

Repo Collateral Reuse and Liquidity Windfalls

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Research question and paper's contribution

Research questions

- How large is the repo collateral reuse market in Europe?
- Are intermediating dealers earning a temporary profit by haircut differentials via collateral reuse?
- How much are market participants interconnected and how large is the collateral multiplier?

In this paper we:

- Build on the SFTDS by developing an algorithm à la Fuhrer, Guggenheim, and Schumacher (2016) to identify collateral reuse in the European repo market.
- Develop the first transaction-level collateral multiplier metric, tracking collateral chains and addressing collateral velocity.
- Empirically test the liquidity windfalls hypothesis (temporary profit via haircut differentials).

Main results

- Average reuse rate: 11.67%;**
- Collateral multiplier: 2.95** (rebound to pre-GFC levels; Singh, 2011), direct approximation of collateral velocity;
- Evidence **against** liquidity-windfalls via haircut differentials; differentials co-move with repo-rate differentials.

Data

We use SFTDS, a transaction-level dataset. Main advantages:

- clear distinction between the different SFTs. We analyze only repo market transactions, while other studies cannot distinguish between securities lending, repo, margin lending
- very wide coverage (all European repo reporters);
- 18 million observations of EGB and corporate bond repos.

Our algorithm

2-step approach based on Fuhrer, Guggenheim, and Schumacher (2016):

- Sort by purchase date, maturity, and collateral value.
- Iterate over transactions to enforce reuse conditions.

Main deviation from the cited algorithm: we do not impose the repurchase date for reuse transactions to happen before the repurchase date of the initial transaction. Contrary to Inhoffen and van Lelyveld (2024), our algorithm does not allow more than one initial transaction to back a unique reuse transaction.

Collateral reuse in the European repo markets

Average reuse rate 11.67% with €50bn average daily reuse. Daily reused collateral rose from €39bn to €62bn (+59%).

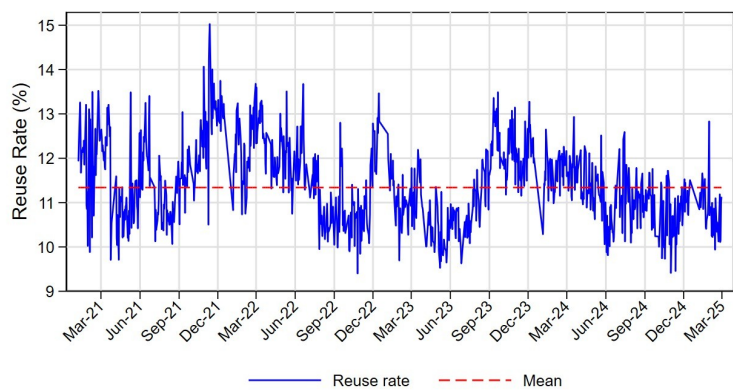


Figure 1. Average Reuse Rate

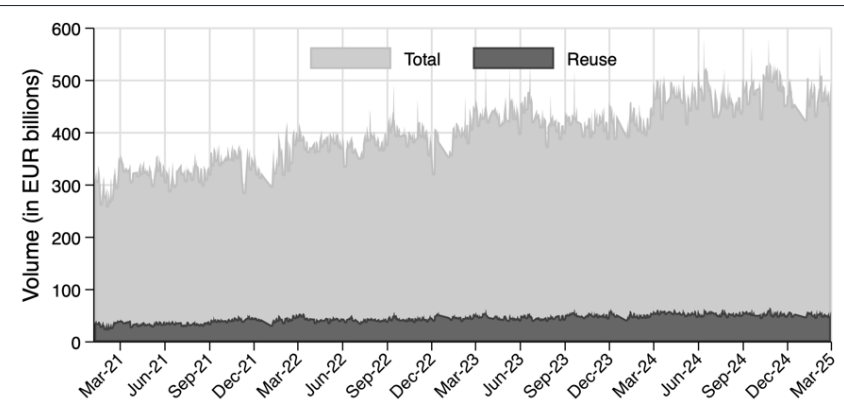


Figure 2. Pledged Collateral – Total vs. Reuse

Collateral chain length

Transaction-level collateral multiplier is 2.95. On average, reused securities pass through three institutions - excluding original owner and including final collateral receiver.

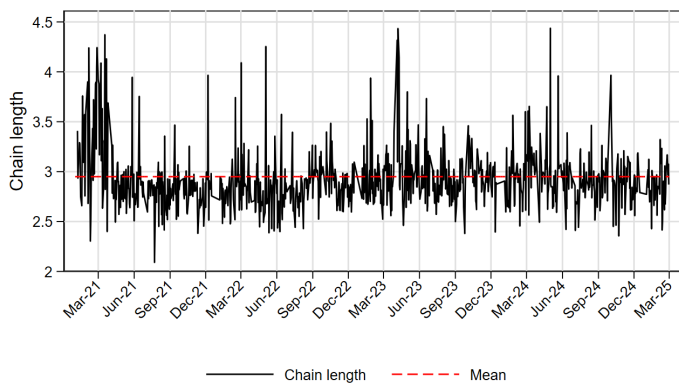


Figure 3. Average Reuse Chain Length

Drivers of reuse

Probit regressions on transaction, counterparty, and collateral characteristics show:

- smaller, shorter trades are more likely to be reused;
- the size of **repo rates** does **not** affect collateral reuse, but the size of **haircuts** matters more
- indicators of financial turmoil and a more hawkish monetary policy stance reduce the probability of reuse, but the effect is small;
- counterparty** characteristics are **crucial** to explain reuse;
- the bond issuer matters when collateral is sovereign bonds;
- specialness does not affect the probability to reuse collateral.

Liquidity windfalls setup

Hypothesis: initial haircut exceeds reuse haircut $\Rightarrow$ temporary cash buffer (*liquidity windfall*); Infante, 2019; Variable of interest is:

$$HC_{\text{initial}} - HC_{\text{reuse}},$$

and if

$$HC_{\text{initial}} > HC_{\text{reuse}} \Rightarrow \text{liquidity windfall.}$$

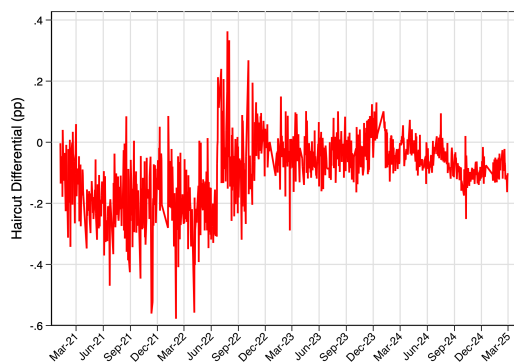


Figure 4. Average Haircut Differentials – Complete sample (mean: -9 bps)

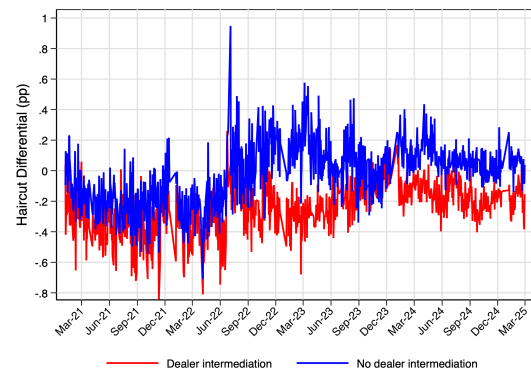


Figure 5. Average Haircut Differentials – Dealer vs. non-dealer (means: -23 bps vs. 0 bps)

Econometric specification

We follow Issa and Jarnećić (2024) in implementing a two-stage Heckman model to account for self-selection bias:

STAGE I:

$$\Pr(\text{reuse}_i = 1) = \Phi\left(\beta_0 + \beta_1 \ln(\text{Notional}_i) + \beta_2 \ln(\text{Term}_i) + \beta_3 \text{Haircut}_i + \beta_4 \text{Repo Rate}_i + \beta_5 \text{OISSpread}_i + \beta_6 \text{Hike}_i + \beta_7 \text{March23}_i + \gamma_{t,b,bw}\right)$$

STAGE II (WLS):

$$\Delta HC_j = \phi_0 + \phi_1 \ln(\text{Notional}_{j2}) + \phi_2 \ln(\text{Term}_{j2}) + \phi_3 \text{NDN}_j + \phi_4 \text{NNN}_j + \phi_5 \Delta R_j + \phi_6 \text{OISSpread}_{j2} + \phi_7 \text{Hike}_{j2} + \phi_8 \text{March23}_{j2} + \phi_9 \text{IMR}_{j2} + \gamma_{t,b,bw} + \varepsilon_j$$

Main results

- Higher* haircuts are applied to reuse transactions relative to initial ones;
- Dealers' intermediation has virtually no impact on this result**, contradicting the existence of liquidity windfalls;
- No trade-off between repo rate and haircut differentials;
- Haircut differentials are generally lower (or more negative) when the bond is later provided via CCP.

Conclusion and further research

Two possible mechanisms:

- There is a certain funding need when participants reuse collateral which limits their ability to profit from this activity
- The mechanism behind reuse is closer to a *search and matching* one, where dealers try to maintain their relationships via intermediating and not putting a lot of emphasis in a temporary profit

Further research (work in progress)

- Deeper analysis of collateral reuse chains. Role of NBFIs and prime brokers in them.
- Connect the collateral reuse chains with the ECB's standing facilities.

References

- Fuhrer, L. M., Guggenheim, B., and Schumacher, S. (2016). Re-use of collateral in the repo market. *Journal of Money, Credit and Banking*, 48(6), 1169–1193.
- Inhoffen, J., and van Lelyveld, I. (2024). *Safe asset scarcity and reuse in the European repo market*. Tinbergen Institute Discussion Paper (No. TI 2024-018/IV).
- Infante, S. (2019). Liquidity windfalls: The consequences of repo rehypotheation. *Journal of Financial Economics*, 133(1), 42–63.
- Infante, S., and Vardoulakis, A. P. (2021). Collateral runs. *The Review of Financial Studies*, 34(6), 2949–2992.
- Issa, G., and Jarnećić, E. (2024). Collateral reuse as a direct funding mechanism in repo markets. *Pacific-Basin Finance Journal*, 86, 102449.
- Kruttli, M. S., Monin, P. J., and Watugala, S. W. (2022). Shock propagation in hedge fund–prime broker credit networks. *Journal of Financial Economics*, 146(3), 965–988.
- Singh, M. (2011). *Velocity of pledged collateral: analysis and implications*. IMF Working Paper 11/256.