The views in this presentation do not necessarily represent the views of the Federal Reserve Board, the Federal Reserve Bank of New York, or the Federal Reserve System.

- Systemic risk built up during the period of low volatility
- Accounting and risk measurement problems can obscure risk taking

- Fire sales and effects on the real economy
- Interconnections transmit distress

- Vulnerability to runs
- Implicit and explicit guarantees from core institutions to shadow institutions

- Financial innovation might increase aggregate risk

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

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

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

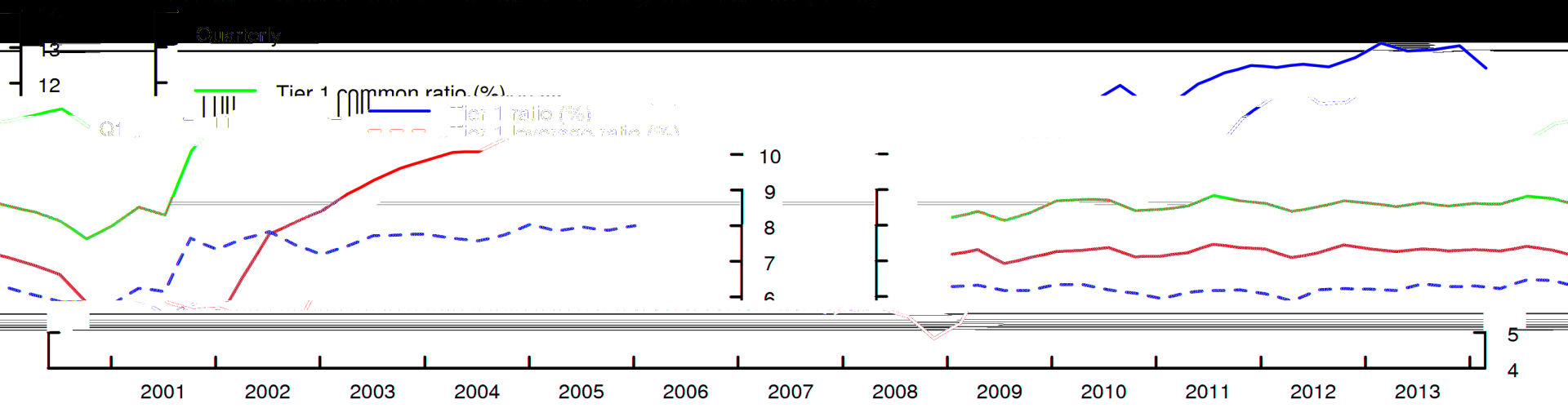
The risk of abrupt reversals in asset values tends to increase when the pricing of risk is compressed

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

- 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

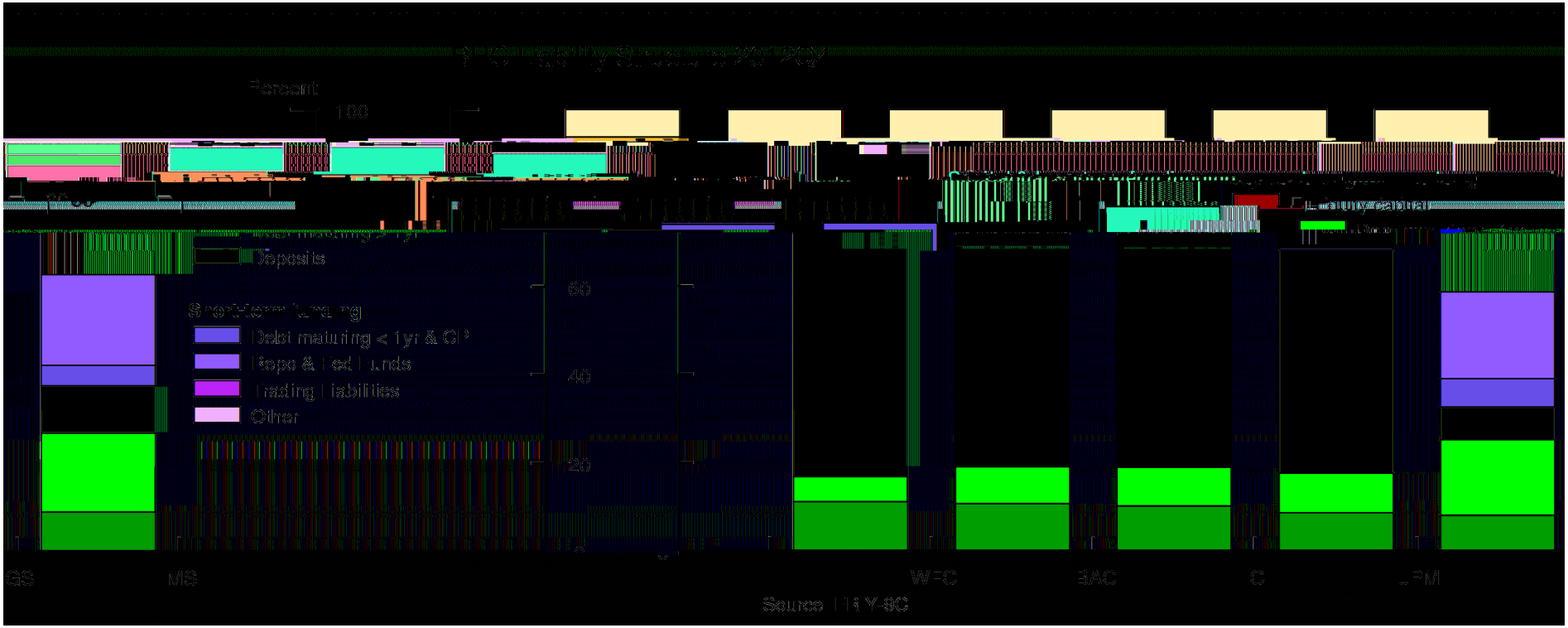
- Size, interconnectedness, complexity, and critical services
  - Interconnectedness: Intra-financial assets and liabilities, counterparty credit exposures
  - Complexity – business lines; number of legal entities; countries of operation
- Market-based measures of systemic risk – CoVaR, SES, DIP
  -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

Chart 1



Note: In May 2009, 19 BHCs were assessed in the Supervisory Capital Assessment Program (SCAP). In this chart, GS, MS, Ally, and Amex are excluded prior to

Source: FR Y9-C.


Percent
100
80
60
40
20
0
Deposits
Debt maturing < 1yr & CP
Repo & Fed Funds
Trading Liabilities
Other
GS
MS
WFC
BAC
C
JPM
Source: 10-Y-9C

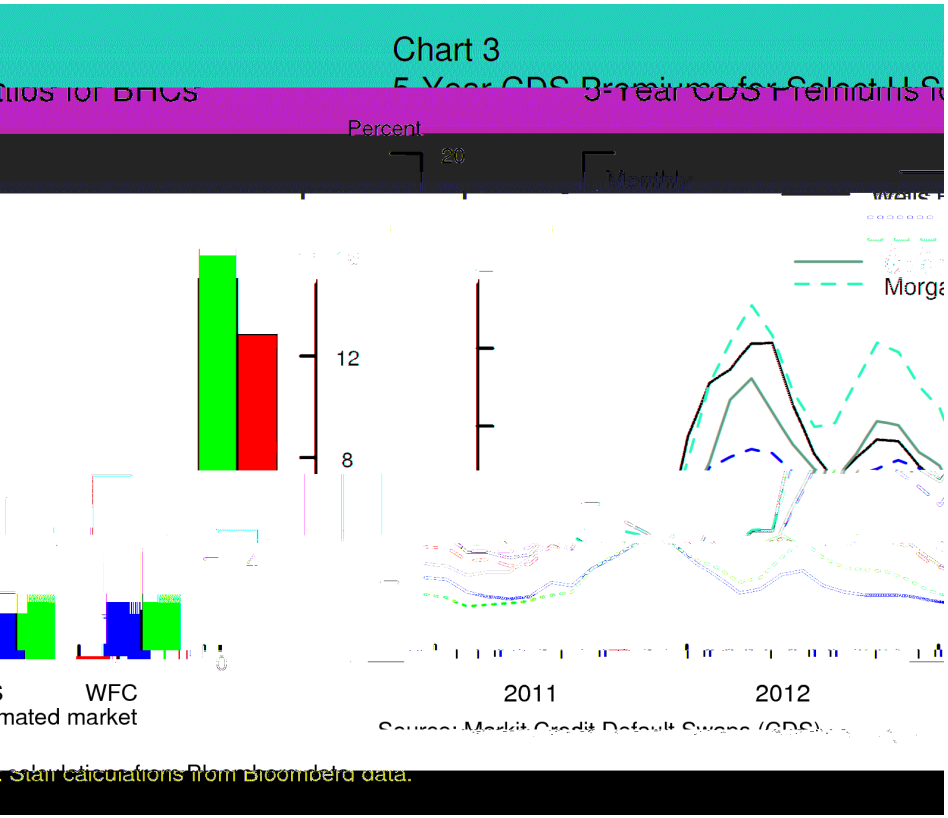
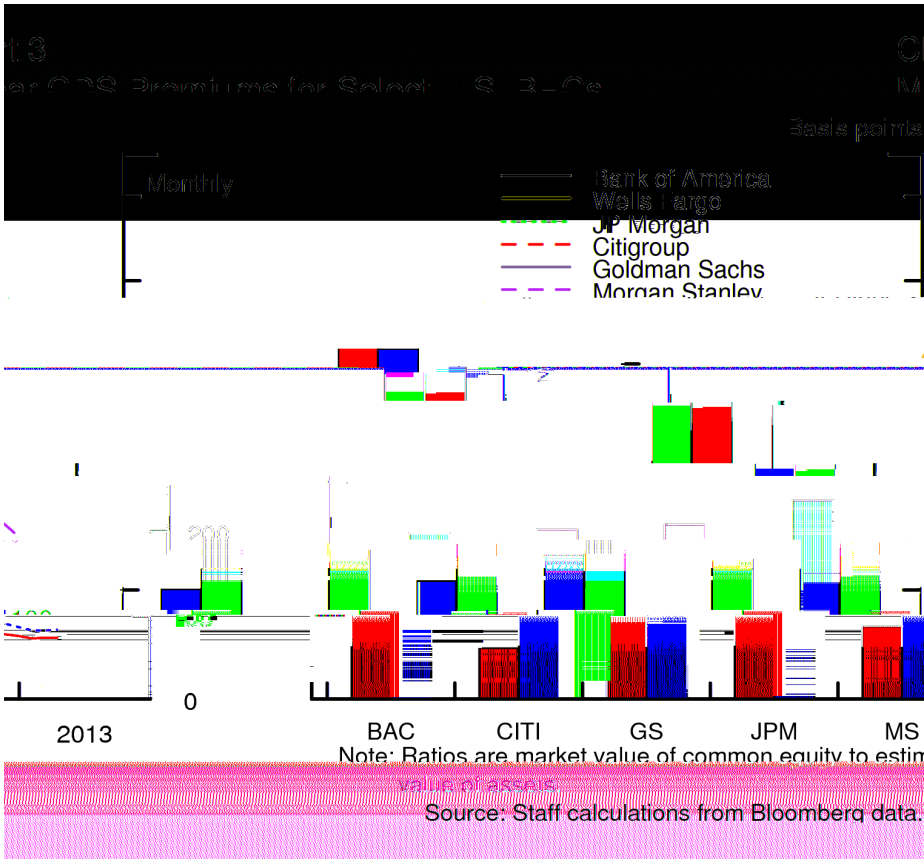


Chart 3
Percent
20
12
8
WFC
2011
2012
Morga


Monthly
Bank of America
Wells Fargo
JP Morgan
Citigroup
Goldman Sachs
Morgan Stanley
0
2013
BAC
CITI
GS
JPM
MS
Source: Staff calculations from Bloomberg data.

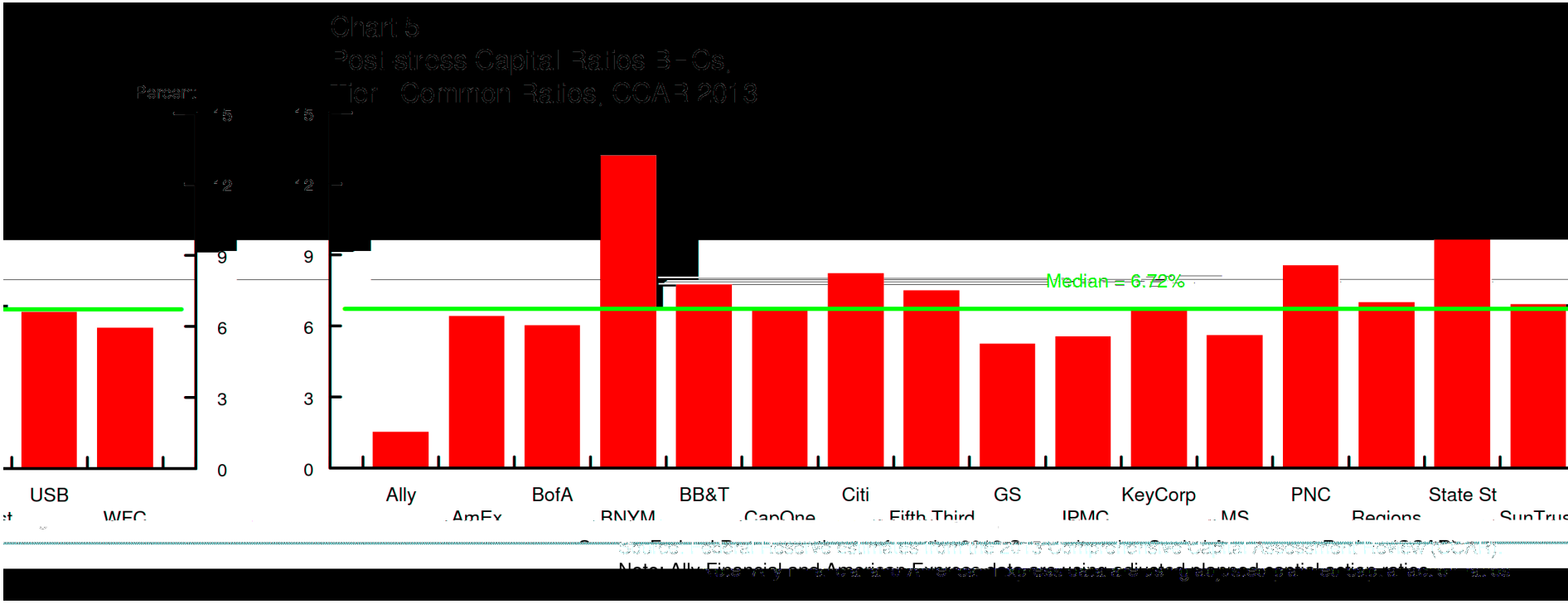
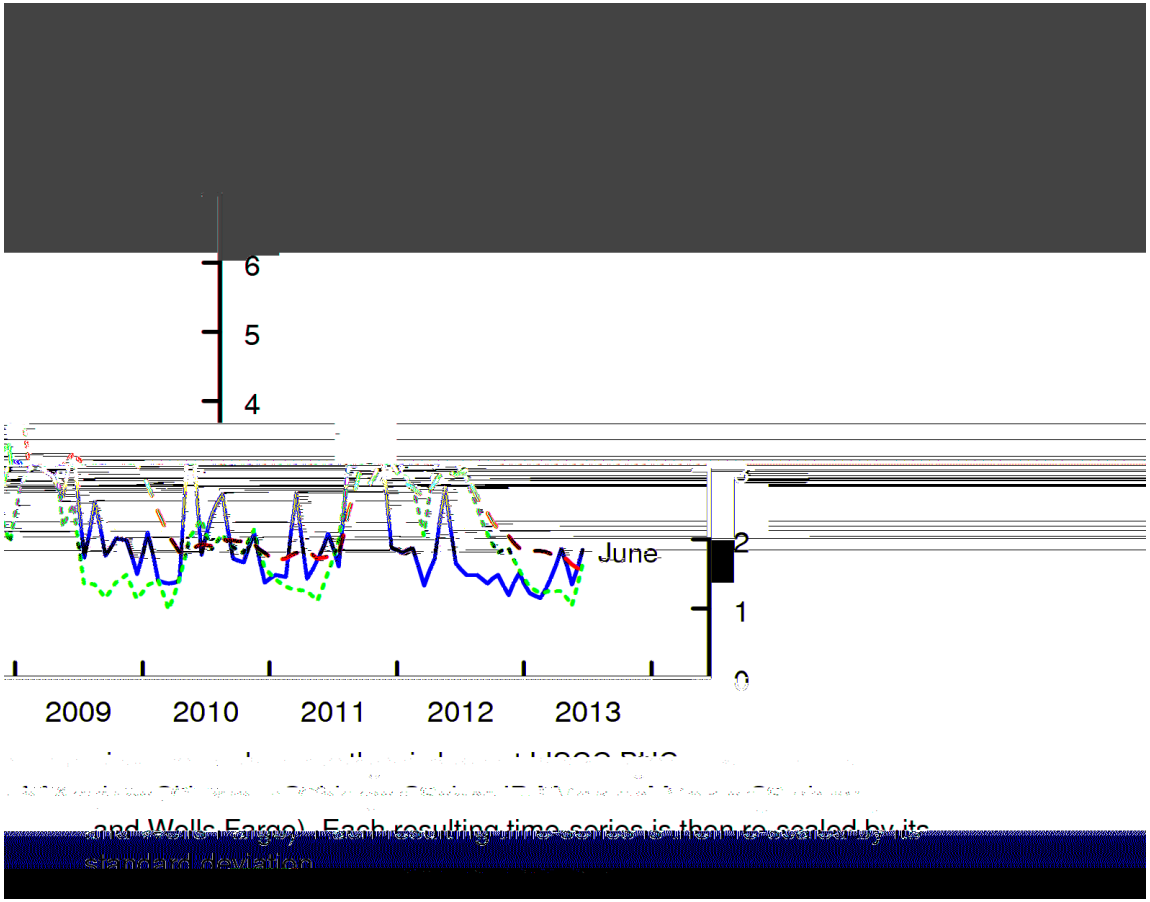
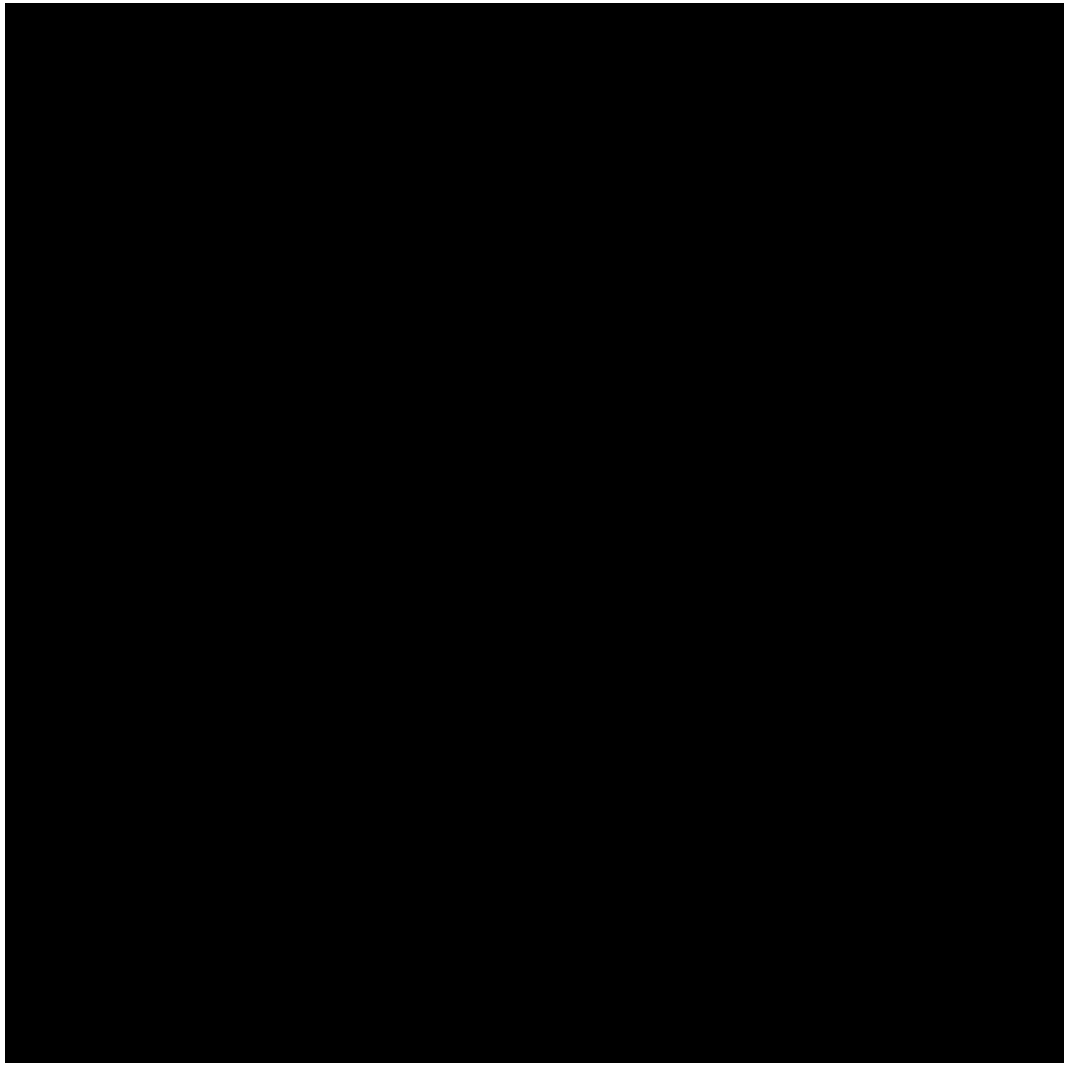


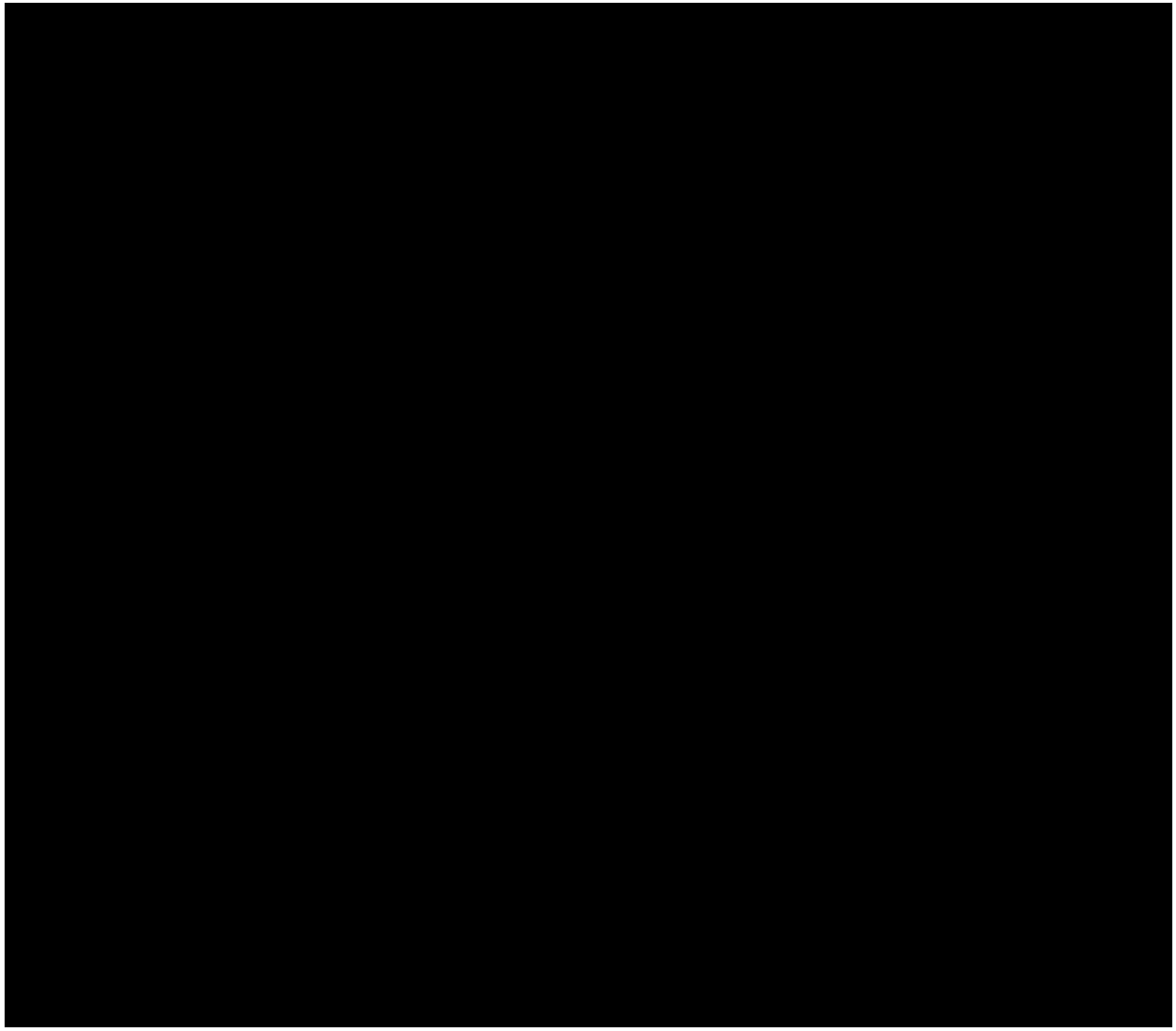
Chart 5
Post stress Capital Ratios 3 - Cs,
Tier Common Ratios, CCAR 2013
Percent
15
12
9
6
3
0
Median = 6.72%
USB
WFC
Ally
AmEx
BofA
BNYM
BB&T
CapOne
Citi
Fifth Third
GS
IPMC
KeyCorp
MS
PNC
Regions
State St
SunTrus



and Wells Fargo). Each resulting time series is then re-scaled by its standard deviation

- 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





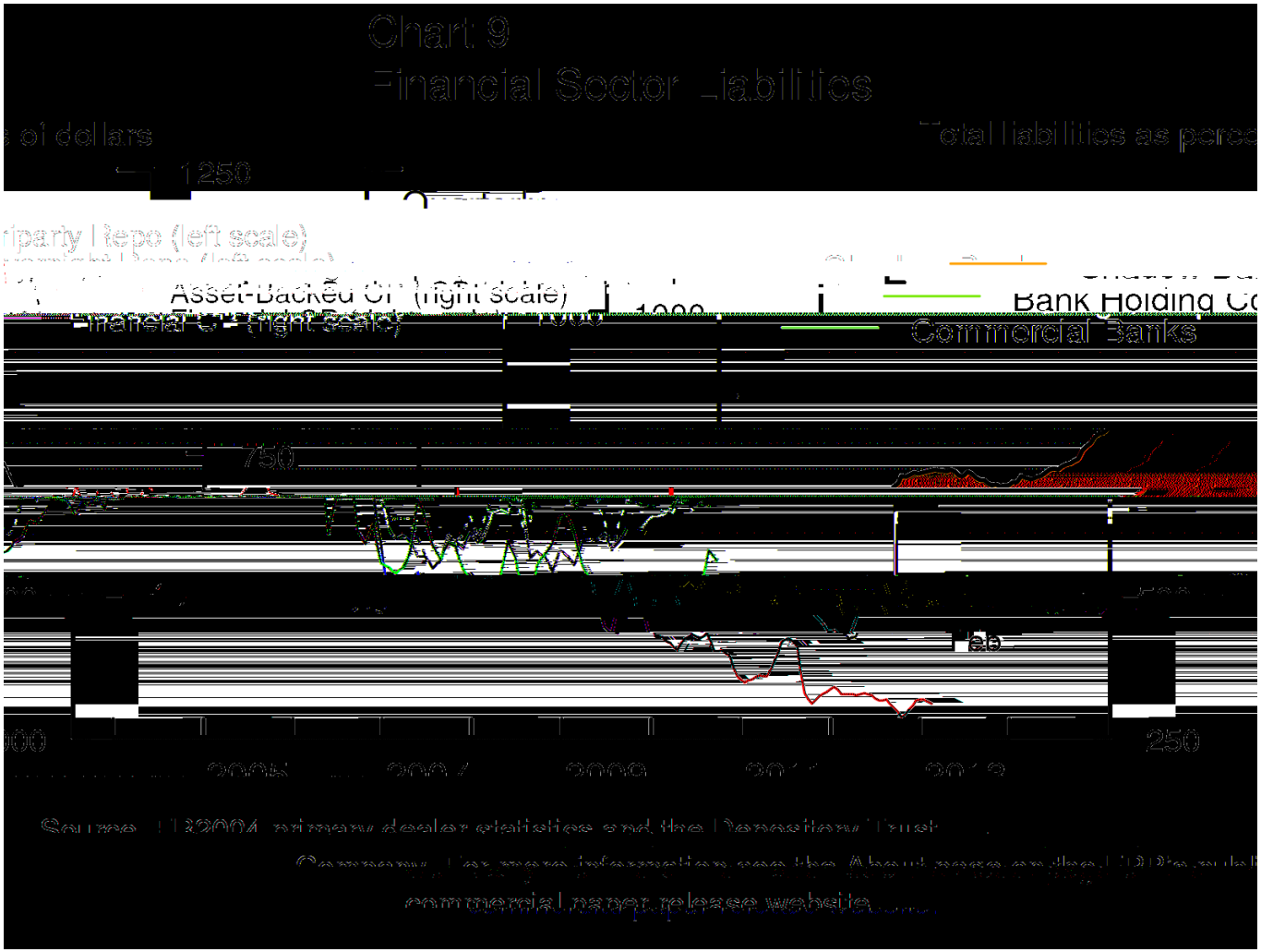
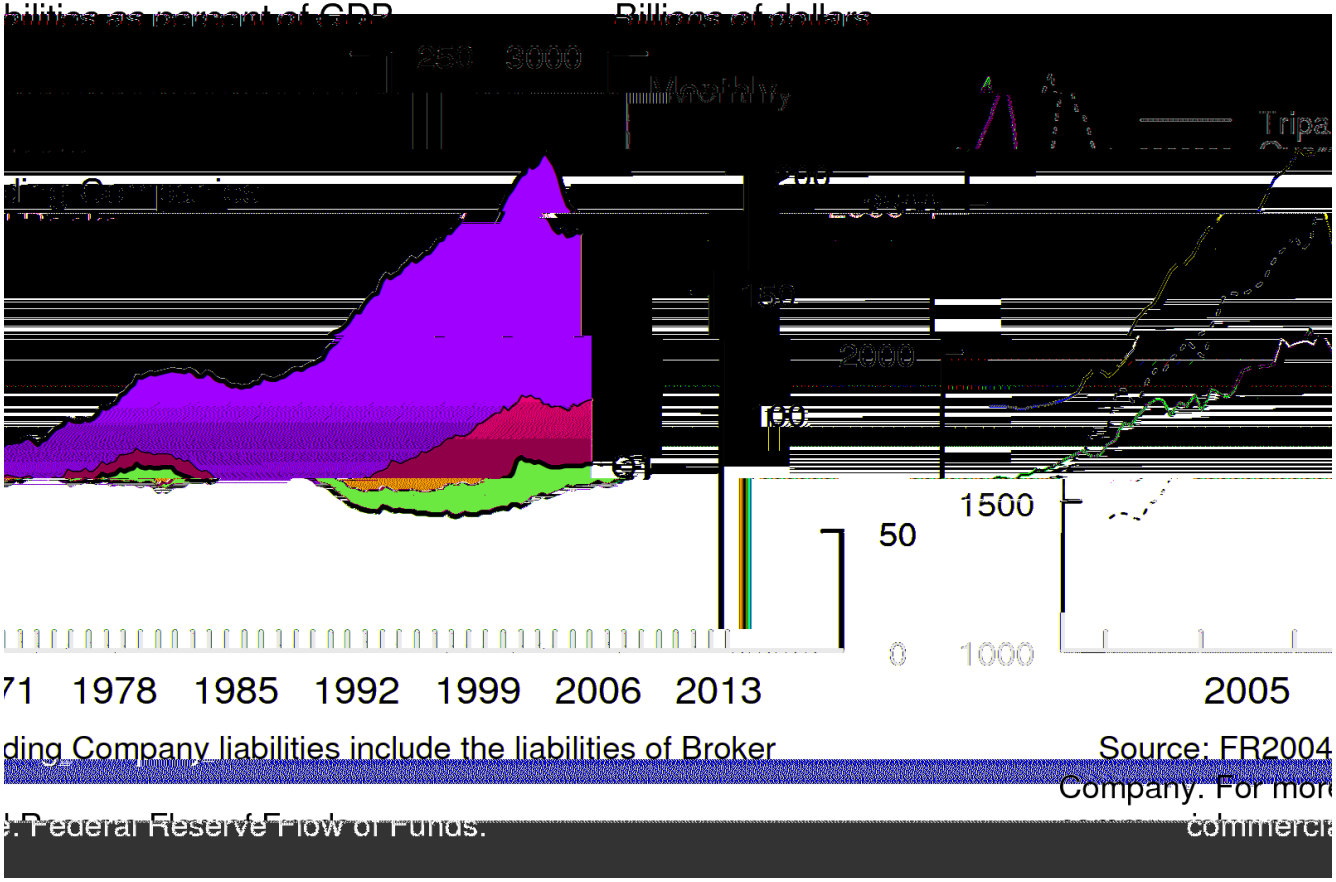


Chart 9
Financial Sector Liabilities
1250
750
Asset-Backed CP (right scale)
Commercial Banks
Feb
250
2005
2007
2009

Chart 10



ding Company liabilities include the liabilities of Broker

Source: FR2004

Company. For more

e. Federal Reserve Flow of Funds.

commercia

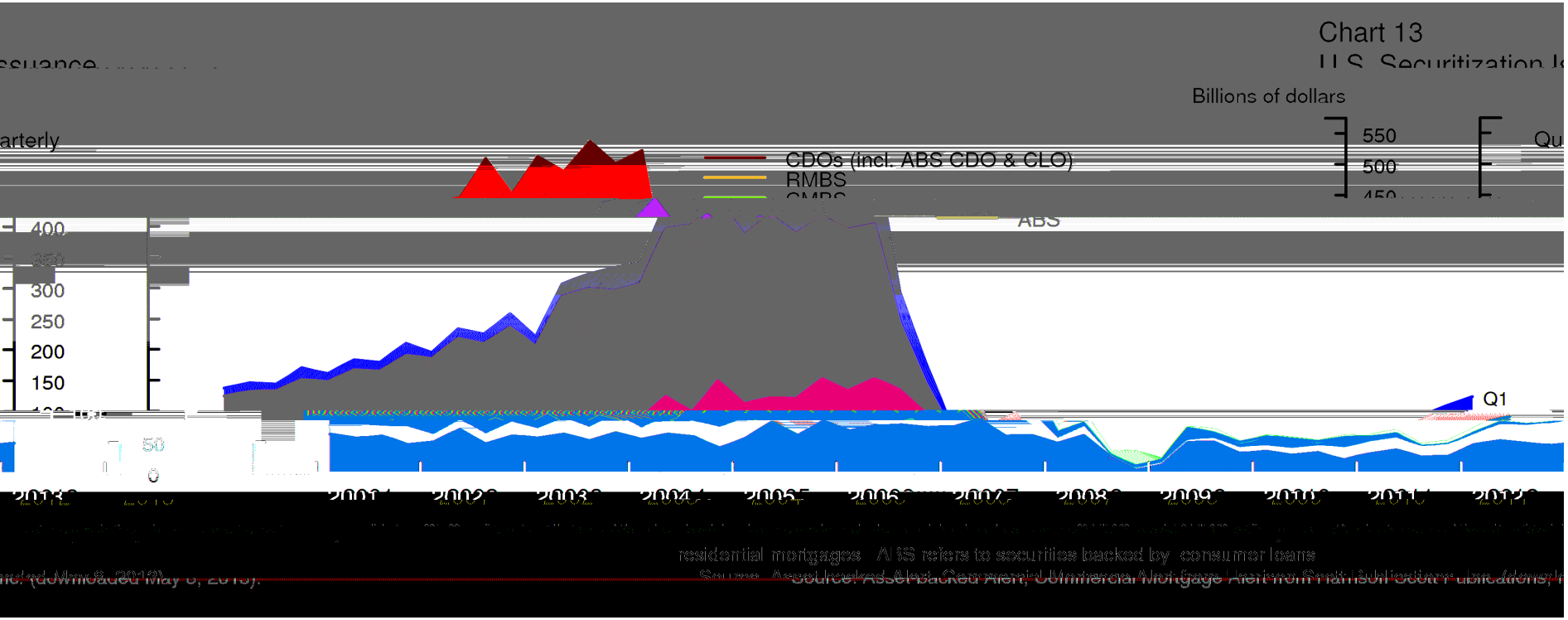
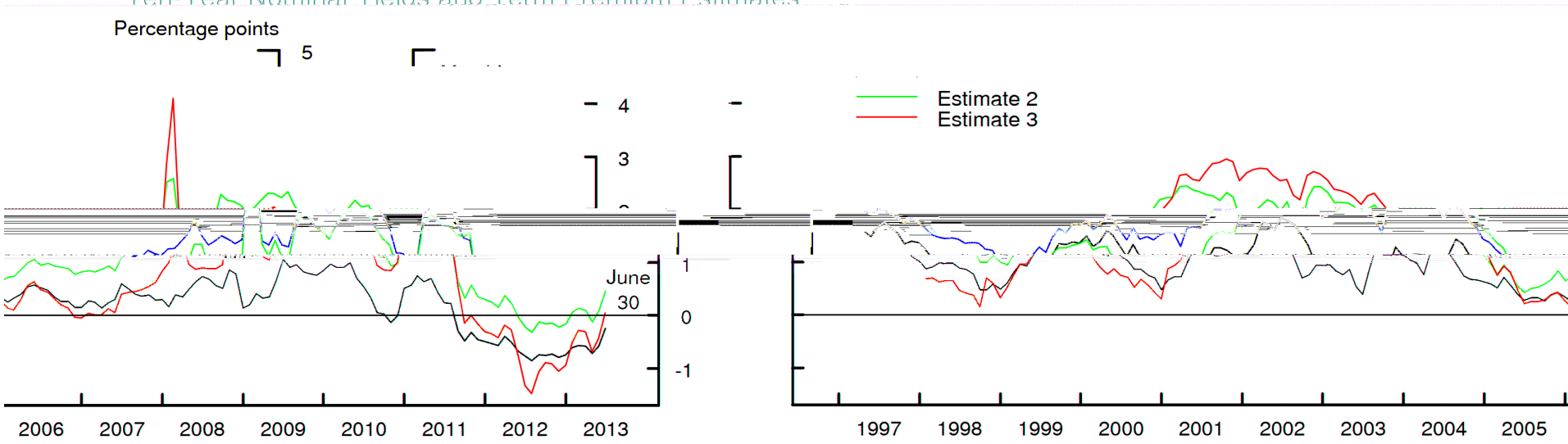


Chart 13
Billions of dollars
550
500
CDOs (incl. ABS CDO & CLO)
RMBS
ABS
400
300
250
200
150
50
0
Q1
residential mortgages. ABS refers to securities backed by consumer loans.

- Inflated asset valuations in booms increase the risk of asset price crashes in busts
- Price and non-price measures of potential bubbles, extremely low volatility

Chart 14

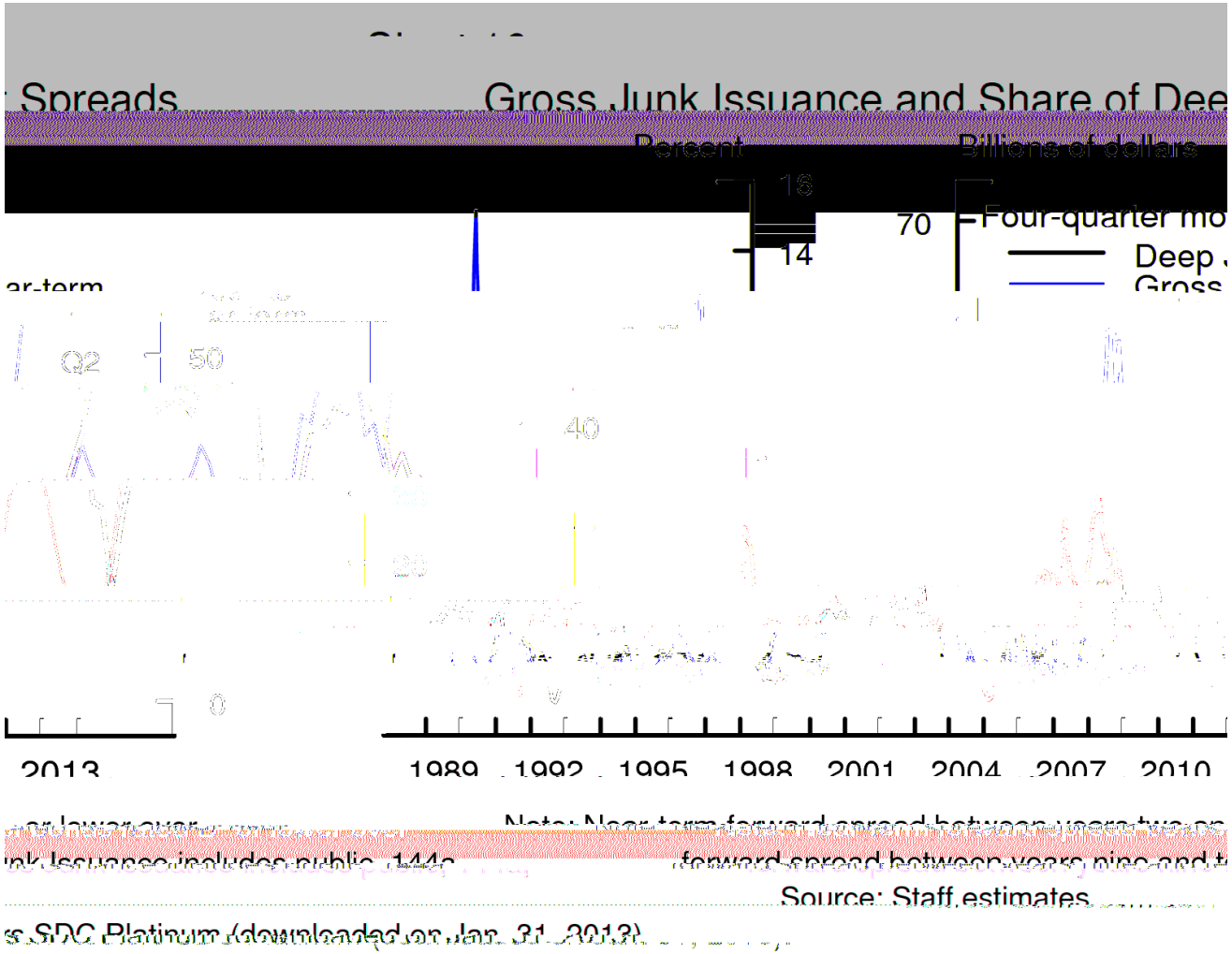
Ten-Year Nominal Yields and Term Premium Estimates

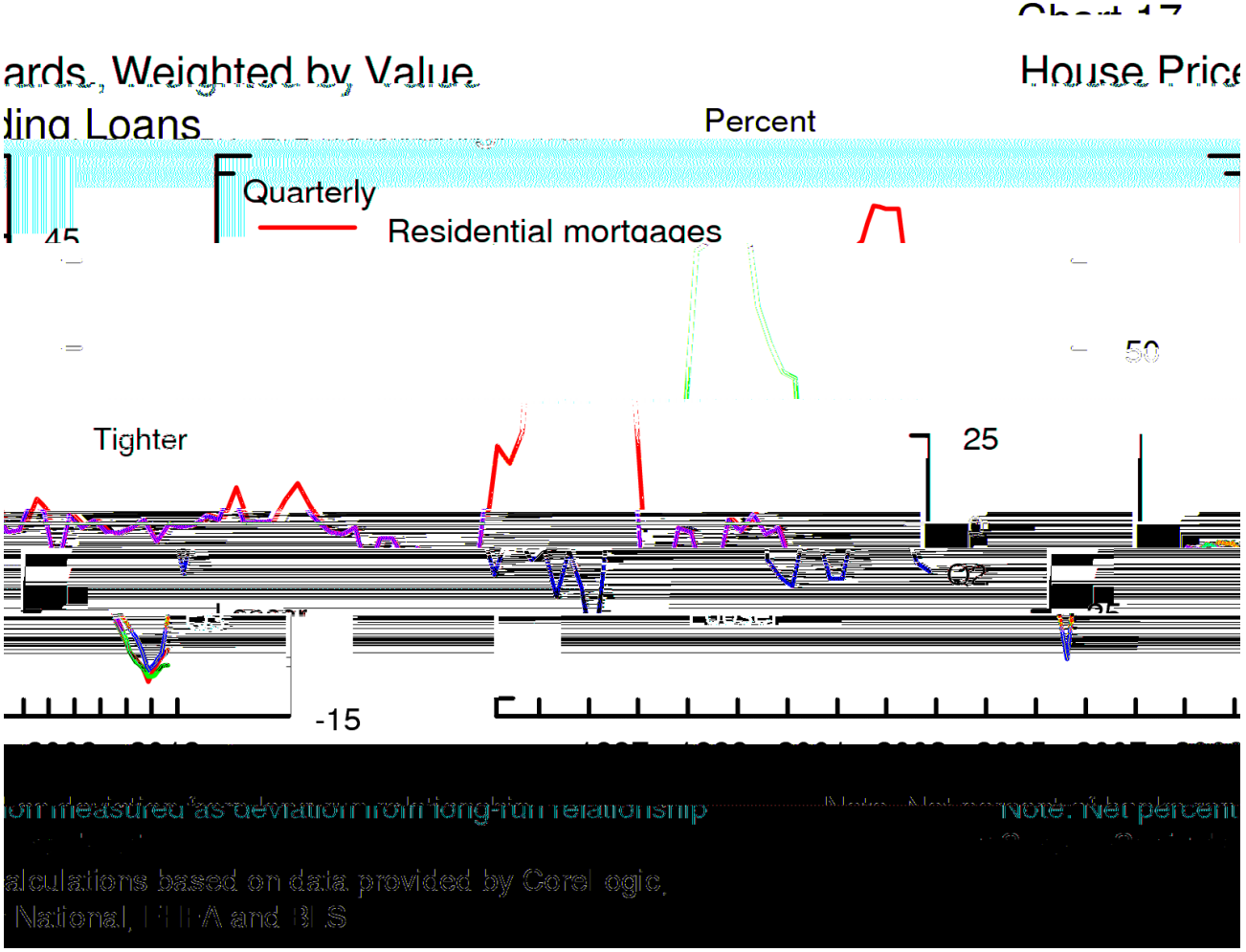


ning Treasury yields with SPF interest rate forecasts (Kim and Wright, 2005)

Note: Term premia are estimated by: Estimate 1: three-factor term structure model combi

yields only (Christensen, Diebold, and Rudebush, 2009).

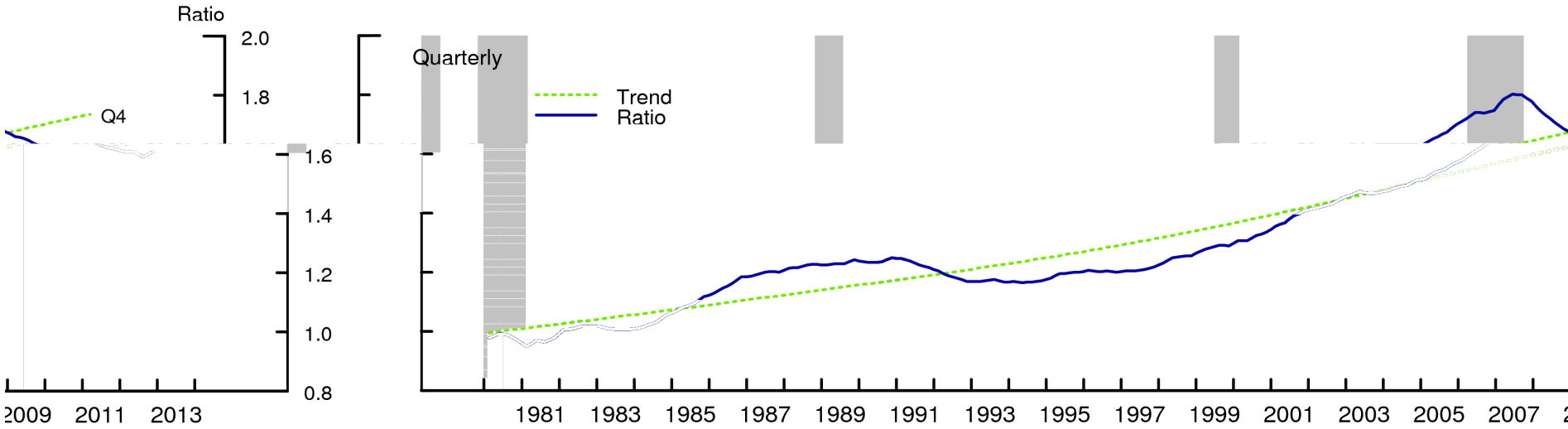

Spreads
Gross Junk Issuance and Share of Dee
Percent
Billions of dollars
16
14
70
Four-quarter mo
Deep
Gross
ar-term
Q2
50
40
30
20
0
2013
1989
1992
1995
1998
2001
2004
2007
2010
Source: Staff estimates


ards, Weighted by Value
House Price
ding Loans
Percent
Quarterly
Residential mortgages
45
50
Tighter
25
-15
alculations based on data provided by Corel ogic,
National, FHFA and BLS

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

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

Chart 19



Note: Calculated using an HP filter. Shaded areas denote NBER recessions.
Source: FOFA, NIPA, and staff calculations.

Chart 20
Debt-to-assets Ratio

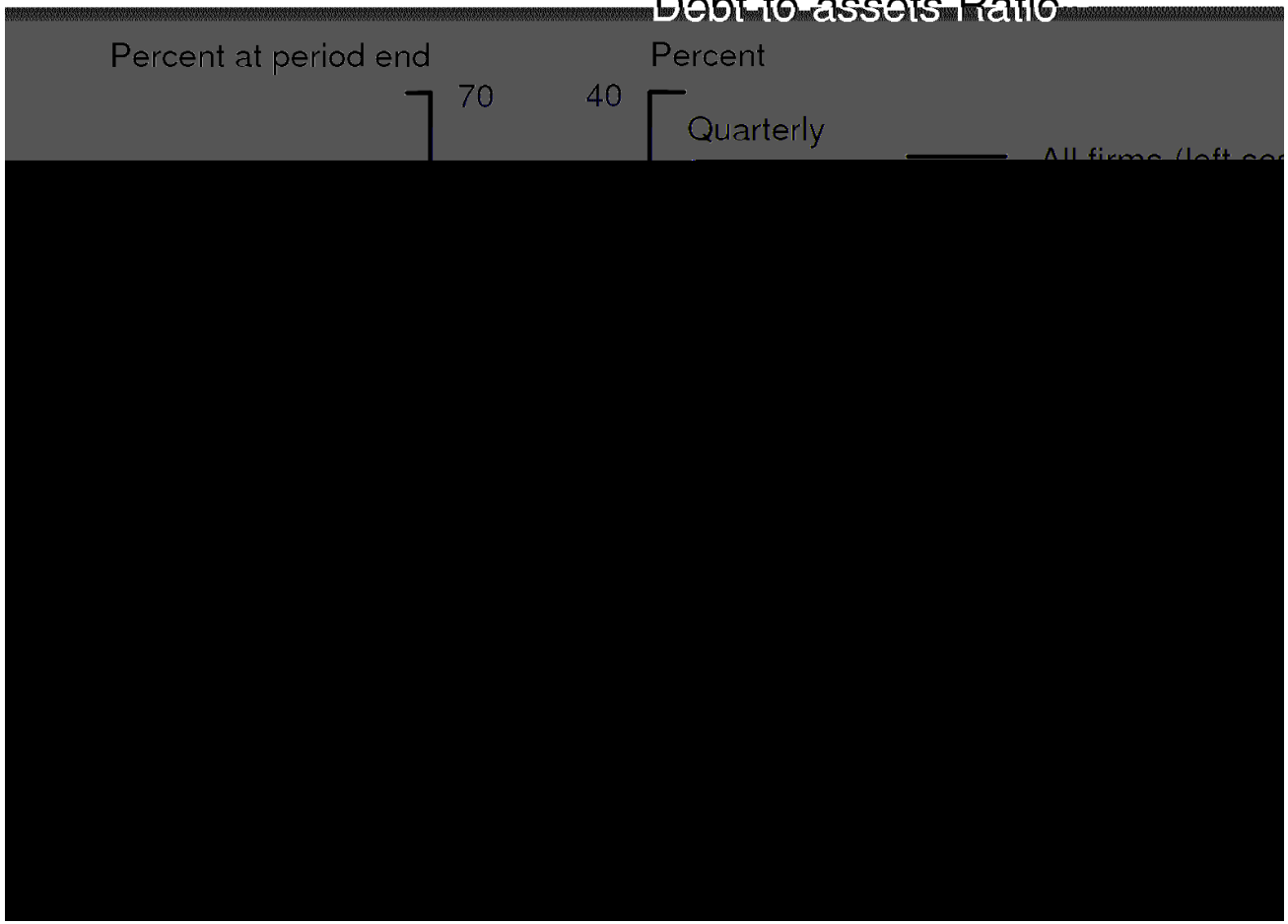
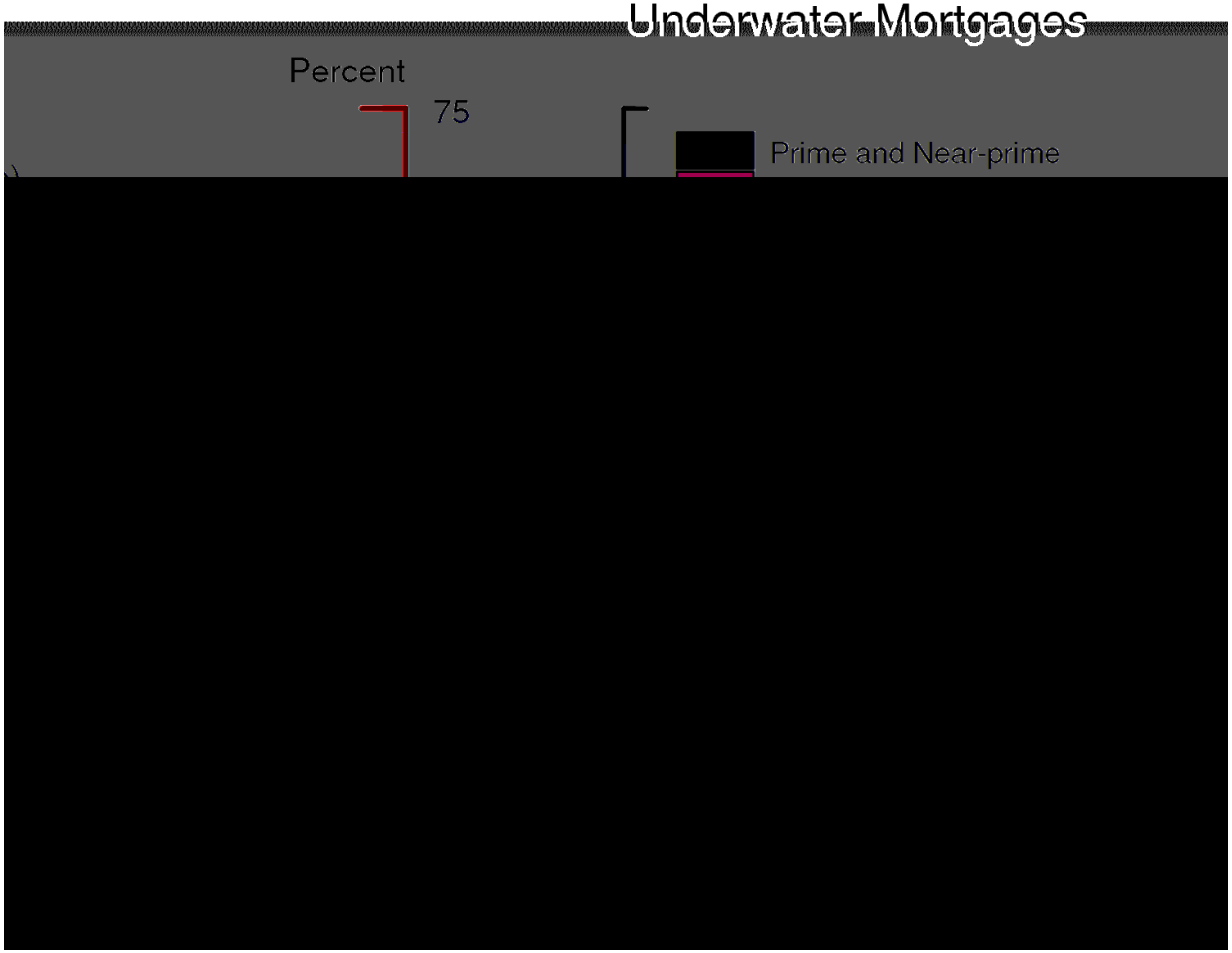


Chart 21
Underwater Mortgages



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

p *s*

2. p *s* *v*

s *p* *v*