Tri-Party Repo Utility Design

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Tri-Party Repo

BUYER
(Cash investor e.g. MMF)

Cash
Securities

TRI-PARTY REPO FACILITY

Cash
Securities

SELLER
(Dealer)
Tri-party Repo Clearing

TPR agent

S1
S2
S3
B1
B2
B3
A systemic flaw

big complex
bank

TPR
facility

B1

S1

B2

S2

B3

S3
Tri-party environment

- Confirm trade
- Select collateral
- Transfer cash
- Transfer securities

BUYER

SELLER
Repurchase

Cash Investor Accounts

Dealer Accounts

Cash

Securities

Repurchase

Cash

Securities
Buyer’s other cash deposit accounts

Cash

Buyer’s repo-clearing cash deposit account

Cash
CPSS-IOSCO FMI Principle 9

“An FMI should conduct its money settlements in central-bank money where practical and available.

If central bank money is not used, an FMI should minimize and strictly control the credit and liquidity risk arising from the use of commercial bank money.”

“One way an FMI could minimize these risks is to limit its activities and operations to clearing and settlement and closely related processes.” (CHIPS)
Securities are transferred into TPR accounts at custodians or central securities depositories.
Collateral is allocated to shells
Tri-party Repo Infrastructure

- **Tri-party agent**: issues confirmations and instructions for cash and collateral transfers.

- **Securities custodian or depository**: maintains securities accounts.

- **Bank (or central bank)**: maintains cash deposit accounts; may also provide secured liquidity.

- **Settlement systems**: processes requests received for cash or securities transfers.
Cash lender diversification benefits

Number of dealer "borrowers"

Average dealer exposure

1  2  3  4  5
A dealer’s economies of scale

Operational costs vs. Number of clearing facilities in use
Clearing bank economies of scale

Number of dealer clients

Fixed operational costs

1  2  3  4  5
Clearing bank economies of scale

Average unit operational costs

Repo volume cleared per dealer
Collateral substitutions

Collateral type 3

Collateral type 2

Collateral type 1

Collateral value (net of haircut)

Time of day
Collateral substitution in two steps

Before                          Mid-step                     After

Collateral value (net of haircut)
Intra-day credit is needed to unwind repos

Maturing repo 3
Maturing repo 2
Maturing repo 1

New repo 3
New repo 1

dealer’s cash
Liquidity for sequential processing

Maturing repo 3
Maturing repo 2
Maturing repo 1
New repo 3
New repo 1

Dealer’s cash
Tri-party Repo FMI Design Goals

1. Accessible accounts for cash and securities.
2. Low total operating costs.
3. Low risk of loss to survivors and “taxpayers.”
4. Low settlement liquidity requirements.
5. Low tri-party agent conflicts of interest through provision of liquidity, collateral valuation, haircut setting, demands for cross-guarantees, continuation of service.
Enabling mechanisms

1. Cash settlement in central bank money, or narrow-bank deposits.
2. Securities held in secure depositories.
4. Settlement finality.
5. Independent collateral valuation and haircuts.
6. Exemption from automatic stay.
7. Enforceable netting.
8. Access to central bank lending of last resort.
Liquidity to Financial Market Infrastructure
Real-Time Gross Settlement

Cash transfers

Settlement

Settlement

Settlement

T1

T2

T3

Time of day
Deferred Net Settlement

Batch settlement

Cash transfers

T1    T2    T3    Time    T4
Loss mutualization via CCP
A few of the dangerous scenarios

1. The TPR agent bank is weakened by unrelated losses. TPR is stopped. Or, dealers or clients are unwilling to place funds in cash clearing account to mature repos. Repos terminate early; collateral held by cash lenders.

2. A dealer fails. The cash investors or clearing bank hold a fire sale of collateral securities.

3. A dealer is in trouble. Cash investors fail to settle purchase leg. Or, the TPR agent is unwilling to provide interim liquidity to unwind repos. Dealer is unable to obtain other financing. Collateral fire sale and dealer failure.
Clearing Bank

1. Capital requirement based on maximum intra-day balance sheet potential exposure to collateral that it could receive that is not eligible for financing at central bank.

2. Unencumbered liquid assets covering maximum potential draw.


4. Access to contingent lender of last resort.
Central Bank Emergency Liquidity
Broad Programmatic Credit Facilities
Lending of Last Resort

Diagram with nodes and arrows indicating relationships between B2, B1, B3, FCB, FB1, FB2, and FMI.
Limited liquidity to an affiliated dealer

bank holding company

bank

broker-dealer

Section 23A
Bear Stearns’ Liquidity Pool Over its Last Days ($ billions)

February March

Data Source: Cox (2008)
Lehman’s tri-party repo book

Source: Copeland, Martin, Walker (2011) FRBNY
September 2008 Run on Money Market Funds

Institutional investment in prime money market mutual funds

Source: Duffie (2012)
Money Market Fund Capital Buffers

Market Value

Accounting NAV

Squam Lake Group (2011)
Money Market Funds

“Stable” NAV

Market Value

100

99.60

Floating NAV

Market Value

99.60
Current Reform of Tri-Party Repo Infrastructure

Pre reform

Cash Investors → Clearing Banks → Cash Investors
8:30AM → 5:30PM

FICC GCF repos settle

DTCC equities available

Fedwire Securities interbank open

Post reform

Cash Investors
3:30PM

Cash Investors

Goal < 10%

Cash Investors
Cash Investors