Comment of “Time series and cross-section properties of equity market liquidity” by Jeffrey Russell

Eric Jondeau
University of Lausanne
Definition of (il)liquidity

Types of Liquidity:
- Market liquidity (assets)
- Funding liquidity (investors)

Components of market liquidity:

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tightness</td>
<td>Bid-ask spread (BAS)</td>
</tr>
<tr>
<td>Depth</td>
<td>Turnover/Nb of trades</td>
</tr>
<tr>
<td>Resiliency</td>
<td>Price impact of trades</td>
</tr>
</tbody>
</table>
Components of Bid-ask spread:

- Cost of holding inventory
- Cost of processing orders
- Cost of trading with more informed investors

The paper proposes proxies for these different costs.
Liquidity as a Risk Factor

Pástor-Stambaugh (2003); Acharya-Pedersen (2005)

- Based on sensitivity of return to the $\text{-volume}$ ($\gamma_{it}$)
- Liquidity factor is the innovation in the aggregate liquidity ($\gamma_t = \sum_i \gamma_{it}$)
- Market liquidity is an important factor for stock returns

Amihud (2014)

- Factor-mimicking ptf: IML ptf based on ILLIQ
- IML beta is positive and significantly priced.
Commonality in Liquidity

Hasbrouck and Seppi (2001)
- Commonality in order flow explains commonality in return.

Korajczyk and Sadka (2008)
- Commonality in a risk measure across firms
- Commonality across risk measures.
Objective: What are the sources of commonality in liquidity across stocks?

Illiquidity (BAS) is expected to decrease as:

- **Inventory cost increases**
  - Volatility
  - Frequency of trades

- **Adverse selection cost increases**
  - Number of analysts
  - Prob. informed trading
  - Frequency of trades
Liquidity Decomposition

BAS is driven by

\[ L_{i,t} = \alpha_i + \lambda'R_{i,t} + \varepsilon_{i,t} \]

Individual drivers are

\[ R_{i,t} = B_i R_t + \eta_{i,t} \]

so that

\[ L_{i,t} = \lambda'_i R_t + \alpha_i + \lambda' \eta_{i,t} + \varepsilon_{i,t} \]

with \( \lambda'_i = \lambda' B \)
Empirical Results

(1) PCA on BAS $\Rightarrow$ 2 to 5 factors (50%, 8%, …)

(2) Individual illiquidity increases as

- VIX $\Rightarrow$ (inventory cost)
- Number of trades $\Rightarrow$ (adverse selection cost)
- TED spread $\Rightarrow$ (funding cost)
- Number of quotes $\Rightarrow$ (liquidity provision, funding cost)

(3) Impulse response analysis

- VAR on 4 factors then IRF for BAS
- Main contributors: VIX and Number of trades
Remarks

(1) VIX is a risk-neutral measure of volatility
   ➔ What about realized volatility?
   ➔ How does it affect the analysis?

(2) VIX and/or TED spread look like non-stationary
   ➔ What about non-stationarity?
   ➔ Do we have trends (cointegration?) in liquidity?
Remarks
Remarks

TED spread
Remarks

(3) There are some causal links between factors:

TED $\rightarrow$ VIX $\rightarrow$ Quotes/Trades

What about timing in causal links?

$\rightarrow$ TED / VIX: long-run causality (macro variables)

$\rightarrow$ Quotes/Trades: short-run causality (aggr. of micro var.)
Remarks
Thank you for your attention