Discussion of
“Corporate Bond Liquidity Before and After the Onset of the Subprime Crisis”
by J. Dick-Nielsen, P. Feldhütter, D. Lando

Discussant: **Loriano Mancini**
Swiss Finance Institute at EPFL

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Goal of the paper

- Impact of illiquidity on corporate bond spreads:
  \[ \text{spread}_{it} = \alpha + \gamma \text{illiquidity}_{it} + \theta \text{credit-risk}_{it} + \ldots + \epsilon_{it} \]

- Economically highly relevant issue

- Challenging task:
  - illiquidity and credit risk not observed (need proxies)
  - illiquidity difficult to quantify (many dimensions)
  - illiquidity small fraction of spreads
    (e.g. 3% for AAA bonds, pre-subprime)

- Inference method: pooled linear regression

- Methodology: PCA on eight, different, liquidity measures \( \Rightarrow \)
  New liquidity measure
  \[ = 1\text{st PC} \approx \text{Amihud} + \text{URC} + \text{std(Amihud)} + \text{std(URC)} \]
Main empirical findings

- During subprime crisis:
  - Bid-ask spreads ↑ strongly
  - Market depth ↓
  - Liquidity risk ↑
  - Number of trades ↑, trade size ↓ (to reduce price impact)

- Impact of illiquidity on AAA bond spreads small (flight-to-quality)

- Liquidity slowly returns in second quarter of 2009

- Fraction of bond spreads due to illiquidity is generally small
  E.g. pre-subprime: 3% AAA, 8% BBB;
  during subprime: 7% AAA, 29% BBB

- ↓ Liquidity of bonds underwritten by Bear Stearns and Lehman Brothers during their financial distress / default (liquidity spiral)

- Not use DATASTREAM, but TRACE for zero trading days, etc.
Yield spread

- On last day \( t \) in the quarter and for every bond:

\[
\text{spread}_{it} = \text{daily-average yield}_{it} - \text{swap rate}_{t}
\]

- daily-average yield\(_{it}\) =
  average yield for all trades on last day \( t \)

- In total > 8 million trades from 10/2004 to 6/2009
  - Is a substantial amount of data discarded?
  - Analysis at higher frequency? (some analysis monthly)

- Reason: quarter end yield spreads allow for lagged in time liquidity measure \( \Rightarrow \) avoid endogeneity
Regression methodology

- For each rating, before and during subprime, pooled linear regression:

  \[ \text{spread}_{it} = \alpha + \gamma \text{illiquidity}_{it} + \theta \text{credit-risk}_{it} + \ldots + \epsilon_{it} \]

- Regression for each liquidity measure:
  \( R^2? \) Residual diagnostics?

- Use all liquidity measures (horse race)? Multicollinearity?

- Another viewpoint: Partitioned regression
  - Regress \( \text{spread}_{it} \) on \( \text{credit-risk}_{it} \): residuals \( \text{spread}^*_{it} \)
  - Regress \( \text{illiquidity}_{it} \) on \( \text{credit-risk}_{it} \): residuals \( \text{illiquidity}^*_{it} \)
  - Then, partial correlations between \( \text{spread}^*_{it} \) and \( \text{illiquidity}^*_{it} \), etc.

- Crucial issue: controlling for credit risk
Controlling for credit risk

- Credit risk controls (directly available from Bloomberg, etc.):
  - (operating income)/sales
  - (long-term debt)/assets
  - leverage
  - equity volatility
  - pretax interest coverage dummies
  - level and slope of swap curve
  - dispersion in earnings forecasts (≈ firm’s true credit quality)

- Distance-to-default
  (≈ asset volatility-adjusted measure of leverage)
  not included

- Robustness check: rating-wise “paired” regressions
  (reduced sample)
Cross sectional analysis

- Analysis focuses relatively more on *time series patterns* of liquidity, etc.
  - Example: Liquidity of bonds issued by financial and industrial firms
  - Finding: *average* liquidities similar (except in worst months during crisis)
- *Cross sectional differences*? Dispersion, higher order moments of liquidities, etc.
- Same remark for time series average number of trades and average size, etc.
Liquidity risk premium

- Usual approach:
  1) commonality in liquidity;
  2) pricing of systematic liquidity

- \textit{total liquidity risk} =
  \text{systematic liquidity risk} + \text{idiosyncratic liquidity risk}

- Only systematic liquidity risk is important for pricing

- For equities (e.g. Korajczyk, Sadka, 2008) and FX rates (M., Ranaldo, Wrampelmeyer, 2010): especially shocks to systematic liquidity carry large risk premium

- In the current paper, most analysis based on \textit{total liquidity risk}

- Motivation: difficult to measure systemic liquidity risk on a quarterly base. More details?
Liquidity spirals

▶ Brunnermeier and Pedersen (2009): link trader’s funding liquidity and asset’s market liquidity

▶ Model predictions: market liquidity
  ▶ can suddenly dry up (√)
  ▶ has commonality (?)
  ▶ is related to volatility (?)
  ▶ is subject to flight-to-quality (√)
  ▶ co-moves with the market (√)

▶ Empirical findings in the current paper ✓
Since we are interested in yield spread effects of illiquidity, we must confine ourselves to the more liquid segment of the corporate bond market for which we can actually observe some trading and therefore some prices and price changes.”

- Illiquidity effects even more severe on less liquid segment?
- Special tools required for analysis of very illiquid bonds?
In short

This paper

▶ deals with a highly relevant topic
▶ provides very interesting empirical findings
▶ is nicely executed, easy to read