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

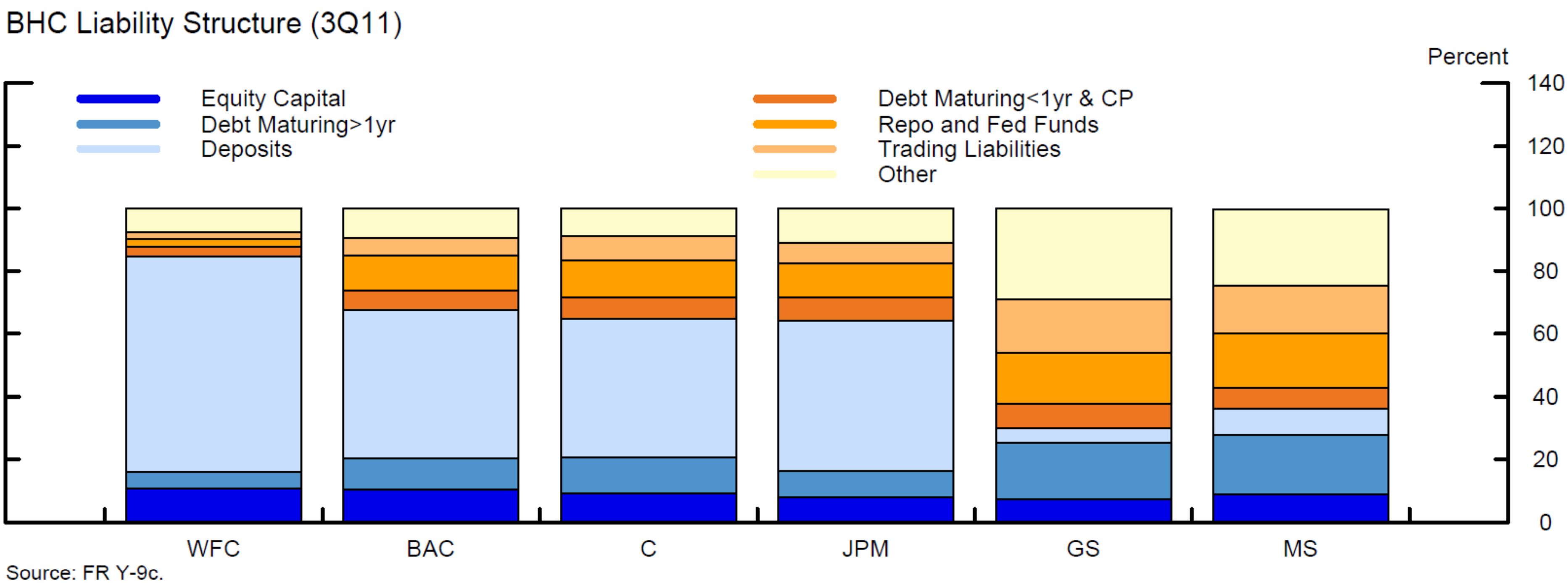
3. **Real Economy**

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

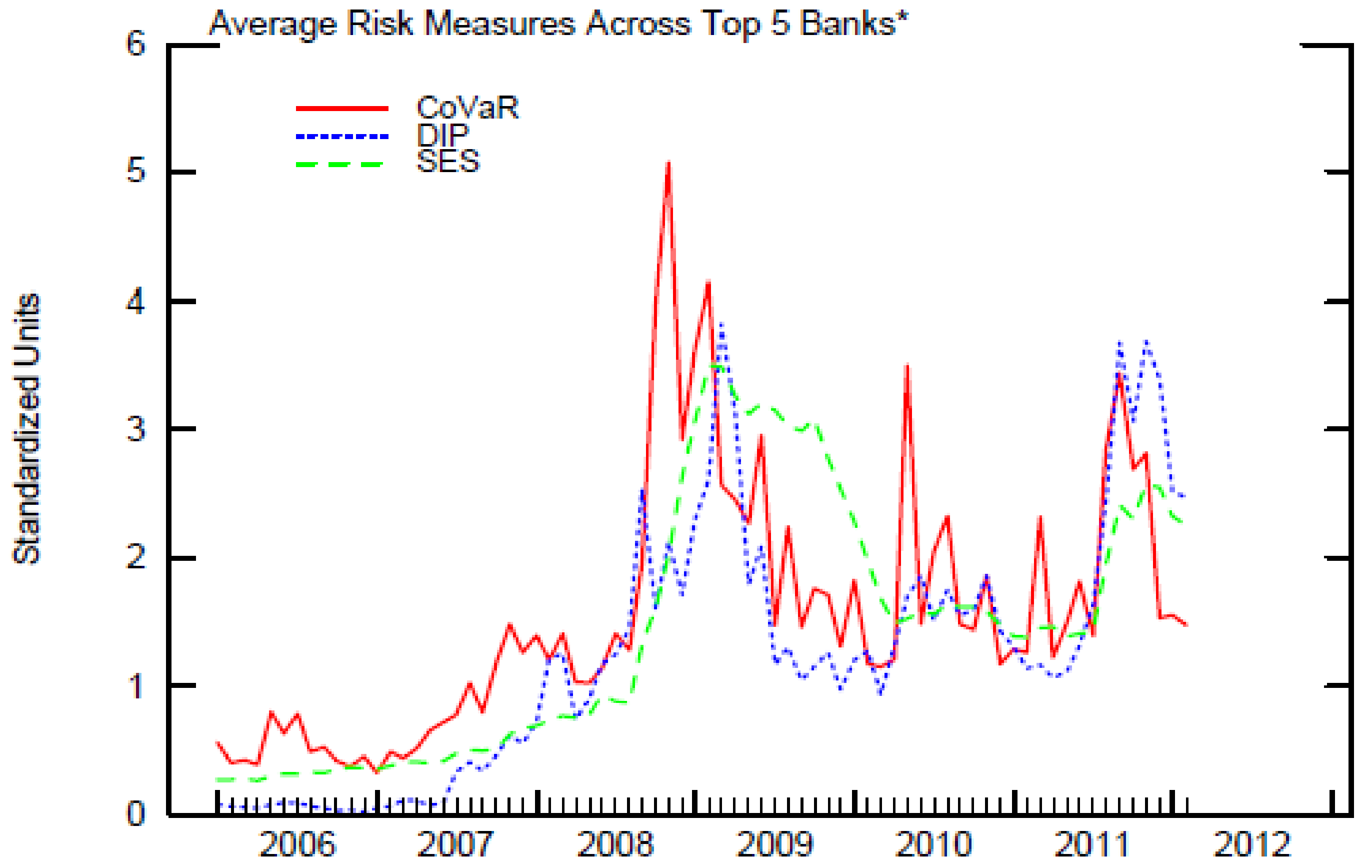
1. SIFI and FMU Monitoring

- **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



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.

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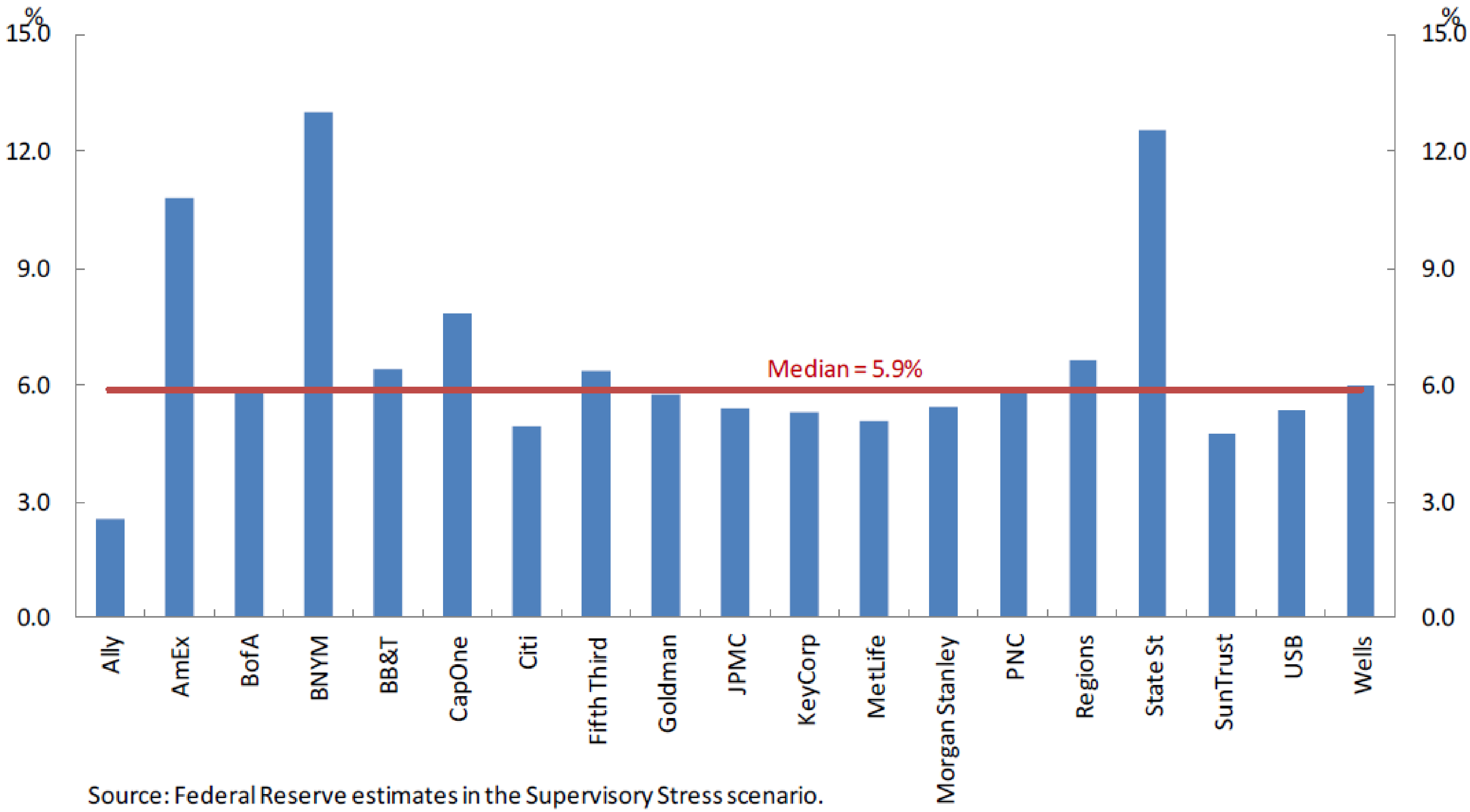
Monitoring SIFIs: Example

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



Source: Federal Reserve estimates in the Supervisory Stress scenario.

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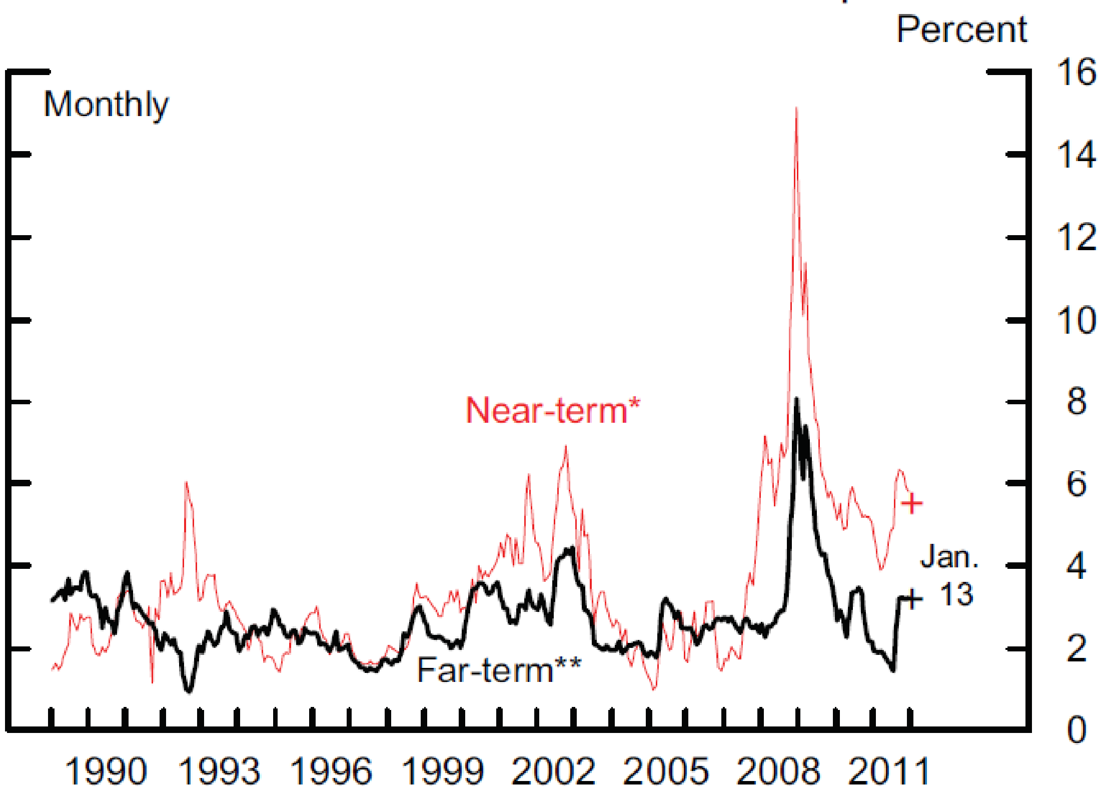
2. Shadow Bank Monitoring

- **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.

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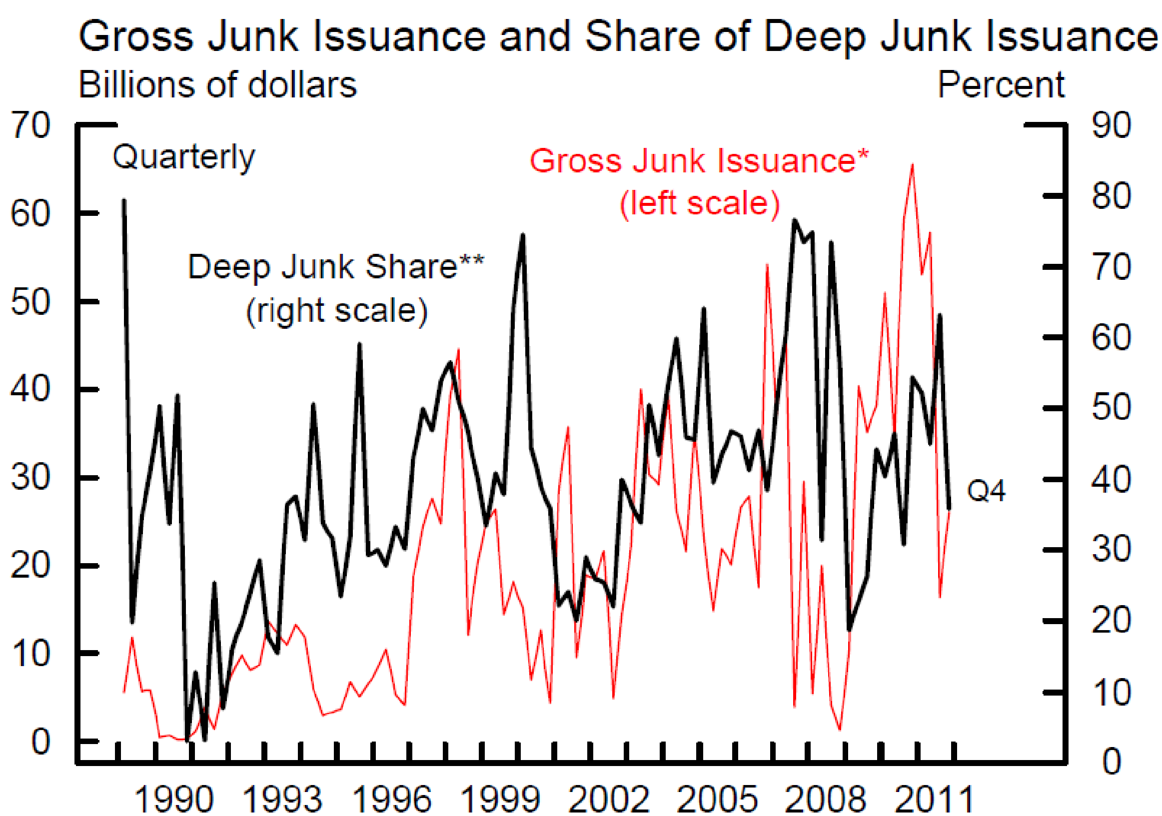
Monitoring Shadow Banking: Example
Junk Bond Issuance

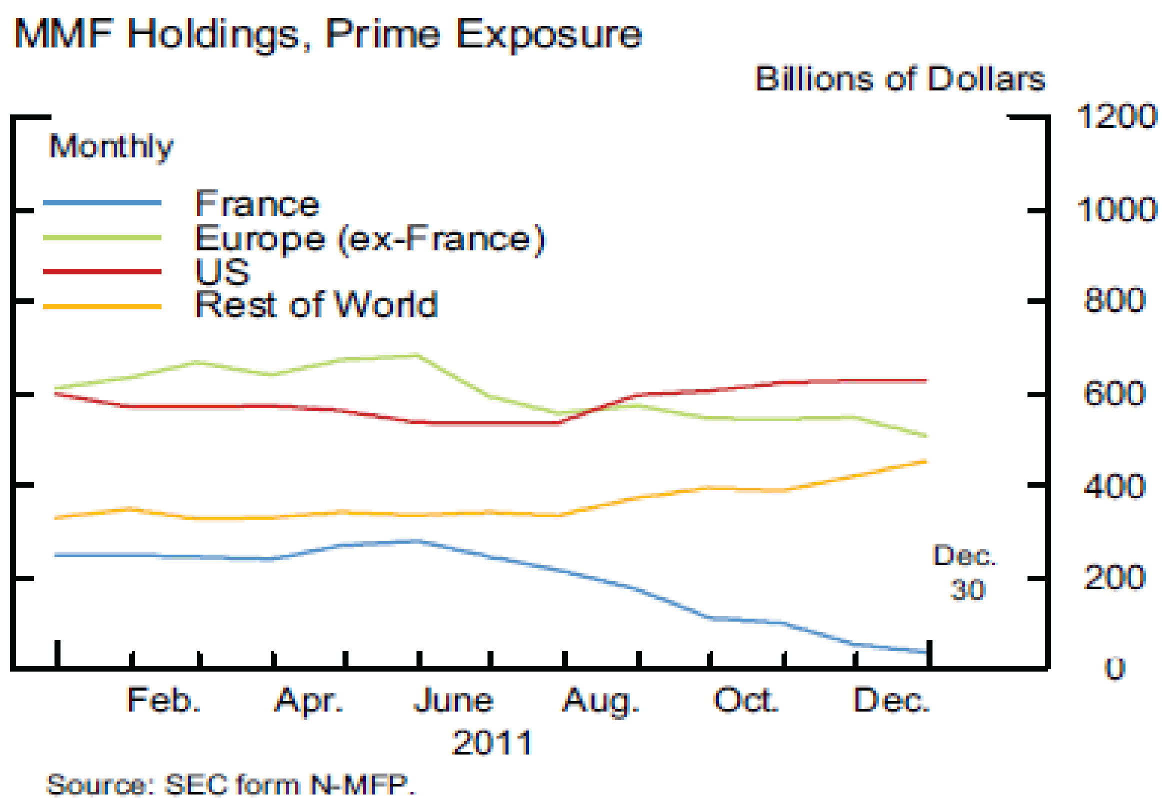


* Includes public, 144a, euro, and MTN issues.

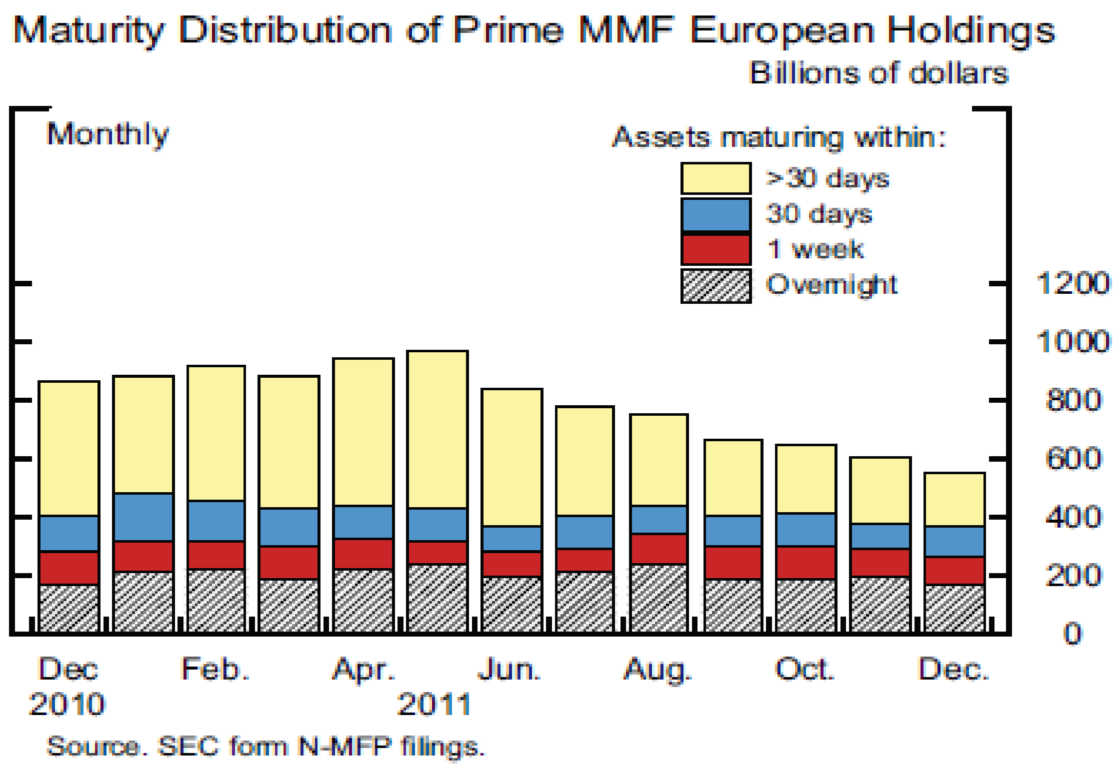
** Fraction of bonds rated B- or lower over total nonfinancial junk issuance.

Source: Thomson-Reuters

Monitoring Shadow Banking: Example Prime Money Market Fund Exposures



Monitoring Shadow Banking: Example
Prime Money Market Fund Maturity Exposures



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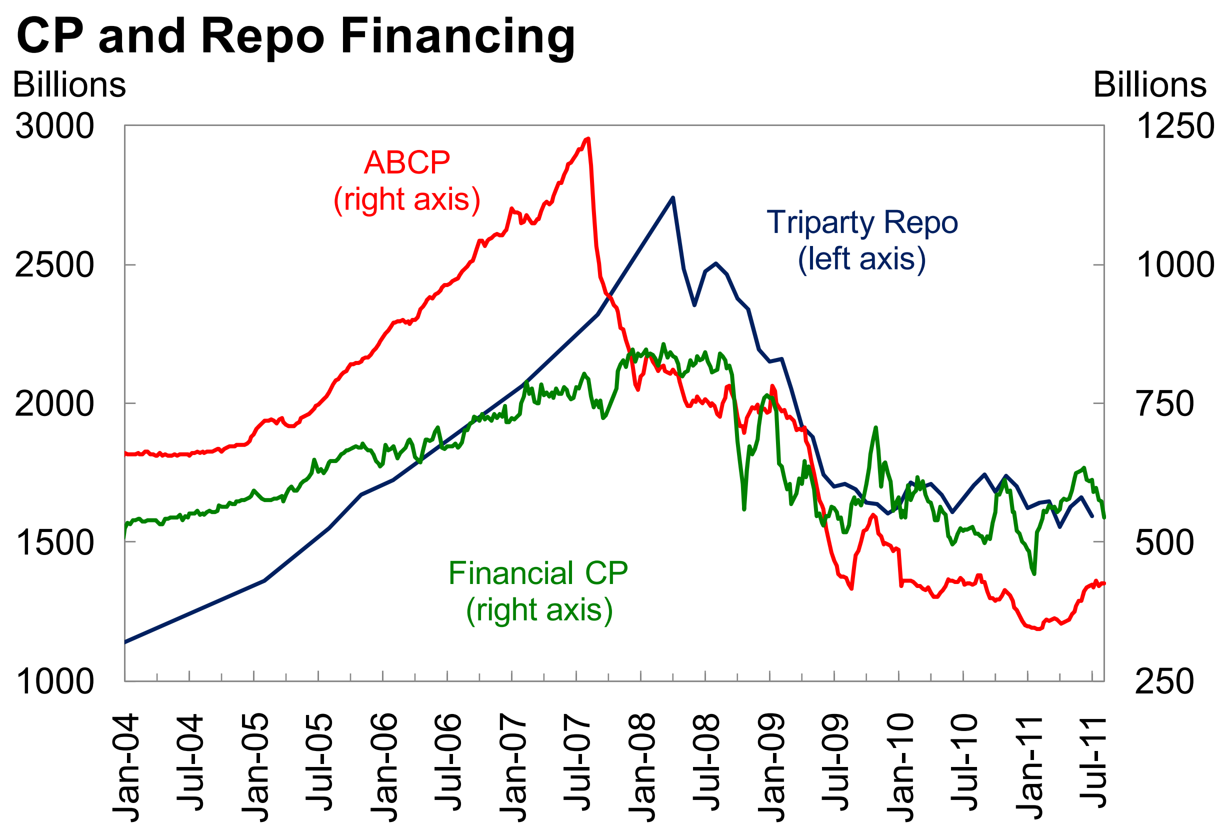
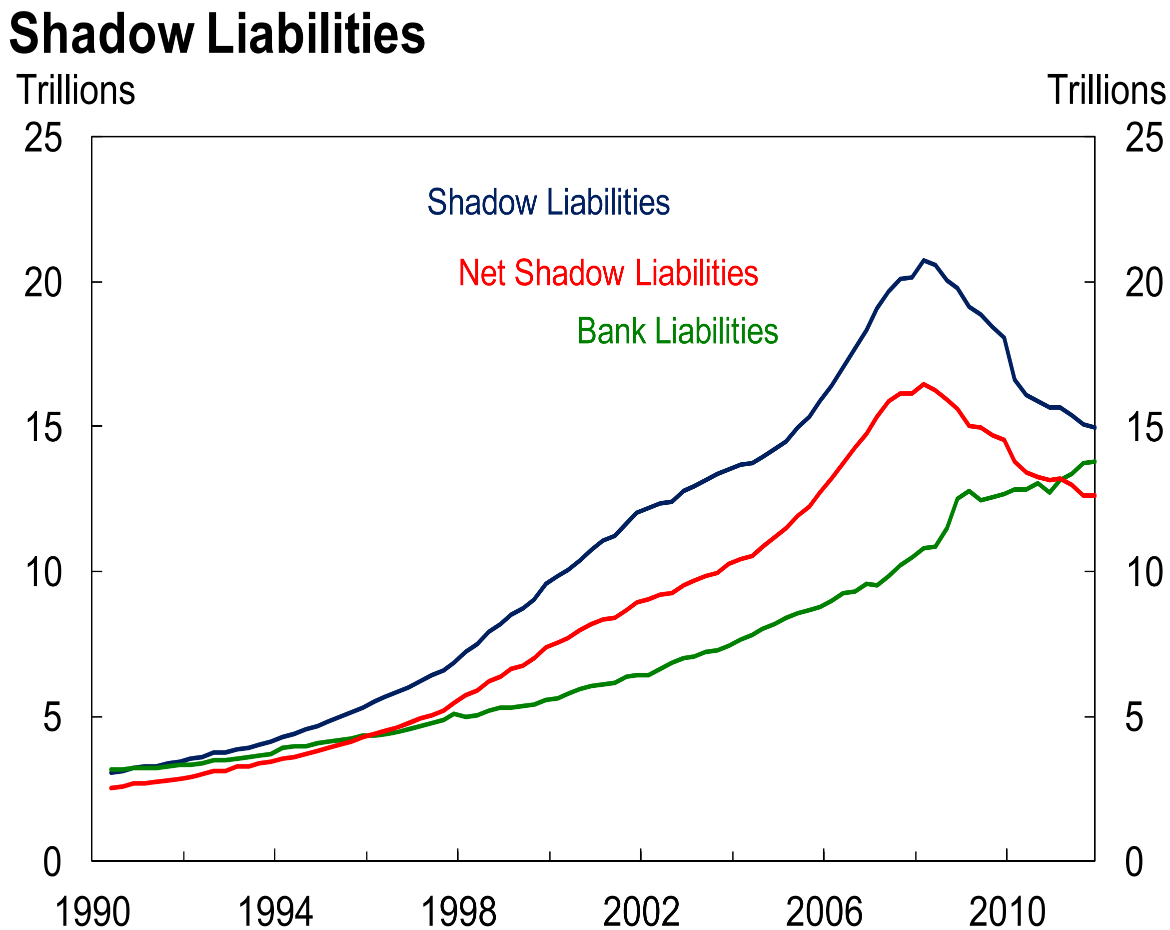
Monitoring Shadow Banking: Example Commercial Paper and Repo Financing



Source: FRBNY and Federal Reserve Board

Monitoring Shadow Banking: Example
Shadow Banking Liabilities



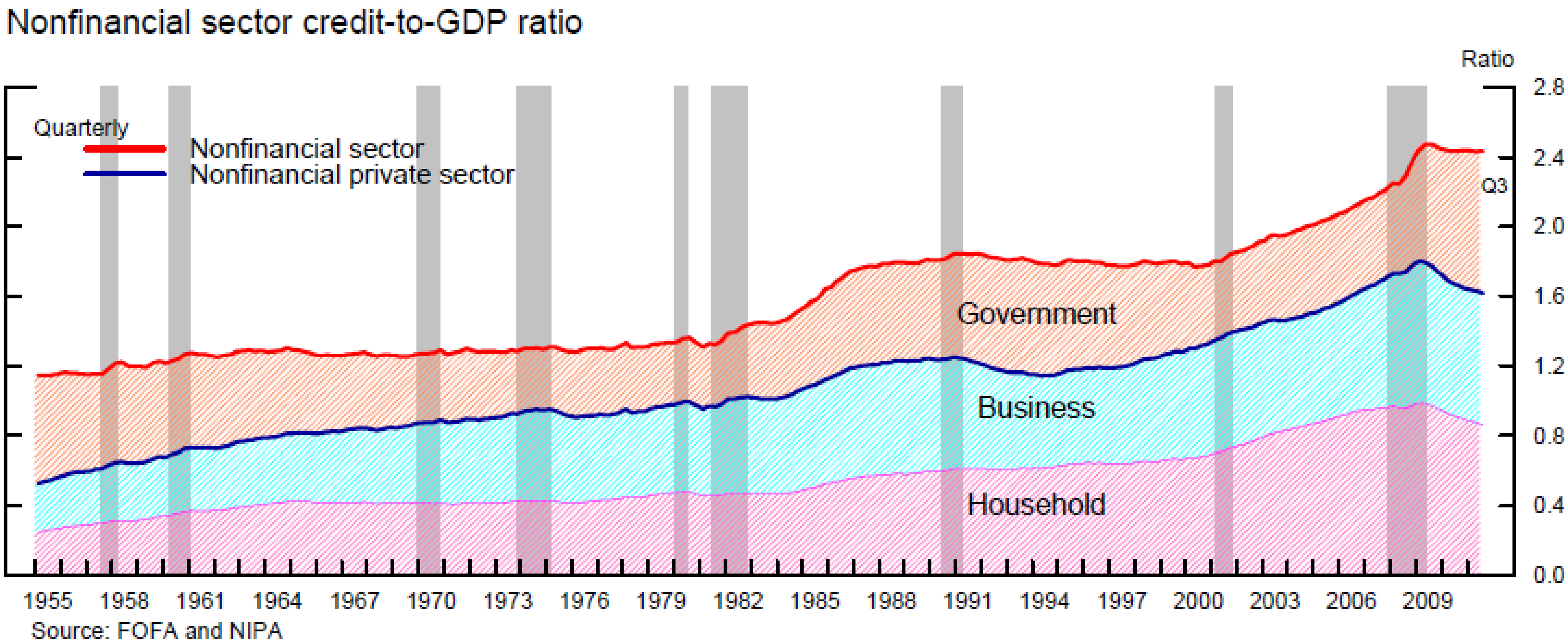
Source: Flow of Funds

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



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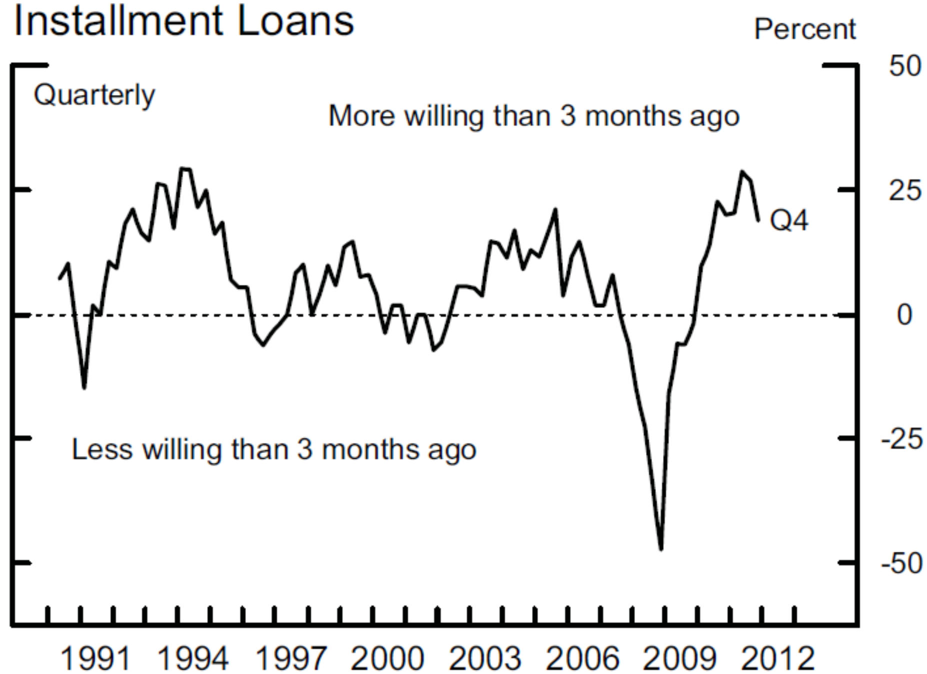
Real Economy Monitoring: Example
Senior Loan Officer Survey

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