Special Repo Rates and the Cross-Section of Bond Prices: the Role of the Special Collateral Risk Premium

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The paper in a nutshell

- The relationship bw U.S. Treasury cash and repo rates.
- Cross-sectional variations in Treasury's convenience yields and in repo special spreads. Are they related?
- The special spread decomposed into expected and unexpected components, which demands a risk premium (SC risk premium).
- SC risk premium explains the on-the-run premium, TIPS-Treasury bond puzzle, and relative TIPS illiquidity.

Main pricing mechanism

- Repo: Holder of bond *i* gone "on **special**" temporarily sell it and borrow at rate R_i.
- Reverse Repo: Borrowed cash is lent at r obtaining a **General Collateral** (GC)
- $(r - R_i)$ determines the dividend or convenience yield. The larger the special spread, the higher the dividend.
- Although short term and secured by safe asset, there is still some uncertainty about the dividend's realization.
- Unexpected component of the special spread captures the risk premium.

Comment 1

- Other reasons than GC-Special "carry"? Other mechanisms justifying the SP risk premium?
- What about short selling?
- Dealer's inventory risk and regulatory issues (e.g. in March 2020 - pandemic crisis)?
- Market making?
- What about other issues affecting more the GC leg?

Comment 2

- Structural view of bond-repo pricing relationship
- $\eta_{i,t} = \alpha_i + \beta_1 y_t^i + \beta_2 \eta_{i,t-1} + \varepsilon_{it}$ (1)

- $\eta_{i,t}$: unexplained model-implied component of bond price
- y_t^i: special spread related to asset *i*

Comment 2

- Structural view of bond-repo pricing relationship
- $\eta_{i,t} = \alpha_i + \beta_1 y_t^i + \beta_2 \eta_{i,t-1} + \beta_3 liq_{i,t} + \varepsilon_{it}$ (1)

- $liq_{i,t}$: What about bond liquidity (premium)?

- $\eta_{i,t}$: unexplained model-implied component of bond price
- y_t^i: special spread related to asset *i*

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- $liq_{i,t}$: What about bond liquidity (premium)?

- Notice that Duffie (1996) predicts **larger specialness for more liquid** assets whereas the **safe asset literature** the opposite.

Comment 2

- Structural view of bond-repo pricing relationship
- $\eta_{i,t} = \alpha_i + \beta_1 y_t^i + \beta_2 \eta_{i,t-1} + \beta_3 risk_{i,t} + \varepsilon_{it}$ (1)

- $risk_{i,t}$: What about risk such as bond risk or that of asset substitutes (safety premium)? E.g. Liu, Yaron, Schmid (2019)

- $\eta_{i,t}$: unexplained model-implied component of bond price
- y_t^i: special spread related to asset *i*

Comment 2

- Structural view of bond-repo pricing relationship
- $\eta_{i,t} = \alpha_i + \beta_1 y_t^i + \beta_2 \eta_{i,t-1} + \beta_3 h_{i,t} + \varepsilon_{it}$ (1)

- $h_{i,t}$: What about other "frictions" such as repo haircuts or derivatives margins or risk bearing capacity?

- $\eta_{i,t}$: unexplained model-implied component of bond price
- y_t^i: special spread related to asset *i*

Comment 3

- Model specification for individual repo spread y_t^i of repo *i*
- $$y_t^i = \left[y_{(t,i)}^D + y_t^S + x_t^i\right]^2 \qquad (2)$$

- $y_{(t,i)}^D$: deterministic auction cycle component
- y_t^S: stochastic process capturing risk component
- x_t^i: residual term
- Agents form expectations about the special spread on the basis of the auction cycle.

Comment 3

- Model specification for individual repo spread y_t^i of repo *i*
- $y_t^i = \left[y_{(t,i)}^D + y_{(t,i)}^R + y_t^S + x_t^i\right]^2$ (2)

- $y_{(t,i)}^D$: deterministic auction cycle component
- y_t^S: stochastic process capturing risk component
- x_t^i: residual term
- $y_{(t,i)}^R$: What about **regulatory seasonality** and **institutional issues** such as "expiration" time of derivative contracts?

Comment 3

- Model specification for individual repo spread y_t^i of repo *i*
- $y_t^i = \left[y_{(t,i)}^D + y_t^M + y_t^S + x_t^i\right]^2$ (2)

- $y_{(t,i)}^D$: deterministic auction cycle component
- y_t^S: stochastic process capturing risk component
- x_t^i: residual term
- y_i^M: What about **time-varying common determinants** such as overall market repo rate or monetary policy rate?

Overall

- A super interesting paper !!! 

The first serious attempt …

1) to estimate the joint term-structure of U.S. Treasury cash and repo rates.
2) to highlight the risk premium associated with specialness.
3) to relate that risk premium to bond pricing anomalies.