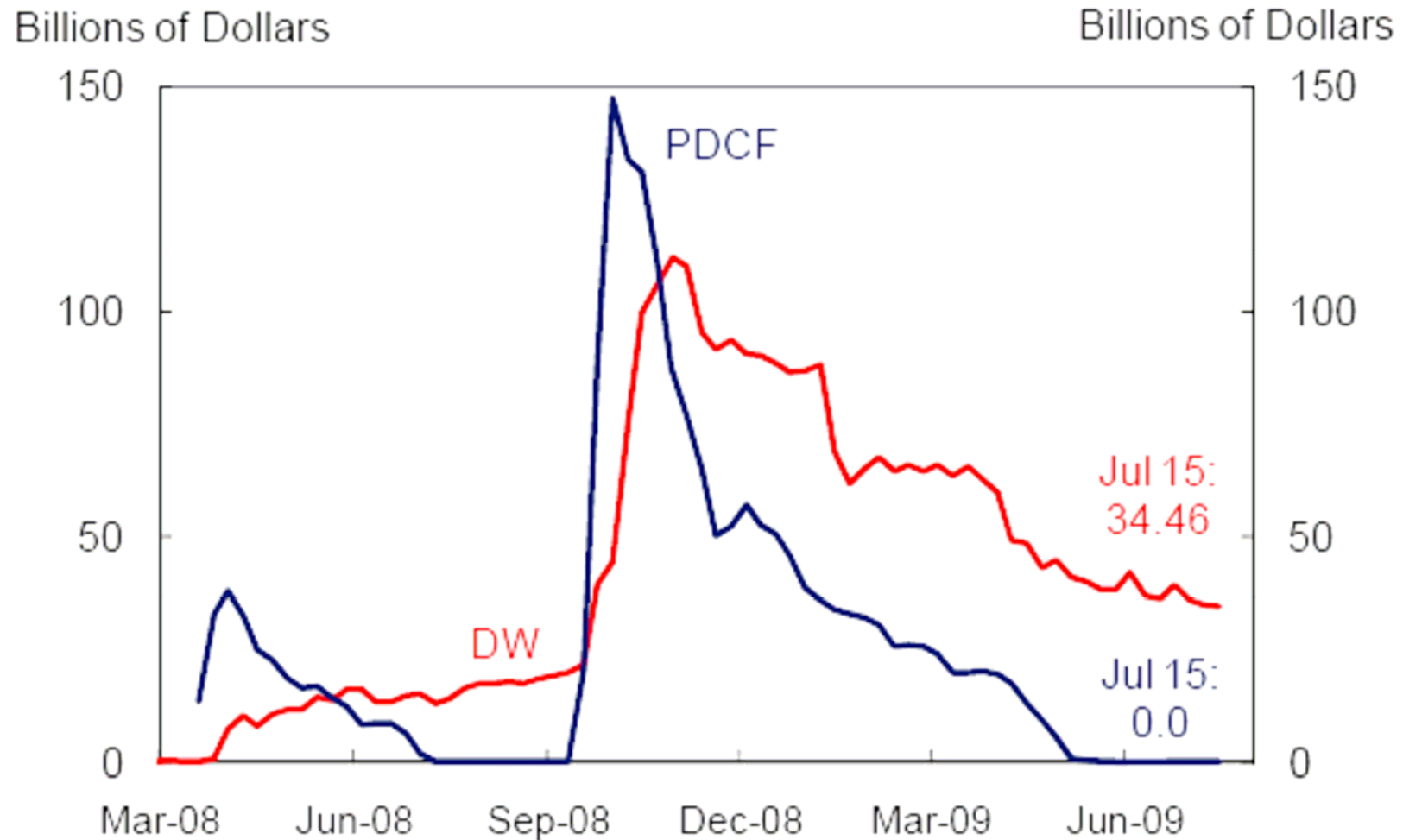
AAA-Rated ABS/CMBS Spreads



Source: Merrill Lynch

Note: Option-adjusted spreads.

Discount Window and PDCF Borrowing

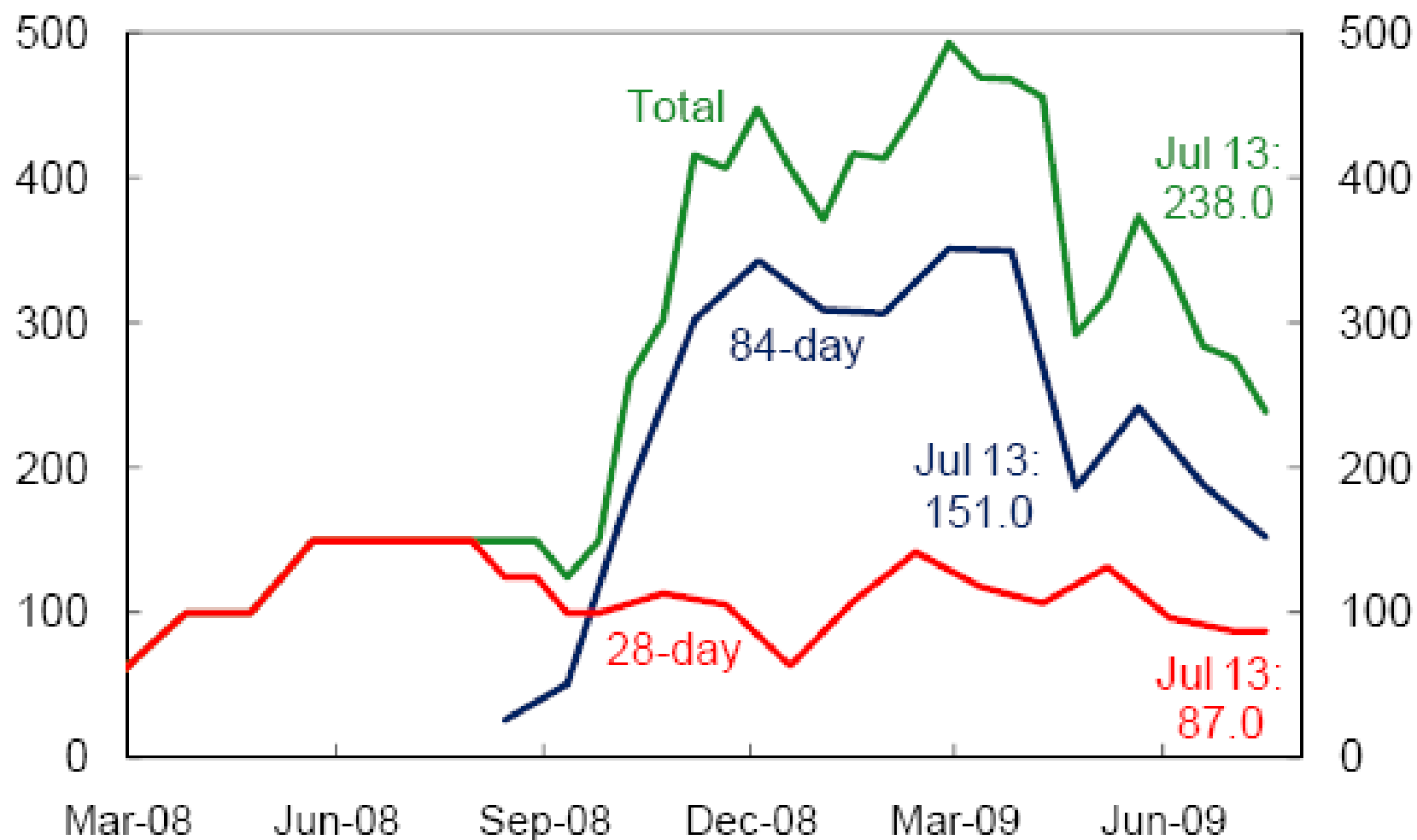


Source: Federal Reserve Board

TAF Total Outstanding

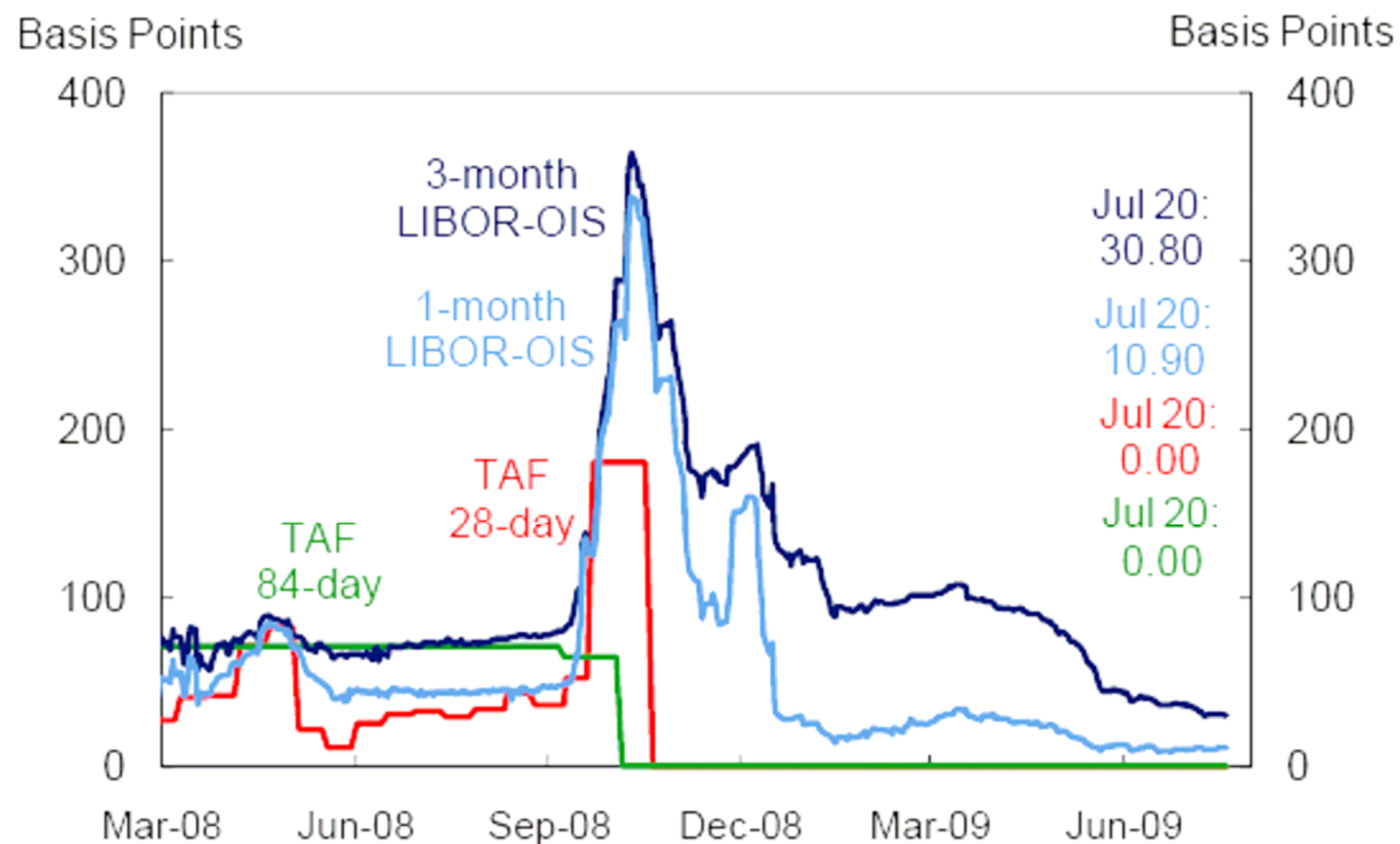
Billions of Dollars

Billions of Dollars

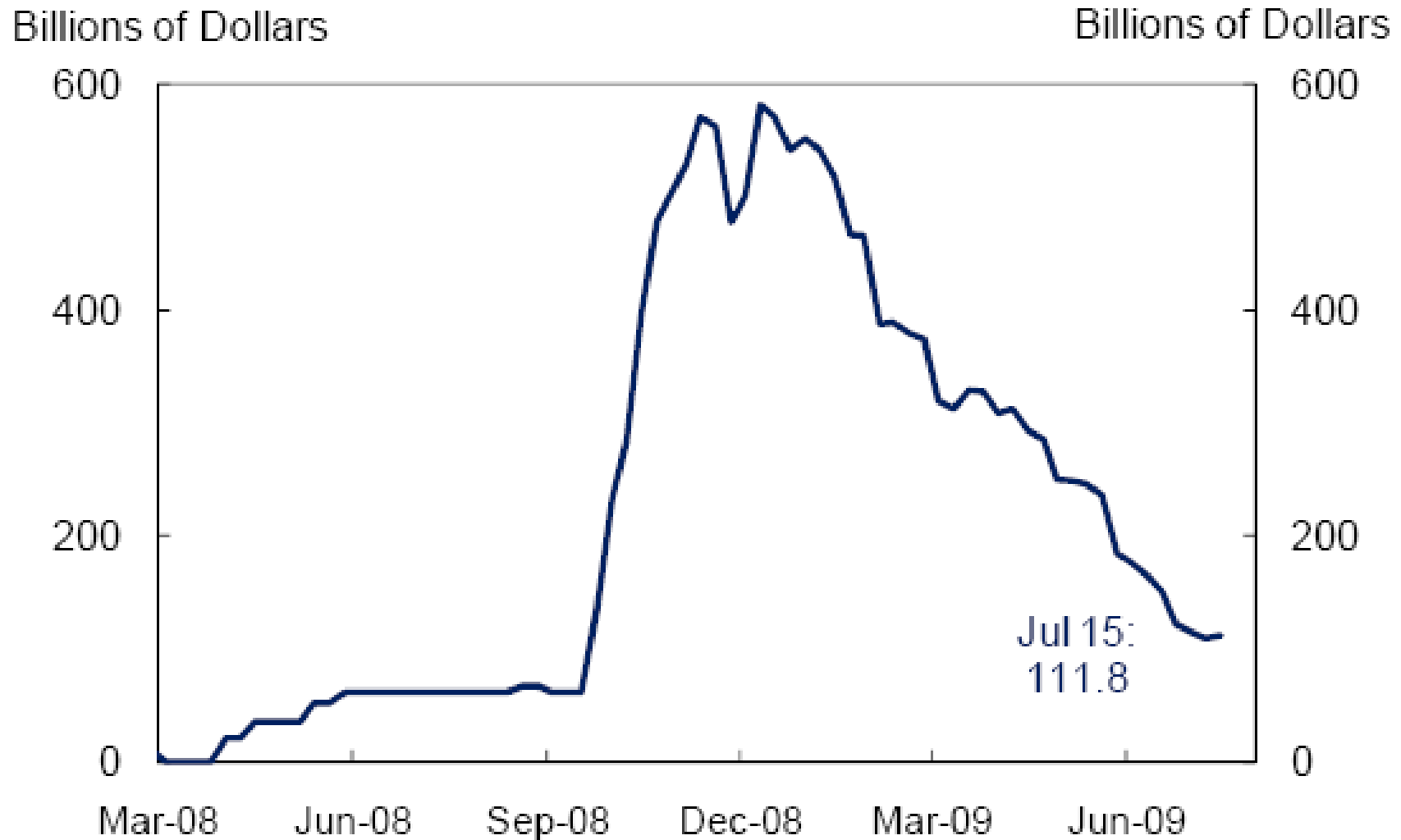


Source: Federal Reserve Board

TAF Spreads and Libor to OIS



Central Bank Liquidity Swaps



Source: Federal Reserve Board, Bloomberg

Exit Strategy

- Which first?
 - Reduce central bank balance sheet size?
 - Raise interest rates?

Exit Strategy

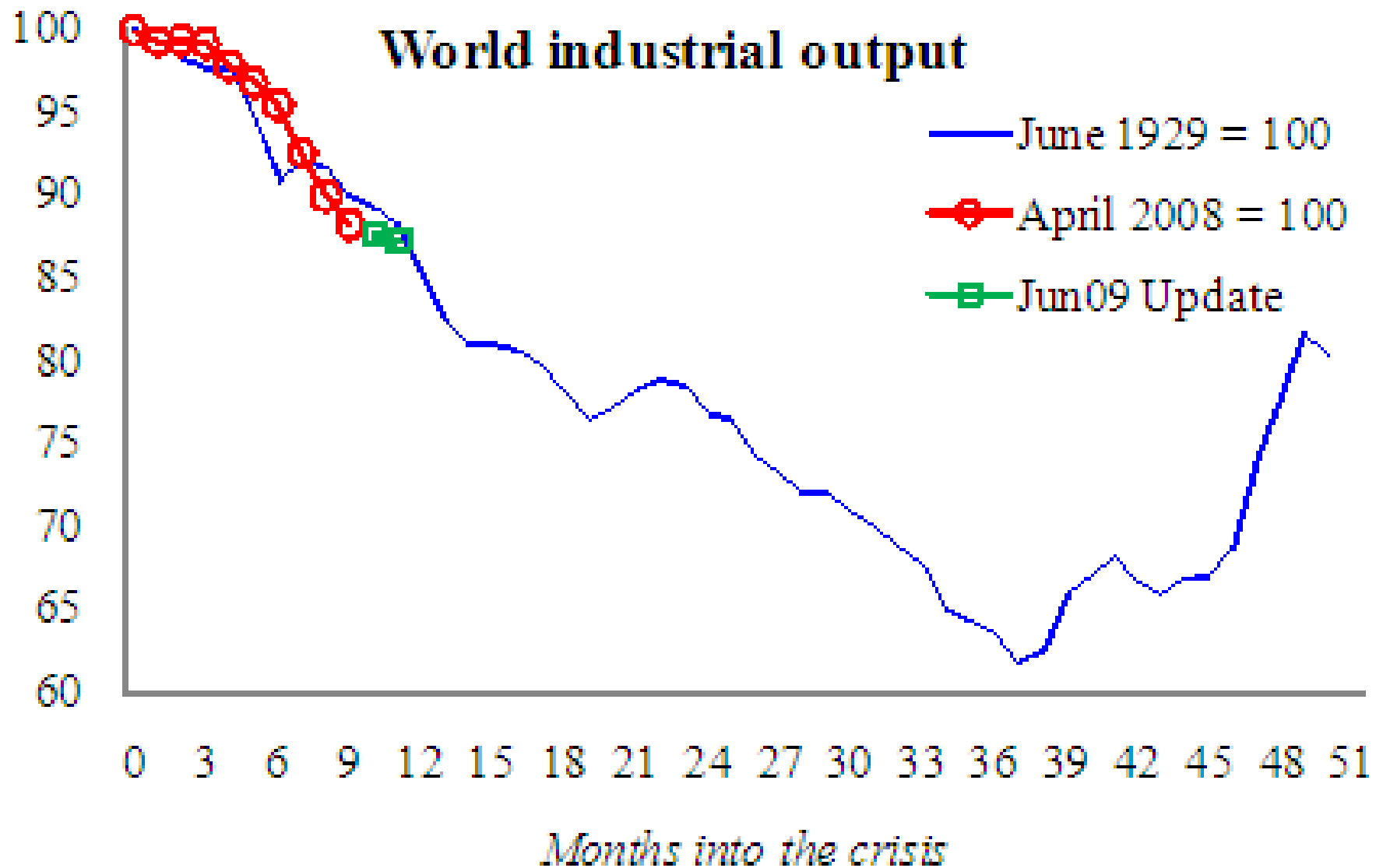
- Assets or liabilities?
- **Liabilities:** control speed of switch narrow money (CB reserves) to broad money
 - Money (CB reserves) held at CB by commercial bank reverse repos
 - Pay interest on CB reserves

Exit Strategy

- Assets:
 - Natural run-off as maturity arrives
 - Commercial paper facilities
 - Short-term lending
 - Exceptional Fed facilities at premium
 - TALF, PPIP unlikely to take off in large scale

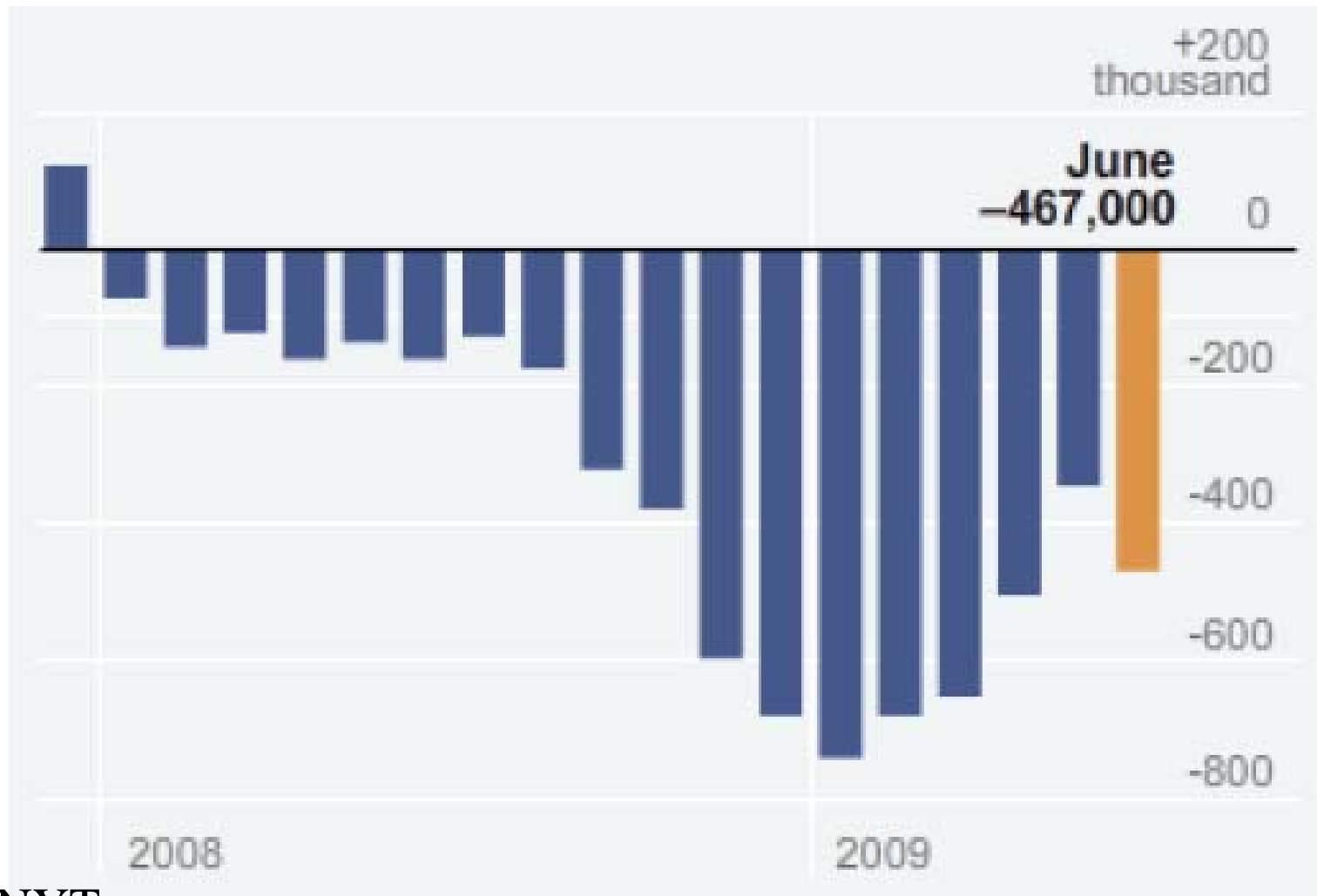
The Real Sector

Comparison with Great Depression



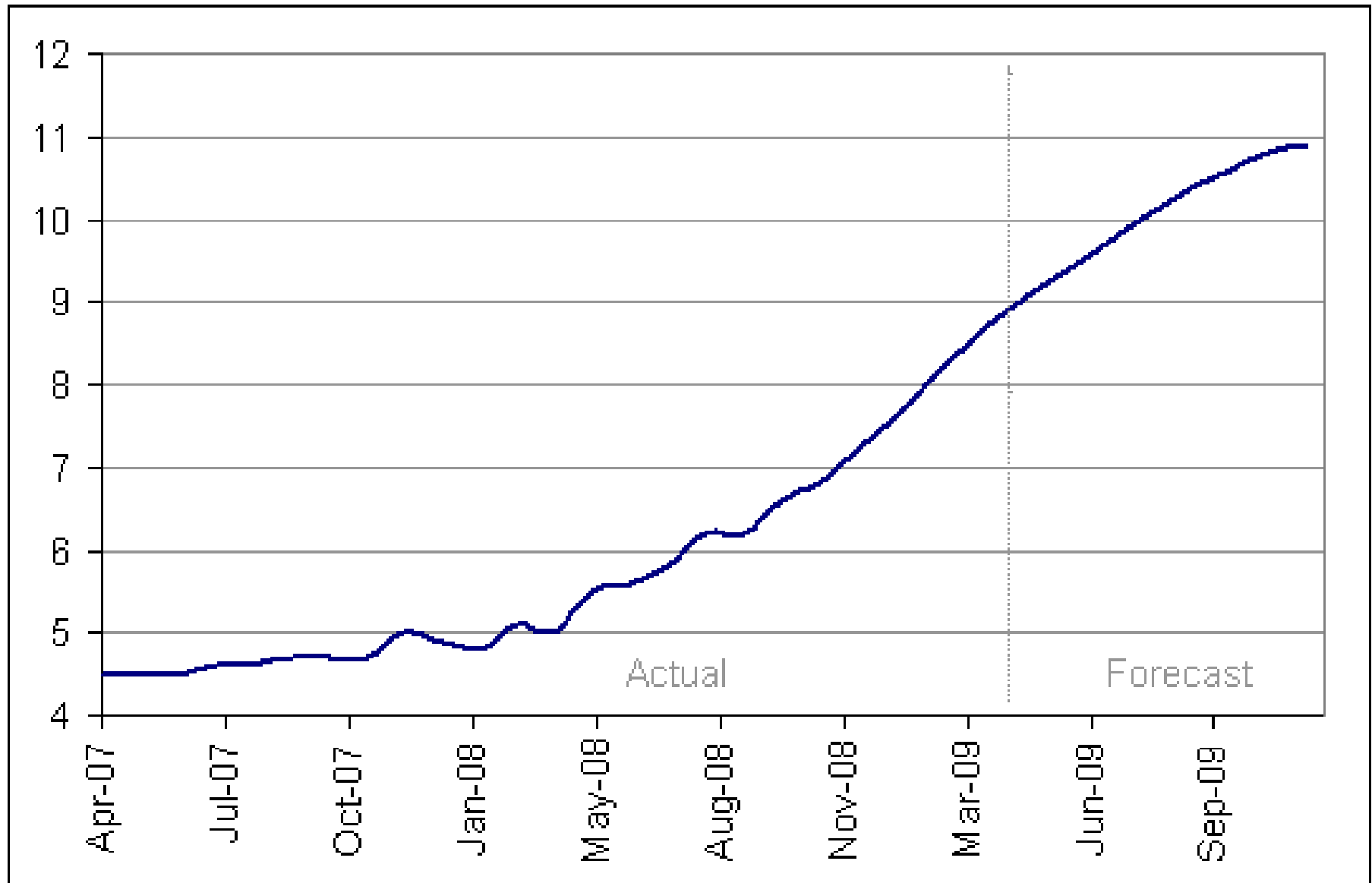
Eichengreen and O'Rourke (VoxEU 2009)

US Job Losses, June 2009

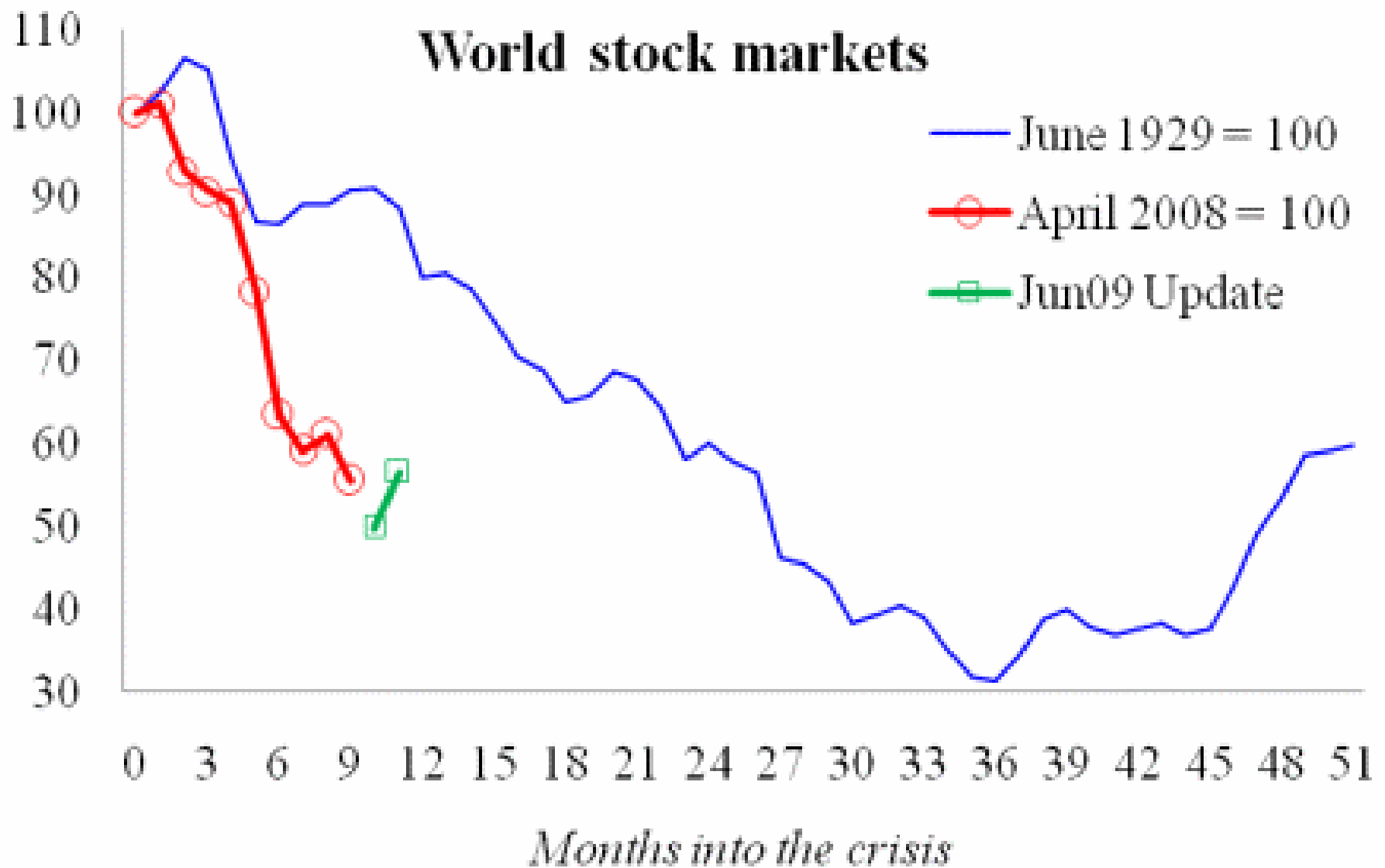


Source: NYT

US Unemployment Projection

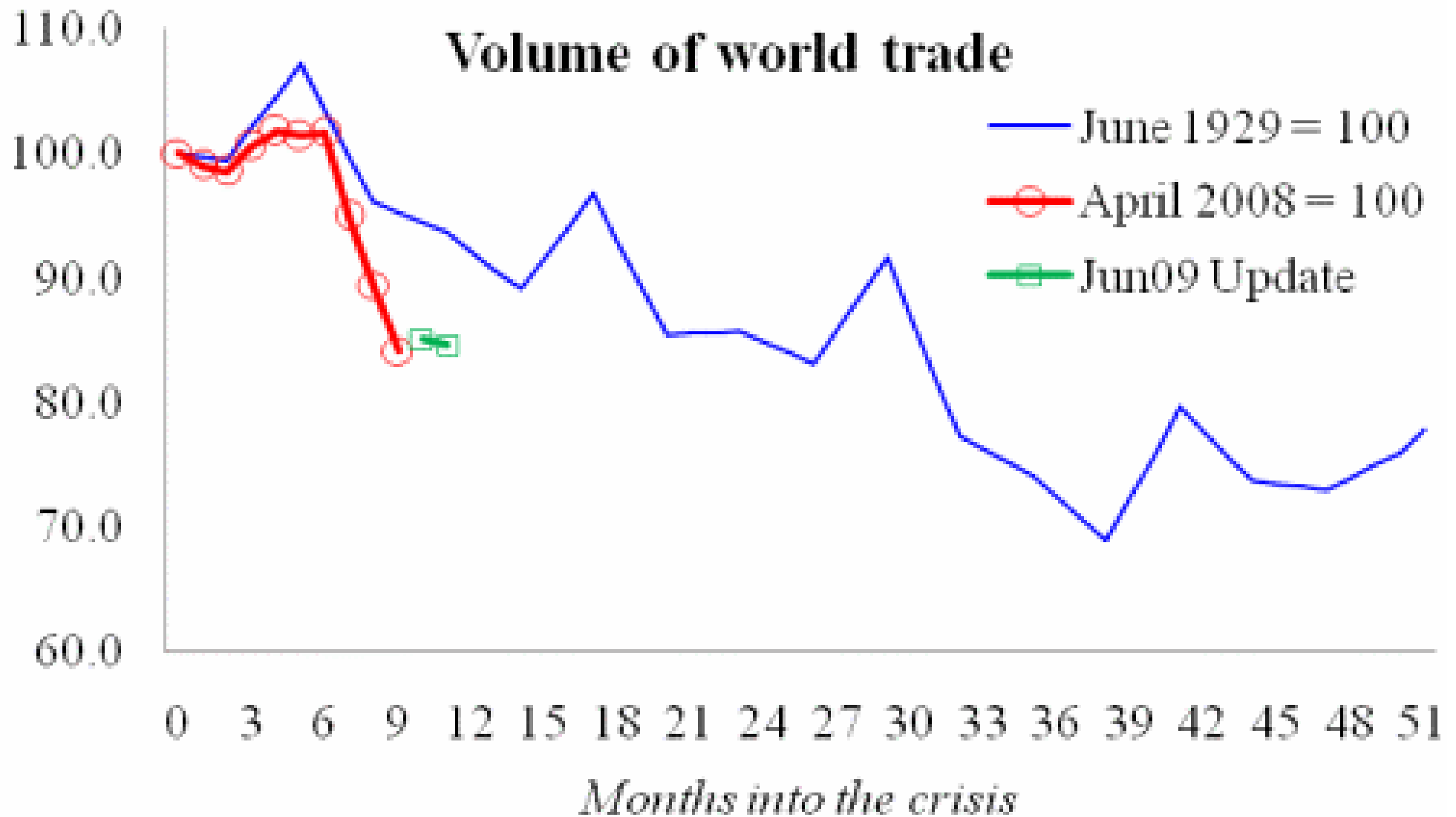


대공황과 주가 지수 비교



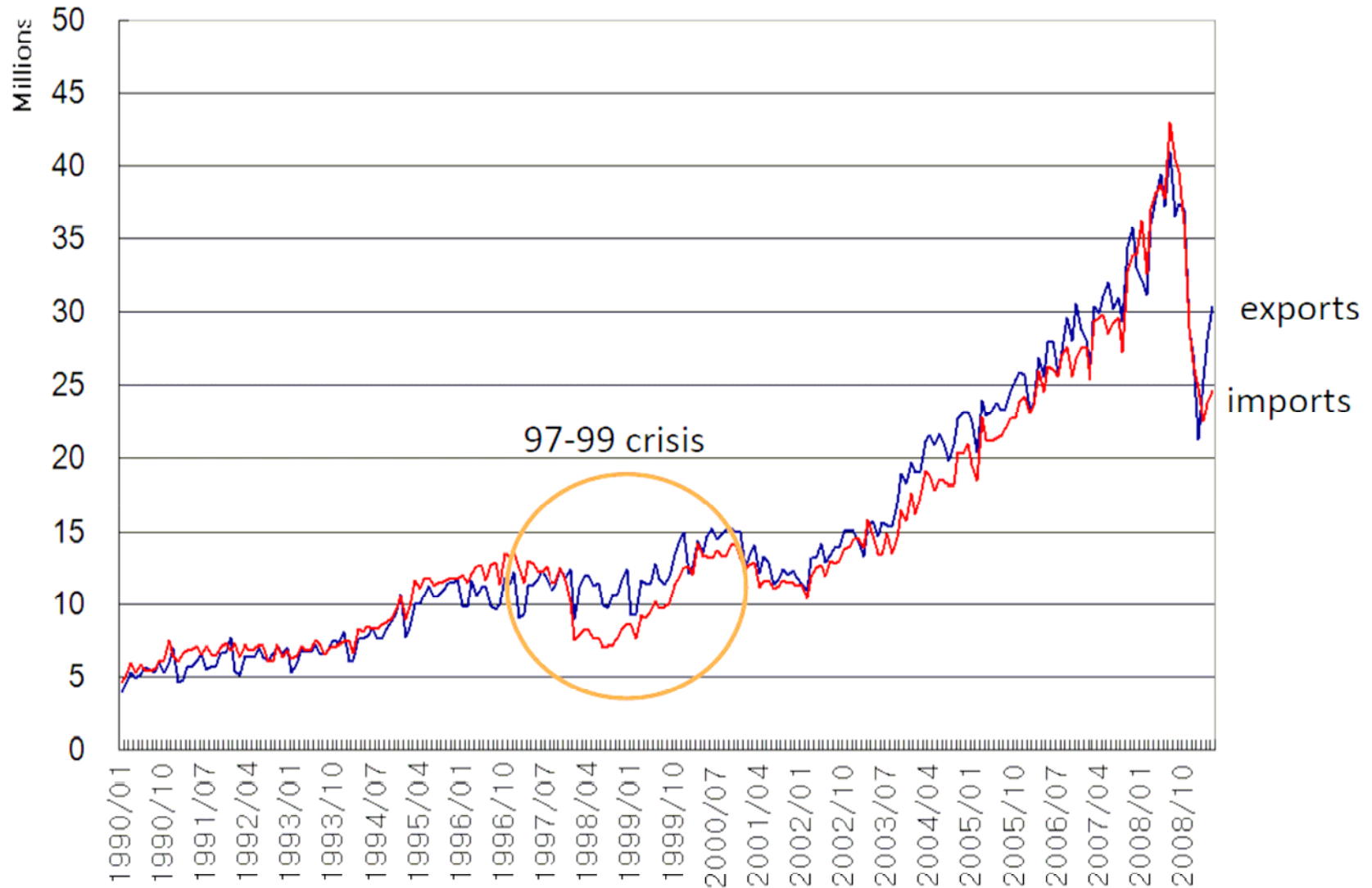
Eichengreen and O'Rourke (VoxEU 2009)

대공황과 무역 총량 비교

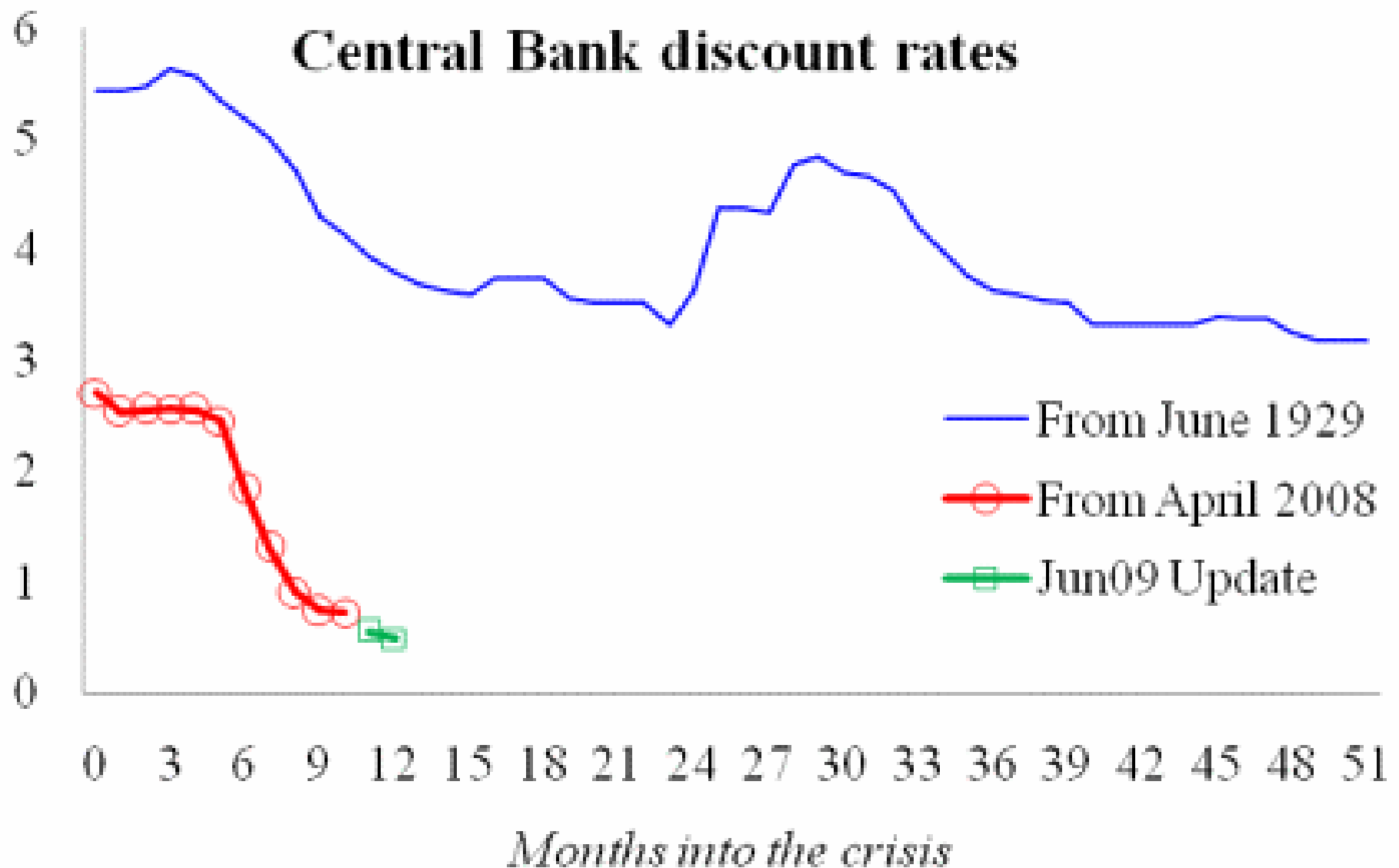


Eichengreen and O'Rourke (VoxEU 2009)

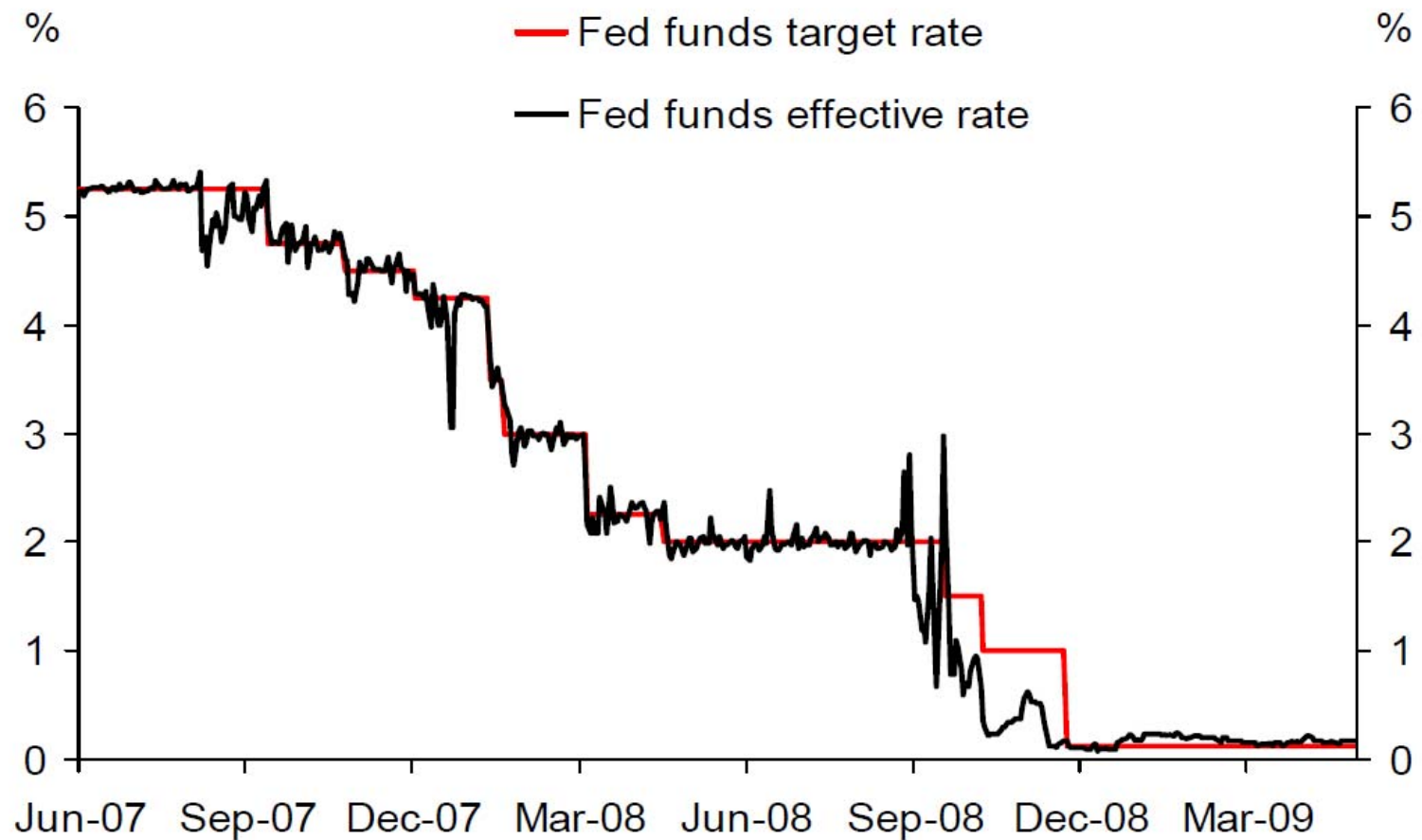
한국 수출과 수입 총량



통화정책 비교 (단기 금리)



US Short Term Interest Rate

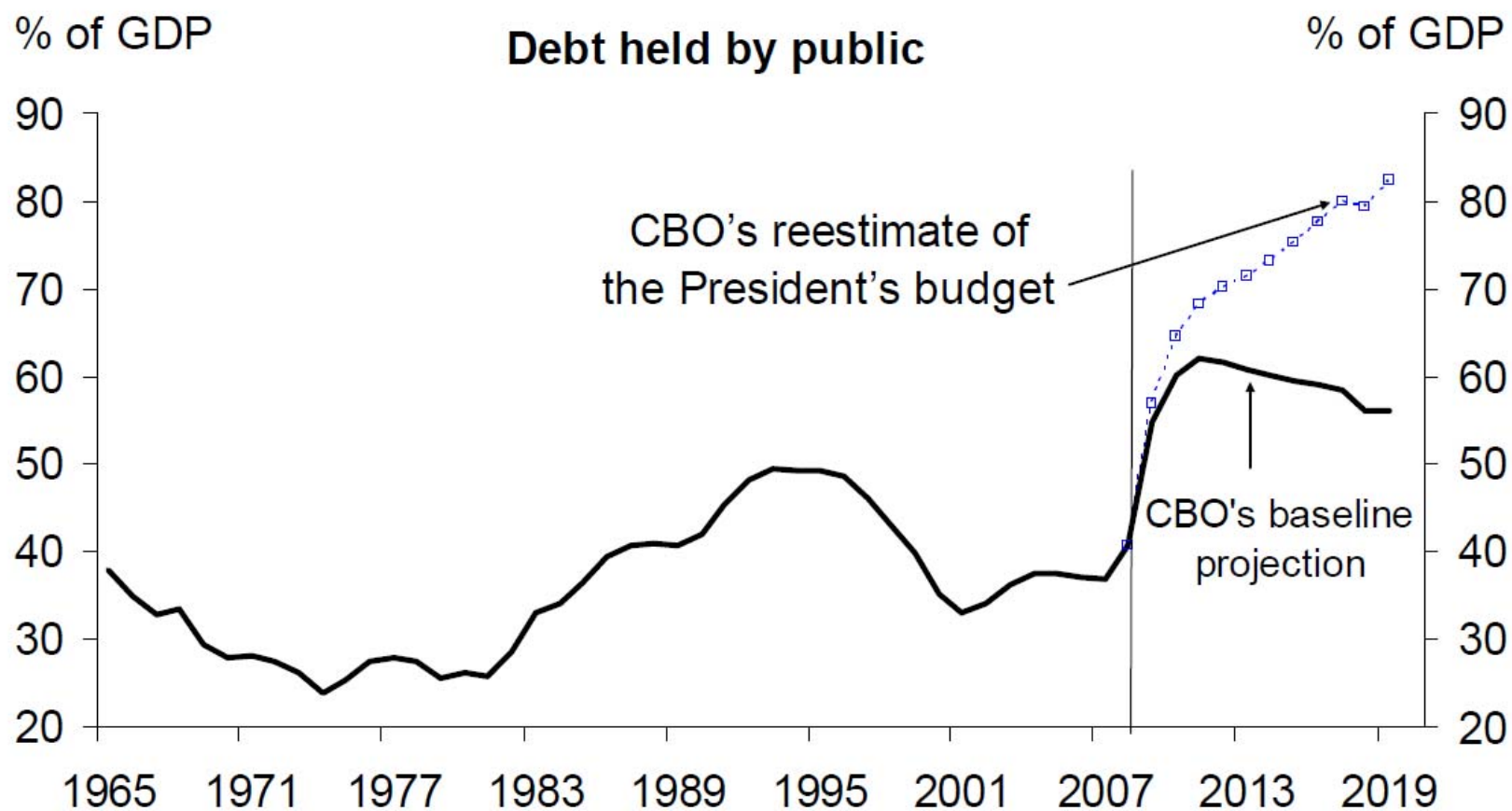


U.S. Fiscal Outlook

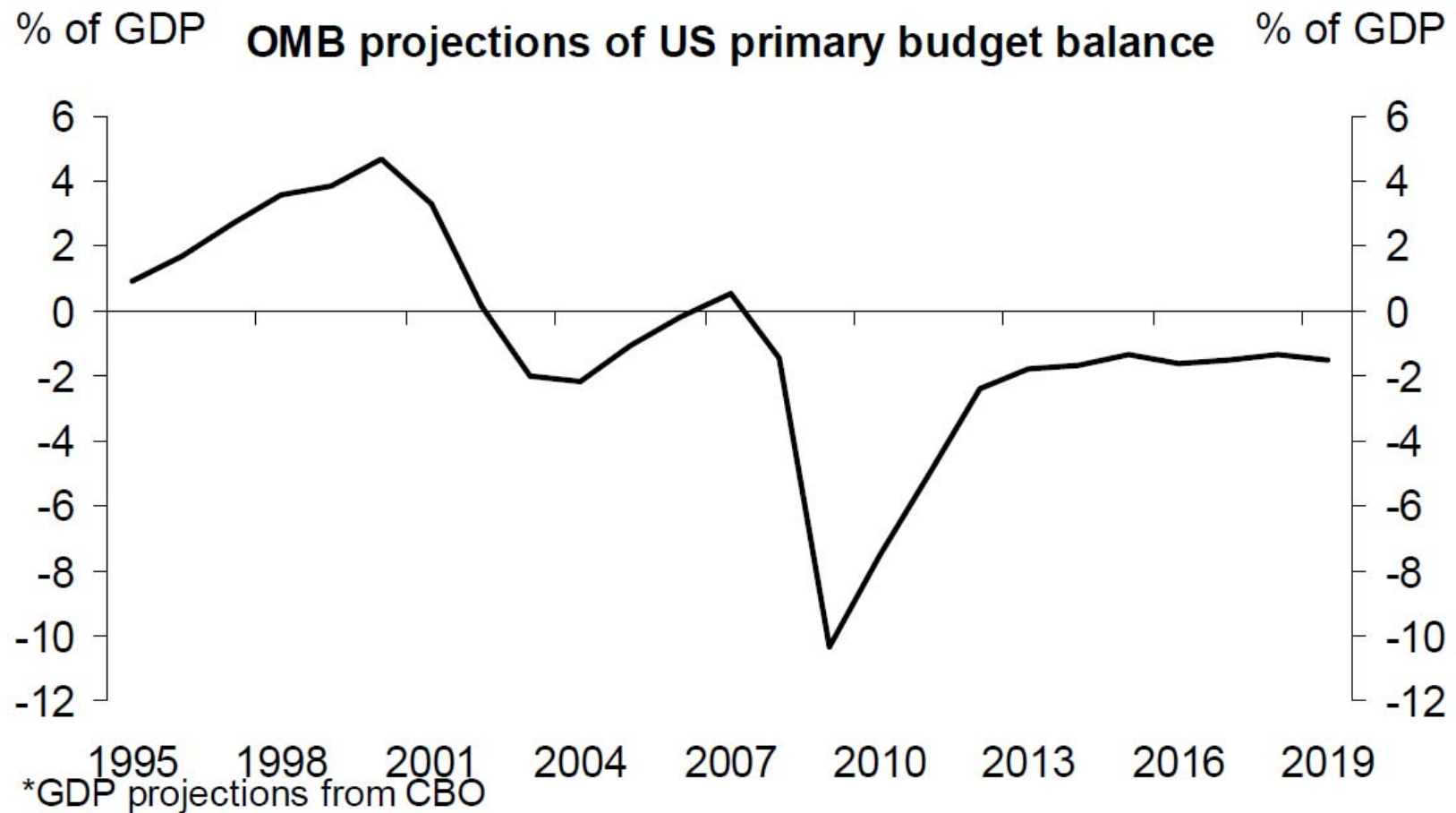
Obama Fiscal Stimulus

- Fiscal Boost of \$ 787 billion
- Roughly same size as Troubled Assets Relief Program (TARP) (\$700 billion) for recapitalizing the banking system
- Unlike banking sector recapitalization,
 - Implementation of fiscal spending takes time
 - Effects slow to materialize in the real economy

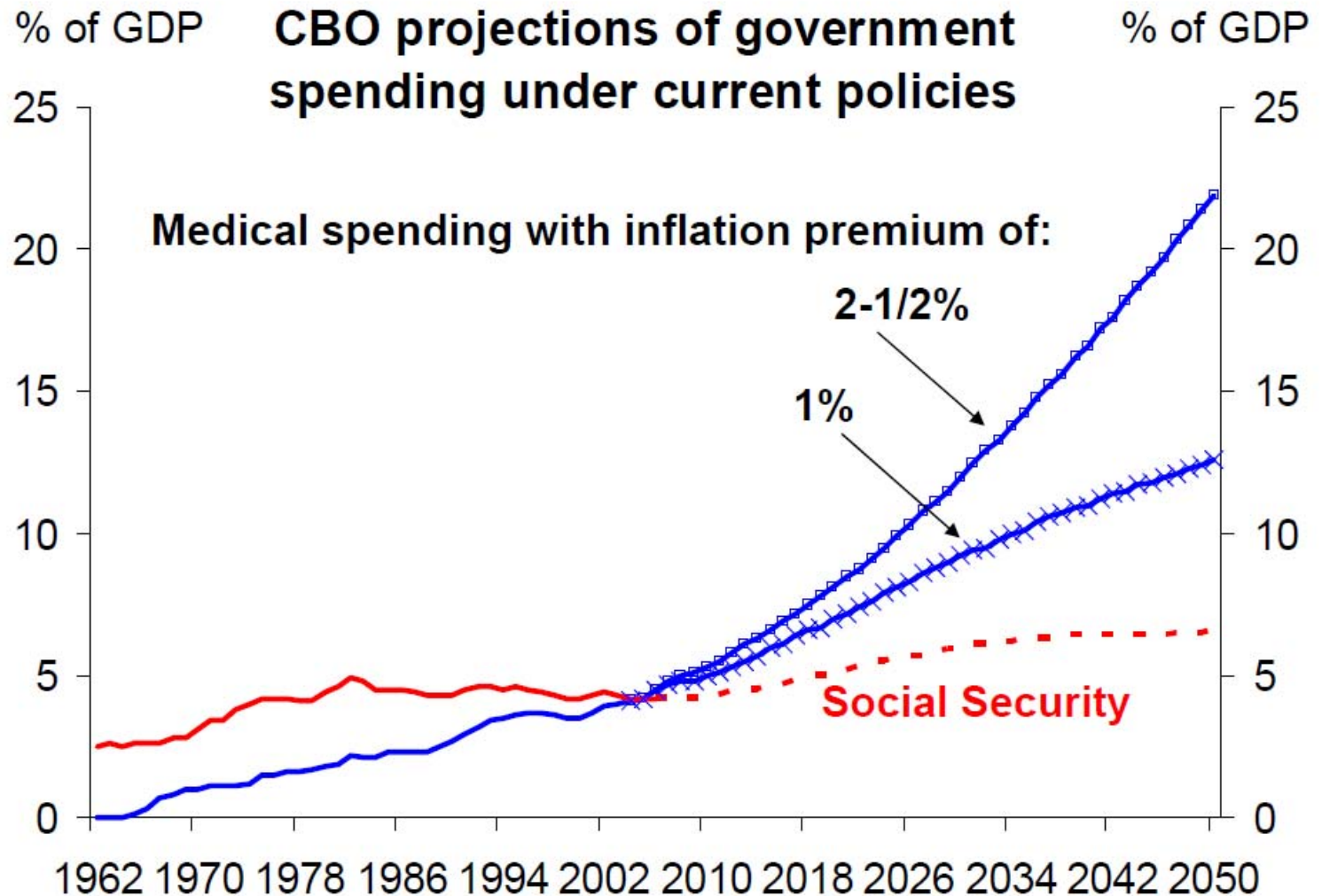
US Fiscal Deficit



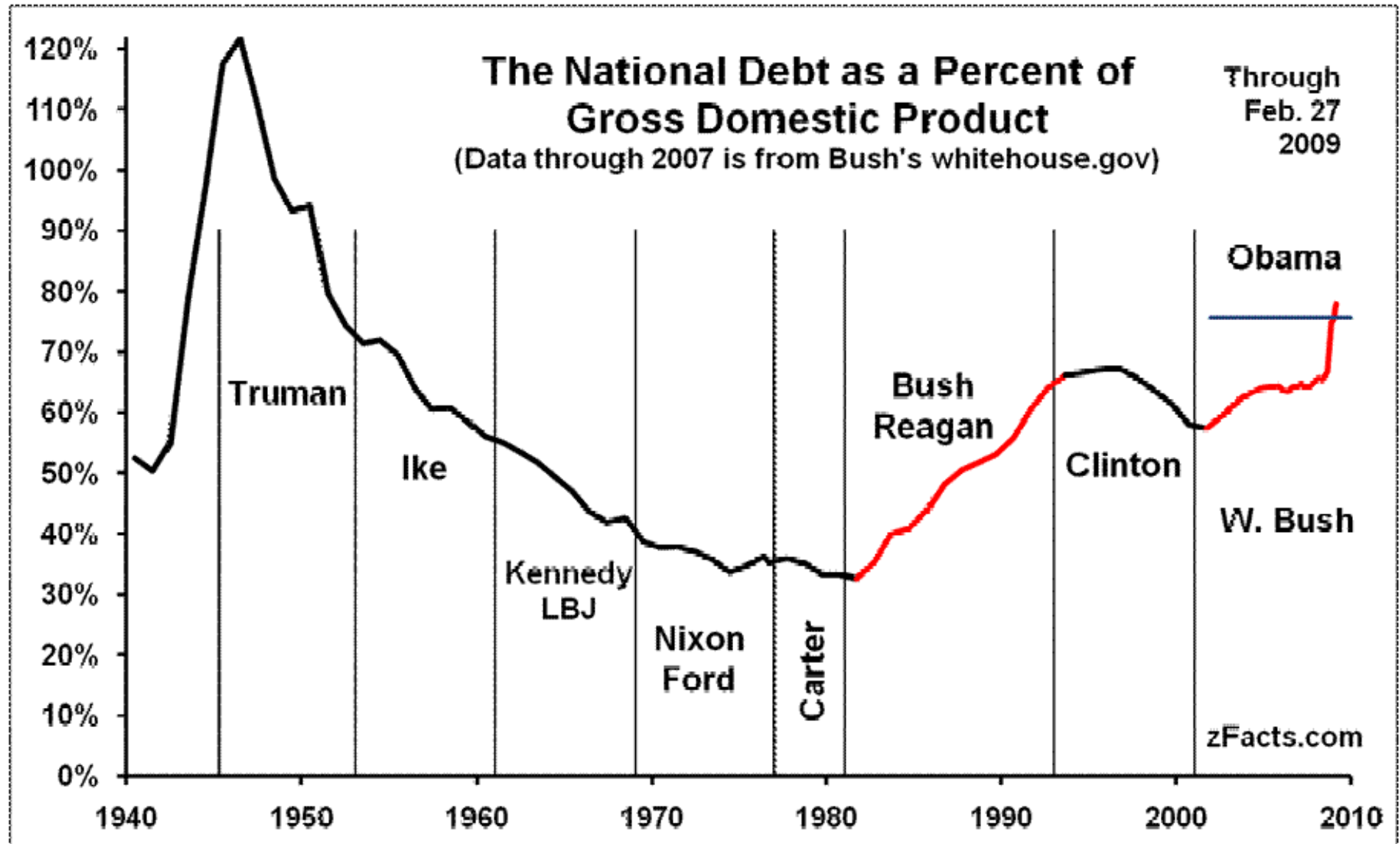
US Fiscal Deficit



US Fiscal Deficit

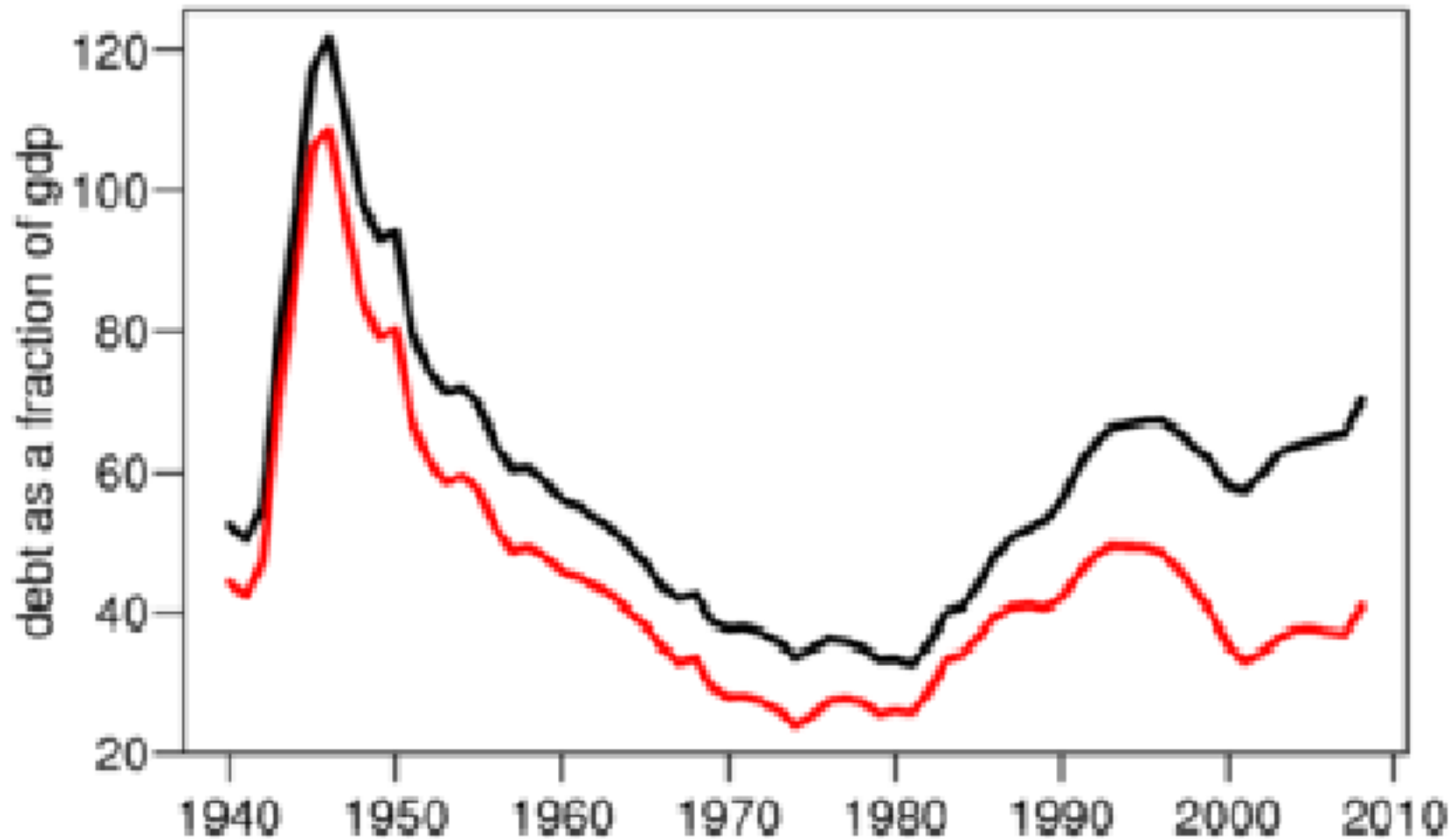


US Debt/GDP Ratio

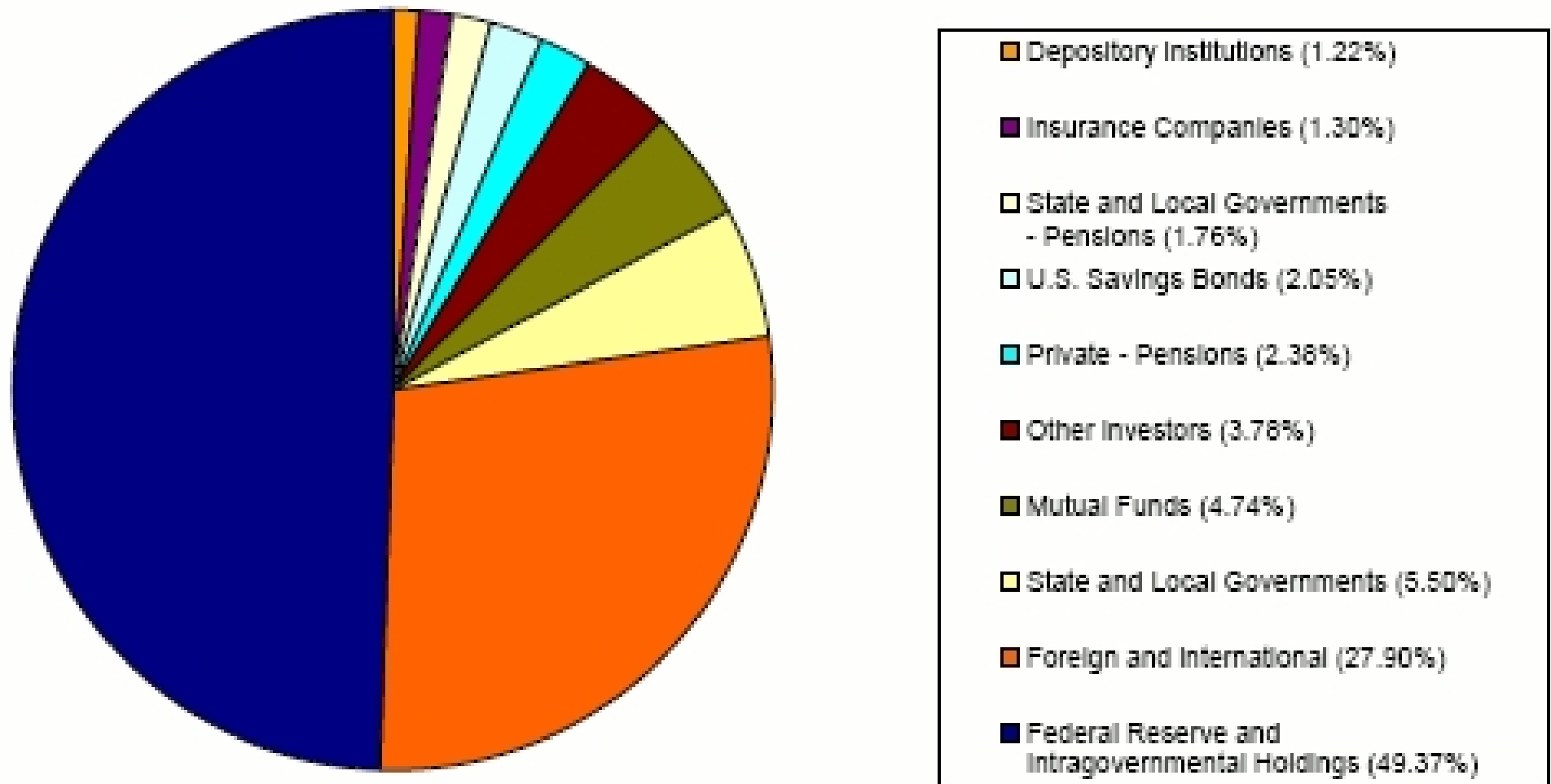


US Govt Debt/GDP Ratio

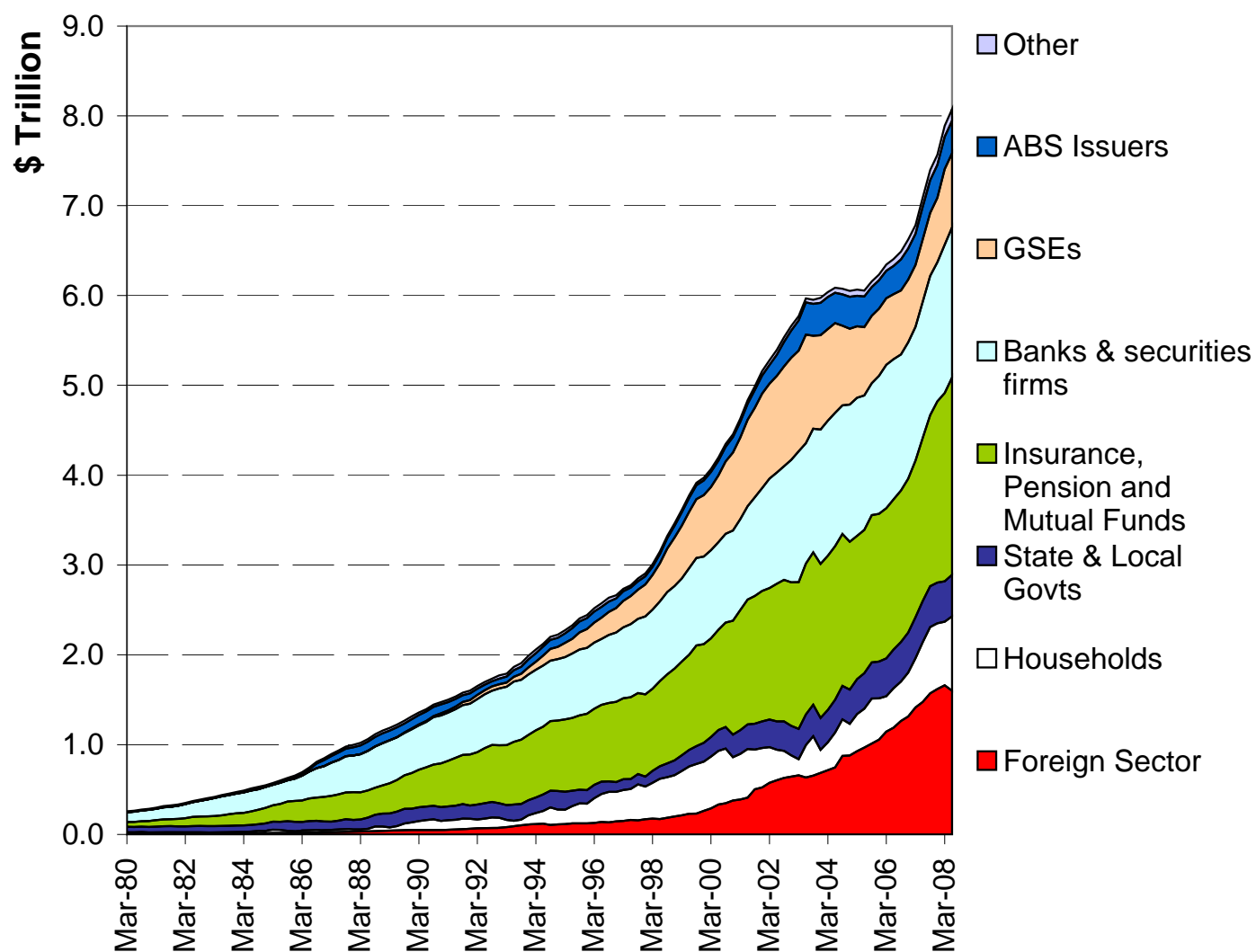
Gross (black) and held by public (red)



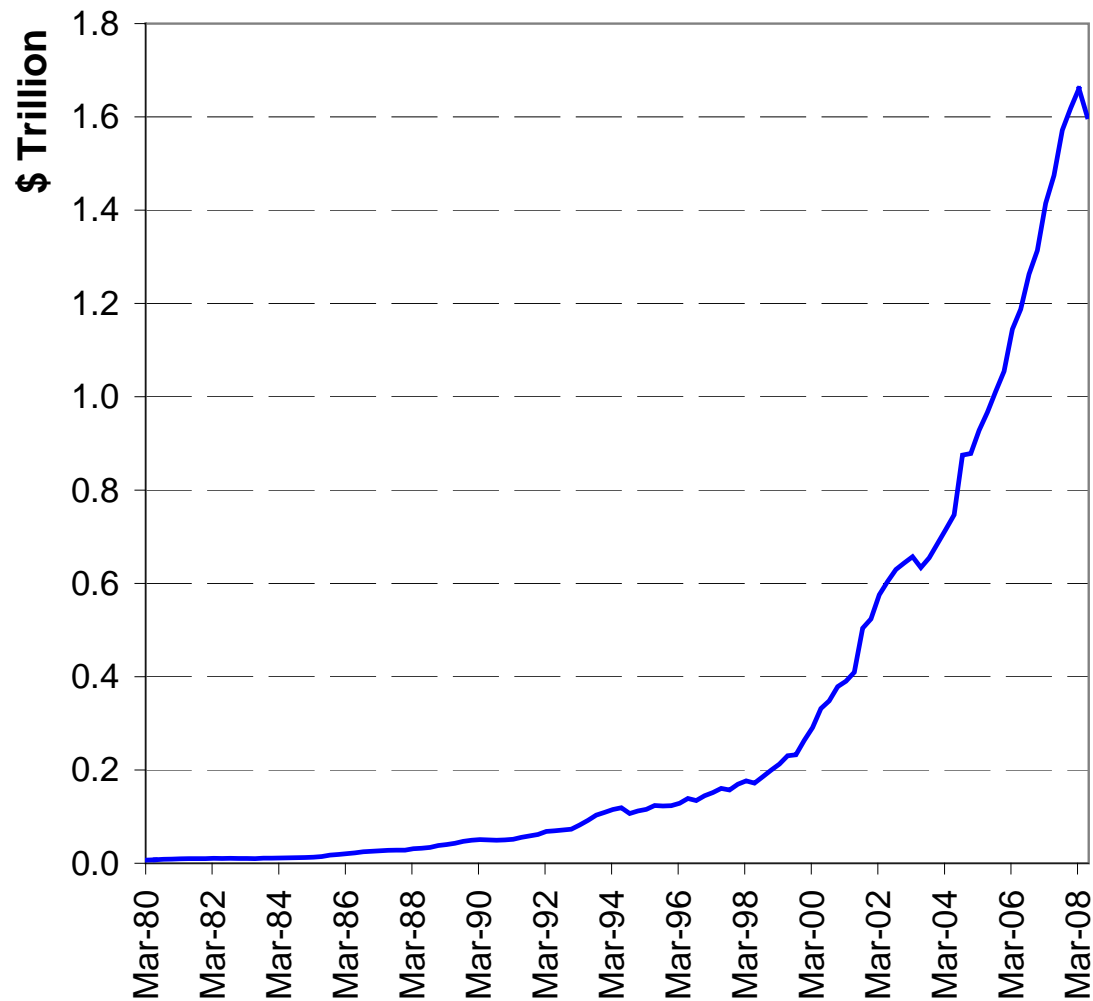
Estimated Ownership of all U.S. Treasury Securities (June 2008)



US External Position (holders of US GSE debt)



US External Position (foreign holders of US GSE debt)



Growth of US Debt by Sector

