

Economics 435

The Financial System

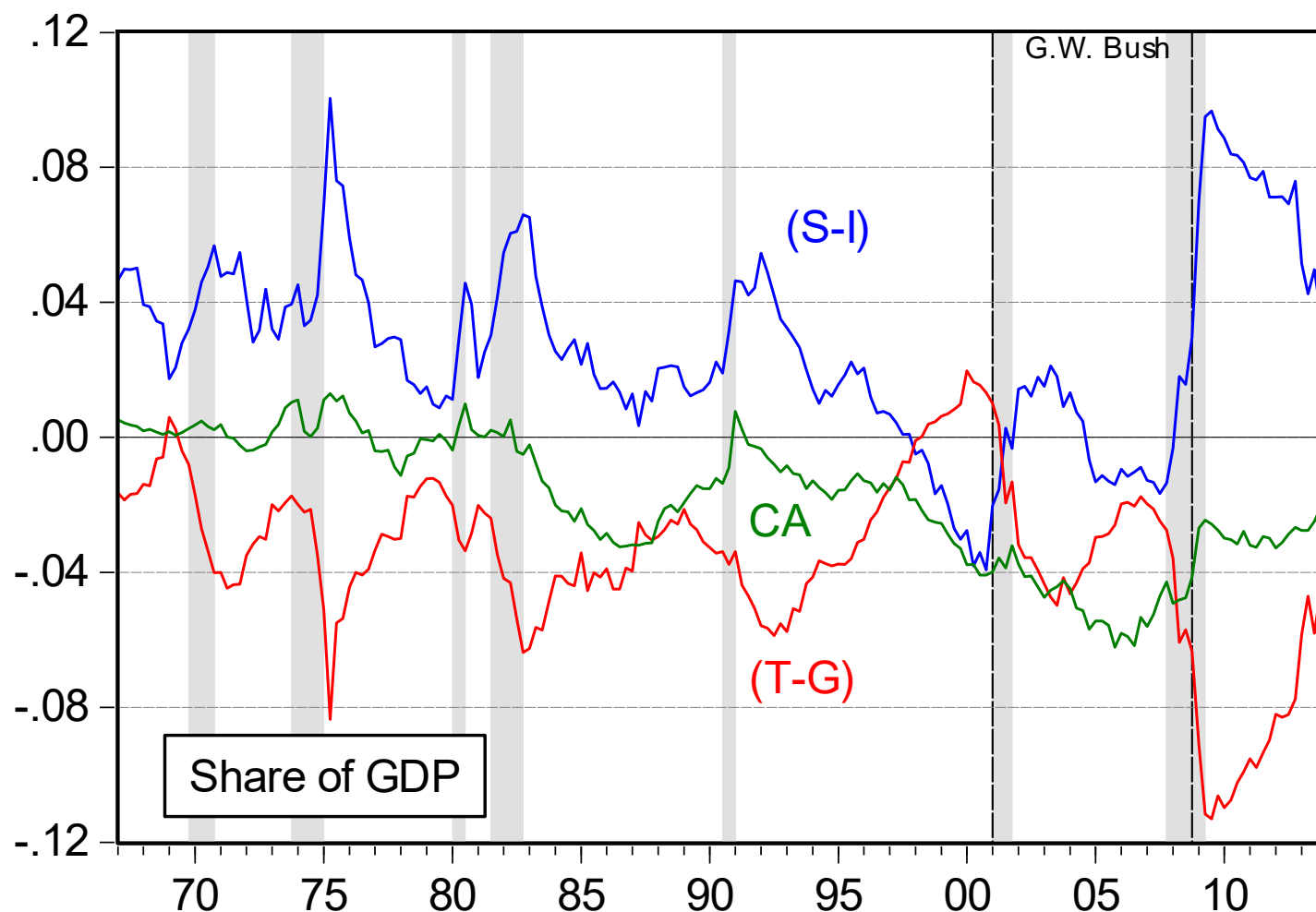
(12/7/2016)

Instructor: Prof. Menzie Chinn
UW Madison
Fall 2016

An interpretation of the 2000's

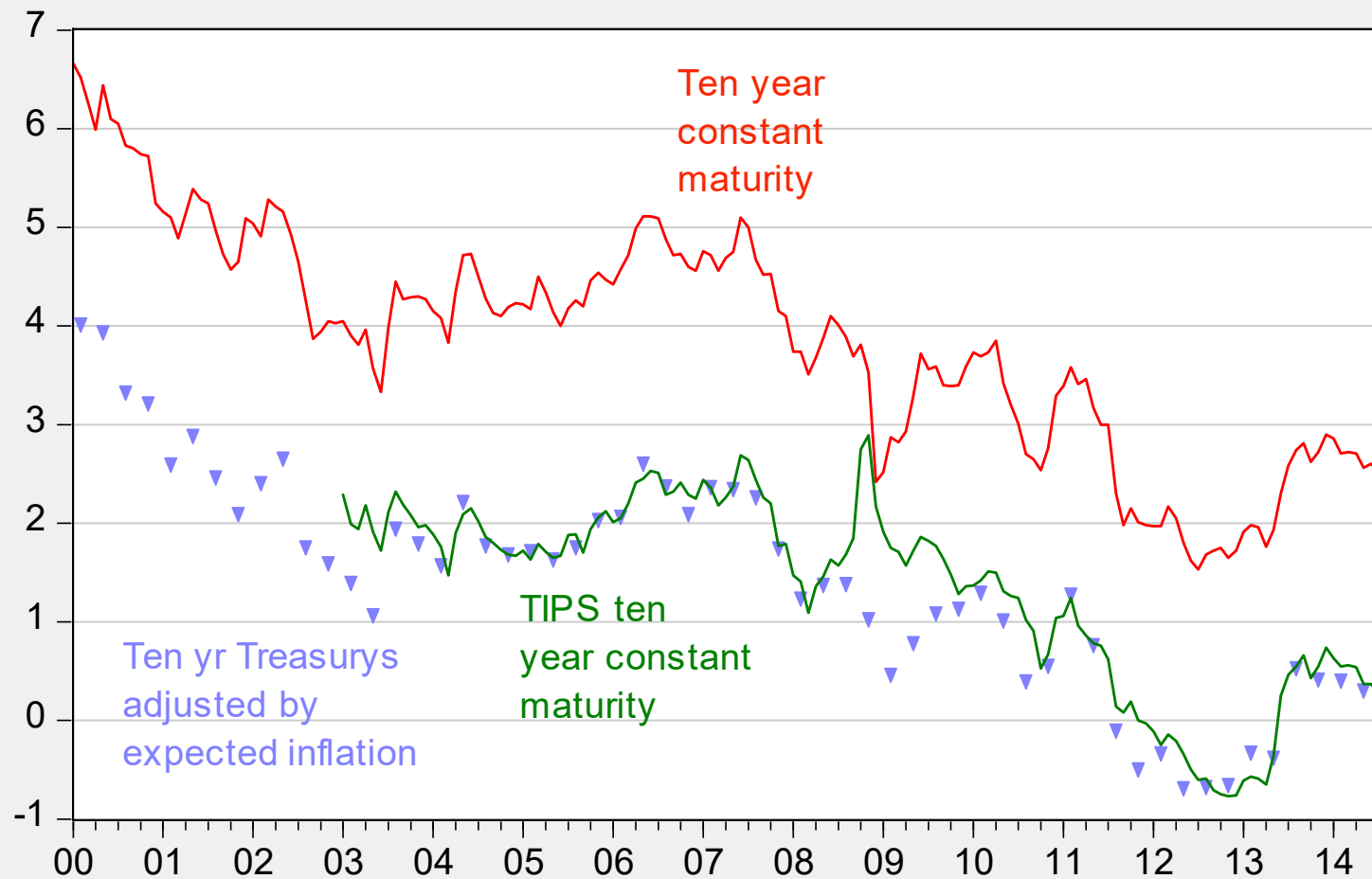
- Conventional capital flow cycle
- Excess saving abroad
- Low interest rates induce borrowing
- Borrowing by sovereign due to tax cuts, “global war on terror”
- Deregulation/non-regulation of the financial sector (incl. shadow banking system)
- Interaction with the tax system

Government and national borrowing



Note: Budget balance is net lending. Source: BEA

Real interest rates

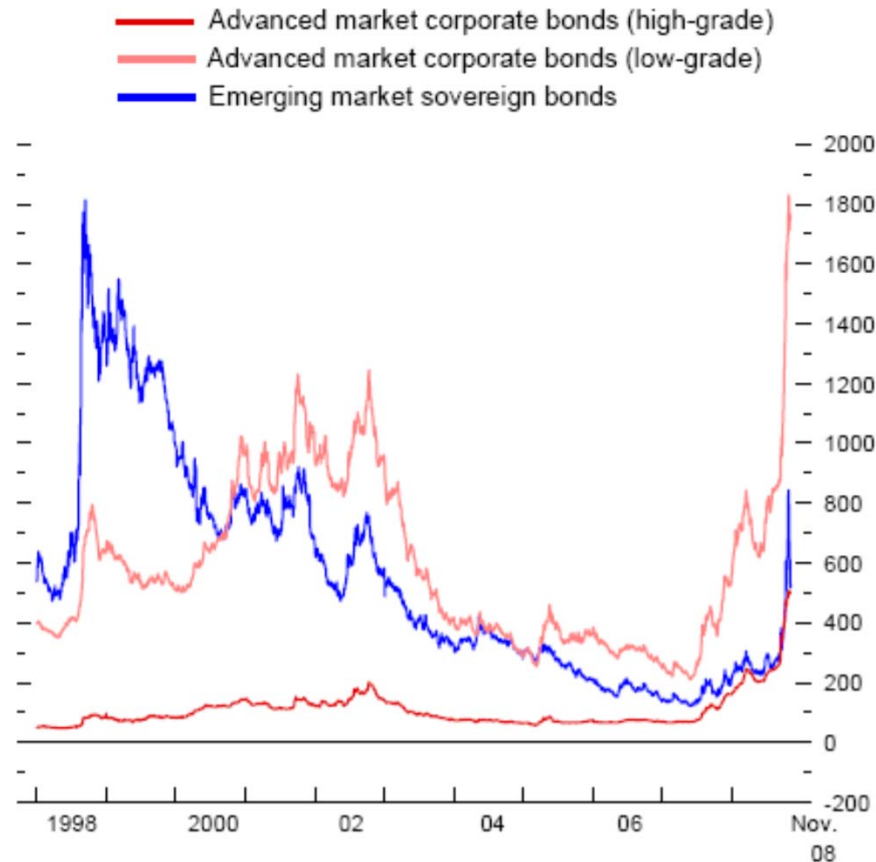


Source: Federal Reserve Board, Philadelphia Fed *SPF*

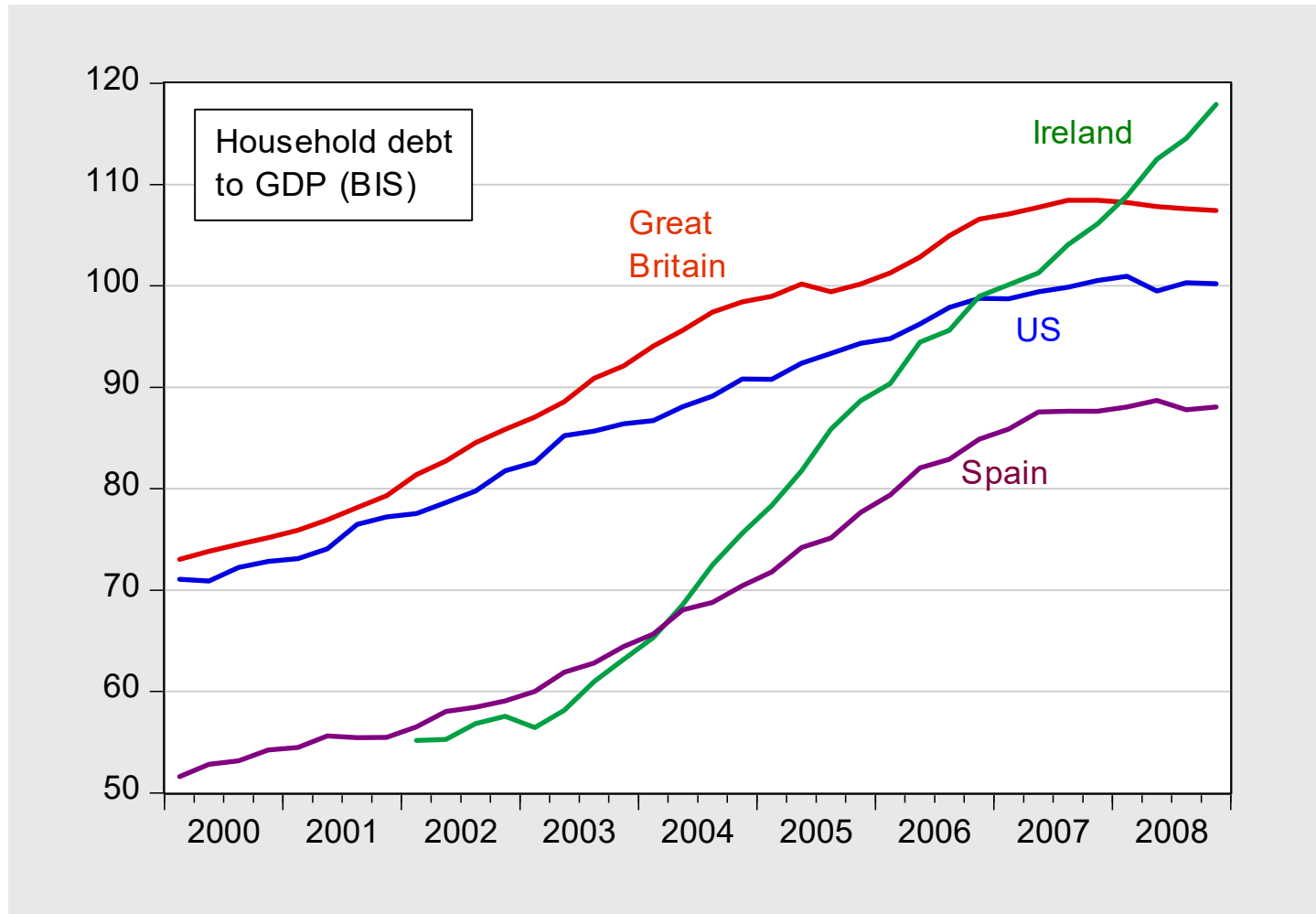
The “Disappearance” of Risk

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

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

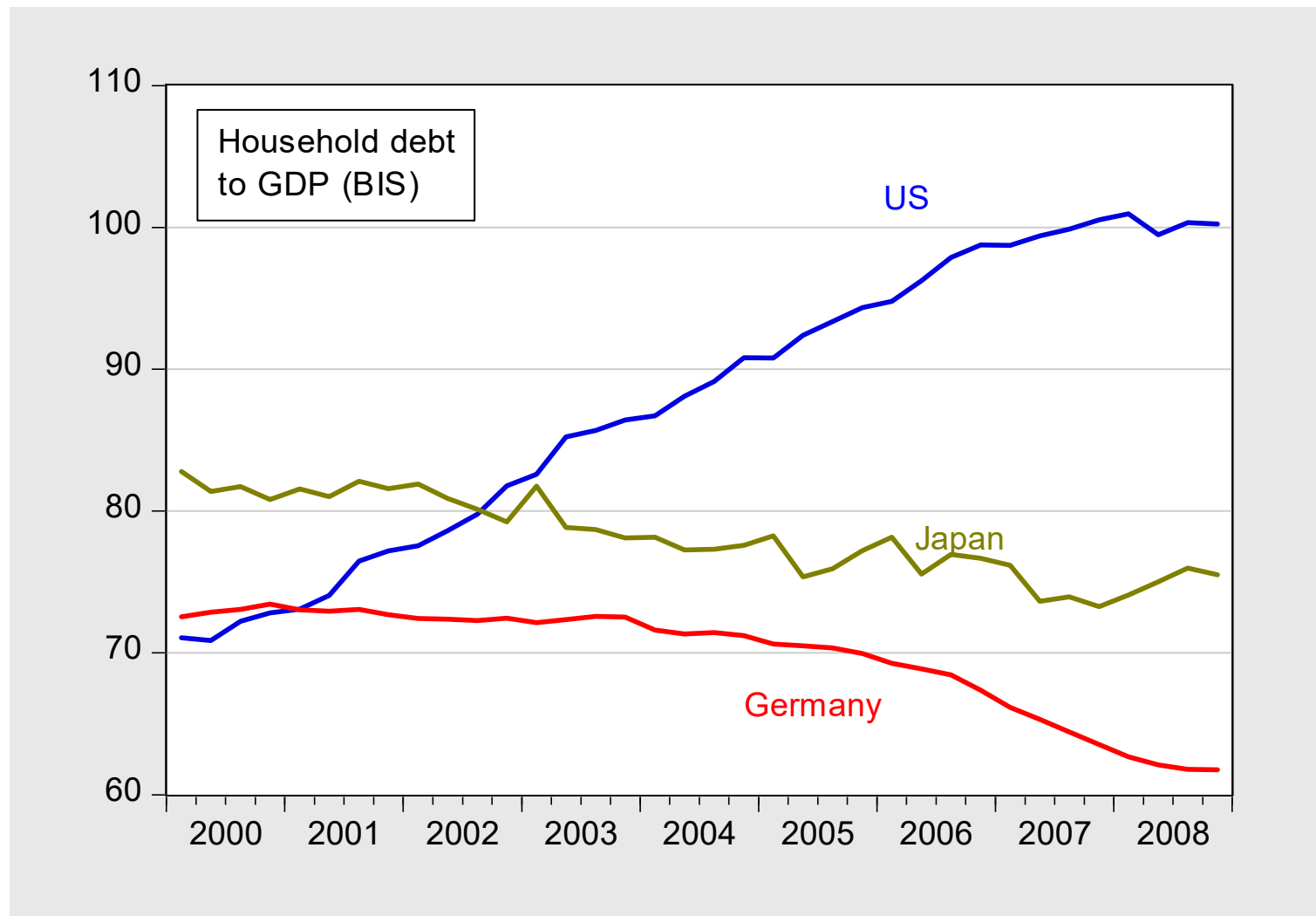


Household debt (I)



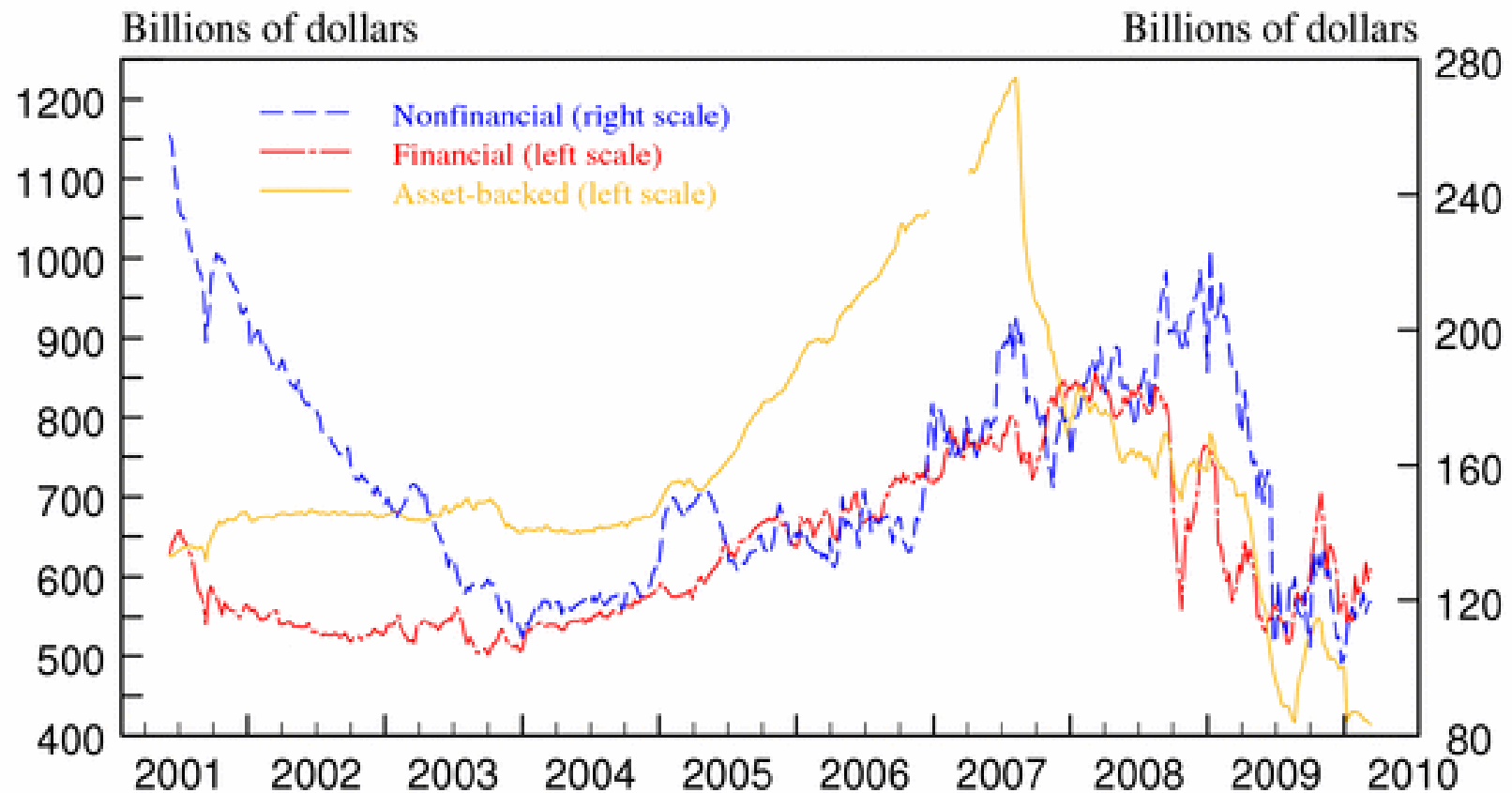
Source: BIS, *Annual Report* (2011)

Household debt (II)



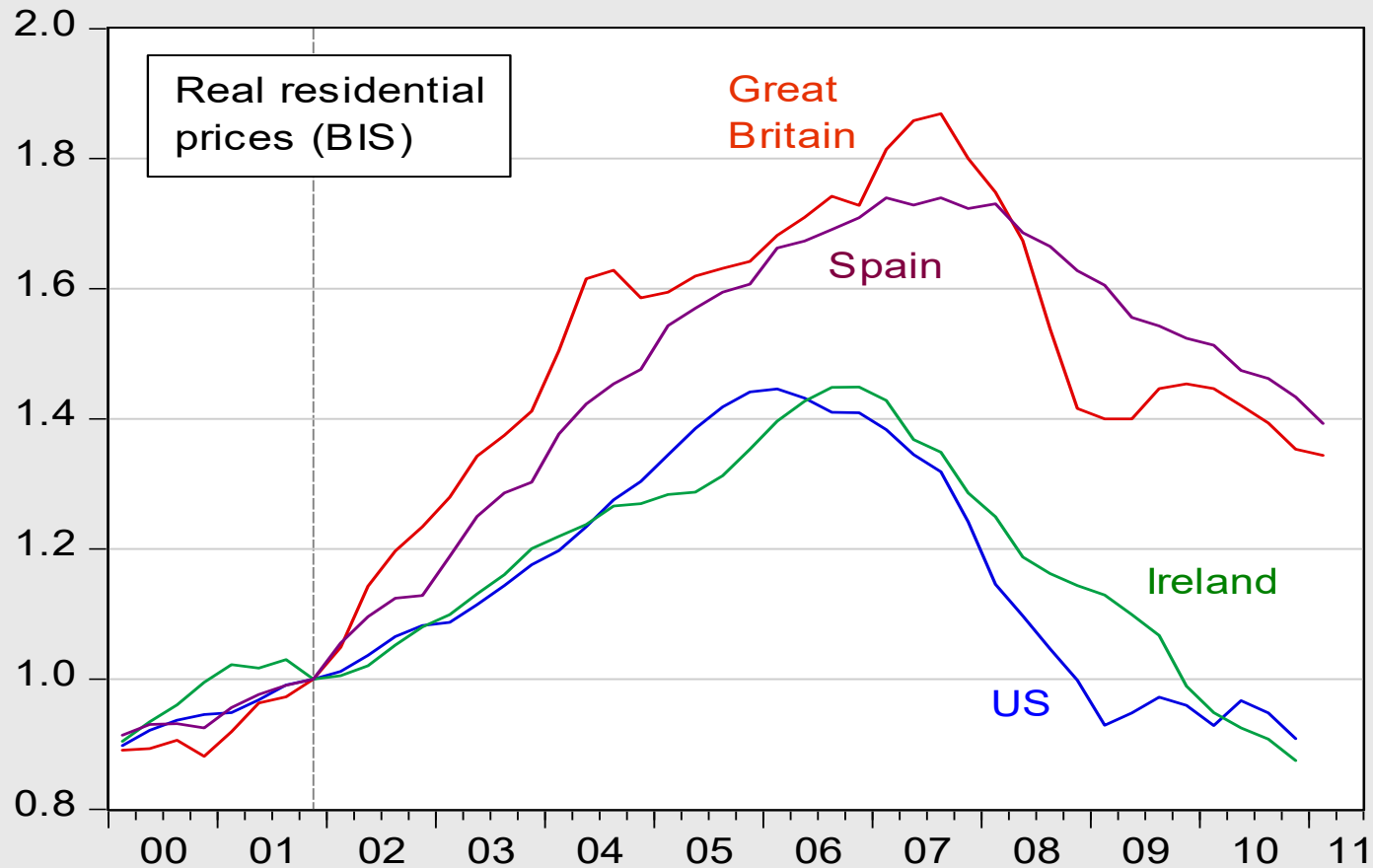
Source: BIS, *Annual Report* (2011)

Lending in the shadow system booms



Source: Federal Reserve Board

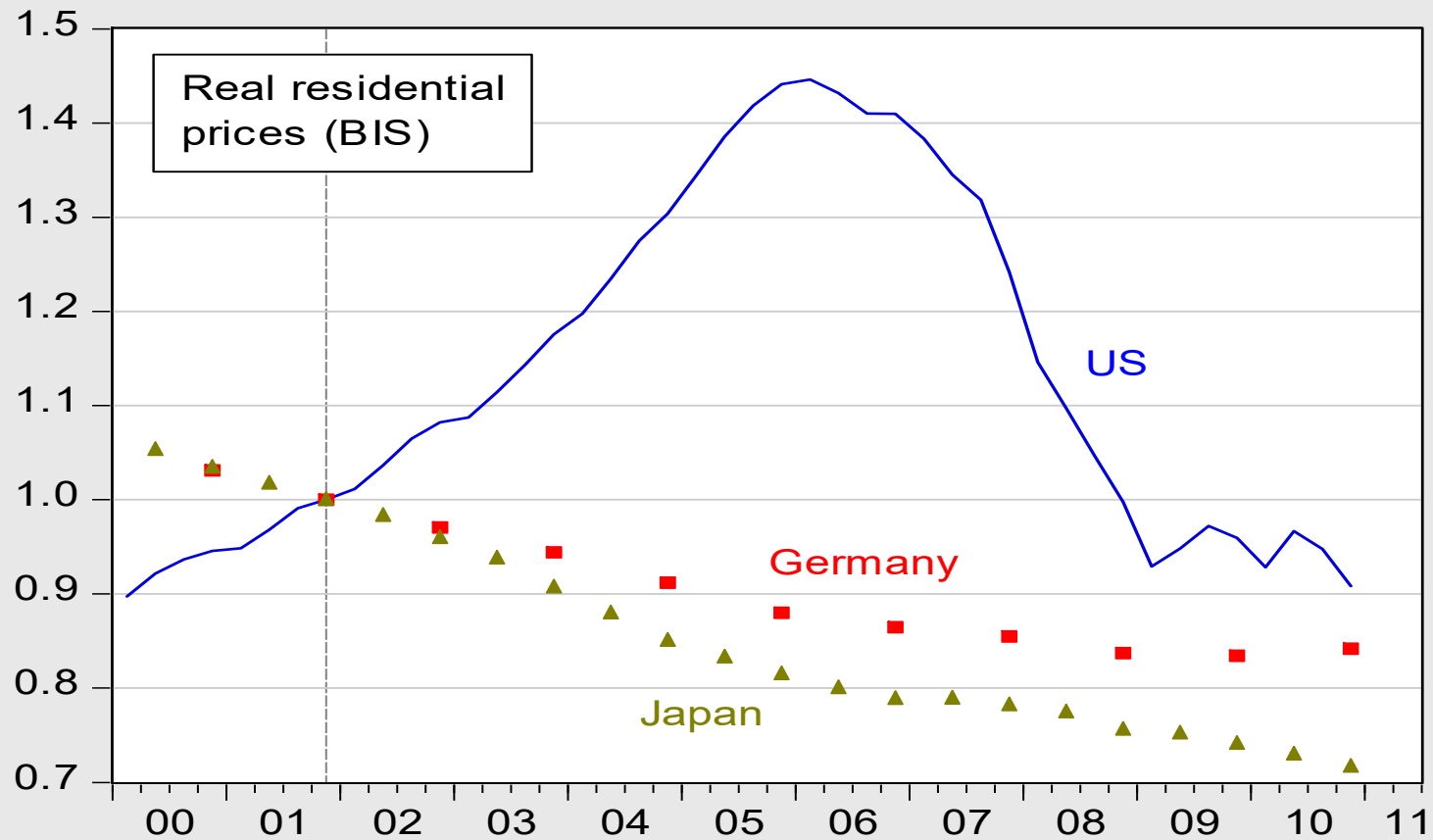
Housing boom (I)



Note: Rescaled to 2001Q4=1.

Source: BIS, Annual Report (2011)

Housing boom (II)

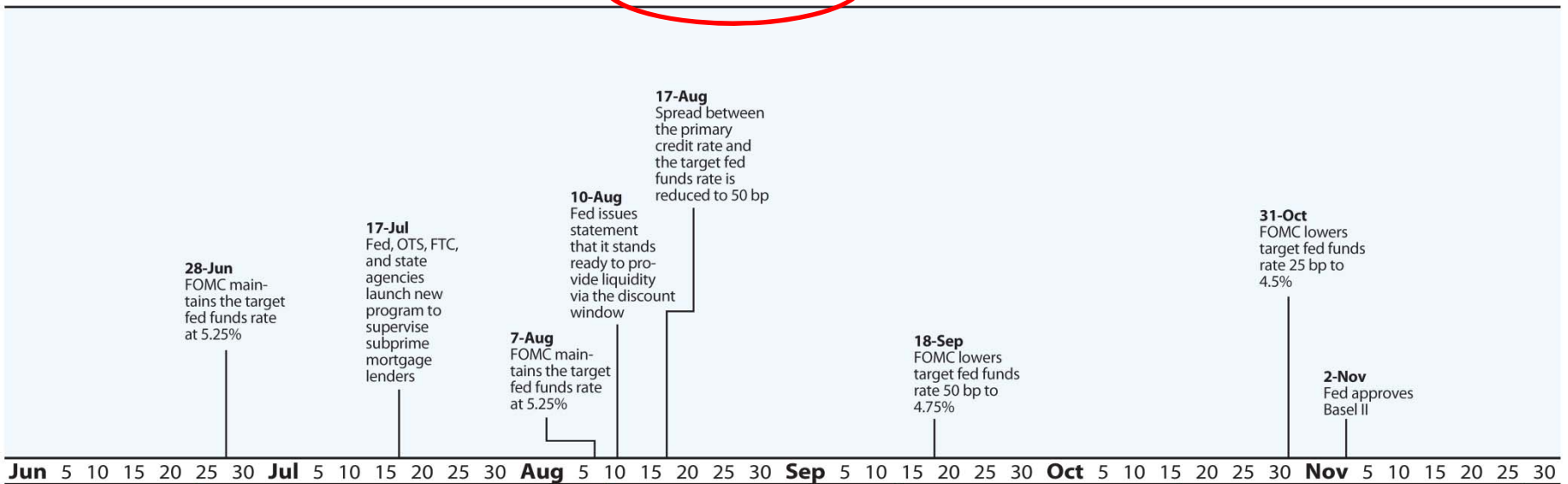


Note: Rescaled to 2001Q4=1.

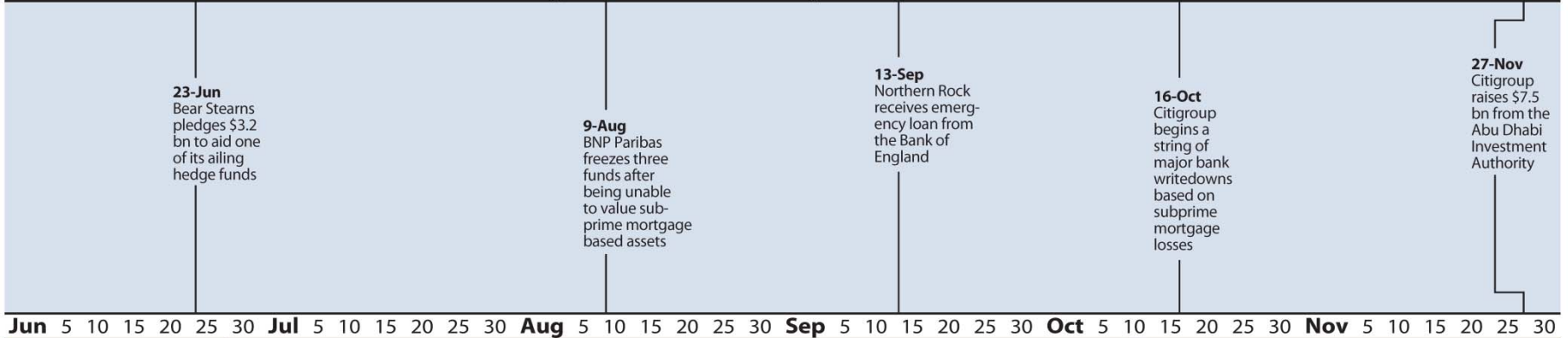
Source: BIS, Annual Report (2011)

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

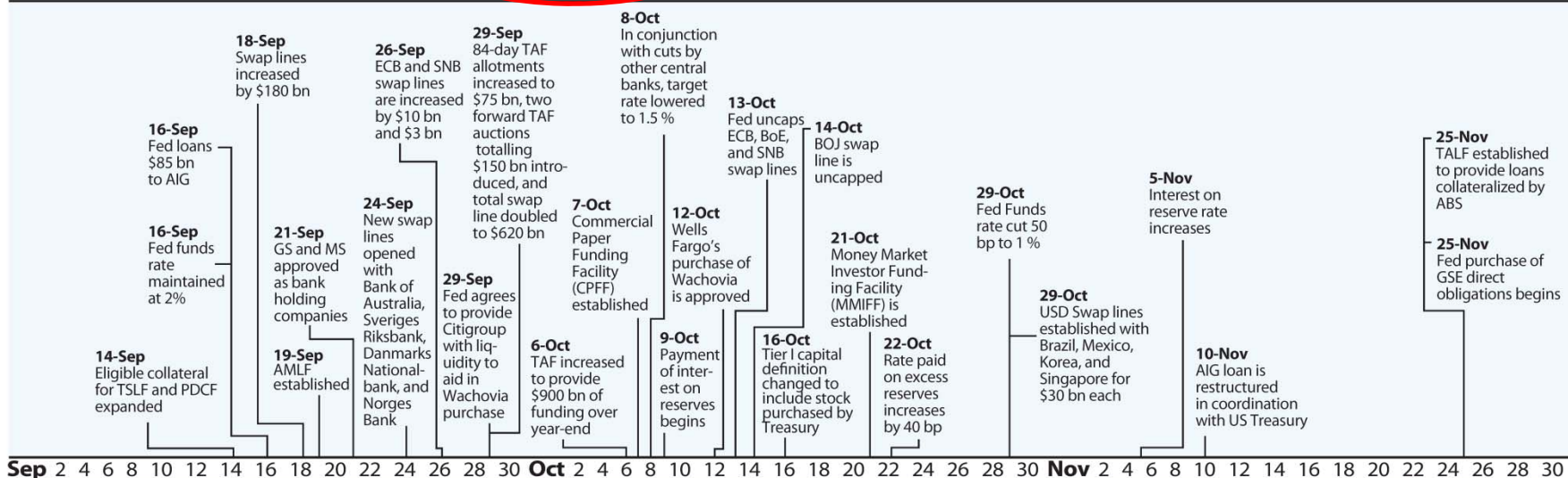


Other Policy Actions

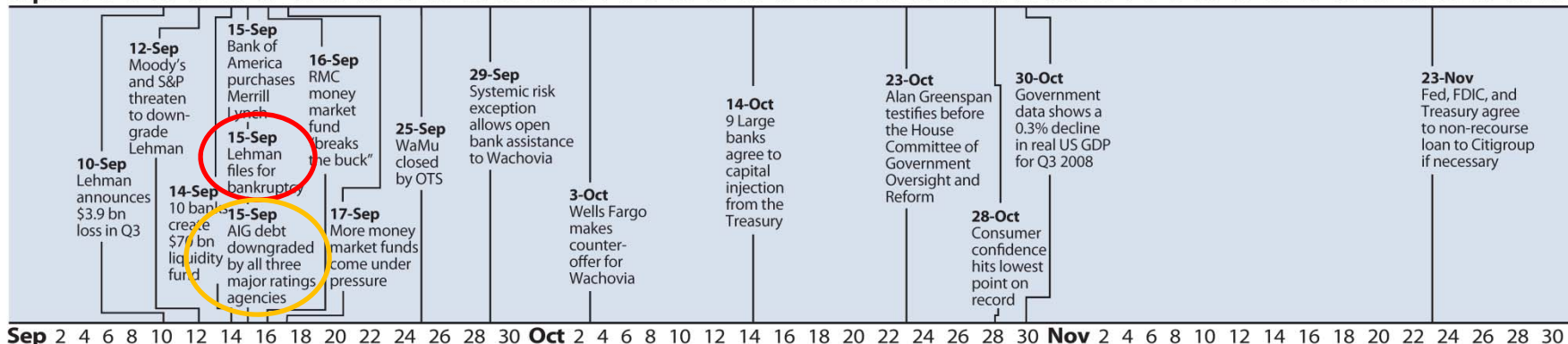


Financial Turmoil Timeline (September 2008 - November 2008)

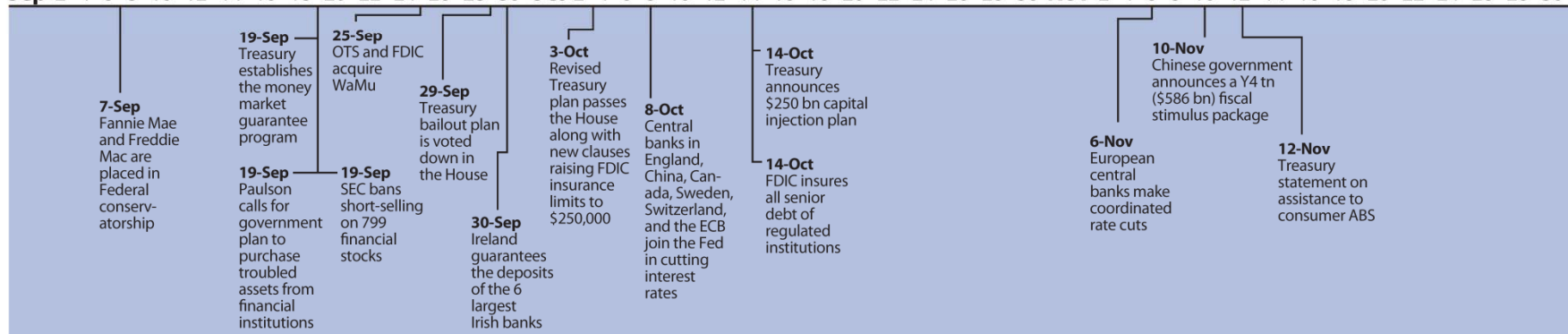
Fed Policy Actions



Market Events

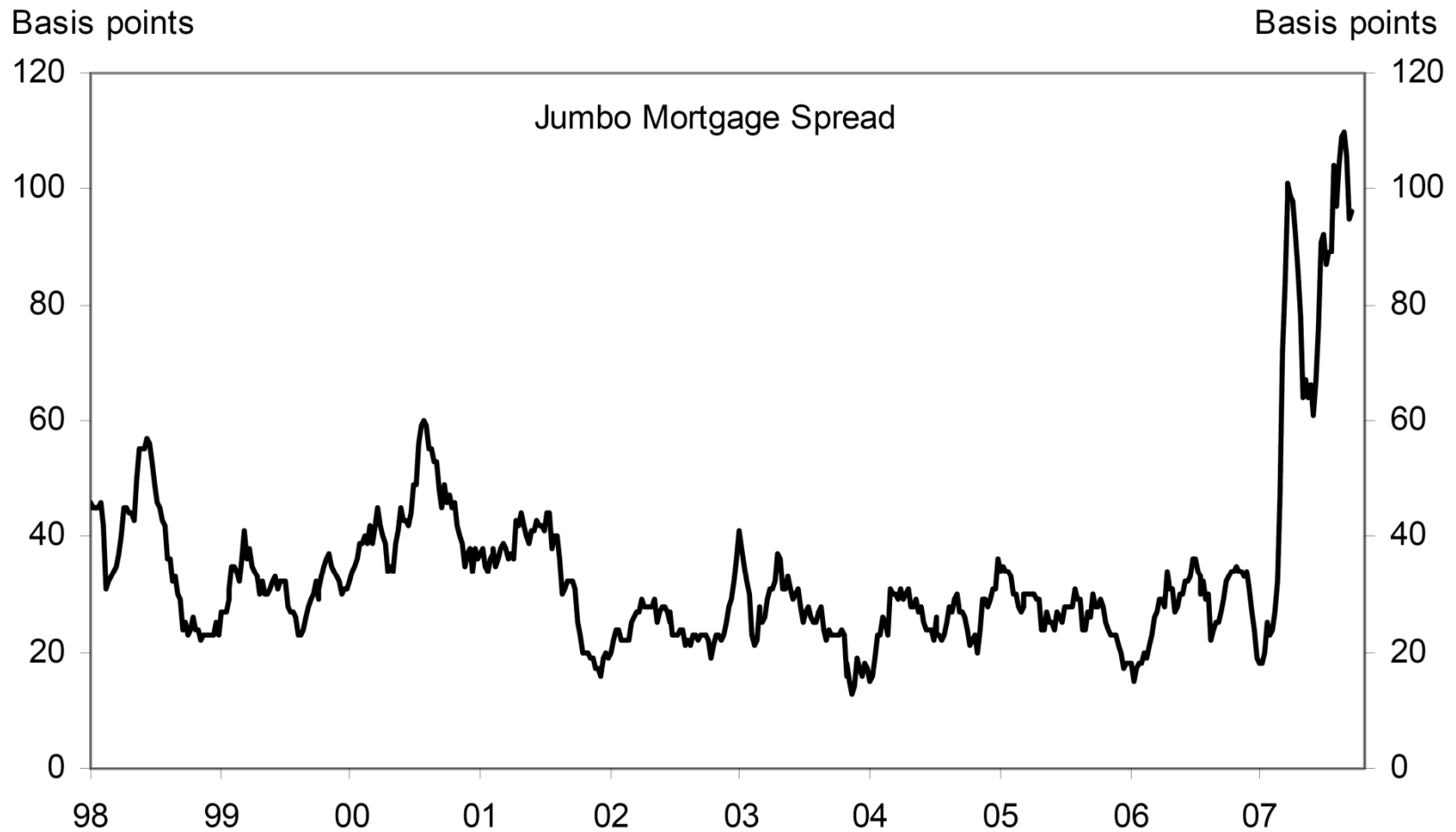


Other Policy Actions



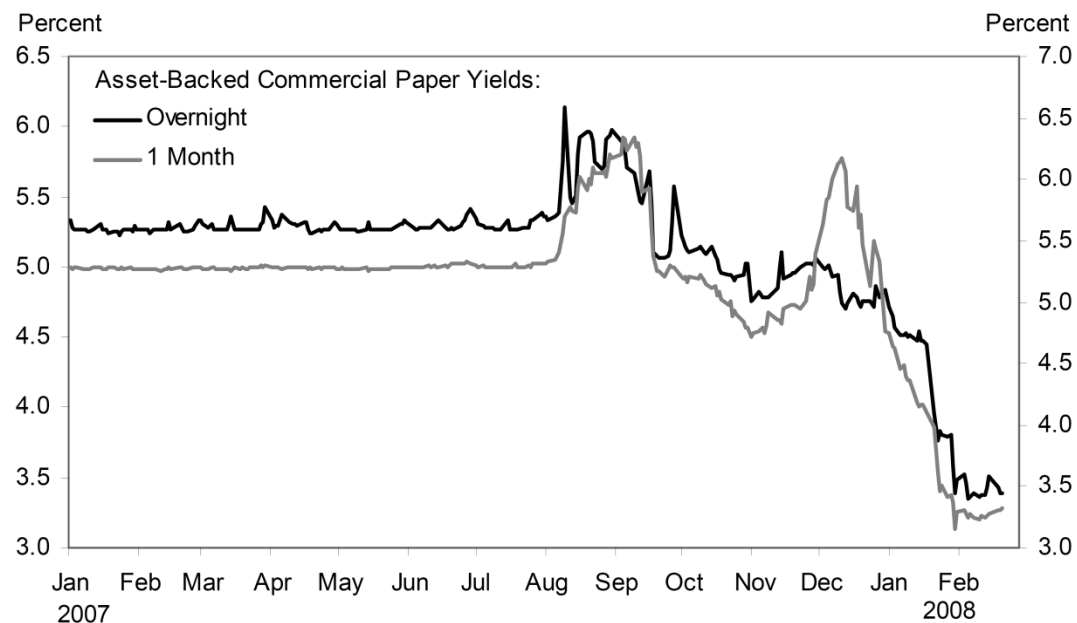
Spreads Rise

Exhibit 2.2 Jumbo Mortgage Spread



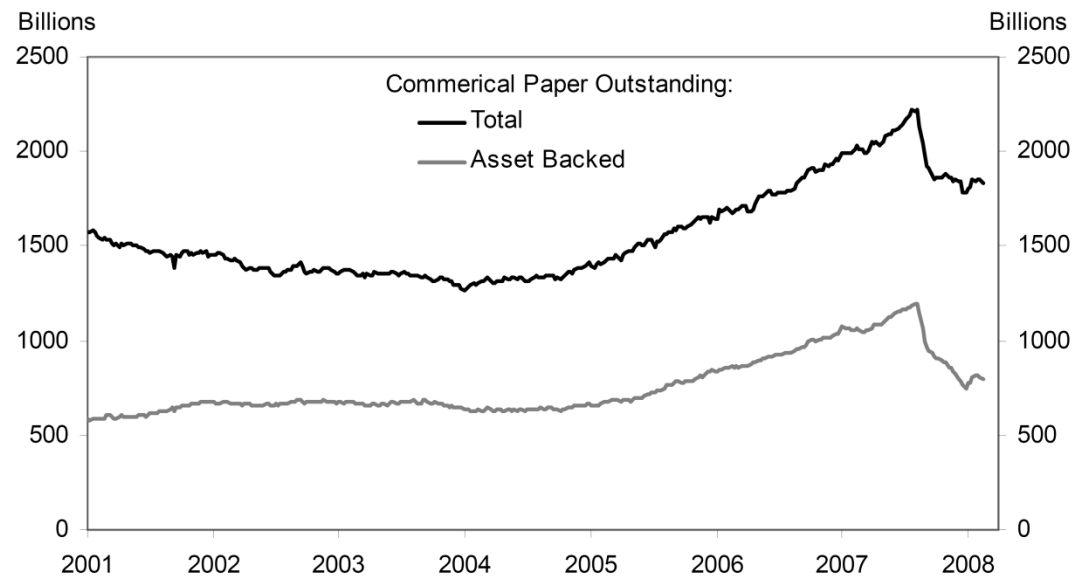
Source: BankRate.com.

Exhibit 2.3 Asset-Backed Commercial Paper (ABCP) Yields



Source: Federal Reserve Board.

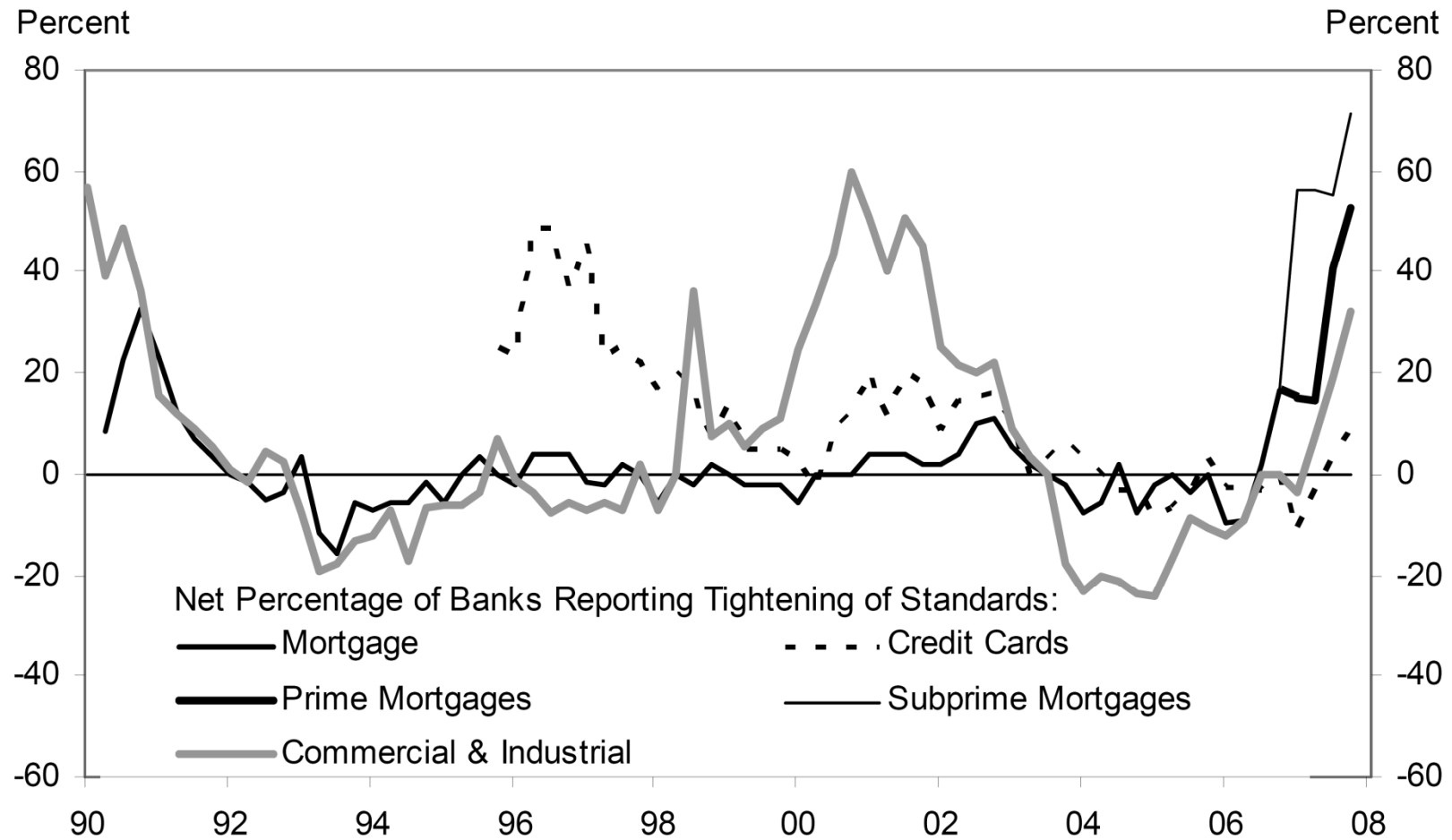
Exhibit 2.4 Commercial Paper Outstanding



Source: Federal Reserve Board.

Credit Tightening

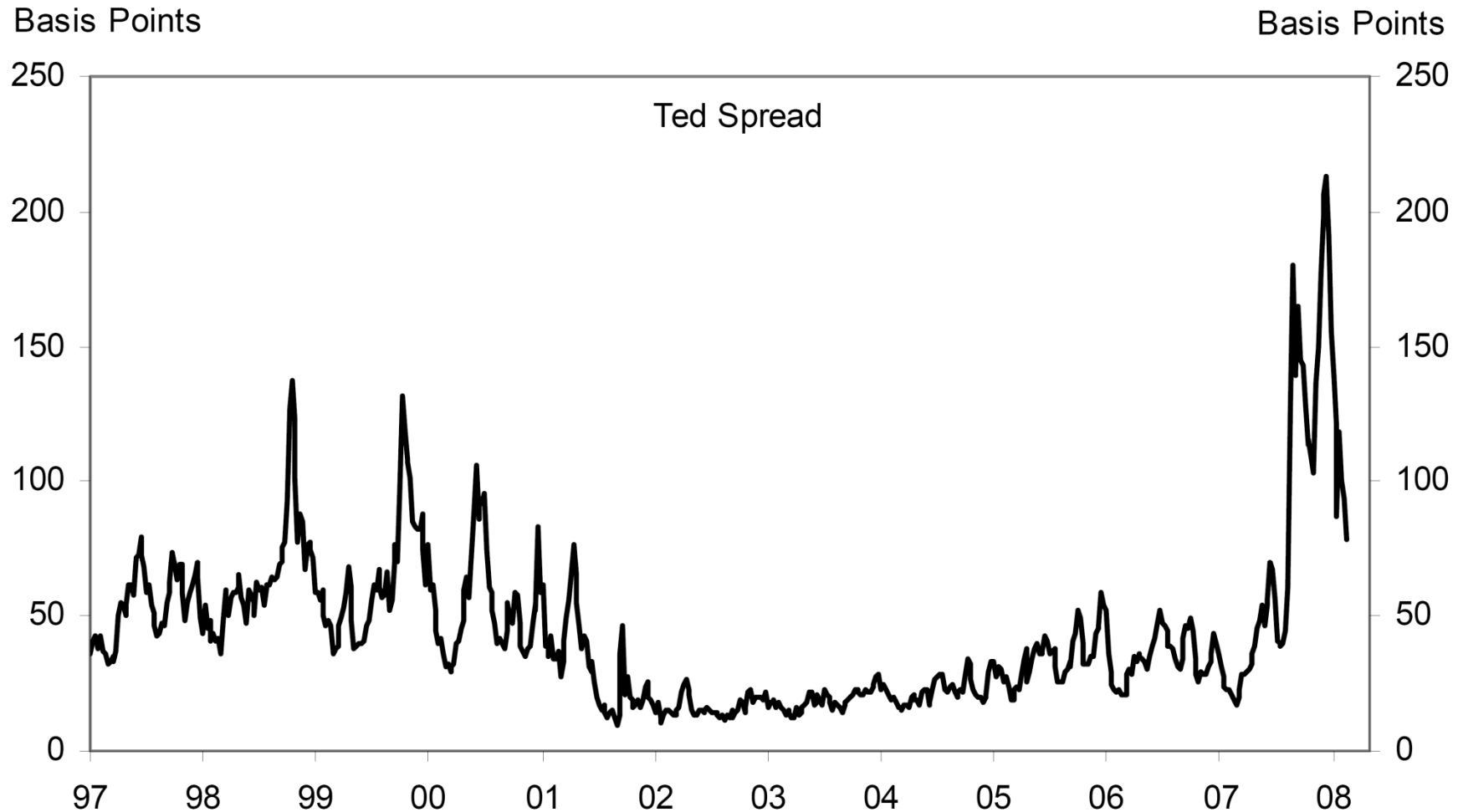
Exhibit 2.5 Senior Loan Officer Survey



Source: Federal Reserve Board.

Trust Disappears

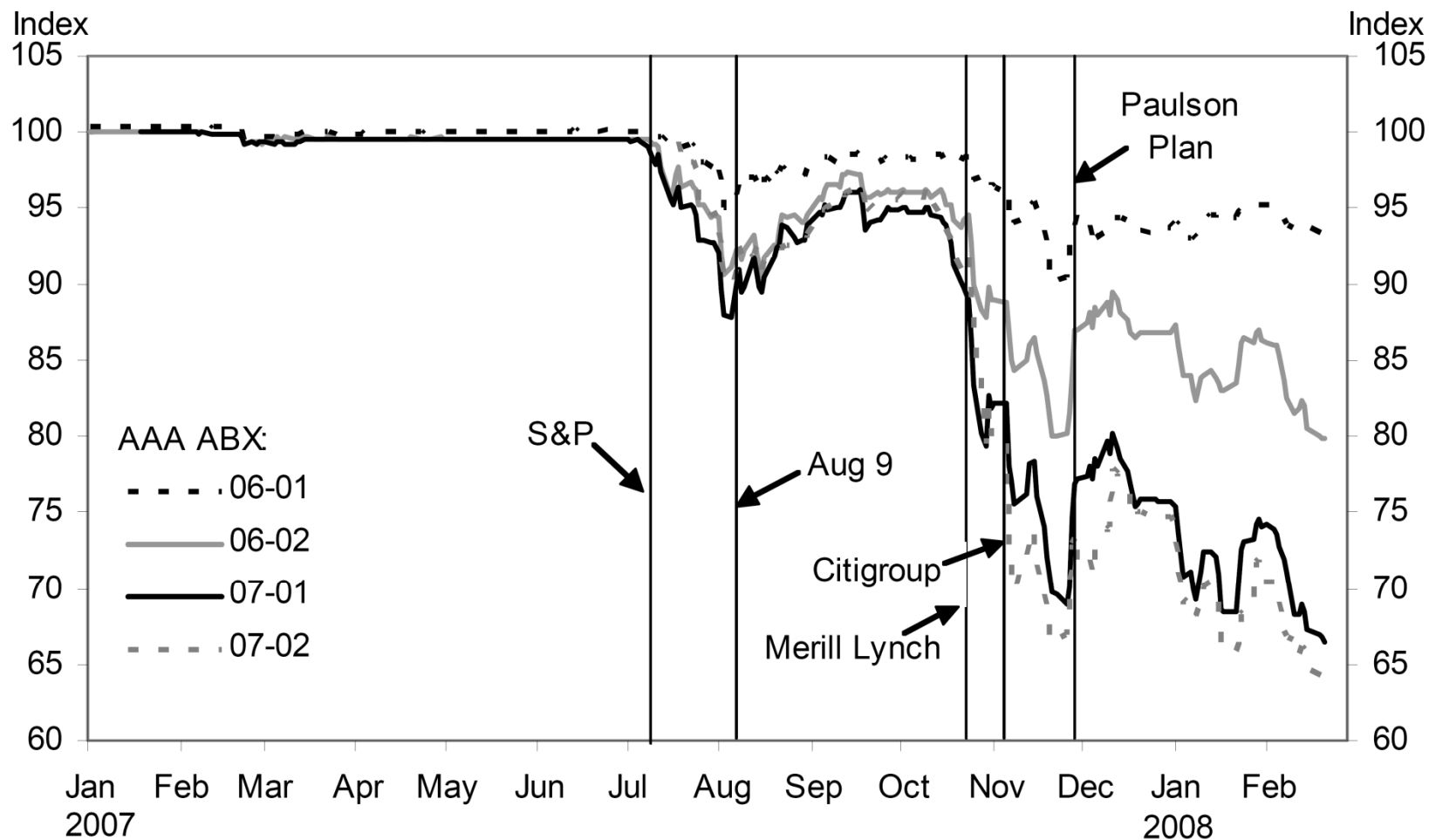
Exhibit 2.8 Treasury-Eurodollar (TED) Spread



Source: Financial Times. Federal Reserve Board.

Derivatives Downgrade

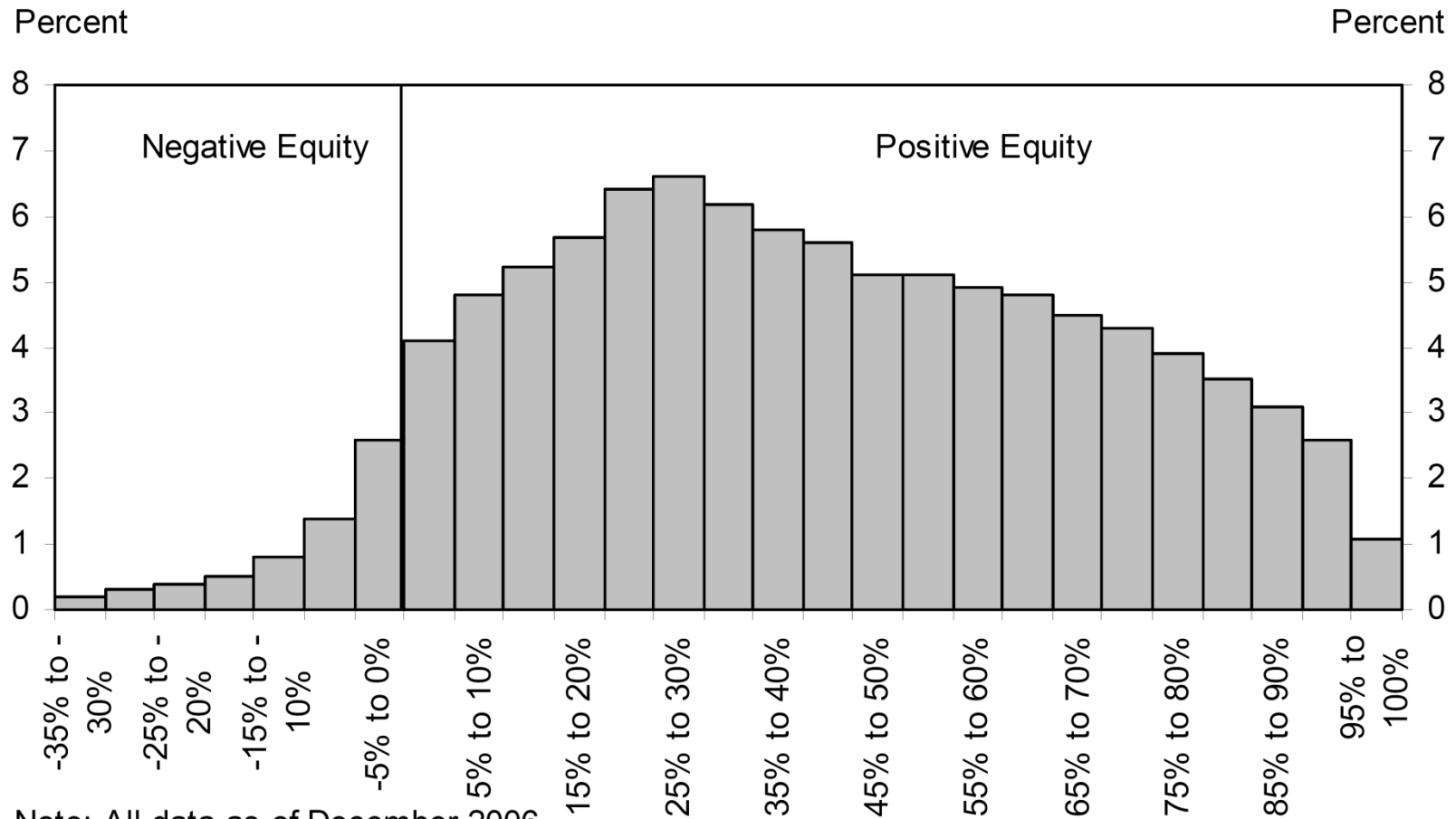
Exhibit 2.12 ABX Indices (AAA rated vintages)



Source: Goldman Sachs.

Arising from Declining House Prices

Exhibit 3.1 Falling Prices Leave Homeowners with Negative Housing Equity

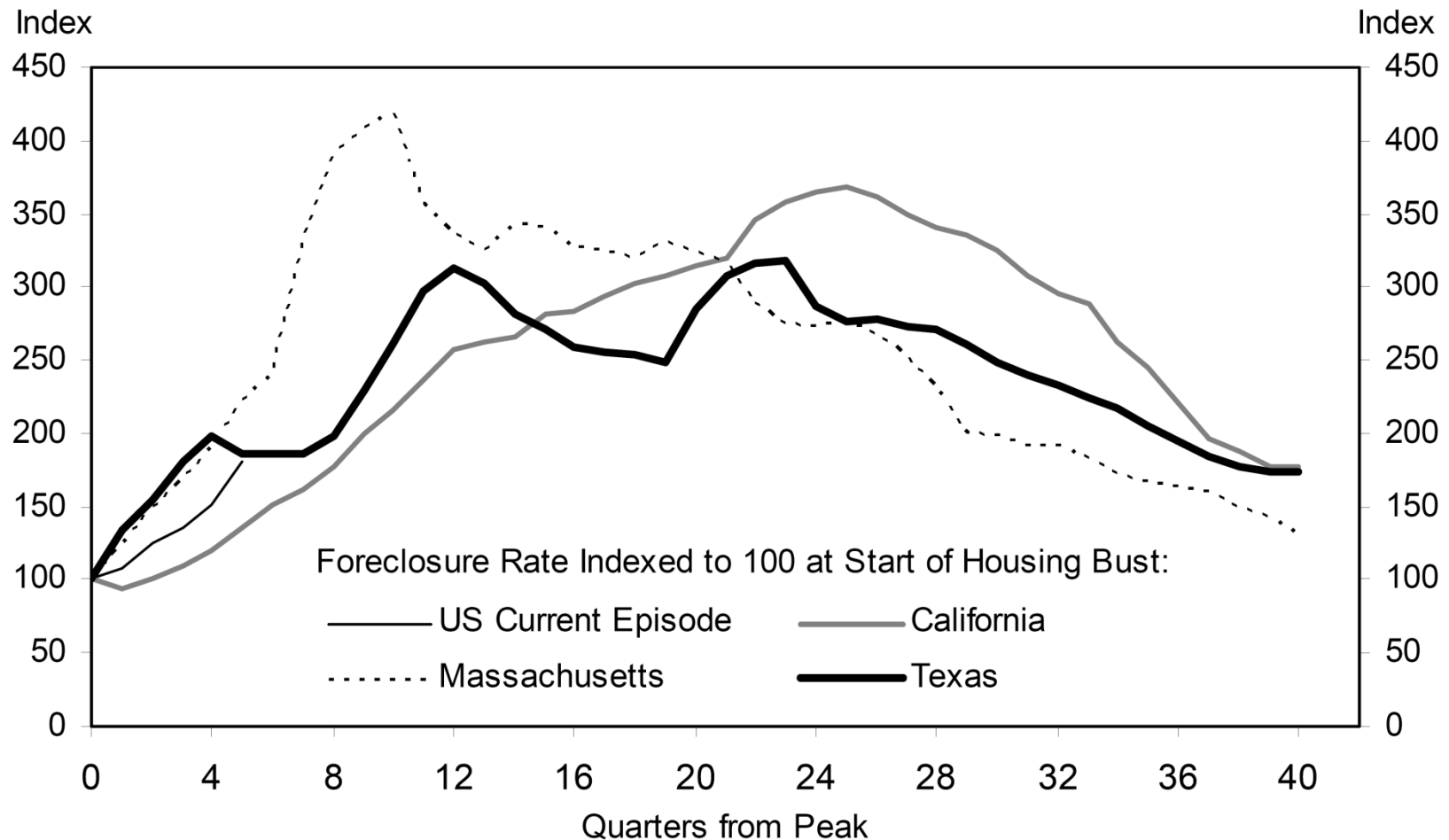


Note: All data as of December 2006.

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

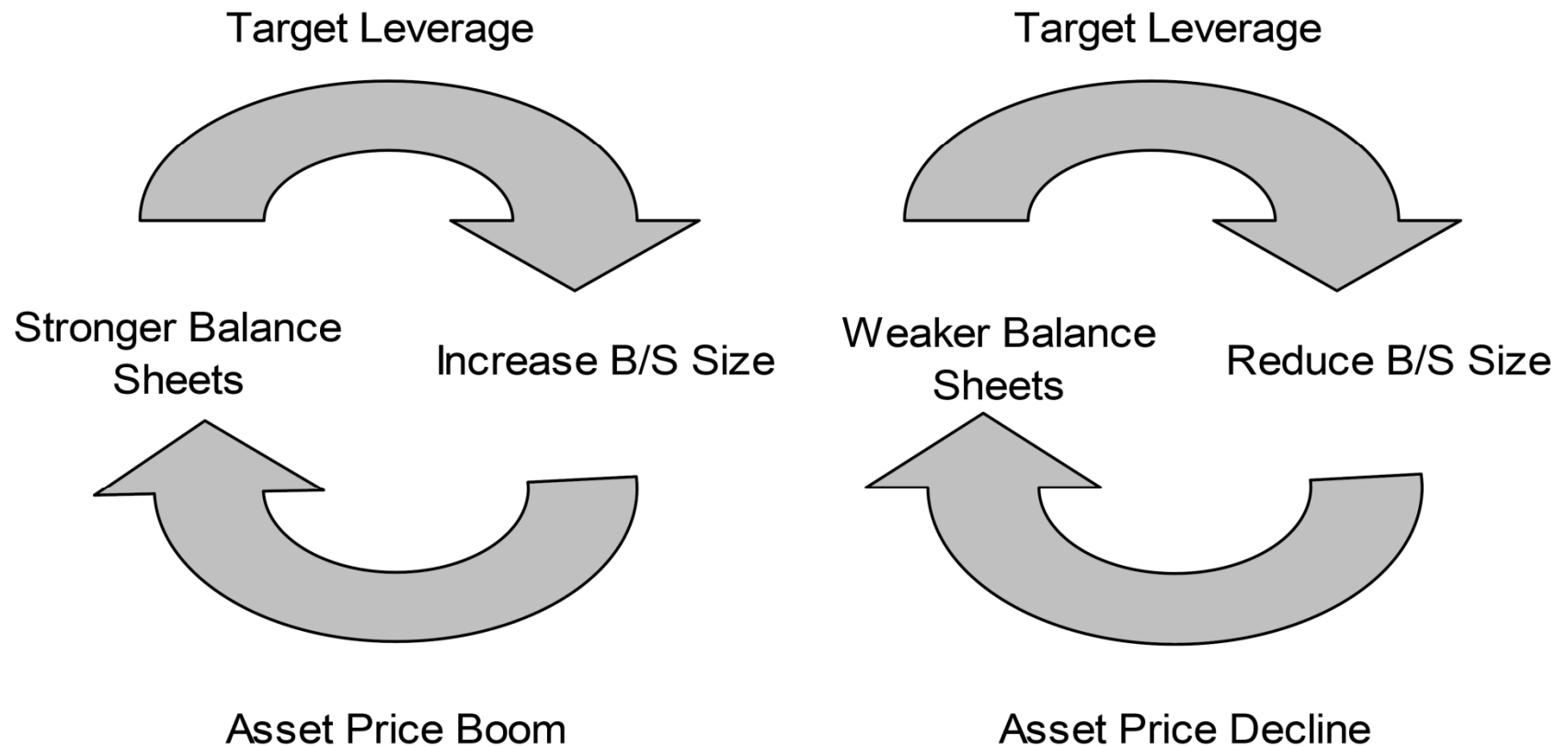
Exhibit 3.7: Home Mortgage Exposures of US Leveraged Institutions

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

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

Positive Feedback Loops

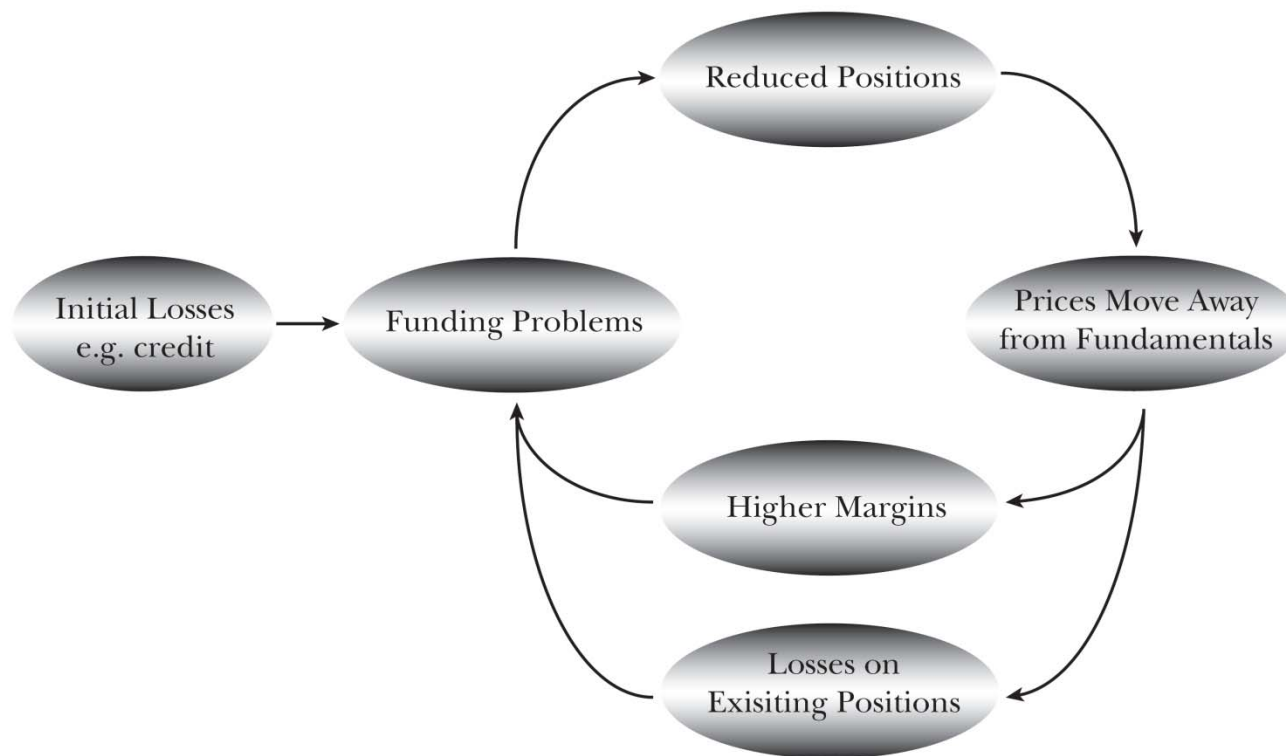
Exhibit 4.3 The Leverage Circle



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

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

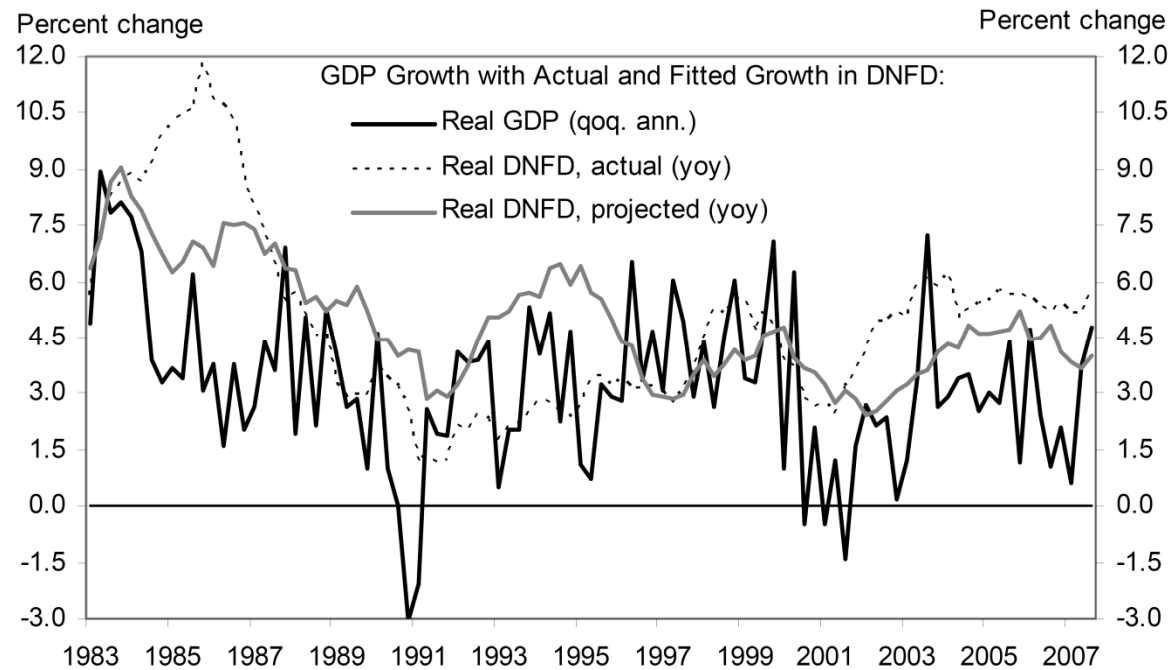
Source: Authors' calculations based on Flow of Funds, FDIC Statistics on Banking, Adrian and Shin (2007), and balance sheet data for Fannie Mae, Freddie Mac, and broker-dealers under Goldman Sachs equity analysts' coverage.

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 _{t-1}	0.247	0.118	2.100
GDP Growth _{t-2}	0.242	0.111	2.190
GDP Growth _{t-3}	-0.264	0.110	-2.410
4 quarter DNFD Growth _{t-1}	0.338	0.176	1.920

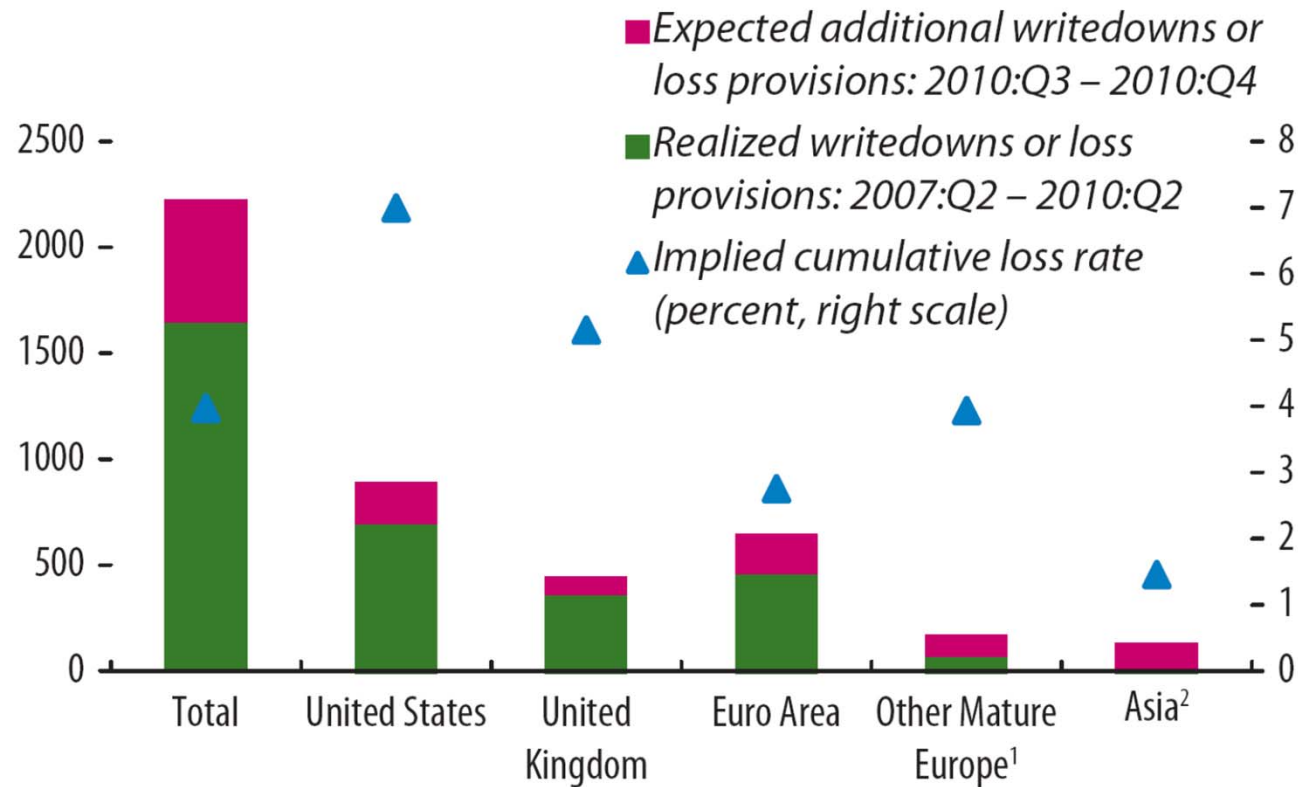
Exhibit 5.3 GDP Growth with Actual and Fitted Growth in DNFD



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.

¹Includes Denmark, Iceland, Norway, Sweden, and Switzerland.

²Includes Australia, Hong Kong SAR, Japan, New Zealand, and Singapore.