The Effect of Primary Dealer Constraints on Intermediation in the Treasury Market

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Road map

1. Paper Summary - focus on conceptual framework and elasticities
2. Comment 1: Dealer's maximization problem: trade-off between VaR and SLR and opportunity costs
3. Comment 2: Other demand shifters and dealer incentives to trade
4. Comment 3: VaR Risk Limits
5. Comment 4: Policy implications
6. Conclusion

Summary - Motivation

- ▶ Key to understanding:
  - ∗ Monetary policy implementation: pricing determinants in the secondary Treasuries market
  - ∗ Fiscal policy: bidding behavior on the primary market for Treasuries
  - ∗ Prudential regulation: pass-through of costs associated with capital requirements, and the relative importance of risk-sensitive (Value at Risk) versus risk-insensitive (Leverage Ratio) requirements
  - ∗ Financial market intermediation: dealer constraints affect pricing and market liquidity

- ▶ **This paper**: Innovative approach and very thorough empirical analysis using novel data on dealer constraints and Treasury markets to inform all of the above

This paper – Main questions

► How do dealer constraints affect intermediation capacity in government bond markets? What are the implications for positions, liquidity, and yields when dealers become more constrained?

  * **Dealer constraints** - two most important capital requirements in banking regulation to date - the risk-insensitive (Supplementary) Leverage Ratio (SLR) and the risk-sensitive Value at Risk (VaR)

  * **Markets** - primary and secondary US Treasury markets

► How do dealer-specific constraints affect absorption capacity of Treasuries during auctions?

► **Elasticities and policy implications:** What is the shadow cost of dealer constraints in Treasury intermediation and outright purchases?

This paper - summary I

▶ Excellent empirical analysis estimating the effects of dealer constraints on the Treasury market using two shocks - tighter constraints lead to a reduction in dealer Treasury positions and turnover, and increase in intermediation margins.

▶ Conceptual framework based on Barbiero et al. (2024) to provide structure, empirical predictions and baseline for calculating elasticities.

▶ Uses regulatory data on US government securities positions and turnover of all primary dealers (FR 2004) combined with individual trading desk VaR limits, VaR utilization and profits (VV-1 dataset).

1. Risk-insensitive SLR - Event study
   * The relaxation of the SLR in April 2020 to exclude US Treasury securities
   * Diff-in-diff approach around the event - not all dealers were affected
   * Baseline time period: 2020, weekly
   * Main measure: **Gross** Treasuries positions

This paper - Summary II

2. Trading desk risk-sensitive VaR limits and intermediation - Granular Instrumental Variable (GIV) Approach
   * Carefully measures granular, high-frequency, dealer-level idiosyncratic changes in VaR limits for Treasury intermediation
   * Constructs time-varying and maturity-specific Treasury securities limit shocks for maturity bucket m at time t, based on VaR limit changes of individual dealer i
   * Baseline time period: 2016-2023, weekly
   * Main measures: **Net** Treasuries positions, turnover, and bid-ask spread
3. Reactions to demand shifters: (1) MBS duration; (2) Euro-area monetary policy rate change (EURIBOR)
4. VaR effects on the primary market for Treasuries: tighter dealer constraints weaken auction outcomes

This paper - Conceptual Framework

▶ Ingredients: representative market maker which intermediates government bonds. Takes demand for bonds as given, and chooses the spread and own exposure to bonds.

▶ Log bond price is p, and has spread s

▶ Demand: $D(p + s)$, supply: $S(p - s)$, and market turnover: $t = D(p + s) + S(p - s)$

▶ Dealer chooses spread s and (non-zero) Treasury exposure δ to maximize intermediation revenue subject to generic marginal cost λ

$$max_{s, \delta} \pi(D, S, p, s, \lambda, \delta) \text{ s.t. } \delta = S(p - s) - D(p + s) \qquad (1)$$

This paper - Elasticities and shadow cost of dealer constraints

▶ Upper limit $\bar{\delta}$ on Treasury exposure binding in equilibrium

▶ FOC can be re-written in terms of the spread elasticity of turnover ϵ_t and the spread elasticity of net position ϵ_δ as:

$$\underbrace{\frac{s \cdot t}{\delta}}_{\text{income relative to position}} \quad (1 + \epsilon_t) = \underbrace{(\lambda - r)}_{\text{shadow cost of constraint minus net return}} \quad \epsilon_\delta \qquad (2)$$

▶ Back out spread elasticities and cost of constraints from the SLR and VaR analysis

Table 12: Estimated Elasticities and Shadow Cost of Constraints

	Bid-Ask Spread Elasticity of		Ratio of Elasticies	Cost of Constraint
	Turnover, ϵ_t (1)	Position, ϵ_δ (2)	$\frac{1+\epsilon_t}{\epsilon_\delta}$ (3)	(% Margin) (4)
SLR estimates	-0.76	-0.93	-0.26	6.3
VaR estimates	-0.71	-0.87	-0.33	8.7

Comment 1: VaR - SLR trade-off and dealers' choices

▶ The dealer chooses Treasuries in isolation, but what is the opportunity cost? Imperfect substitute - Reserves

▶ Marginal costs λ are time-varying - most binding could be either VaR or SLR (see e.g., Cochran, Petrasek, Saravay, Tian, Wu - Oct 2024, FEDS Note) - the alternative investment opp. also matters

▶ Dealer flexibility to choose spreads s can also depend on:
  * who else operates in the market - recent increase of Non-Bank Financial Intermediaries (NBFIs) not subject to the same regulation as dealer banks change market dynamics (see e.g., Kashyap, Stein, Wallen and Younger, 2025 - Brookings WP)
  * increase in supply of Treasuries from e.g., Federal Reserve balance sheet normalization

▶ All these assumptions (and more) feed into the elasticity estimates and shadow costs of constraints

Comment 1: Time varying binding constraints

Figure 1. Supplementary Leverage Ratio – Six Largest Dealers
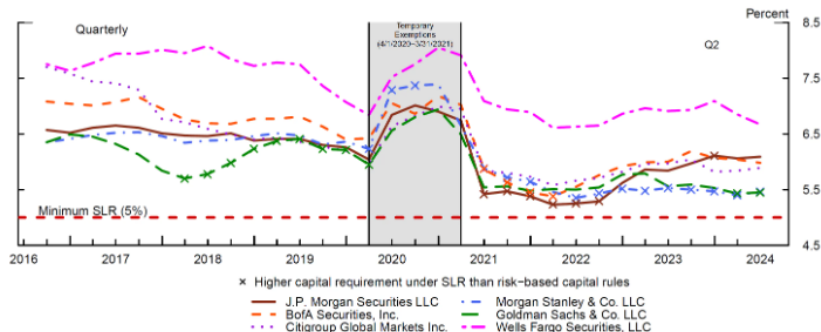
Note: The temporary exemption period reflects the temporary exclusion of Treasury securities and reserves from total leverage exposure.
Source: FR Y-9C and FFIEC 101

Source: Cochran, Petrasek, Saravay, Tian, Wu (Oct 2024, FEDS note) - "Assessment of Dealer Capacity to Intermediate in Treasury and Agency MBS Markets"

Comment 1: VaR - SLR trade-off and dealers' choices

▶ An alternative maximization problem of the dealer which may give different elasticity and cost estimates could be:

$$max_{I,w,s}\pi(I, w, s) \text{ s.t. } VaR(w, I) \leq \overline{\text{VaR}} \text{ and } SLR(w, I) \geq \overline{\text{SLR}} \qquad (3)$$

where w is the Treasury portfolio weight of total investment I and $(1 - w)$ is the weight in Central Bank Reserves or another investment opportunity.

▶ Authors could expand why the elasticity estimates from VaR and SLR are so similar given the different time periods or how would they vary in time.

▶ Why is the shadow cost of the VaR constraint higher than for SLR for low-risk leverage intensive investments such as Treasuries? What are the VaR sources?
  * Dealers hedge with swaps - interest rate DV01 is close to zero (Lu and Wallen, 2024)
  * Is it basis risk? Volatility from balance sheet normalization?
  * Does the gross (SLR) vs net position (VaR) comparison matter?

## Comment 2: Other demand shifters and dealer incentives to trade

▶ What is the *overall* profit a dealer makes by trading Treasuries and what does it depend on?

   * In the model is spreads from intermediating bond purchases, in the back of the envelope calculation is profits from the trading desk. But also...

   * Demand in derivative markets - swaps or futures. Swap spreads?

   * Repo demand - e.g., some dealer banks warehouse Treasuries when intermediating in the repo market (Lu and Wallen, 2025) - variation that could be exploited

   * Treasuries are also held to meet HQLA requirements ...

▶ This could be a new paper!

Comment 3: VaR Risk Limits

▶ Li, Petrasek and Tian (2025, FEDS Staff WP) use the same data and show that internal VaR risk limits on the dealer Treasury trading desks are very persistent - could engage to clarify the complementary aspects

▶ Structural break of GIV Limit Shocks in 2022? Sample split? Sources of variation?

Figure A.6: Limit Shocks by Maturity Bucket
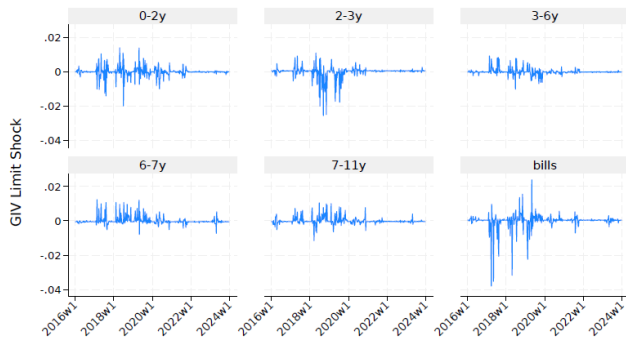
Comment 4: Policy implications

▶ Excellent framework to think of optimal capital requirements - Treasuries inclusion in the SLR calculation?

▶ VaR pro-cyclicality in times of stress? Negative effects on market liquidity?

▶ Implications for financial stability or yield curves during periods of market volatility?

▶ I think the current discussion of policy implications does not do enough justice to all the results and potential links to optimal policy that are in the paper.

To wrap up

- ▶ Very polished paper that shows in a convincing manner the effects of main banking constraints on dealer intermediation in the Treasury market.

- ▶ Very policy relevant for Monetary Policy, Banking Policy and Fiscal Policy (and more...)

- ▶ In future work the authors could analyze in more detail the opportunity costs of intermediating Treasuries and the interaction between SLR and VaR

- ▶ I learned a lot, and I highly recommend reading it! All the best with the publication!

References

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