

A Nonsupervisory Framework to Monitor Financial Stability

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Dodd-Frank Act

Reforms regulatory architecture

- Tighter standards: Identify and regulate SIFIs and FMUs
- Infrastructure: Derivatives reform
- New entities: FSOC, OFR
- Places some constraints on the ability of the government to respond to crises

New financial stability mandate

- Macro prudential approach to supervision
- Identify and mitigate threats to financial stability
- Promulgate pre-emptive macroprudential policies

Does not control financial flows or innovation

- Could push financial activities into the shadows
- Maturity transformation outside of lender of last resort will continue

As a result, we cannot forecast where or in what form systemic risk will arise

Lessons from the Crisis about Systemic Risk

- 1. Microprudential supervision may not suffice to prevent systemic events, given level of capital**
- 2. Systemic risks can emerge during benign periods**
 - Systemic risk built up during the period of low volatility
 - Accounting and risk measurement problems can obscure risk taking
- 3. Systemic risk externalities have first order, aggregate effects**
 - Fire sales and effects on the real economy
 - Interconnections transmit distress
- 4. Shadow banking system affects core financial institutions**
 - Vulnerability to runs
 - Implicit and explicit guarantees from core institutions to shadow institutions
- 5. Aggregate leverage and maturity transformation matter**
 - While financial innovation can enhance risk sharing, it might increase aggregate risk

Implications of Crisis for Monitoring Financial Stability

Pre-emptive assessment process:

1. Identify possible shocks from scenarios (with caveats)
2. Assess amplification mechanisms:
 - transmission channels and vulnerabilities in the financial system (structural or cyclical) that could transmit and amplify possible shocks
3. Evaluate how these vulnerabilities could amplify shocks, disrupting financial intermediation and impairing real economic activity

Broad Monitoring Framework

1. SIFIS (bank and nonbank) and FMUs

Firms are considered systemically important because their distress or failure could disrupt the functioning of the broader financial system and inflict harm on the real economy

2. Shadow Banking

Shadow banks (and chains) provide maturity and credit transformation without public sources of backstops and represent systemic risks due to their connections to other financial institutions

3. Real Economy

Linkage of financial sector to real economy is via the provision of credit

1. SIFI and FMU Monitoring

Measures of default risk

- Capital and leverage ratios; off-balance sheet commitments
- Stress test results (CCAR) – best forward-looking measure
- Market-based measures
 - CDS, sub-debt bond spreads
 - Stock prices, price to book, market equity capitalization, market betas

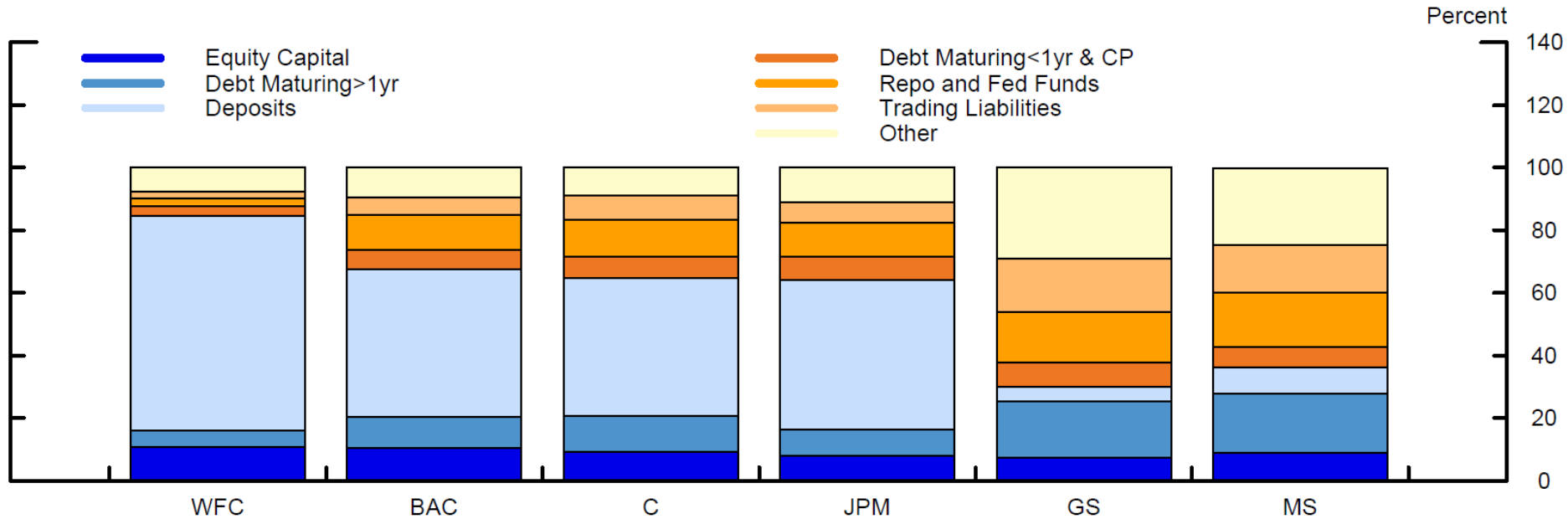
Measures of liability risk: runs and funding squeezes, cross border

Measures of systemic importance

- Size, interconnectedness, complexity, and critical services
 - Interconnectedness: Intra-financial assets and liabilities, counterparty credit exposures
 - Complexity – business lines; number of legal entities; countries of operation
- Market-based measures of systemic risk – CoVaR, SES, DIP
 - Adrian and Brunnermeier (2008), Huang, Zhou, Zhu (2009), Acharya et al (2010)

Monitoring SIFIs: Example BHC Liability Structure

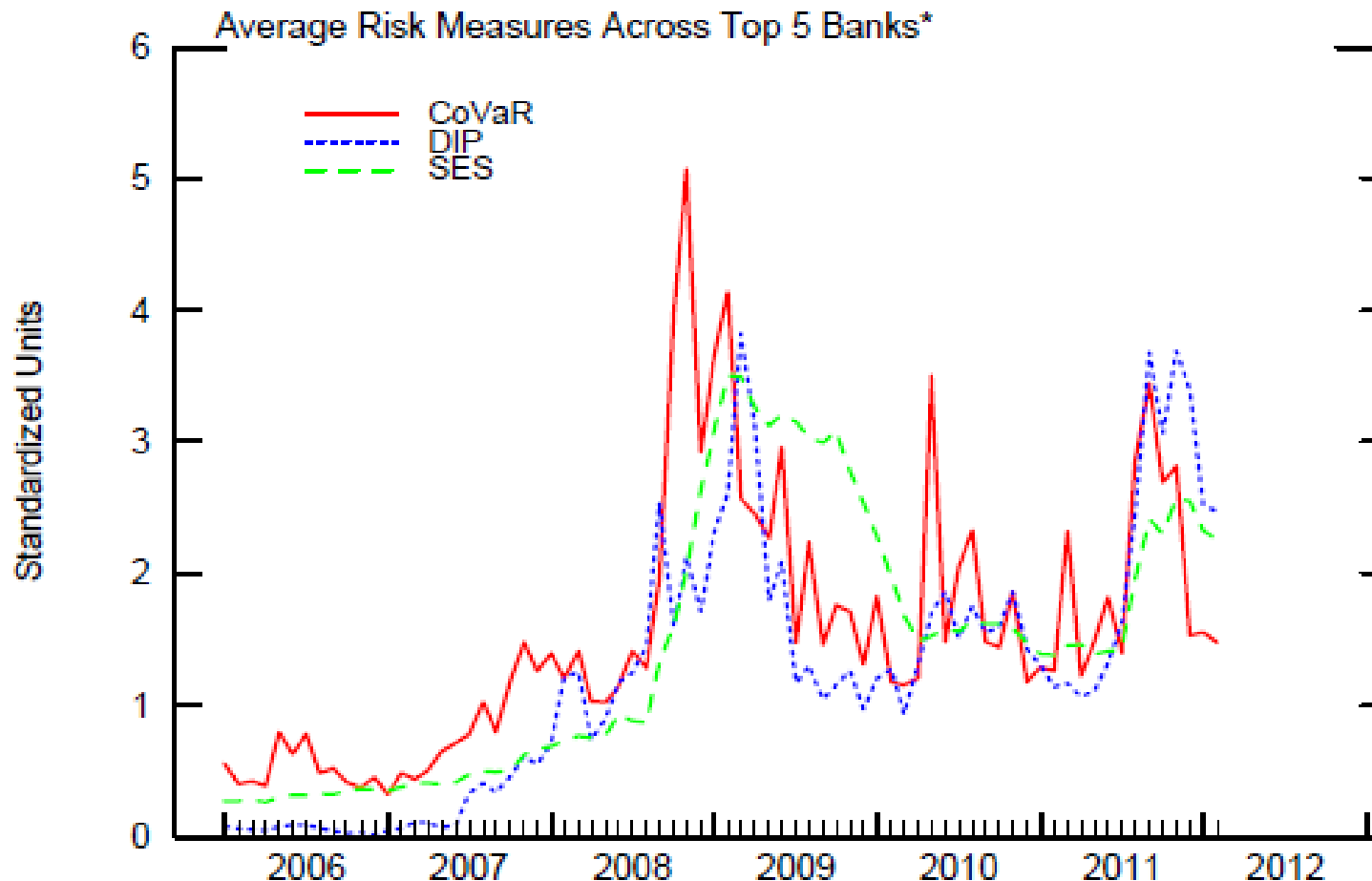
BHC Liability Structure (3Q11)



Source: FR Y-9c.

Monitoring SIFIs: Example

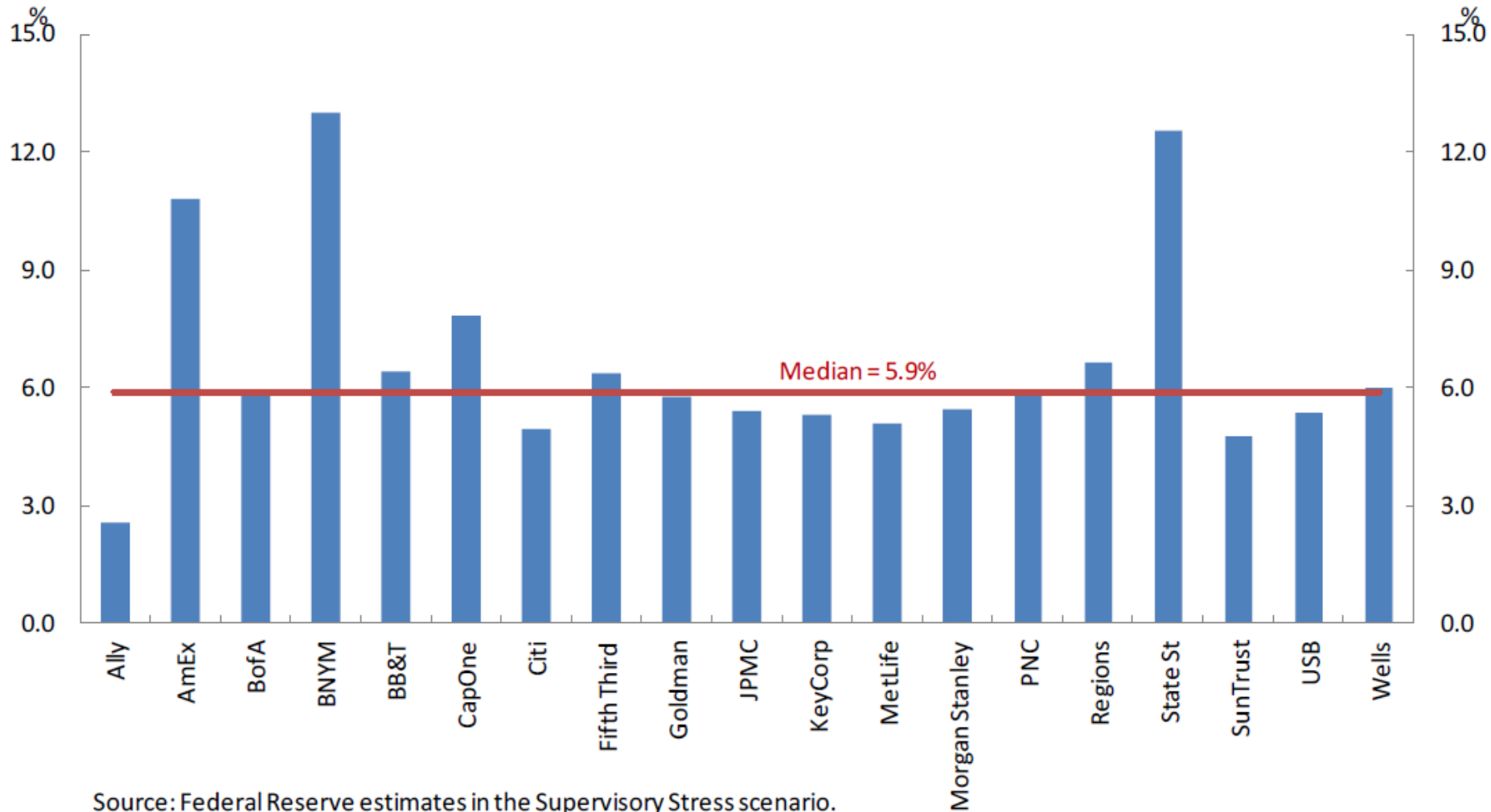
Market Based Systemic Risk Measures



* Each risk measure (CoVaR, SES, DIP) is averaged across five large banks (BAC, C, JPM, GS, MS). Each resulting time series is then re-scaled by its standard deviation.

Monitoring SIFIs: Example

Minimum Tier 1 Common Ratio in the Supervisory Stress Scenario (%)



Source: Federal Reserve estimates in the Supervisory Stress scenario.

2. Shadow Bank Monitoring

Potential for Destabilizing Drops in Asset Prices

- Shadow banking could inflate asset valuations in booms and amplify asset price crashes in busts
- Price and non-price measures of potential bubbles, extremely low volatility

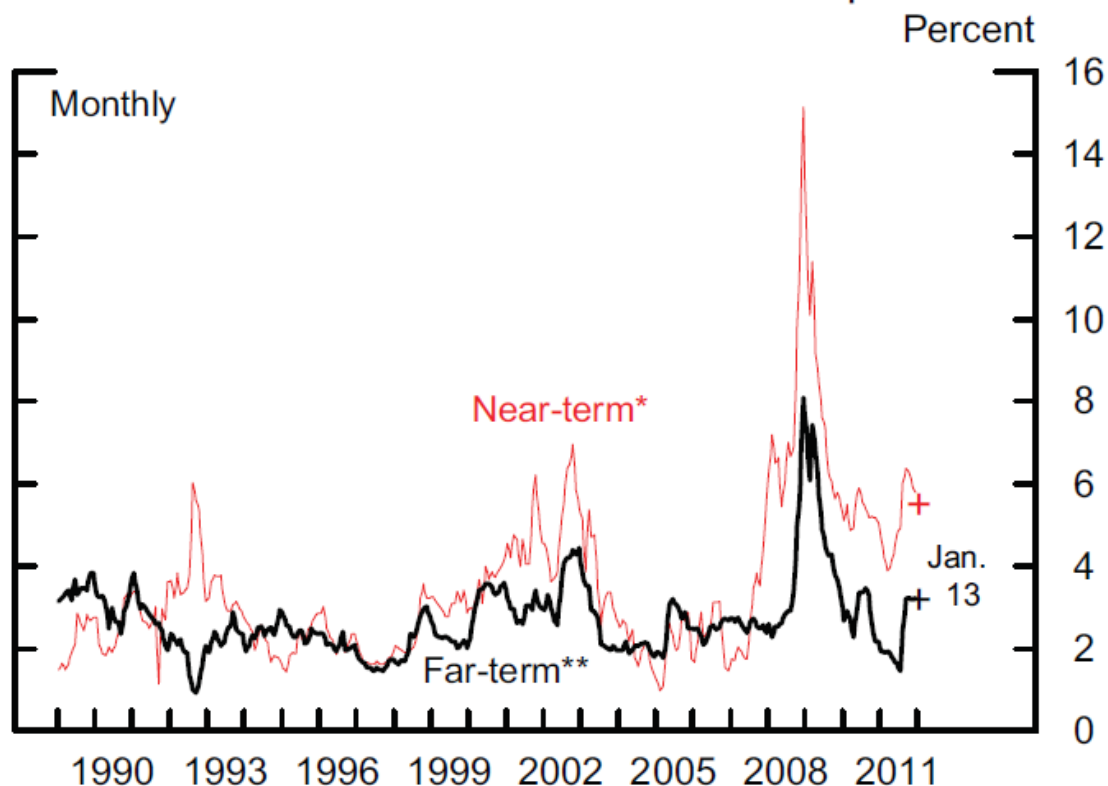
Leverage Cycle, Maturity Mismatch, and Run Risk

- Measures of leverage in financial system (including on and off balance sheet exposures)
- Measures of maturity mismatch and vulnerability
- Hedge funds, insurers, pension funds, and other financial firms that are not SIFIS
- Activities not backed by government backstops: MMFs, cash pools, securities lending / repo activities, velocity of collateral, securitization

New Products

Monitoring Shadow Banking: Example Forward Credit Spreads

Near- and Far-Term BB Forward Credit Spreads



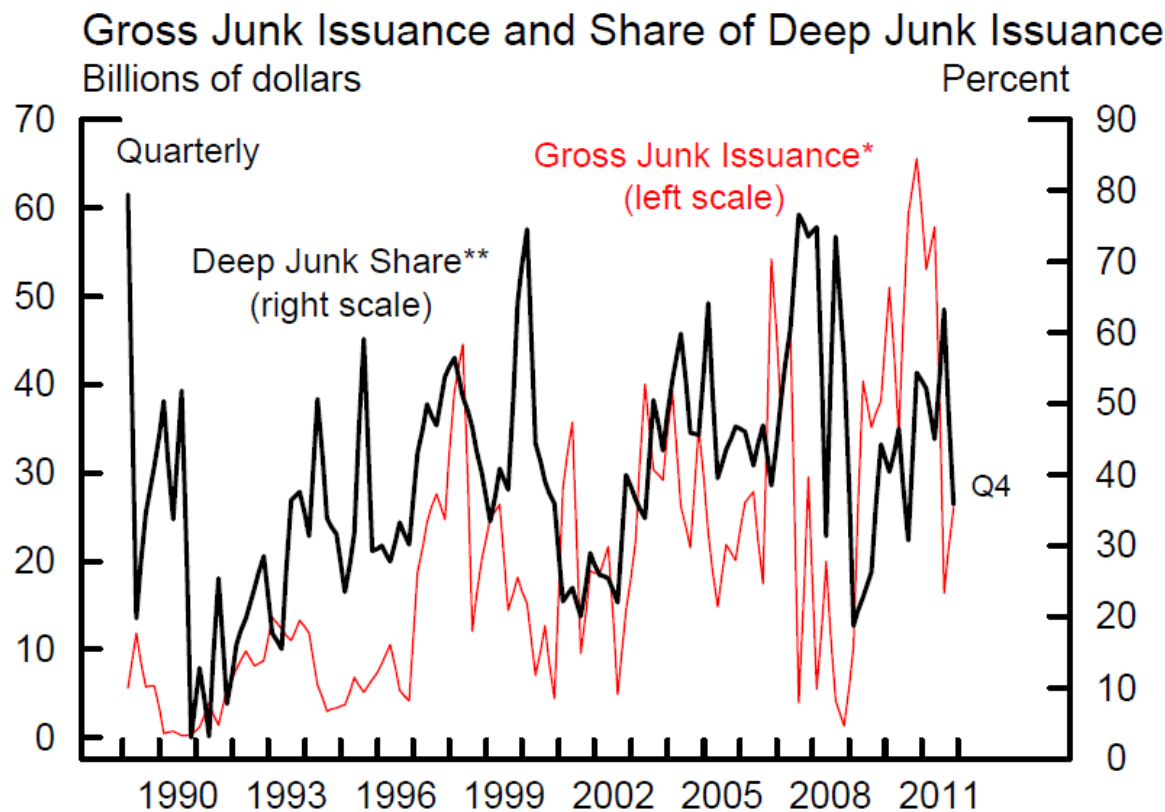
* Forward spread between years two and three.

** Forward spread between years nine and ten.

+ Denotes the latest daily observation.

Source. Staff estimates.

Monitoring Shadow Banking: Example Junk Bond Issuance



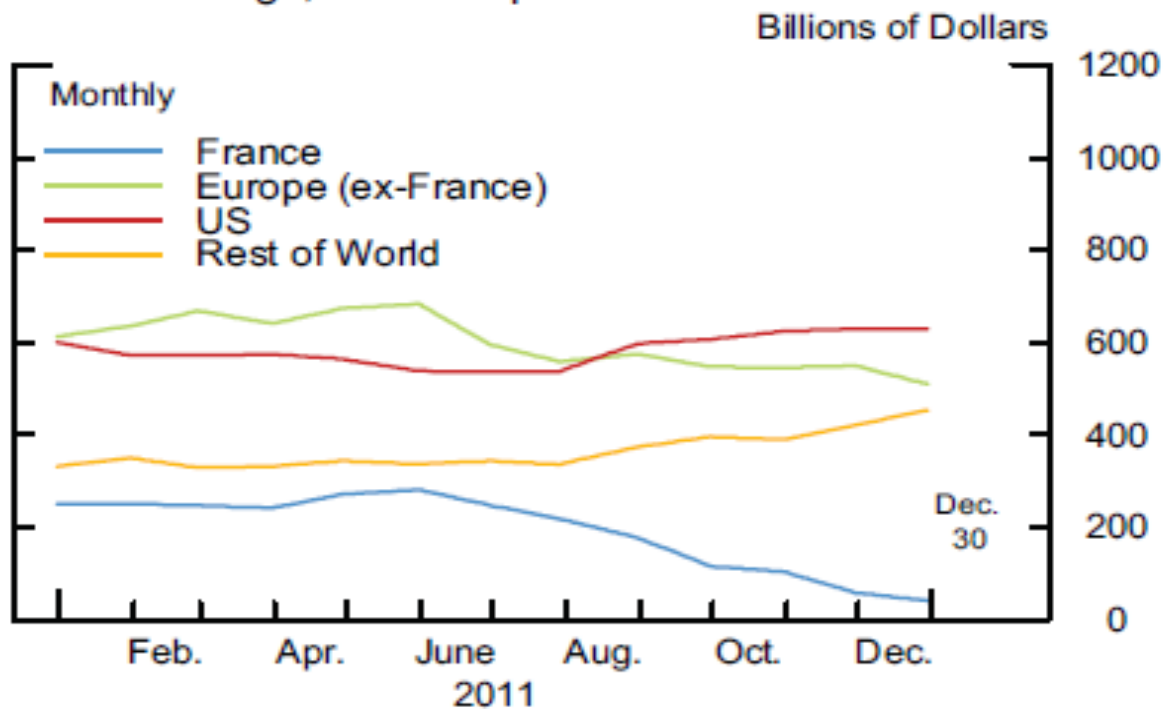
* Includes public, 144a, euro, and MTN issues.

** Fraction of bonds rated B- or lower over total nonfinancial junk issuance.

Source: Thomson-Reuters

Monitoring Shadow Banking: Example Prime Money Market Fund Exposures

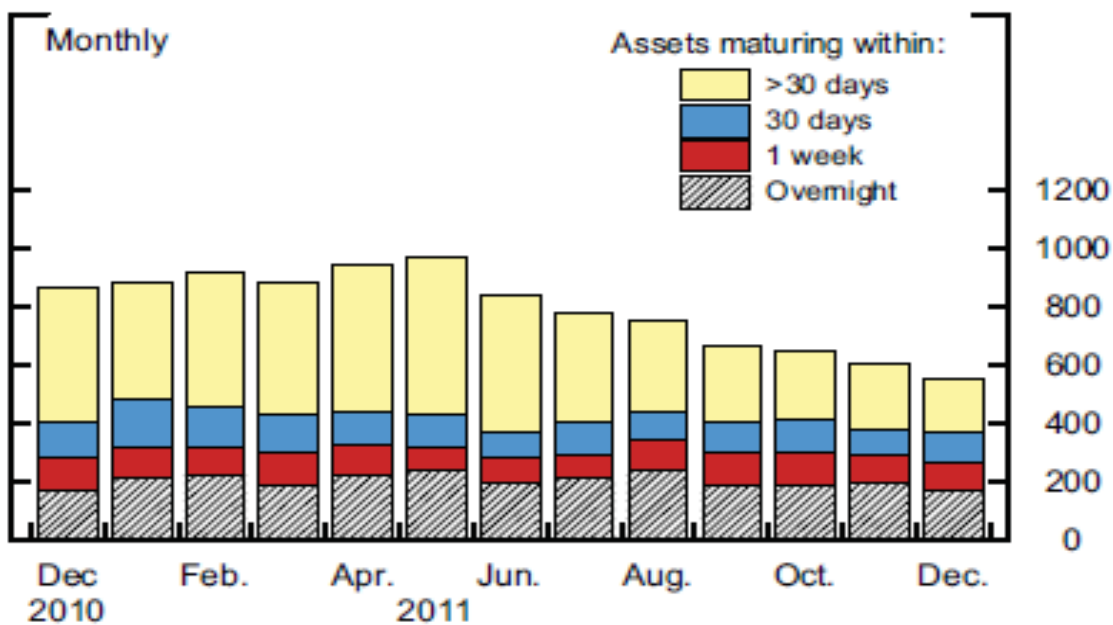
MMF Holdings, Prime Exposure



Source: SEC form N-MFP.

Monitoring Shadow Banking: Example Prime Money Market Fund Maturity Exposures

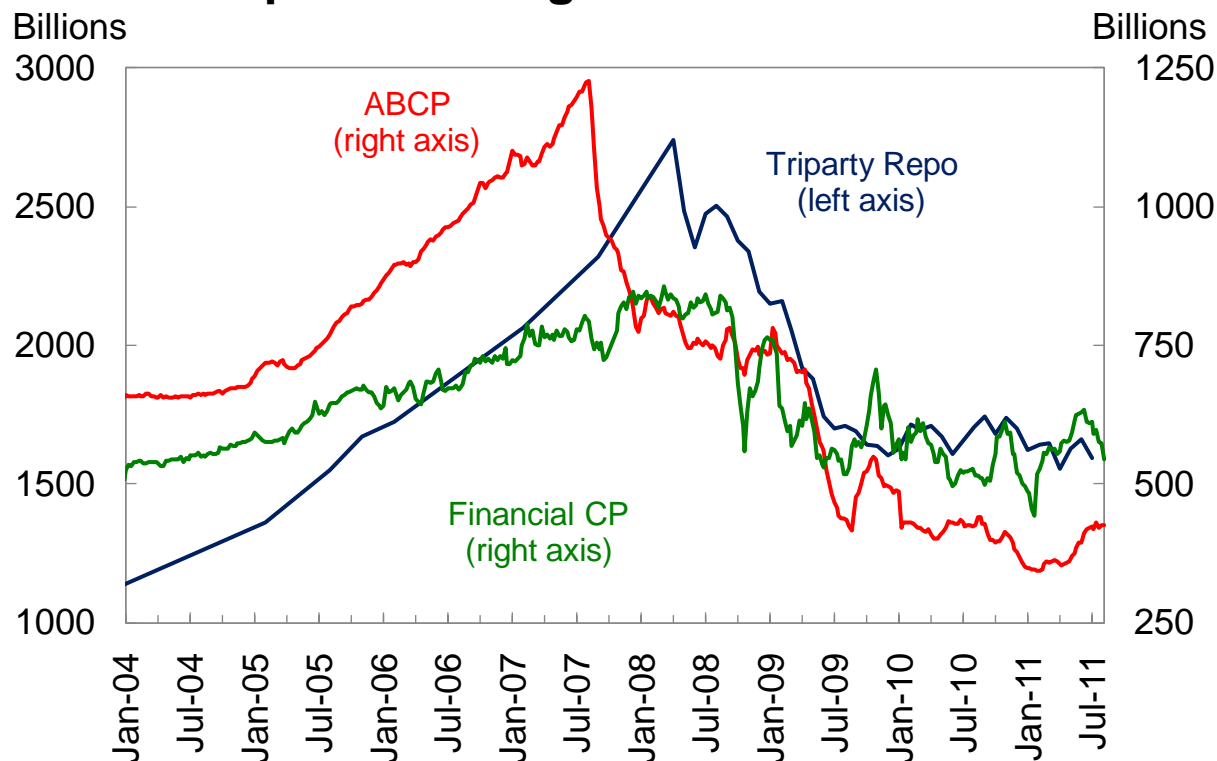
Maturity Distribution of Prime MMF European Holdings
Billions of dollars



Source. SEC form N-MFP filings.

Monitoring Shadow Banking: Example Commercial Paper and Repo Financing

CP and Repo Financing

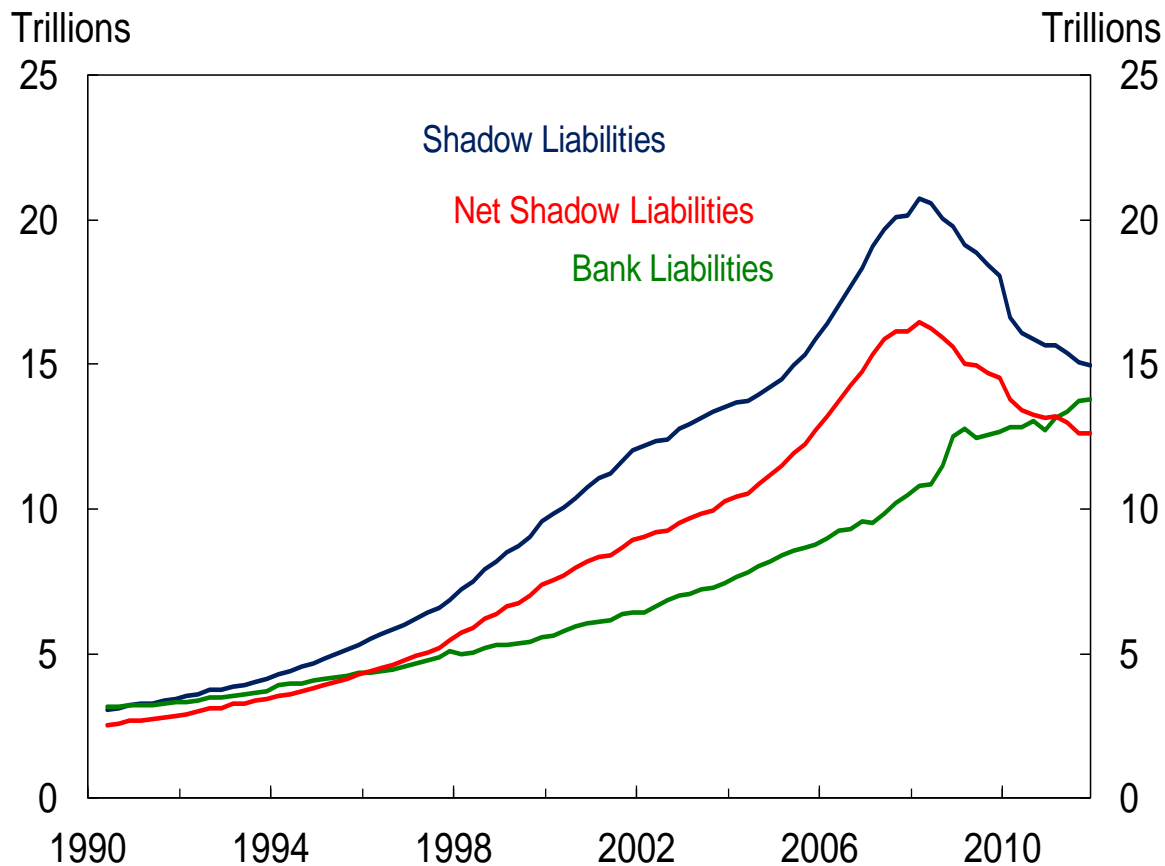


Source: FRBNY and Federal Reserve Board

Monitoring Shadow Banking: Example

Shadow Banking Liabilities

Shadow Liabilities



Source: Flow of Funds

3. Real Economy Monitoring

Nonfinancial sector risk

- Leverage of nonfinancial sector—households, businesses, governments
- Nonfinancial credit that is ultimately funded with short-term debt

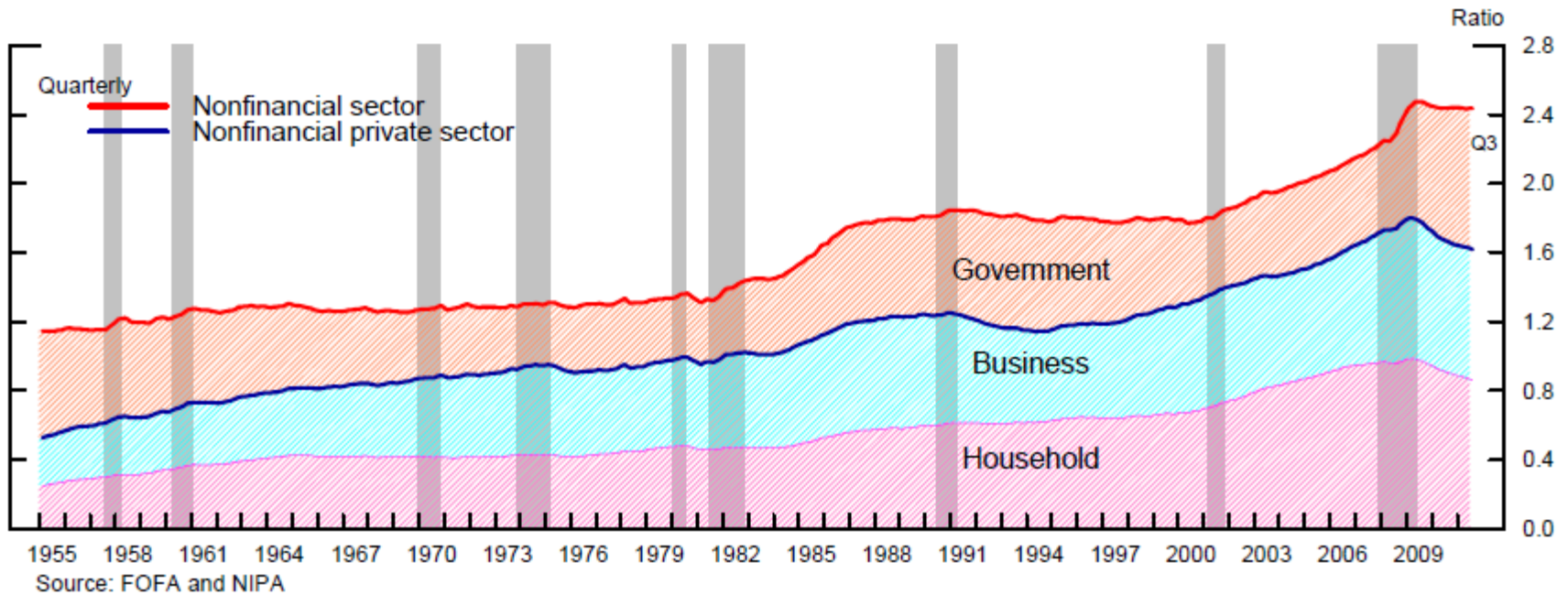
Effect of financial sector on economic activity

- Underwriting standards, risk appetite, and balance sheet capacity of financial institutions
- Indicators of macro-economy vulnerability to financial risks

Real Economy Monitoring: Example

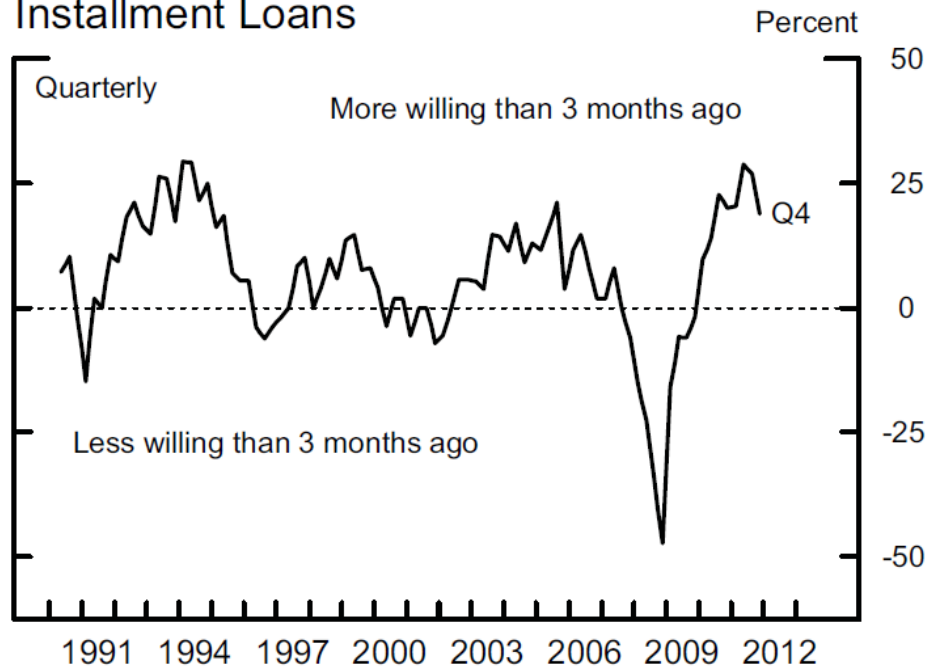
Nonfinancial Sector Credit-to-GDP Ratio

Nonfinancial sector credit-to-GDP ratio



Real Economy Monitoring: Example Senior Loan Officer Survey

Willingness to Make Consumer
Installment Loans



Note: Net percent of banks reporting willingness to make loans.

Source: Senior Loan Officer Opinion Survey on Bank Lending Practices.

Conceptual Framework for Policy Response to Systemic Risk

Monitoring indicates the extent to which shocks might trigger systemic events

- Monitoring informs us about exposures to changes in the pricing of risk
- Sharp increases in the pricing of risk can generate systemic risk

Tradeoff between systemic risk and the price of risk

- Regulation is trading off the price of risk with the level of systemic risk
- Higher price of risk today may reduce buildup of systemic risk

Tougher regulation, higher price of risk, less systemic risk

Ex ante Policies to Promote Financial Stability

1. SIFIs

- Size of macroprudential surcharge
- Stringency of capital requirements, and liquidity requirements

2. Shadow Banking

- Margins , more centralized clearing
- MMMF and repo reforms
- Greater disclosure and transparency, better accounting

3. Nonfinancial sector

- Lender restrictions
- Borrower requirements