Impact of Regulations on Derivatives Markets
Good and Bad Unintended Consequences

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Based on joint work with Leif Andersen, Arvind Krishnamurthy, and Yang Song

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Dealer capital structure matters for OTC market liquidity and pricing
Space on dealer balance sheets is more expensive

assets debt equity
Example regulatory consequences

- More agency-based intermediation, lower turnover, and fewer block trades.
- New trade protocols and market infrastructure.
- Shifting intermediation franchises to better capitalized dealers.
- Some pricing and allocative distortions, especially under the leverage-ratio rule.
Approaching One Quadrillion in Swap Compression
## Funding value adjustments of swap dealers

<table>
<thead>
<tr>
<th>Bank</th>
<th>Amount (millions)</th>
<th>Date Disclosed</th>
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<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>
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<td>Q4 2014</td>
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<td>Citi</td>
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<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>Lloyds Banking Group</td>
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<tr>
<td>Goldman Sachs</td>
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<td>Q4 2011</td>
</tr>
</tbody>
</table>

**Sources:** Supplementary notes of quarterly or annual financial disclosures.
Swap Financing Costs

Cash financing needs:
- Upfronts.
- Initial margin, under Dodd-Frank and MiFID.
- Variation margin payments.
Back-to-Back Swap Trades

Dealers hedge the market risk of client swaps in the inter-dealer market.
Dealers are required to post margin
Collateralization

Client \[\xrightarrow{K} \text{No IM} \xleftarrow{X} \text{Dealer} \xrightarrow{X} \text{CCP} \xleftarrow{K'} \text{IM}\]
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
Decline in GCF net lending volume

Source: Martin (2016).
Economize on dealer balance-sheet space with all-to-all platforms

Non-dealers are more able to trade directly with each other. Intermediation of the market requires lighter use of dealer balance sheets.
FICC’s repo central counterparty is currently restricted to dealers
Buy-side CCP access would economize on dealer balance-sheet space
Covered interest parity violations are even bigger at quarter ends
The USD-JPY CIP basis

Source: Du, Tepper, Verdelhan (2016).