

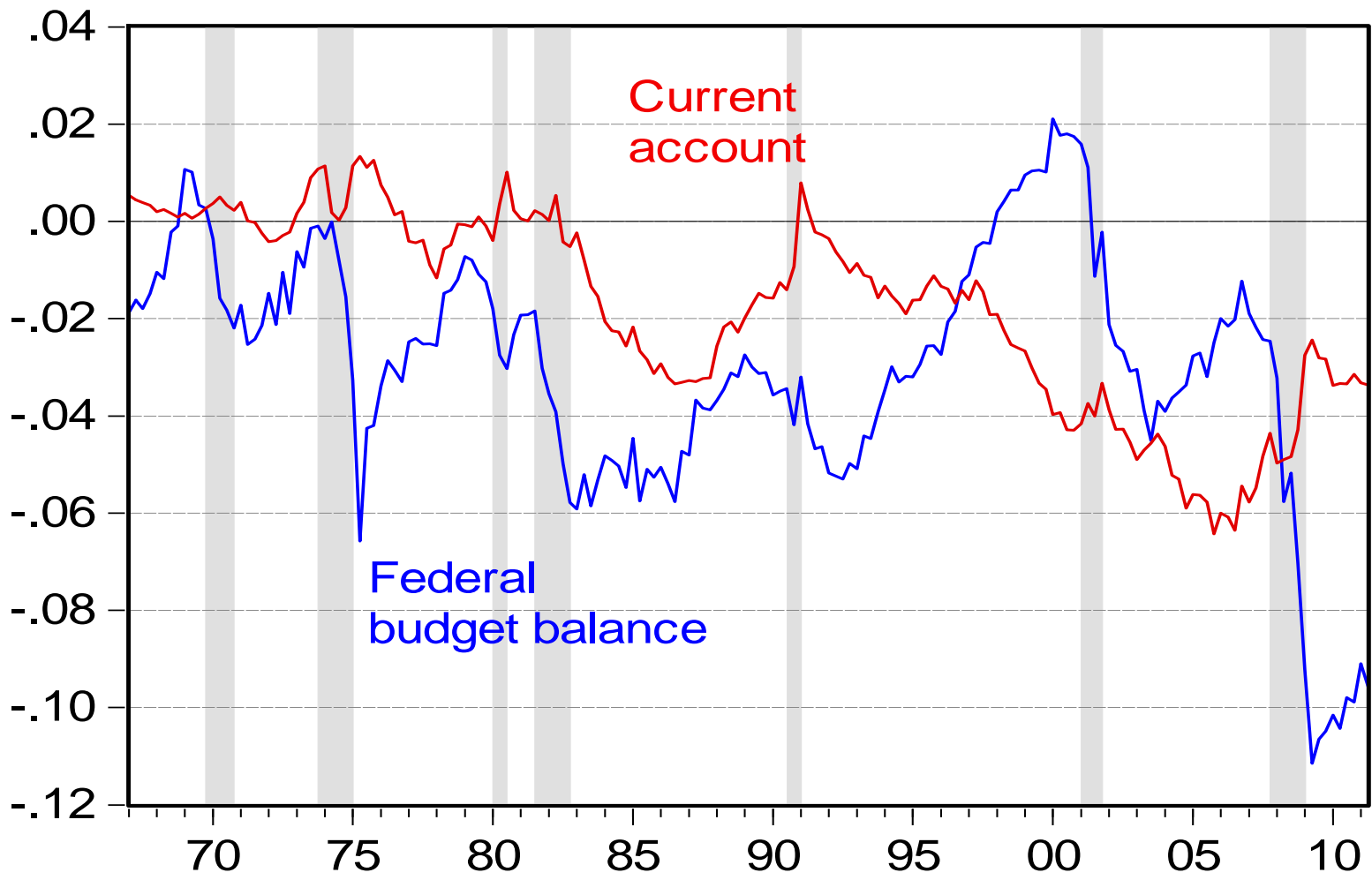
Economics 435  
The Financial System  
(4/28-30/12)

Instructor: Prof. Menzie Chinn  
UW Madison  
Spring 2014

# An interpretation of the 2000's

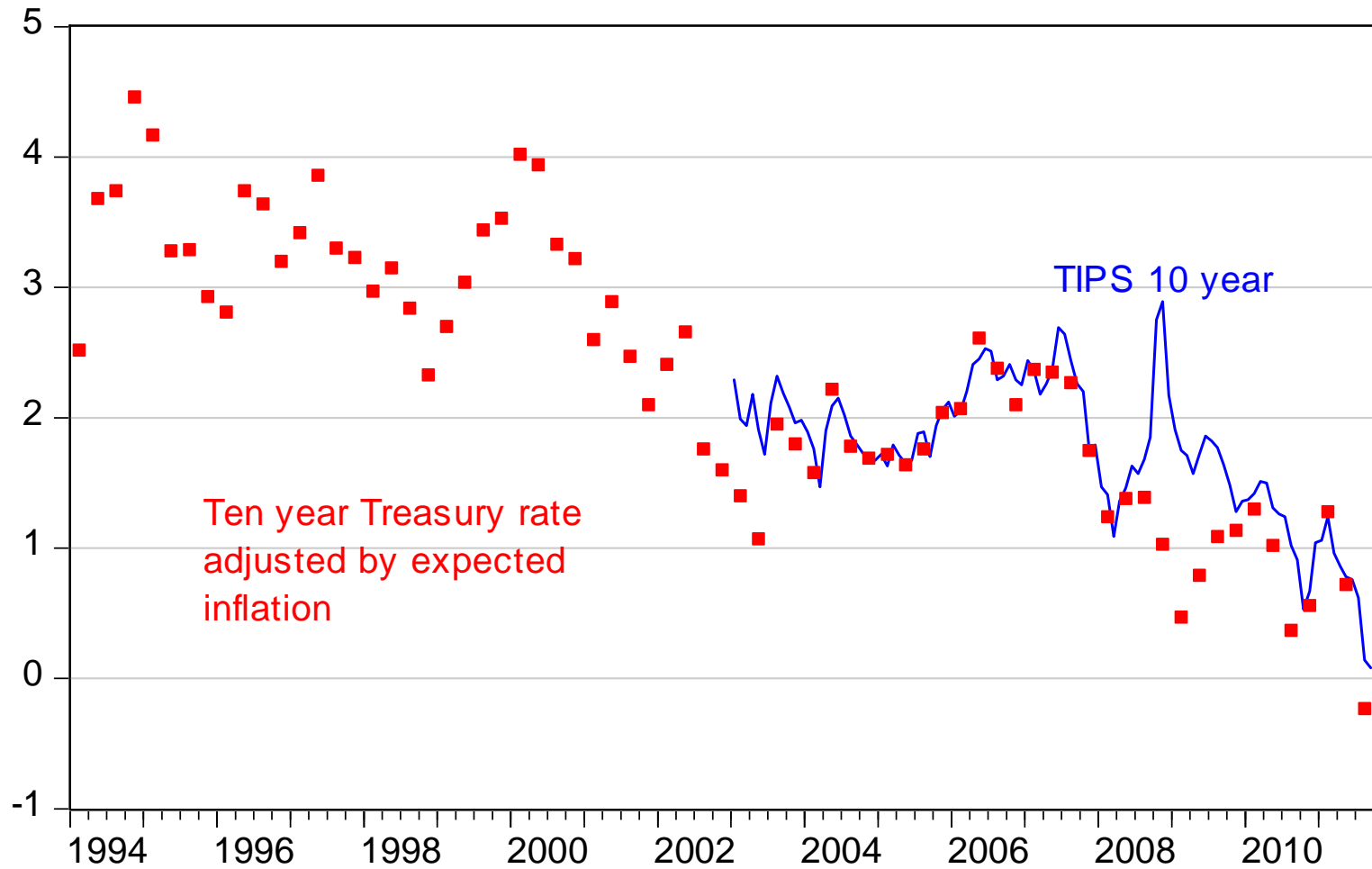
- Conventional capital flow cycle
- Excess saving abroad
- Low interest rates induce borrowing
- Borrowing by sovereign due to tax cuts, “global war on terror”
- Deregulation/non-regulation of the financial sector (incl. shadow banking system)
- Interaction with the tax system

# Government and national borrowing



Note: Fed. Budget balance is net lending. Source: BEA

# Real interest rates

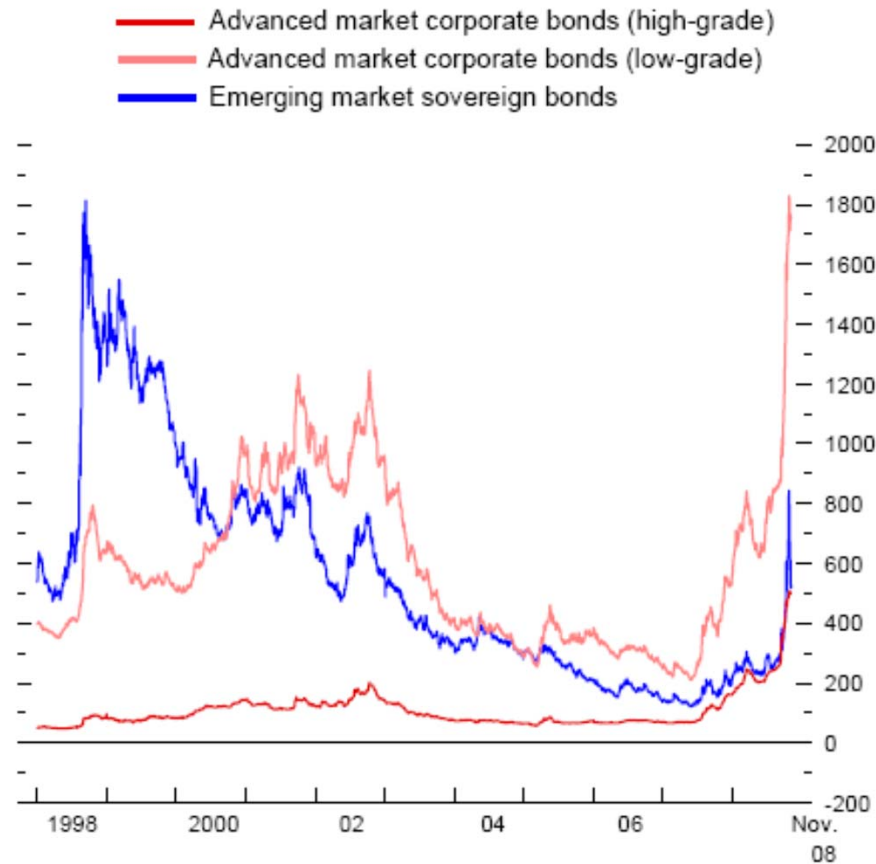


Source: Federal Reserve Board, Philadelphia Fed *SPF*

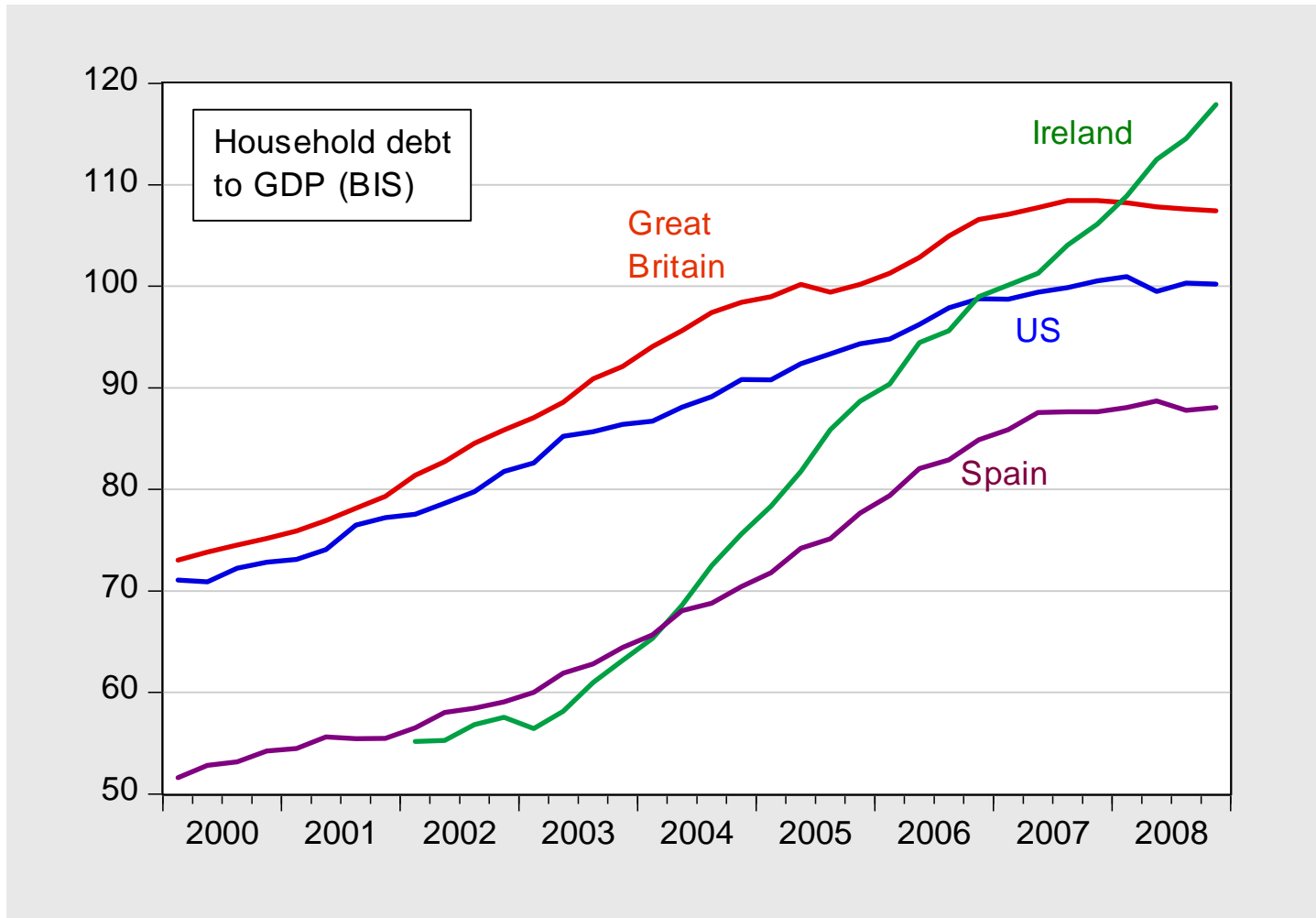
# The “Disappearance” of Risk

**Figure 3. Advanced and Emerging Markets: Sovereign and Corporate Bond Spreads, 1998–2008 <sup>1</sup>**  
*(In basis points)*

Source: IMF, *WEO* update,  
11/6/08

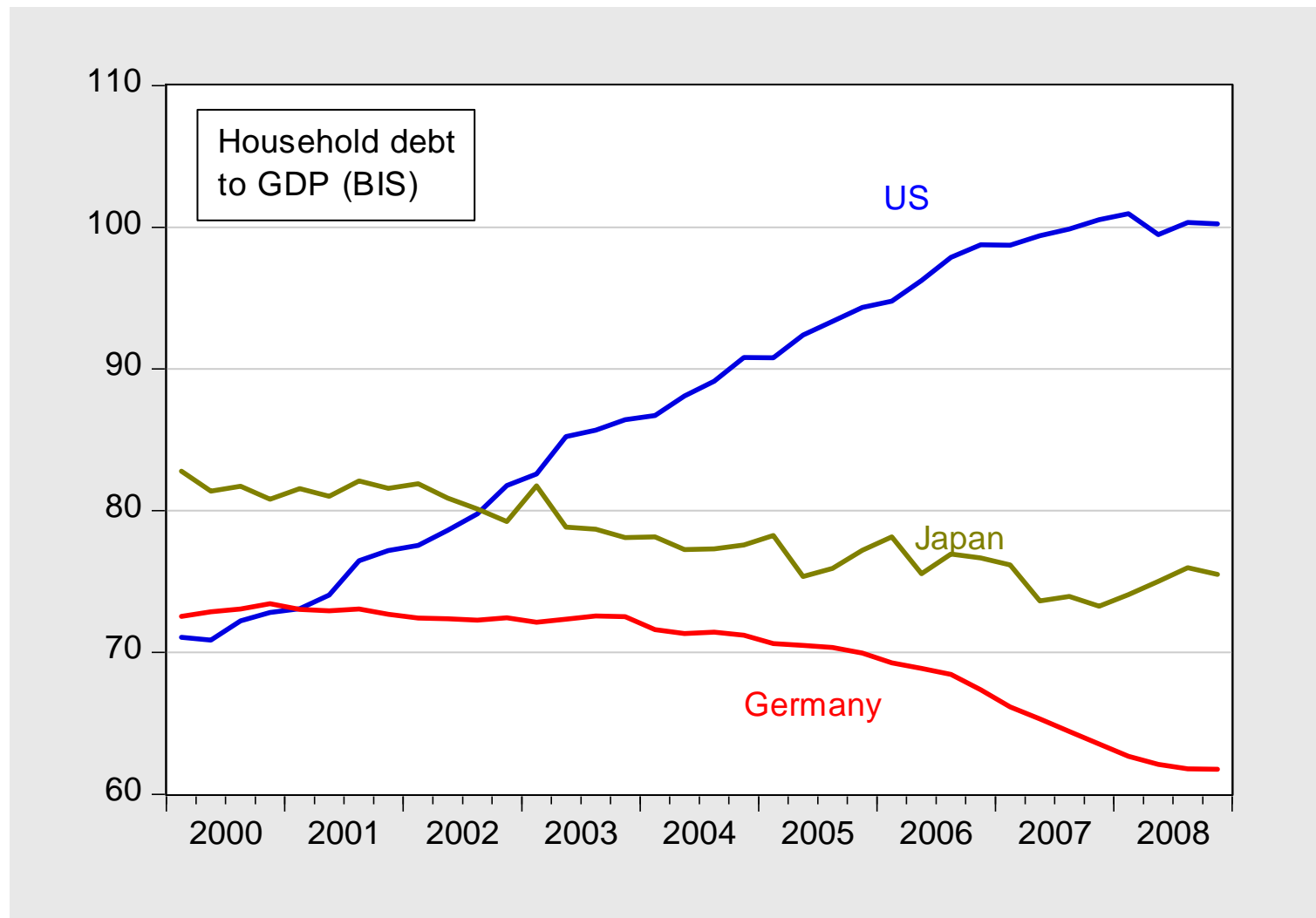


# Household debt (I)



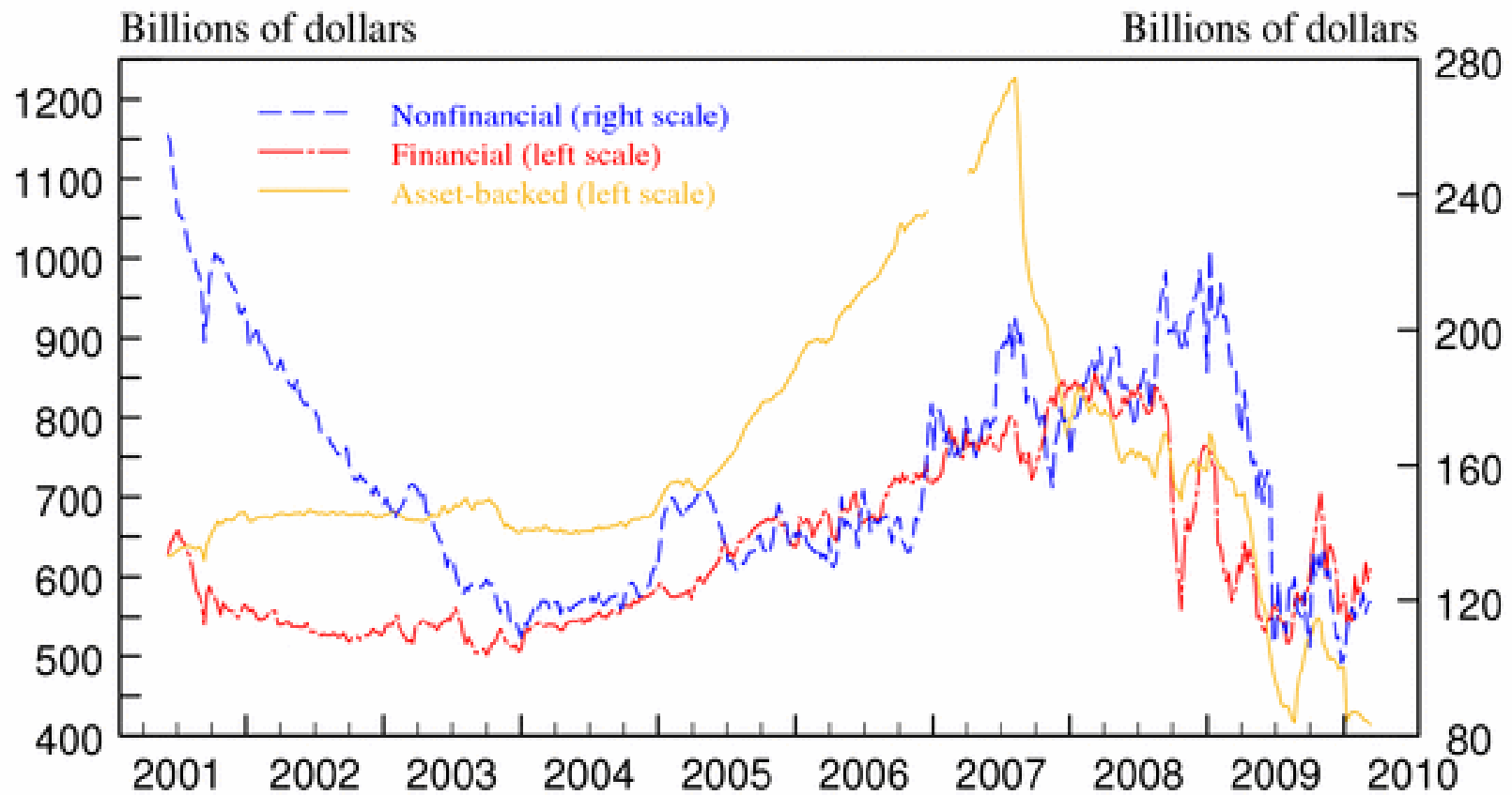
Source: BIS, *Annual Report* (2011)

# Household debt (II)



Source: BIS, *Annual Report* (2011)

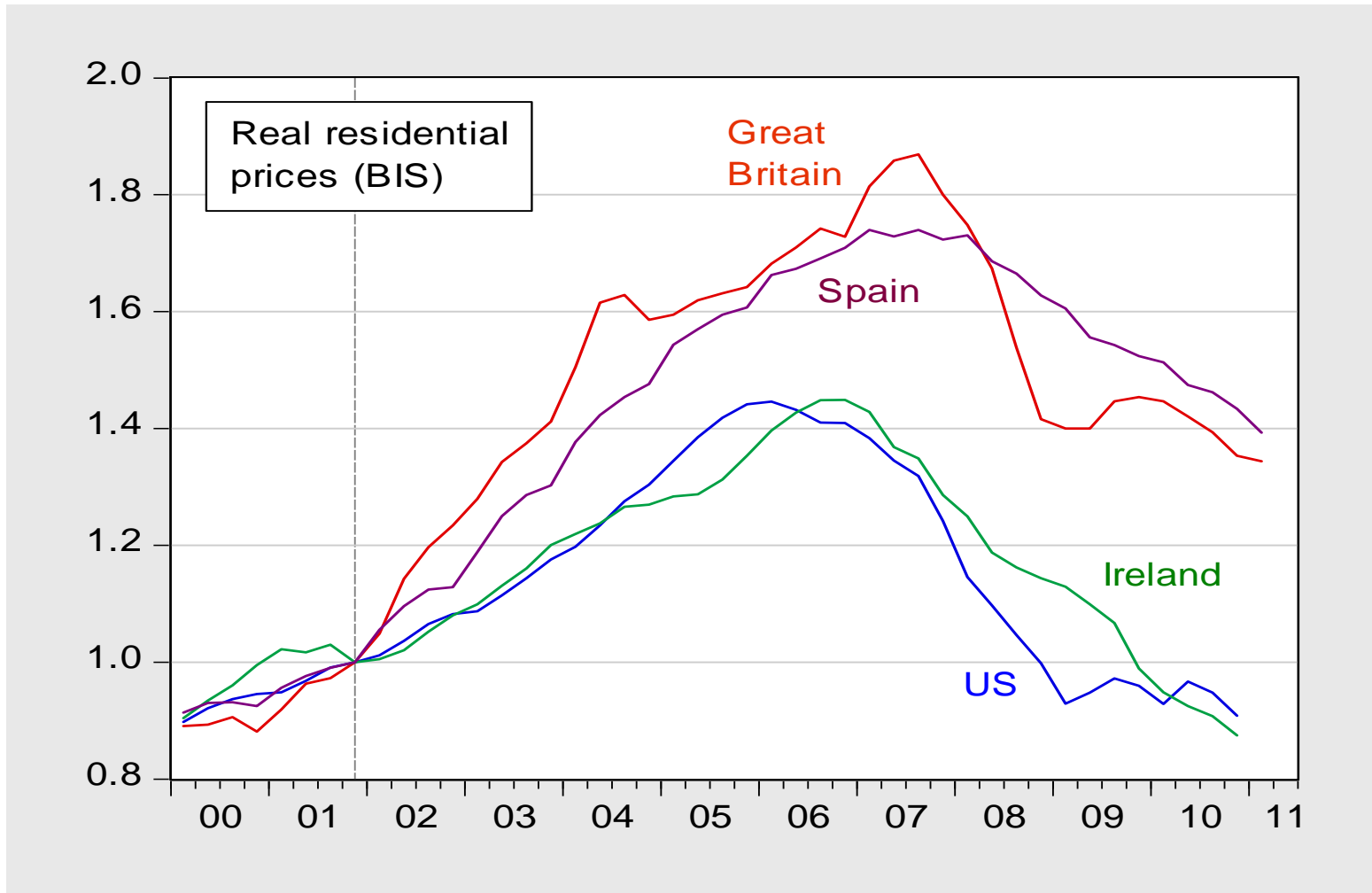
# Lending in the shadow system booms



Source: Federal Reserve Board



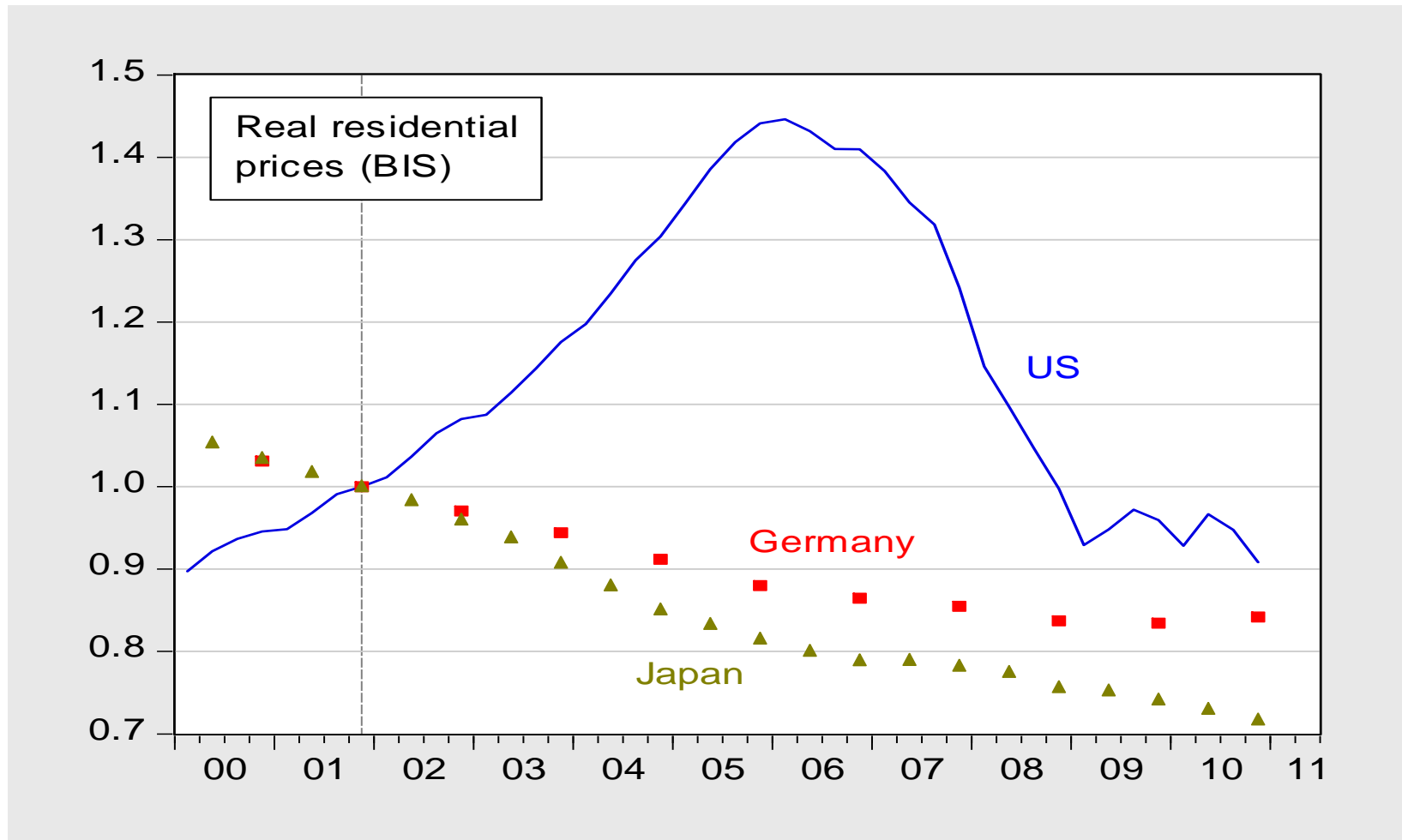
# Housing boom (I)



Note: Rescaled to 2001Q4=1.

Source: BIS, Annual Report (2011)

# Housing boom (II)

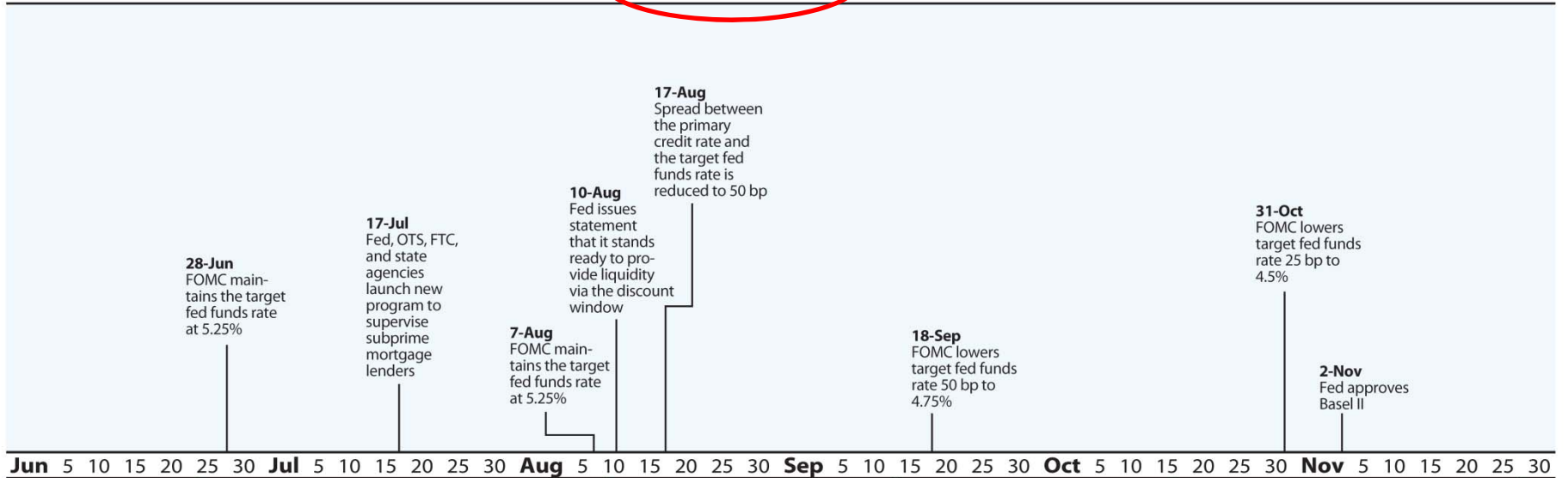


Note: Rescaled to 2001Q4=1.

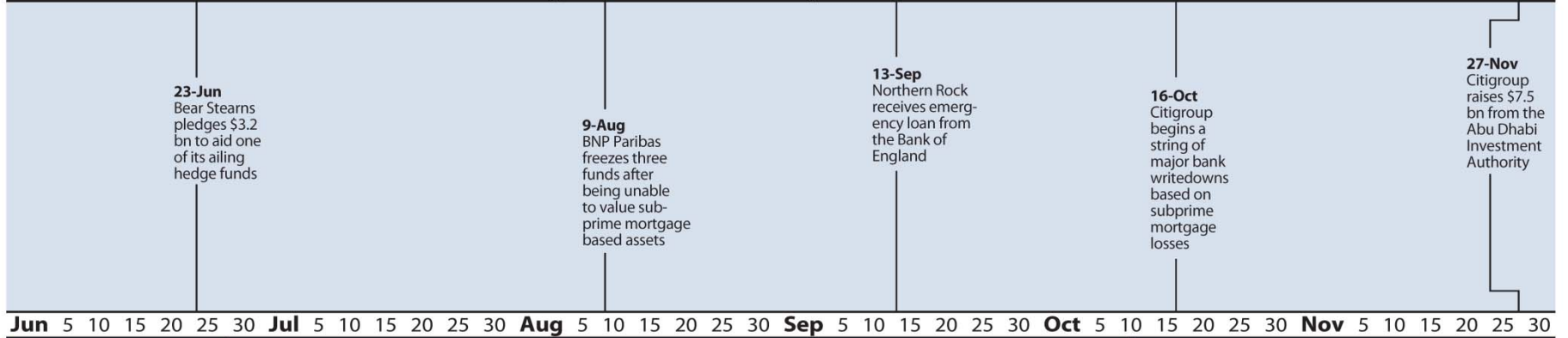
Source: BIS, Annual Report (2011)

# Financial Turmoil Timeline (June 2007 - November 2007)

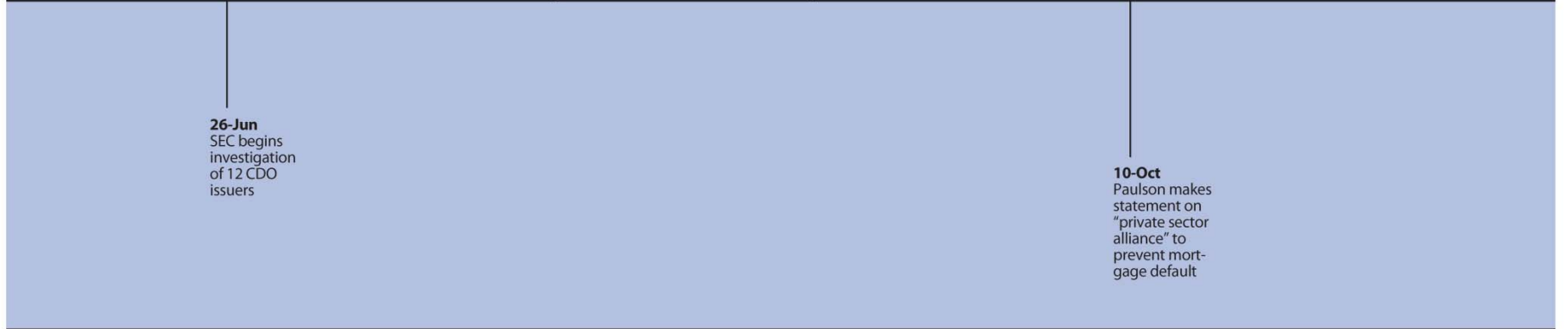
## Fed Policy Actions



## Market Events

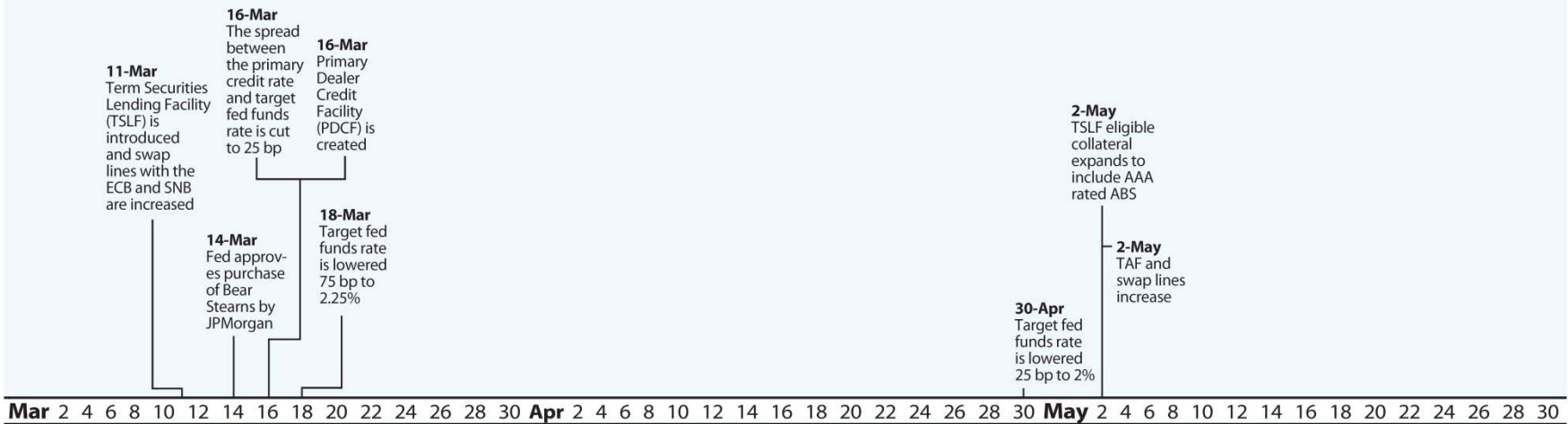


## Other Policy Actions



# Financial Turmoil Timeline (March 2008-May 2008)

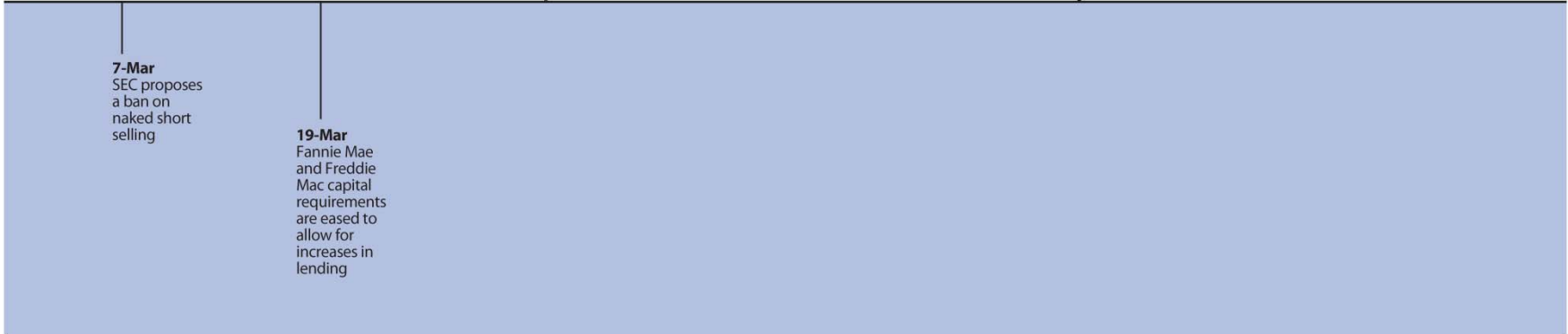
## Fed Policy Actions



## Market Events

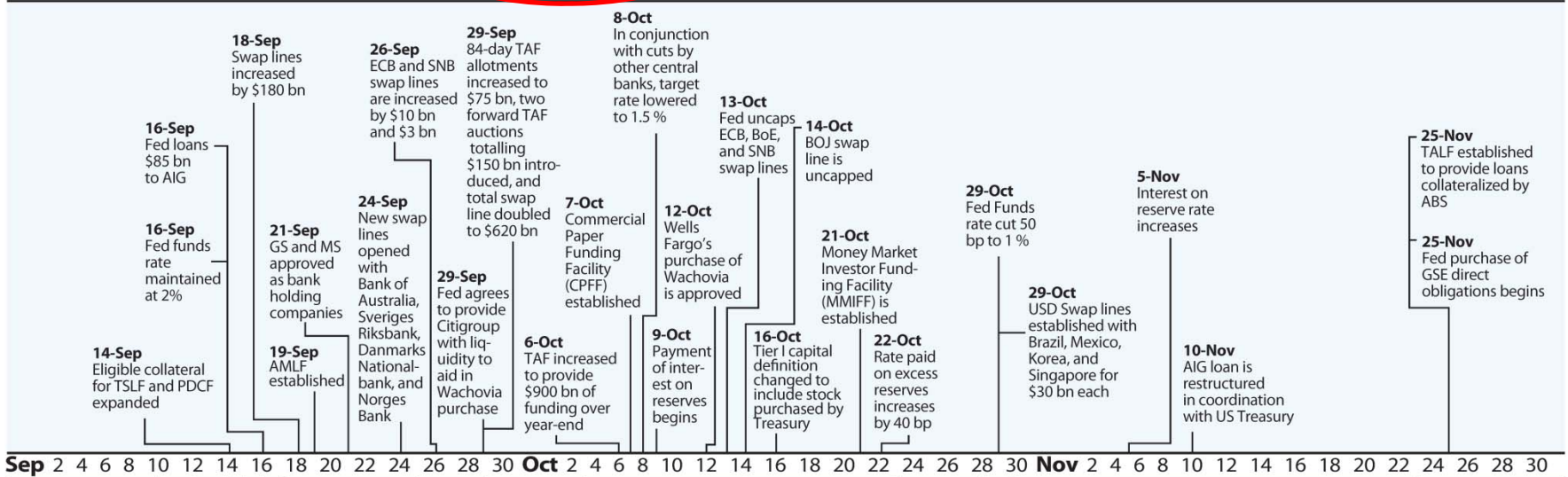


## Other Policy Actions

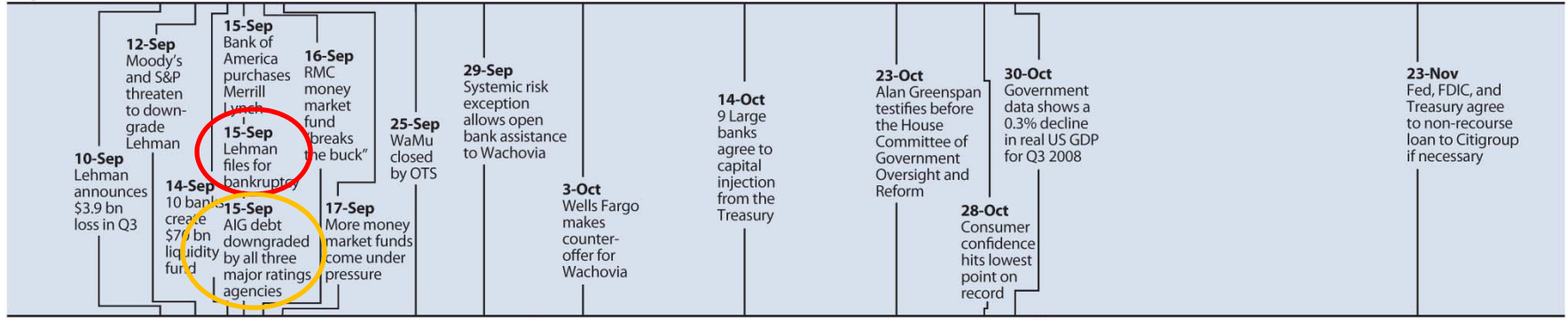


# Financial Turmoil Timeline (September 2008 - November 2008)

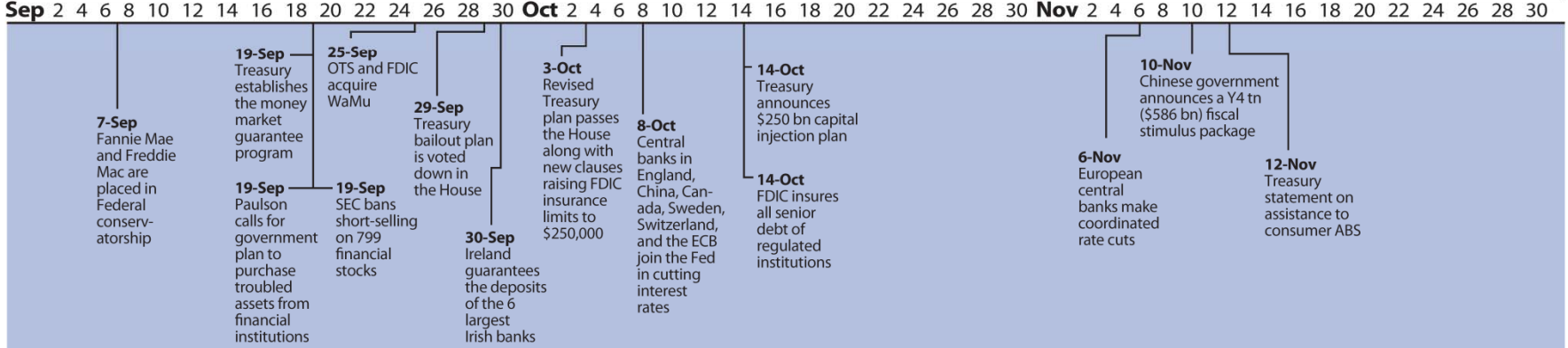
## Fed Policy Actions



## Market Events

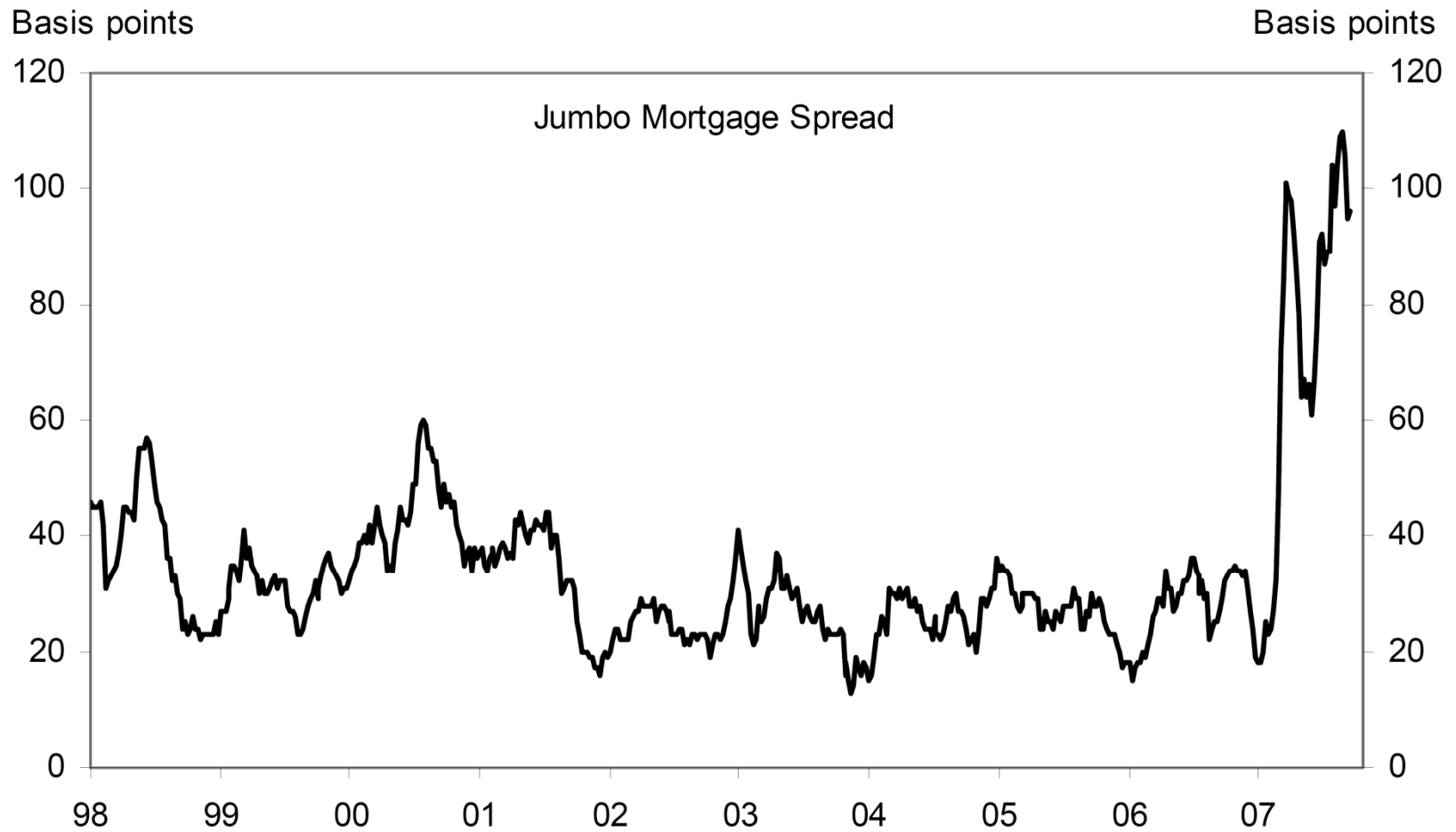


## Other Policy Actions



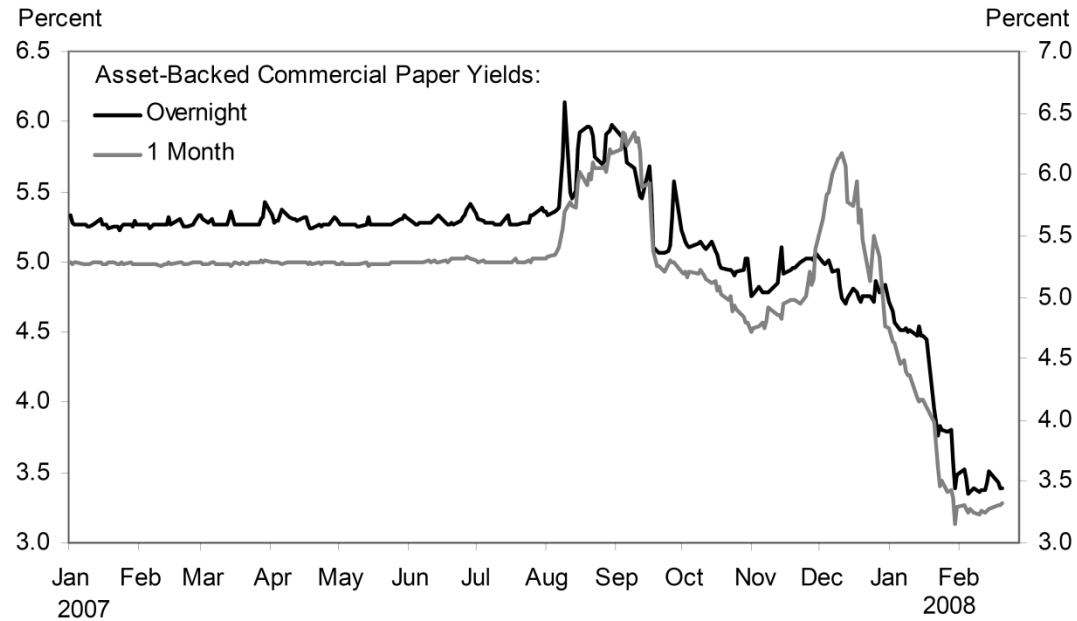
# Spreads Rise

Exhibit 2.2 Jumbo Mortgage Spread



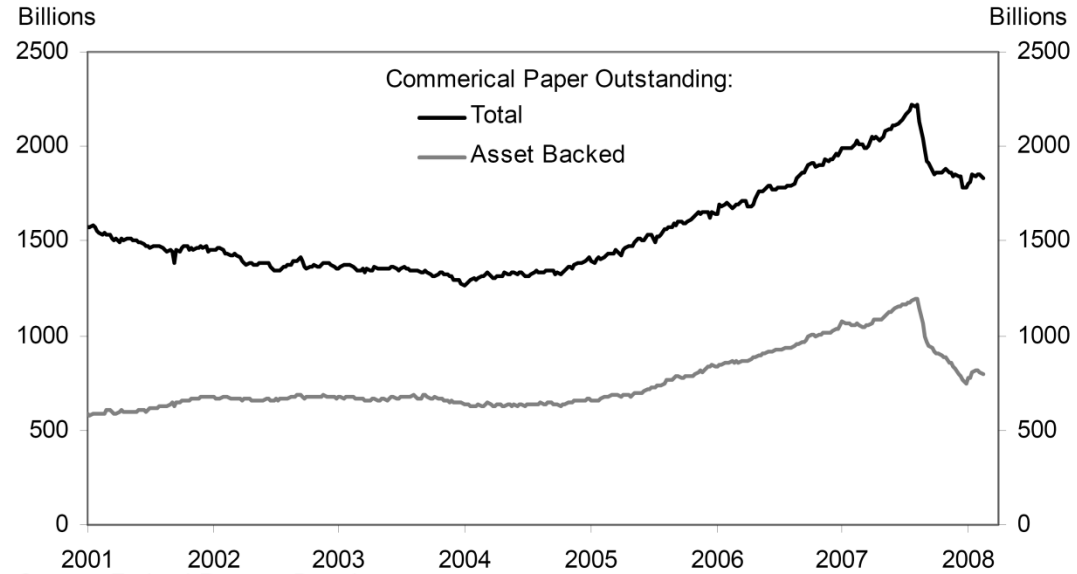
Source: BankRate.com.

Exhibit 2.3 Asset-Backed Commercial Paper (ABCP) Yields



Source: Federal Reserve Board.

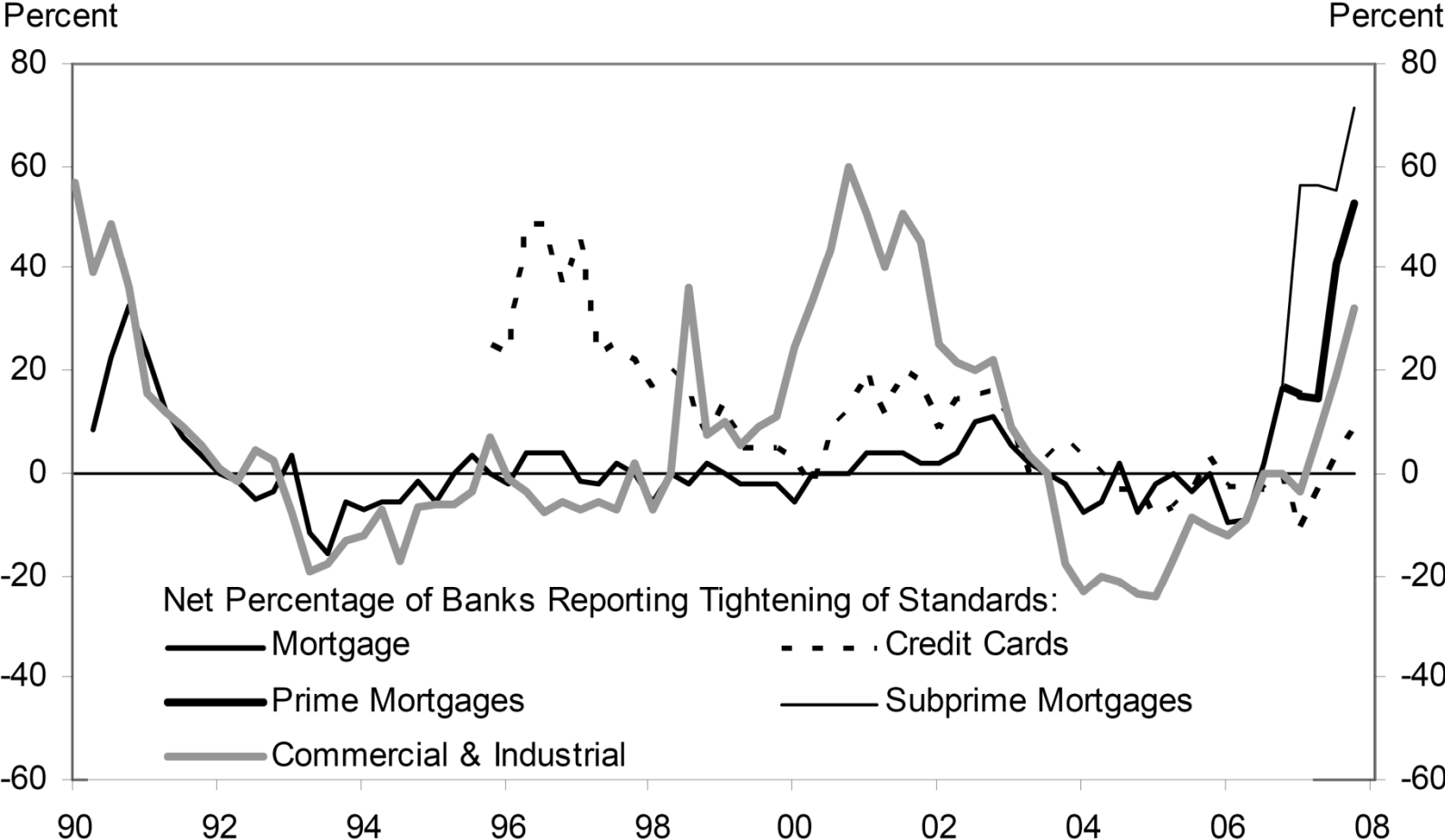
Exhibit 2.4 Commercial Paper Outstanding



Source: Federal Reserve Board.

# Credit Tightening

Exhibit 2.5 Senior Loan Officer Survey

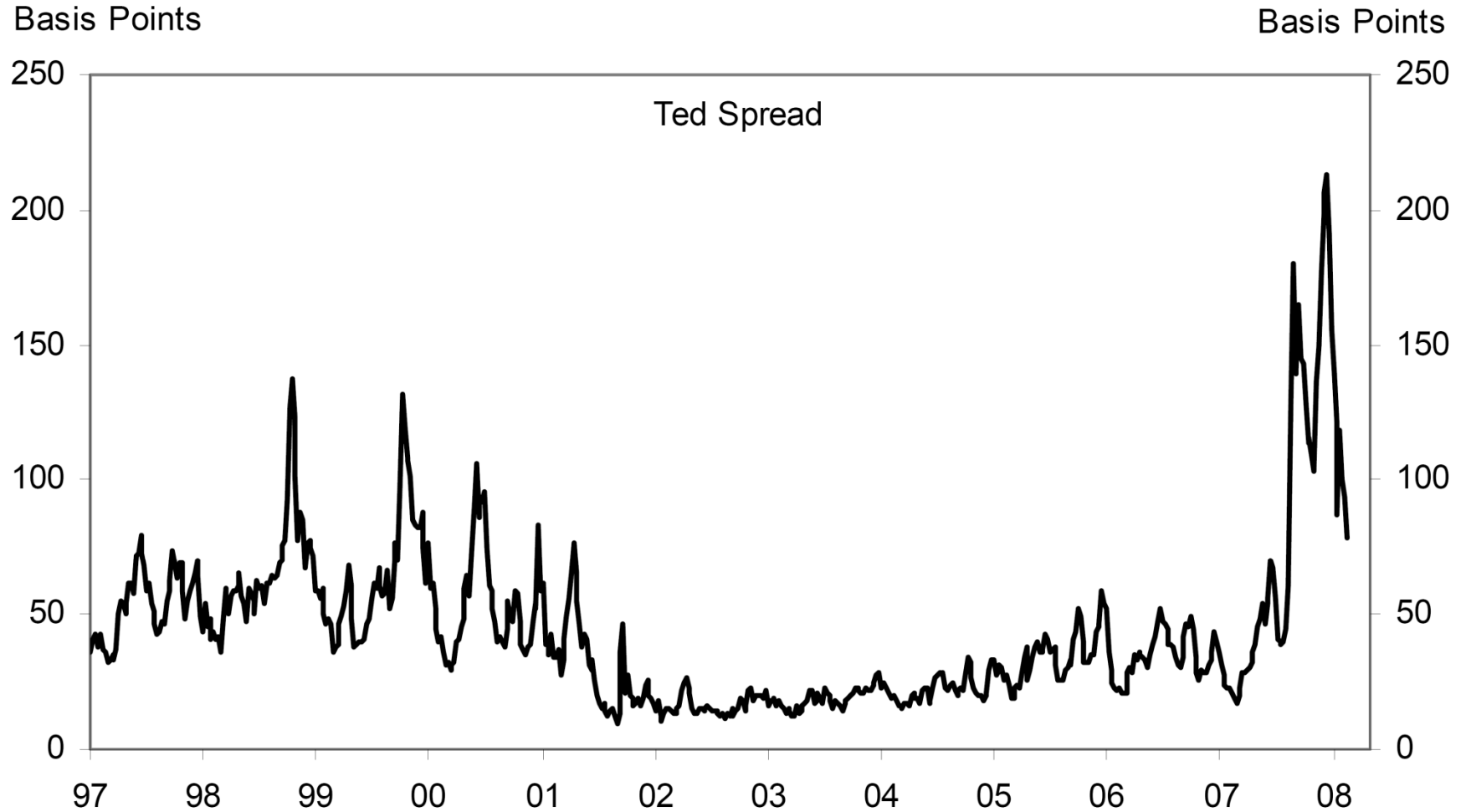


Source: Federal Reserve Board.



# Trust Disappears

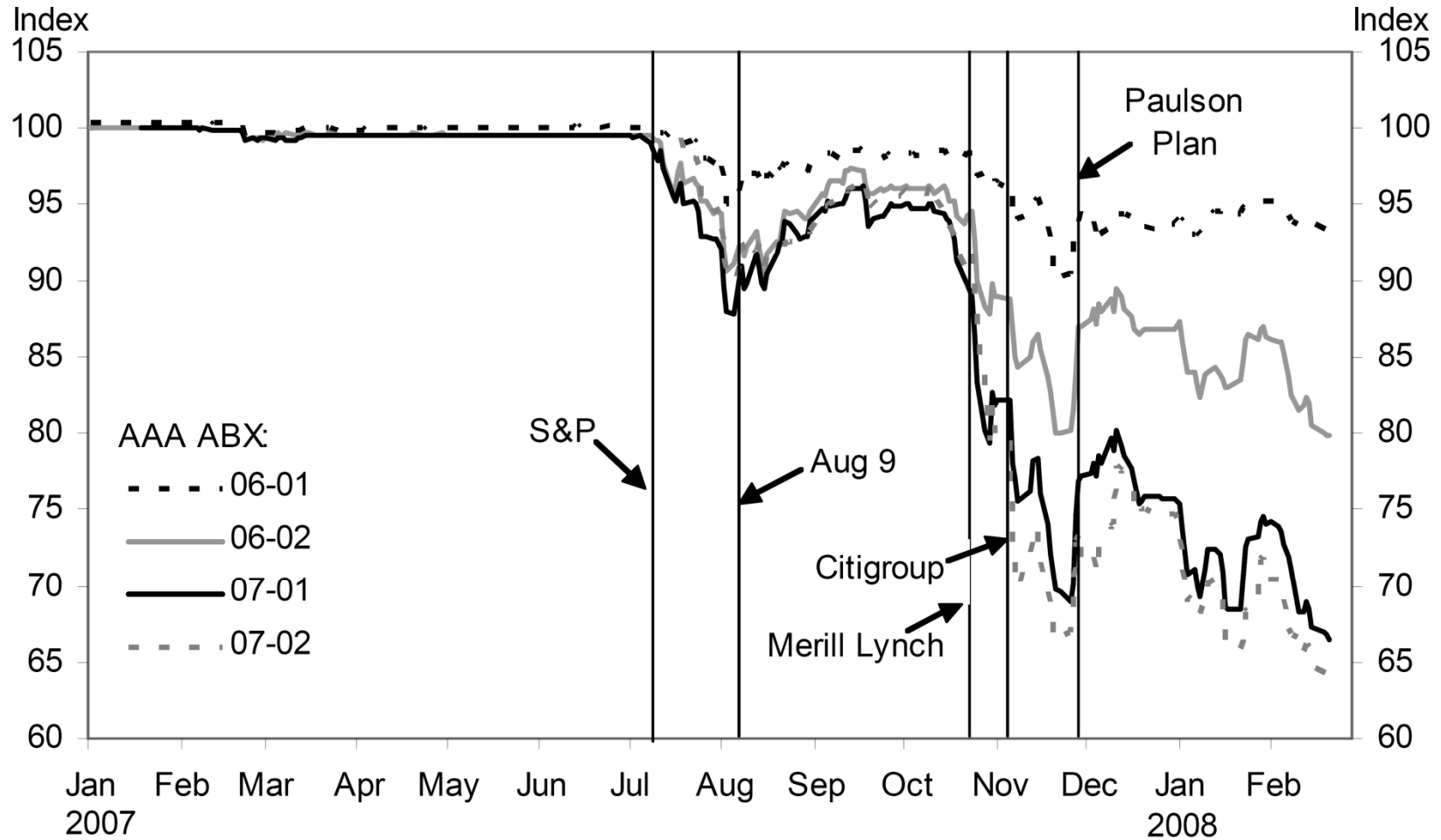
Exhibit 2.8 Treasury-Eurodollar (TED) Spread



Source: Financial Times. Federal Reserve Board.

# Derivatives Downgrade

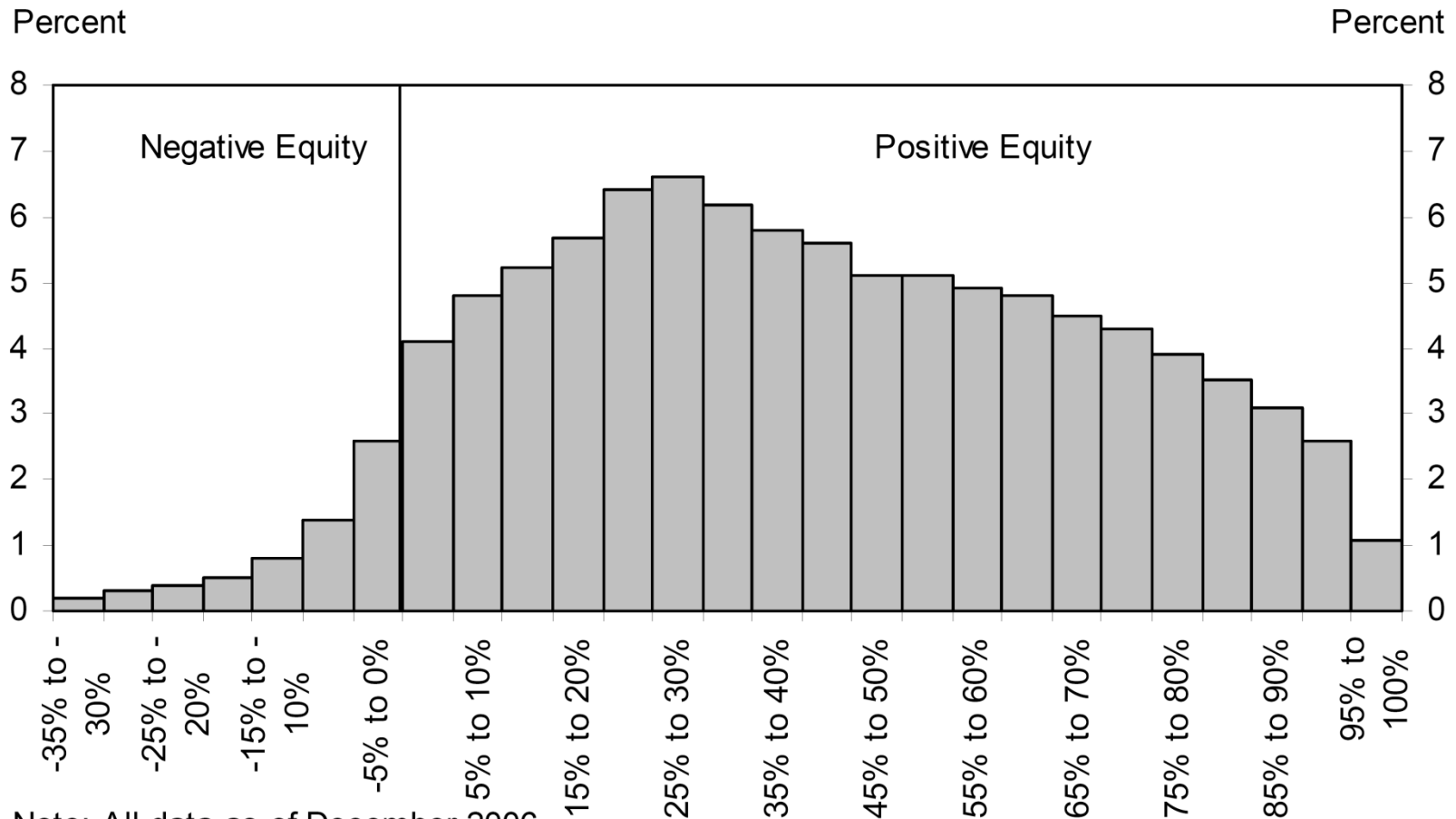
Exhibit 2.12 ABX Indices (AAA rated vintages)



Source: Goldman Sachs.

# Arising from Declining House Prices

Exhibit 3.1 Falling Prices Leave Homeowners with Negative Housing Equity

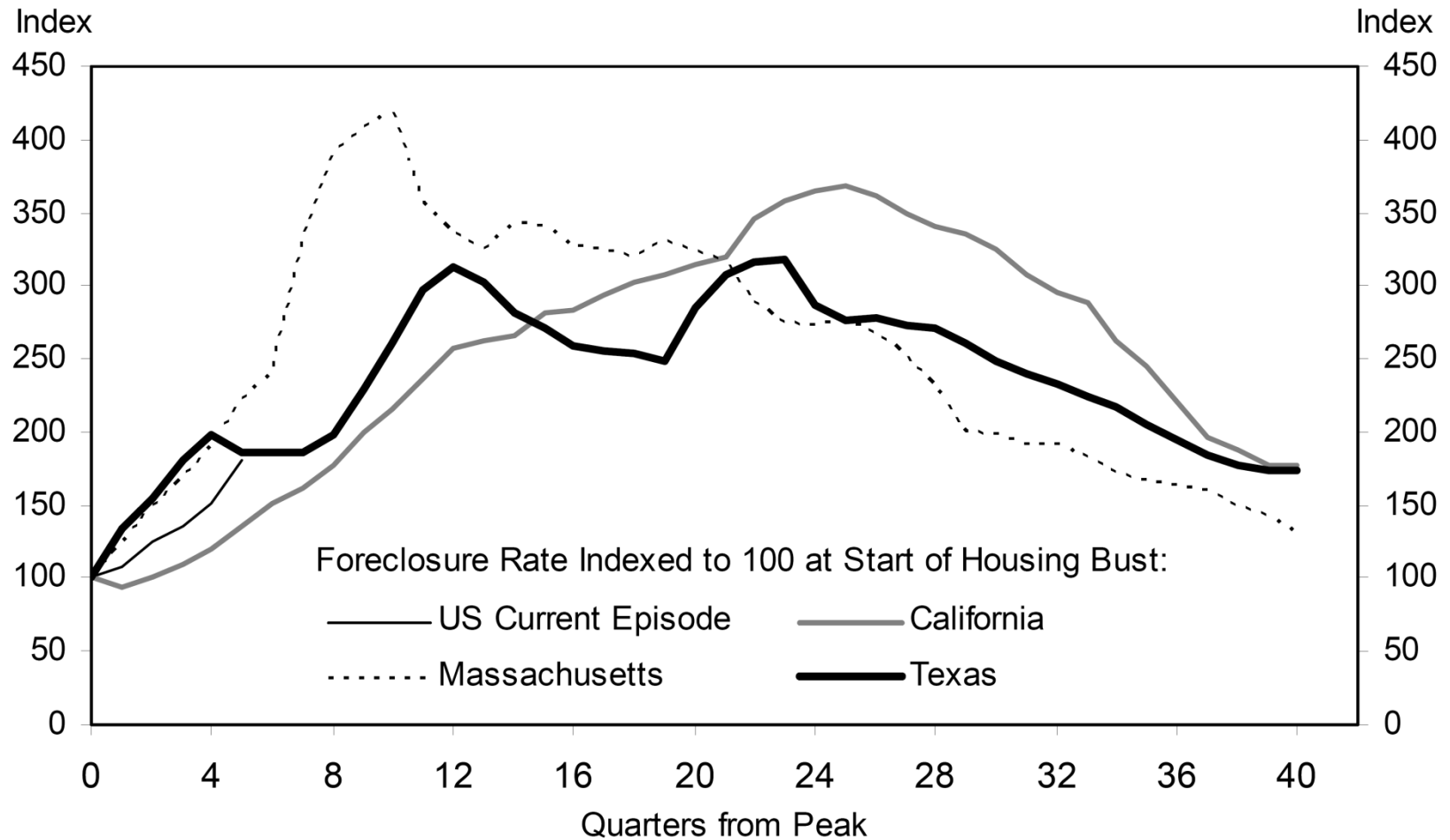


Note: All data as of December 2006.

Source: First American CoreLogic, Inc.

# Foreclosures and House Prices

Exhibit 3.6 Foreclosures Triple in the Housing Bust



Source: Mortgage Bankers Association.

# Real Estate Debt and Finance

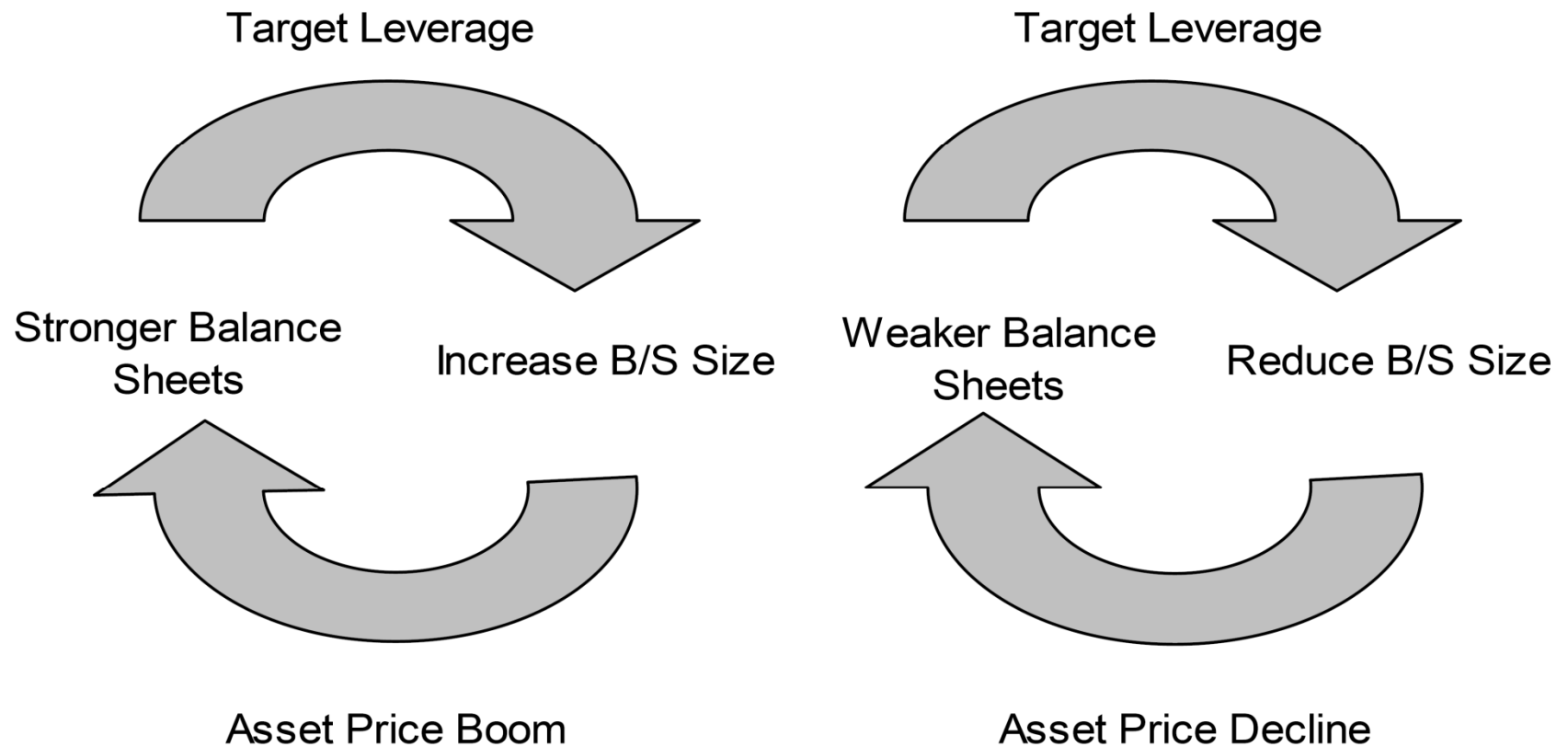
Exhibit 3.7: Home Mortgage Exposures of US Leveraged Institutions

<b>Home Mortgage Debt</b>	<b>Billion (\$)</b>
<b>Total</b>	<b>11,028</b>
<b>US Leveraged Institutions</b>	<b>5,591</b>
<b>Commercial banks</b>	<b>2,881</b>
Direct	1,935
RMBS	946
<b>Savings Institutions</b>	<b>1,148</b>
Direct	895
RMBS	253
<b>Credit Unions</b>	<b>361</b>
Direct	300
RMBS (estimate)	61
<b>Brokers and Dealers</b>	<b>213</b>
Direct	0
RMBS (estimate)	213
<b>Government-Sponsored Enterprises</b>	<b>987</b>
Direct	457
RMBS (estimate)	530

Source: Federal Reserve Board. FDIC. Authors' calculations.

# Positive Feedback Loops

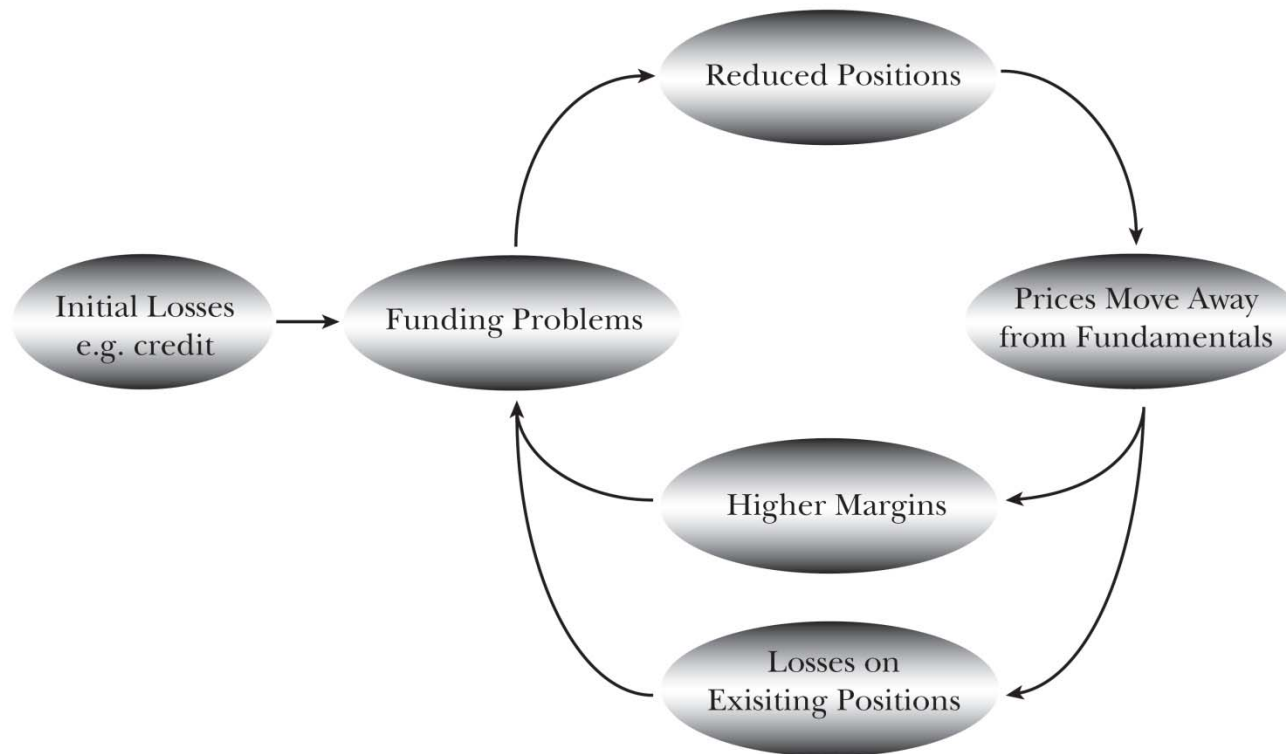
Exhibit 4.3 The Leverage Circle



# Additional Channel

*Figure 4*

**The Two Liquidity Spirals: Loss Spiral and Margin Spiral**



*Source:* Brunnermeier and Pedersen (forthcoming).

*Note:* Funding problems force leveraged investors to unwind their positions causing 1) more losses and 2) higher margins and haircuts, which in turn exacerbate the funding problems and so on.

# Leverage

Exhibit 4.5 Leverage of Various Financial Institutions

	<b>Assets (\$bn)</b>	<b>Liabilities (\$bn)</b>	<b>Capital (\$bn)</b>	<b>Leverage</b>
<b>Commercial banks</b>	10793	9693	1100	9.8
<b>Savings Inst</b>	1914	1687	227	8.4
<b>Credit Unions</b>	748	659	89	8.4
<b>Brokers/hedge funds</b>	5397	5226	171	31.6
<b>GSEs</b>	1633	1567	66	24.7
<b>Leveraged Sector</b>	<b>20485</b>	<b>18804</b>	<b>1681</b>	<b>12.2</b>

Source: Authors' calculations based on Flow of Funds, FDIC Statistics on Banking, Adrian and Shin (2007), and balance sheet data for Fannie Mae, Freddie Mac, and broker-dealers under Goldman Sachs equity analysts' coverage.

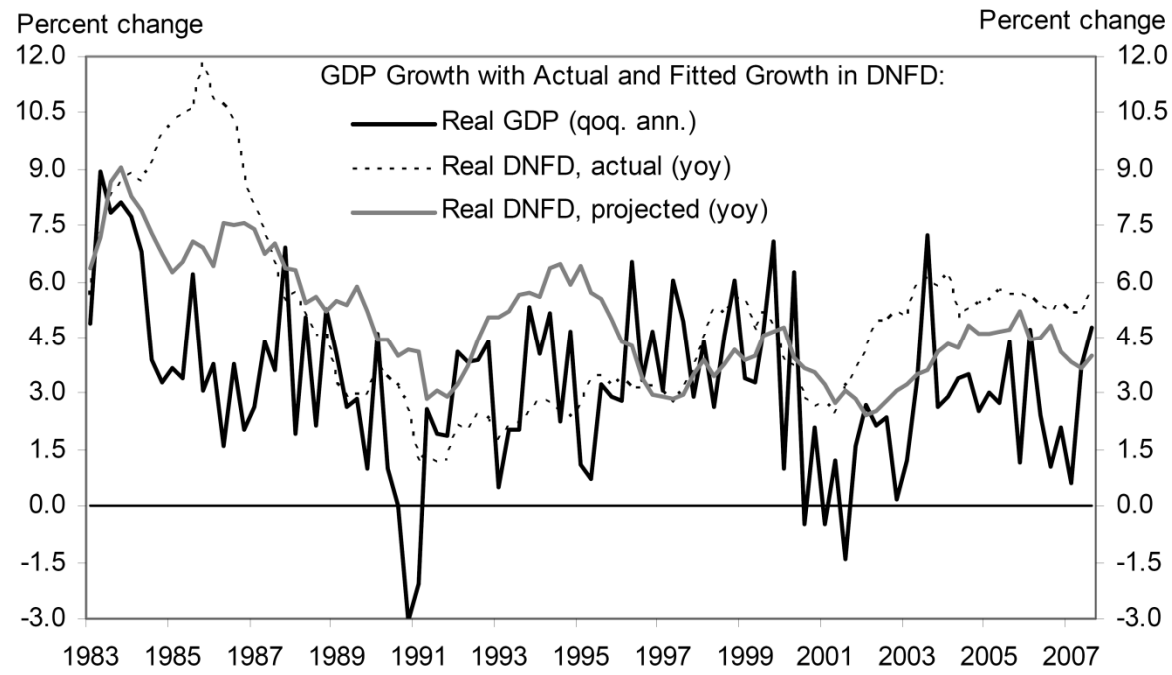


## Exhibit 5.2 Instrumental Variable Estimates of GDP Growth and DNFD

### Dependent Variable Quarterly GDP Growth (at an annual rate)

Independent Variable	Coefficient	Standard Error	T-Statistic
Constant	0.904	0.590	1.530
GDP Growth <sub>t-1</sub>	0.247	0.118	2.100
GDP Growth <sub>t-2</sub>	0.242	0.111	2.190
GDP Growth <sub>t-3</sub>	-0.264	0.110	-2.410
4 quarter DNFD Growth <sub>t-1</sub>	0.338	0.176	1.920

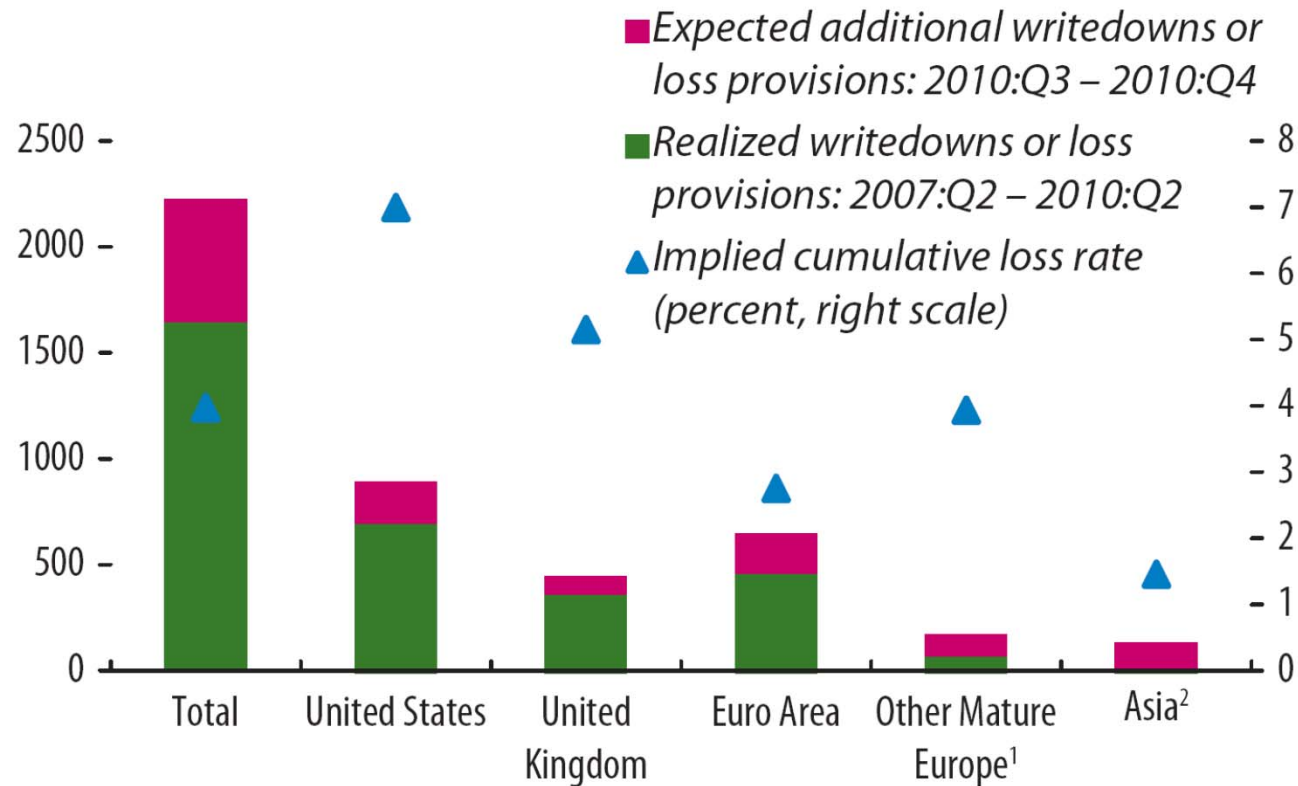
Exhibit 5.3 GDP Growth with Actual and Fitted Growth in DNFD



Source: Department of Commerce. Authors' calculations.

# Losses to Financial System

**Figure 1.12. Bank Writedowns or Loss Provisions by Region**  
*(In billions of U.S. dollars unless indicated)*



Source: IMF staff estimates.

<sup>1</sup>Includes Denmark, Iceland, Norway, Sweden, and Switzerland.

<sup>2</sup>Includes Australia, Hong Kong SAR, Japan, New Zealand, and Singapore.