FEDERAL RESERVE BANK of NEW YORK

Changes in the US repo market since the crisis

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Agenda

- Quick recap of the risks that the tri-party repo (TPR) market created during the crisis

- Three distinct set of changes have affected the U.S. repo market since the crisis:
  - Tri-Party Repo Infrastructure Reform: Intended to directly impact the TPR market
  - Basel III regulation: Impacting the repo market (not only TPR) indirectly
  - MMF reform

- Much progress has been made, but risk of fire sale in case of default of a large dealer remains

TPR was a source of risk during the crisis

- Poor system design obscured credit and liquidity risk
  - Clearing banks issued large amount of intraday credit and investors assumed they would always unwind and bear the risk

- As large tri-party repo borrowers experienced acute stress clearing banks became uncomfortable with the unwind

- An abrupt decision to not unwind a client's repo would have been fatal for the client…and potentially damaging to others
  - Many cash investors had no capacity to liquidate collateral and absorb losses
  - A sudden recalibration of risk would have left broker dealers without a critical source of financing

Tri-Party Repo Infrastructure Reform

Tri-party Repo Reform Policy Imperatives

- The private-sector TPR task force was asked to address the following elements of the tri-party repo infrastructure:

1. Reliance on large amounts of intraday credit provided by clearing banks to support clearing and settlement
2. Deficiencies in the credit and liquidity risk management practices across all market participants
3. The lack of credible plans and resources to manage the default of a large borrower – fire sale risk

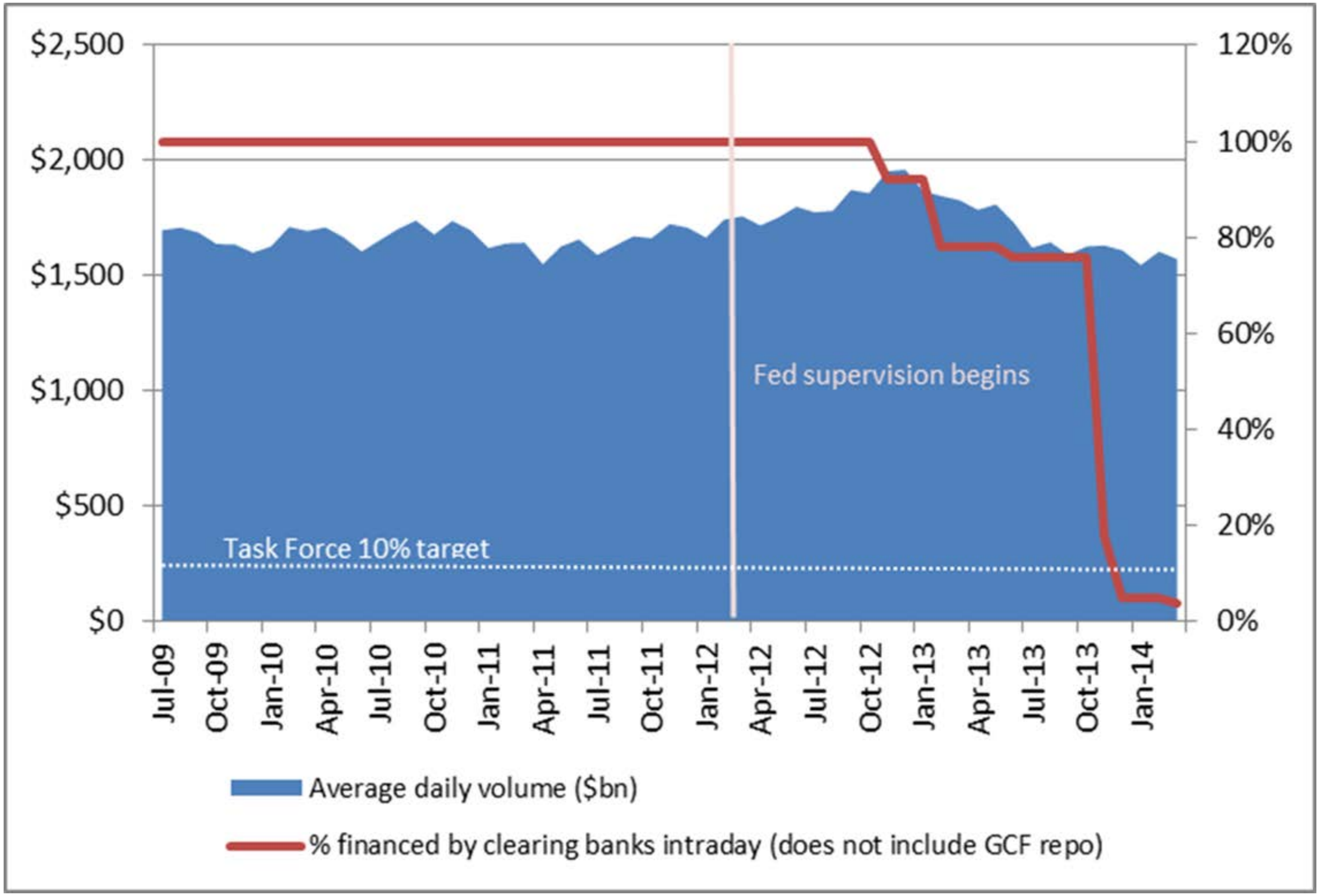
TPR reform: some successes

- Intraday credit extensions by the clearing banks have been below the 10% threshold since the end of 2013
  - Key to this success: Intraday credit must be committed, which incurs a capital charge, providing strong incentives to reduce it

- Market participants have implemented better risk management practices

- Still not plan or resources to deal with fire sale risk in case of a large dealer default

Intraday credit usage has declined below 10%



Improved risk management practices

- Improved clearing bank risk management
  - Lending decision is contractual, not discretionary
  - Clearing bank is less exposed to dealers, more resilient to default of any single dealer

- Dealers are less vulnerable to a clearing bank pullback of credit
  - Settlement process is more credit-efficient
  - Many dealers have termed out their book, reducing exposure to rollover risk

- Lenders are only exposed to borrower
  - Exposure to borrower is “true term”

What about fire-sale risk?

- This issue was discussed by the task force, but no solutions were pursued
- Despite attempts to focus the industry on the risk of fire sales, the topic has not gained traction
  - Several high profile speeches in 2013 by President Dudley, and Governors Stein and Tarullo drew attention to this risk
  - FRBNY staff wrote a paper on the risk of fire sales and organized a conference
- A CCP for repo with broad membership could help reduce fire sale risk, but none has emerged yet

Basel III

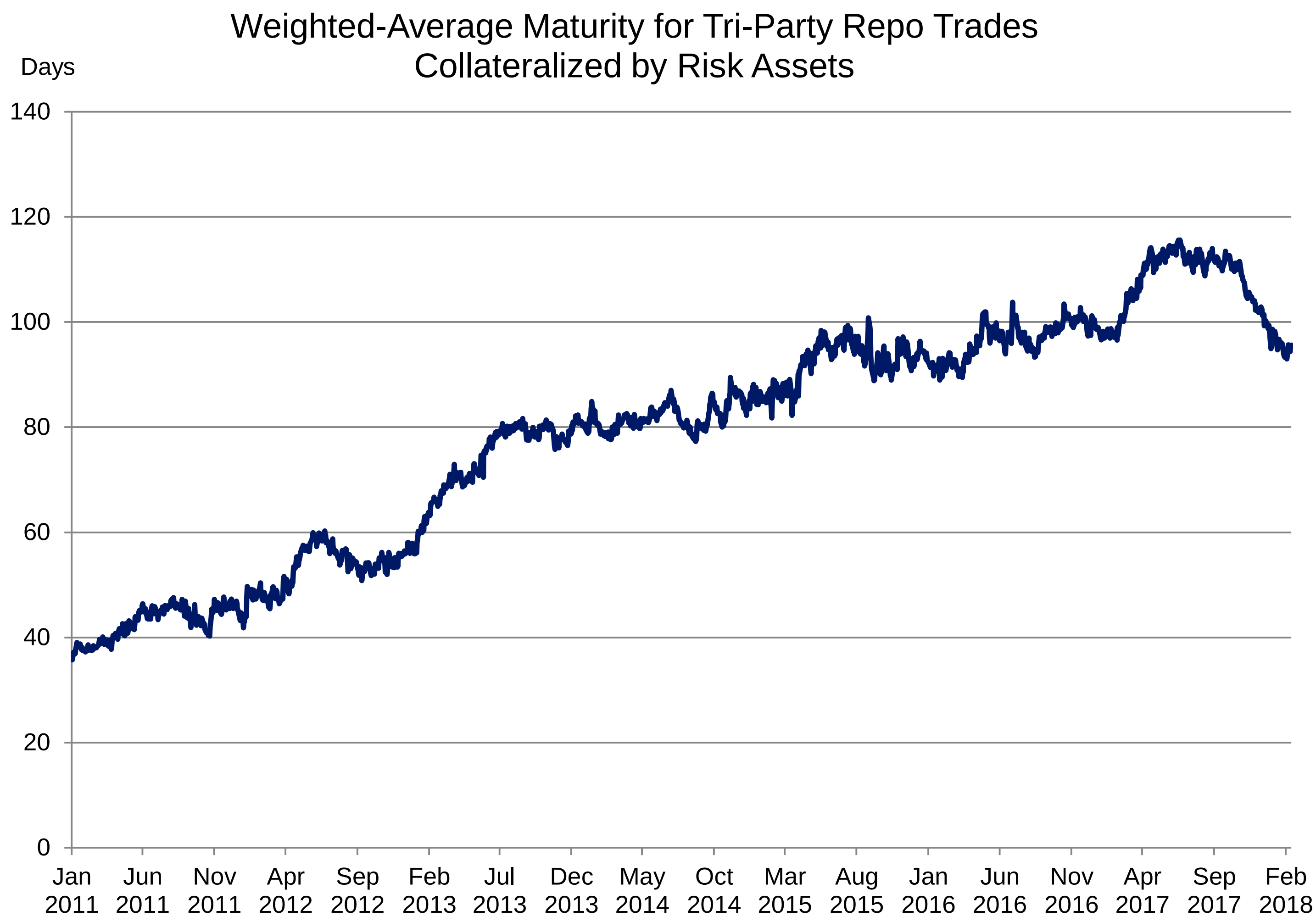
Regulatory reform and the repo market

- Basel III regulatory reform had an indirect influence in the repo market, mainly through the LCR and the leverage ratio

- The LCR contributed to a terming-out of repo books

- The leverage ratio has increased the balance sheet cost of low margin activities, including repo

Dealers are extending the maturity of repos

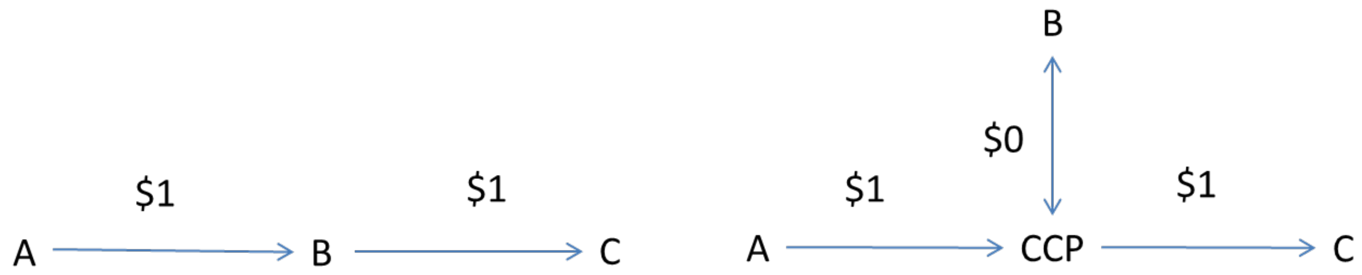


Source: Federal Reserve Bank of New York.

LR creates an incentive to form a repo CCP

- The balance sheet cost of doing repo could be lower if some transactions are netted
  - A repo and reverse repo of same maturity with the same counterparty can be netted from the perspective of the LR

- A repo CCP could provide some netting benefits



Why has it not happened yet?

- Principles for Financial Market Infrastructures require a CCP to have highly reliable liquidity resources to be able to settle its obligations in case of default of its largest member
  - Significant cost in part because repo settles on a gross notional basis (unlike derivatives contracts)

- Leverage ratio (again)
  - Bank affiliated CCP members must hold capital against they liquidity commitment to the CCP

- Balance sheet optimization has reduced the need for netting

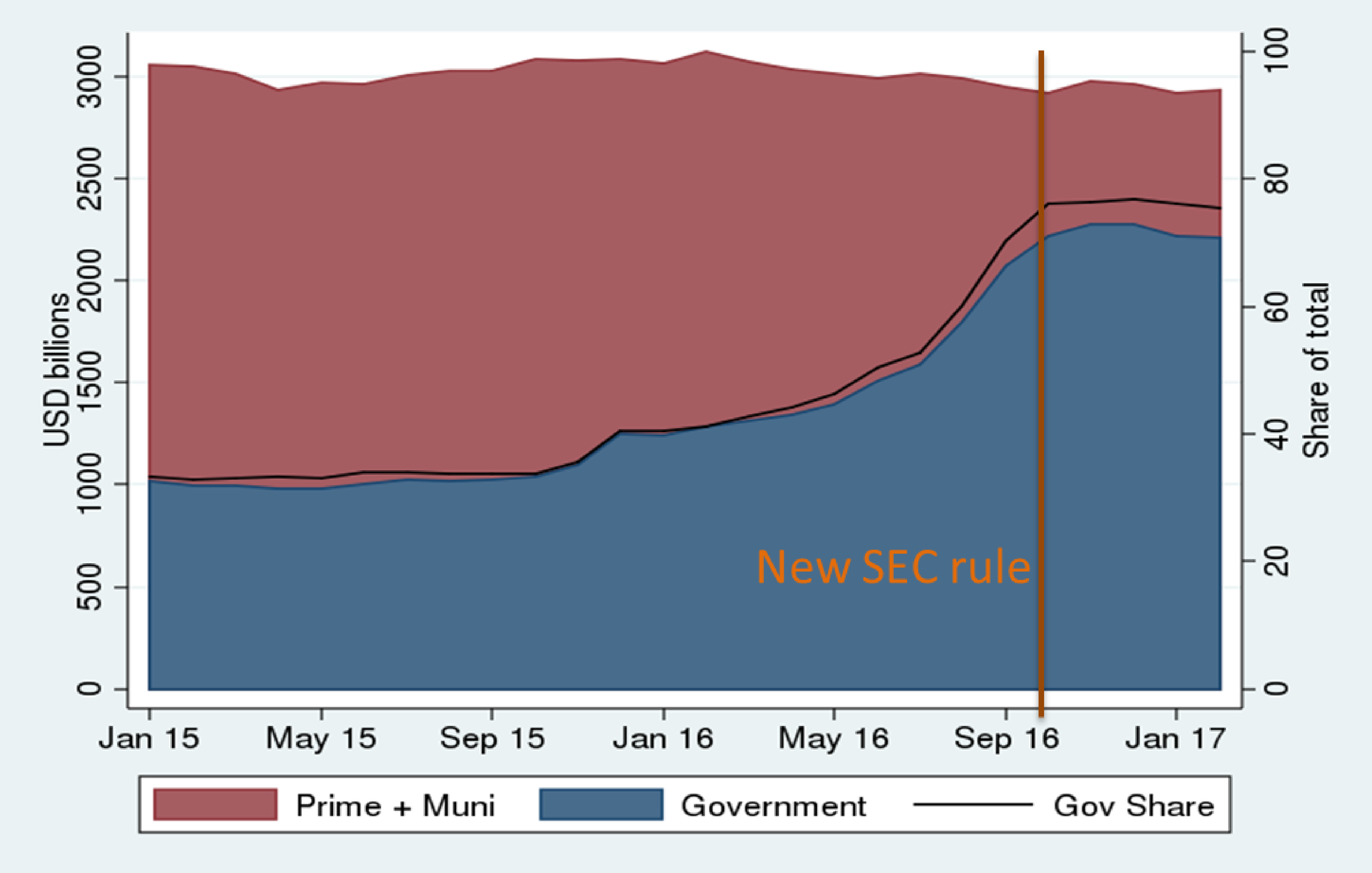
MMF reform

Changes to SEC's rule 2a-7

- The changes are designed to reduce MMFs' susceptibility to destabilizing runs

- Two key elements:
  - Institutional prime and muni funds—but not retail or government funds—can no longer use fixed NAV
  - All prime and muni funds must adopt gates and fees on redemptions, which can be imposed under stress

- The rule change let to a massive shift out of prime and muni funds into government funds



USD billions
3000
2500
2000
1500
1000
500
0
Share of total
100
80
60
40
20
0
New SEC rule
Jan 15
May 15
Sep 15
Jan 16
May 16
Sep 16
Jan 17
Prime + Muni
Government
Gov Share

To sum up

- The repo market is a lot safer than it was
  - TPR infrastructure reform helped reduce extensions intraday credit and led to better risk management
  - Basel III and MMF reforms have also helped

- Fire sale in case of a dealer default is still an important risk

- Fire sale risk could be mitigated by a repo CCP
  - But creating a new CCP or broadening membership of the existing one has proved challenging
  - Some progress recently with FICC’s Centrally Cleared Institutional Triparty and expansion of sponsored membership