What is Happening to Bond Market Liquidity?

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Yes, Liquidity Has Changed

- Some market makers are giving up some franchises.
- Large market makers hold much smaller inventories.
- Smaller trades sizes are offered, and turnover is lower.
- HFT firms, asset managers, bond funds, hedge funds, and electronic trade platforms are playing bigger roles.
- There is a higher cost and lower volume of securities financing.
At treasury electronic trade platforms
Bid-ask spreads are narrow and stable

Source: Adrian, Fleming, Stackman, and Vogt (2015) (BrokerTec data)
Treasury market turnover

Data source: SIFMA

Daily volume/outstanding
Corporate bond – average bid-ask spreads

![Graph showing average bid-ask spreads for Corporate bonds over years 2000 to 2016 for Investment Grade and High Yield categories.](image)
Turnover of corporate and municipal bonds

Data source: SIFMA
Conventional bilateral OTC markets
Dealers are increasingly agents, not principals
Customers request quotes from several dealers
But only one at a time in bilateral OTC markets

Zhu (2013)
Or request quotes at multilateral trading platforms
But trade is fragmented across platforms
Reducing fragmentation improves competition
At corporate bond platforms
Dealer competition lowers buy-side trade costs

Source: Hendershott and Madhavan (2014)
Two-tiered OTC markets

\(c_1\) \(d_1\) \(c_2\)

\(d_1\) \(c_5\)

\(c_3\) \(d_2\) \(d_3\) \(c_6\) \(c_7\)

\(MTP_1\) \(CLOB\) \(MTP_2\) \(MTP_3\)
All-to-all central-limit-order-book platforms
At treasuries electronic trade platforms
Principal trading firms are disintermediating bank dealers

Source: Fleming, Mizrach, Nguyen (2014) (BrokerTec data)
At FX trade platforms: Increasing non-dealer trade

Daily trade volume (billions of USD)

Source: Rime and Schrimpf (2014) (BIS data)
Combined use of exchange and OTC markets
The role of dealer capital structure

assets
debt
equity
More equity to fund more assets
Legacy shareholders have subsidized creditors

Higher capitalization implies a value transfer from legacy shareholders to creditors.
For shareholders to break even, the new assets must be purchased at a profit that exceeds the value transfer to creditors.
When a dealer funds swap collateral with debt

assets

debt

equity

new HQLA

old assets

new debt

old debt

equity
Shareholders transfer value to creditors

assets

<table>
<thead>
<tr>
<th>debt</th>
<th>new HQLA</th>
</tr>
</thead>
<tbody>
<tr>
<td>equity</td>
<td>old assets</td>
</tr>
</tbody>
</table>

| new debt |
| old debt |
| equity |
new HQLA
old assets

new debt
old debt

equity

funding value adjustment (FVA)

Source: Andersen, Duffie, Song (2016)
## Funding value adjustments of swap dealers

<table>
<thead>
<tr>
<th>Bank</th>
<th>Amount (millions)</th>
<th>Date Disclosed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank of America Merrill Lynch</td>
<td>$497</td>
<td>Q4 2014</td>
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<tr>
<td>Morgan Stanley</td>
<td>$468</td>
<td>Q4 2014</td>
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<tr>
<td>Citi</td>
<td>$474</td>
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<tr>
<td>HSBC</td>
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<td>Royal Bank of Canada</td>
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<td>UBS</td>
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<td>Crédit Suisse</td>
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<td>BNP Paribas</td>
<td>€166</td>
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<td>Crédit Agricole</td>
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<td>J.P. Morgan Chase</td>
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<td>Deutsche Bank</td>
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<td>Royal Bank of Scotland</td>
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<td>Barclays</td>
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<td>Lloyds Banking Group</td>
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<tr>
<td>Goldman Sachs</td>
<td>Unknown</td>
<td>Q4 2011</td>
</tr>
</tbody>
</table>

Sources: Andersen, Duffie, Yang (2016), from supplementary notes of quarterly or annual financial disclosures.
Dealers enter repo

repo asset ← repo claim

old assets

debt

equity
Impact of the leverage-ratio regulation on repo intermediation costs to legacy shareholders
Average overnight repo rate difference
Non-bank dealers versus bank-affiliated dealers

Data sources: Bloomberg and BNY Mellon
Negative swap spreads

Source: Klingler and Sundaresan (2016)
Covered Interest Parity Basis

Source: Sundaresan (2016)
CCPs lower dealer capital and collateral needs
But trade size has declined over time

![Graph showing trade size over time](chart.png)

Source: Adrian, Fleming, Stackman, and Vogt (2015) (BrokerTec data)