LESS IS MORE

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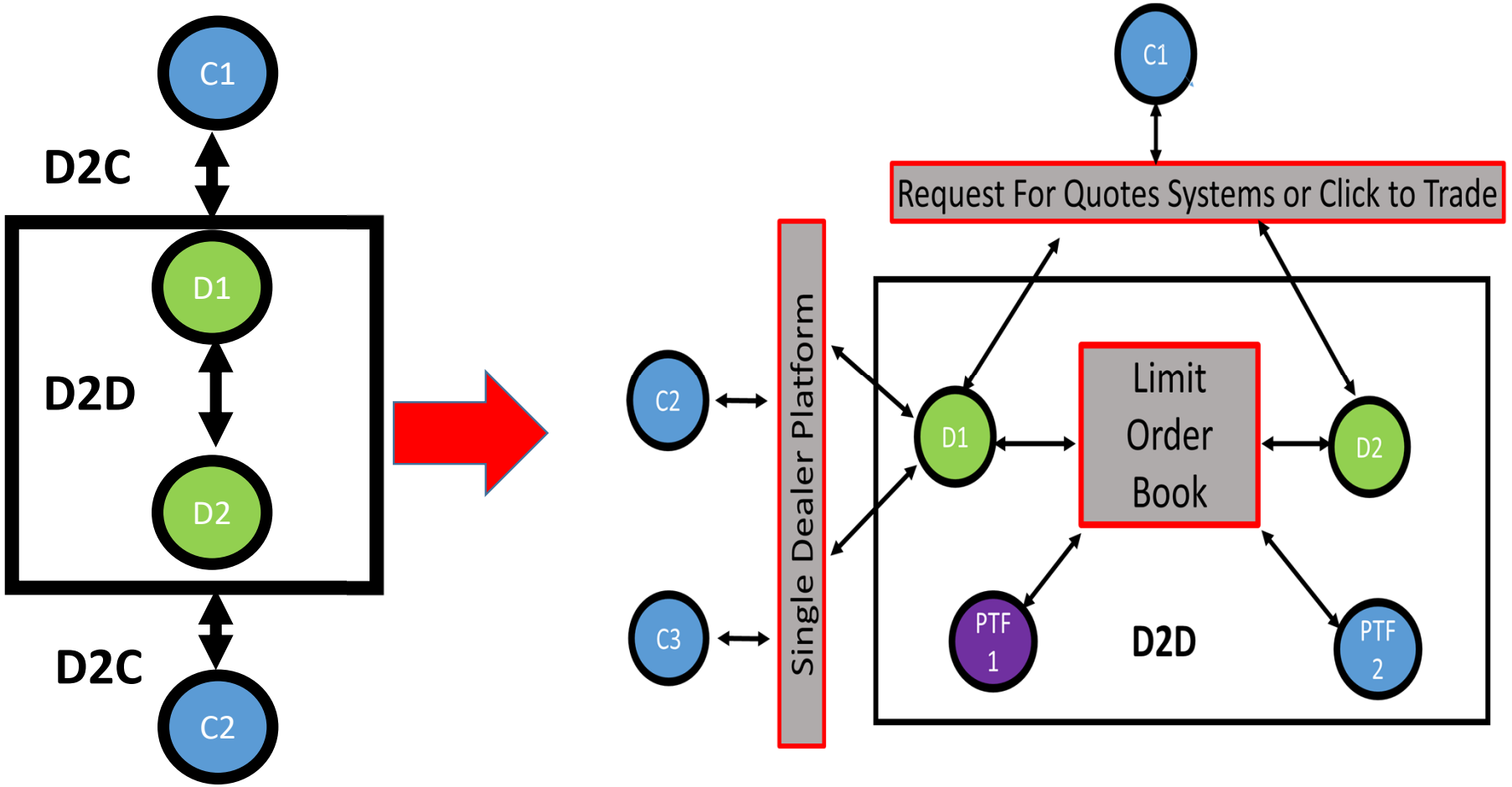
Background

Background

- **Important changes in the organization of OTC markets (Corporate bonds, Treasuries, FX etc.) since the financial crisis**
  - Rise of electronic trading platforms: Limit order books in interdealer markets (e.g., BrokerTec in US Treasuries and MTS in European govies), Request for Quotes systems (RFQs) in dealer to customer segments (Tradeweb, MarketAxess, Bondvision etc.).
- **New questions about the effects of these changes:**
  - Liquidity of OTC markets (e.g., electronic v.s voice segments).
  - Market stability (e.g., are electronic markets less or more resilient to fire sales?)
  - What is the value of voice trading relative to electronic trading?

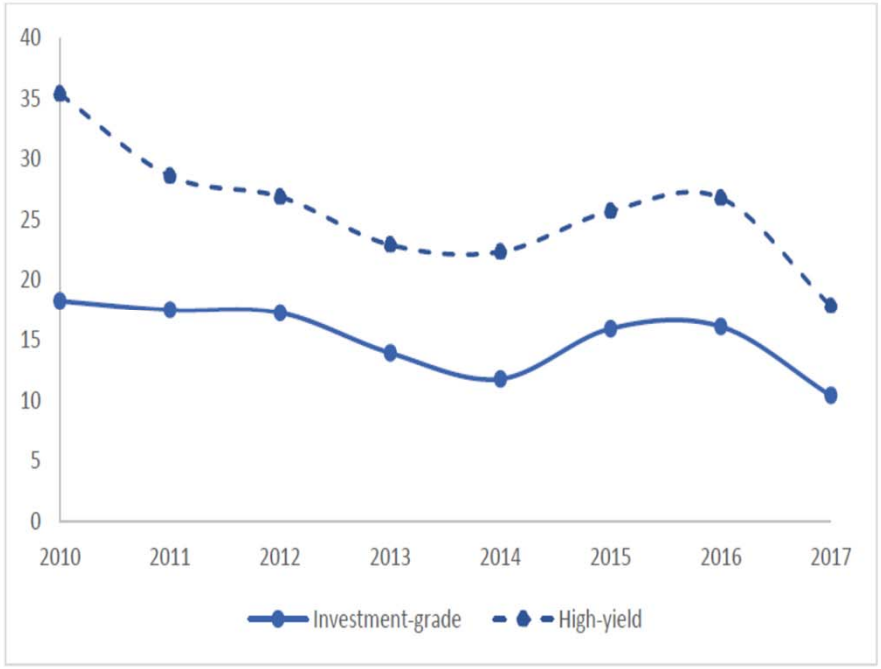
OTC Markets: From bilateral to multilateral trading



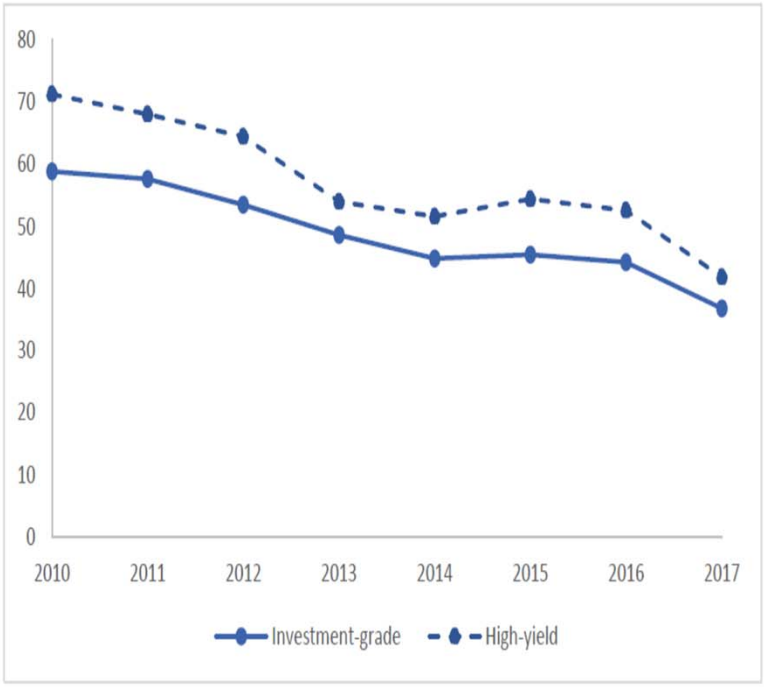
Source: Duffie, Foucault, Veldkamp, Vives (2022), "Barcelona 4: Technology and Finance," CEPR Press, London,

Liquidity: Voice vs Electronic Trading

Panel A. Transaction costs in electronic trading



Panel B. Transaction costs in voice trading



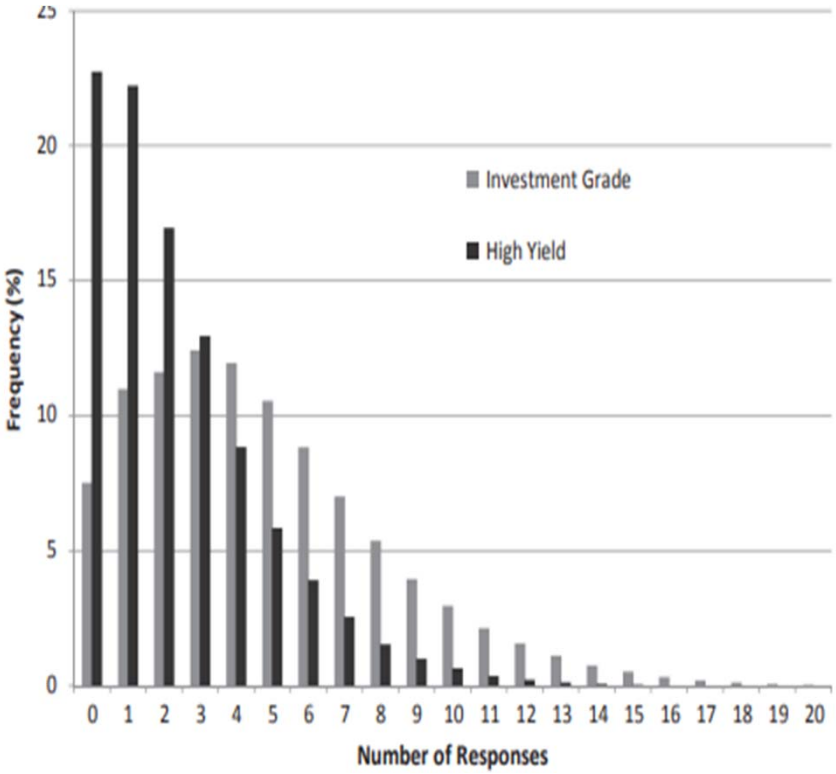
Source: Figure 4 in O'Hara and Zhou (2021), "The electronic evolution of corporate bond dealers", Journal of Financial Economics. Data: MarketAxess (RFQ system) and TRACE

Less is More

"Less Is More"

- Contribute to the growing literature that analyzes RFQs
  - Necessary steps to understand the previous "big picture" questions.
  - Necessary steps for policy (market design)
- RFQs:
  - Similar to sealed bid (first price) auctions
  - But (i) clients choose the number of bidders and (ii) contacted dealers **may or may not** choose to respond to a request (number of participating dealers $\leq$ number of contacted dealers).
  - "Response rate" is a dimension of liquidity.

Request for Quotes-Example



Source: Hendershott and Madhavan (2015), Journal of Finance. Data: 467,614 RFQs on MarketAxess in 2010/2011.

Example of a request-for-quote	
Bond	DE0001102507
BondDescription	German Bund, DBR 0 08/15/30
Currency	EUR
Date	Apr 25 2022, 11:37:02
Customer ID	Cust39
CustomerRanking	Silver
CustomerRequest	RequestForBid
Size	15,000,000
NumofBanks	5
Quoted	Yes
DealerQuote	101.96
ReferenceMid	102.04
InterdealerMid	102.06
Outcome	Dealer bought @ 101.96
CoverPrice	101.92

Source: Bak-Hansen and Sloth (2023): "Dealer Customer Relationships in OTC Markets", Working Paper, HEC Paris. Data: Large European Dealer (2018-2022); 1.3 mio requests in fixed income.

"Less Is More"

- **Main idea**
  - Responding to a quote request is costly for dealers
  - If a client queries more dealers:
    - Competition among dealers who choose to respond is stronger $\Rightarrow$ The client gets a better deal (larger share of gains from trade)
    - But dealers are less likely to respond $\Rightarrow$ Expected participation can decline with the number of dealers and risk of no trade at all is higher.
- **Equilibrium:** Less is more: It is optimal for the client to contact fewer dealers than the maximum possible.

When "Less" is still "too much"

- **Welfare**
  - The number of queried dealers is always too high compared to the level that would maximize total expected gains from trade (client + dealers' expected gains from trade)
  - Why?
    - **The client does not internalize dealers' cost of responding to a request** (which is paid whether the dealer responds or not ⇒ The dealer's price cannot reflect this cost⇒ "Missing Market").
    - ⇒ **The client queries too many dealers compared to what is socially optimal for all parties**
- **Good starting point for thinking about policy.**

Comments

Comments: Discuss Empirical Findings

- **Relate more the implications of the paper to empirical findings on RFQs. Three observable variables of interest:**
  1. Dealers' response rate to a request
  2. Number of contacted dealers by a client
  3. Spreads (markups or discounts relative to interdealer prices).

- **The model has predictions about (1) and (2) and possibly (3).**
  - Develop them and confront them to empirical findings (e.g., those in Hendershott and Madhavan (2015) and Bak-Hansen and Sloth (2023)).

Example

Table VI

Descriptive Statistics for Number of Dealers in an Auction

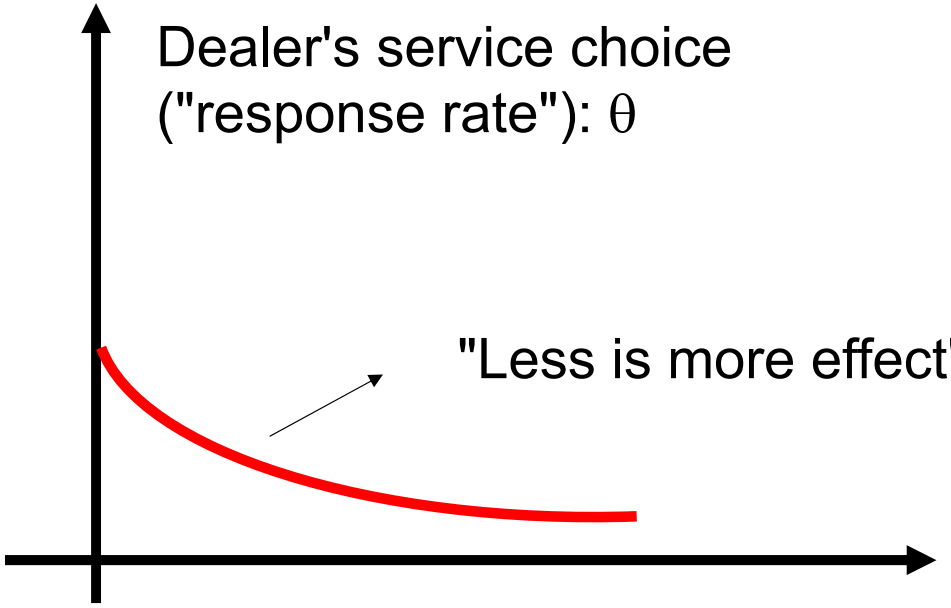
The table presents descriptive statistics from January 2010 through April 2011 for the length of time (in minutes) the auction is run, the number of dealers participating in electronic auctions, and the percentage of auctions that resulted in a trade. Four trade size categories by dollar size are represented, based on market conventions, up to a maximum of $5M and above. The 10 highest-volatility days are identified as the 10 days with the highest absolute CRSP value-weighted return. Figures reported are sample means.

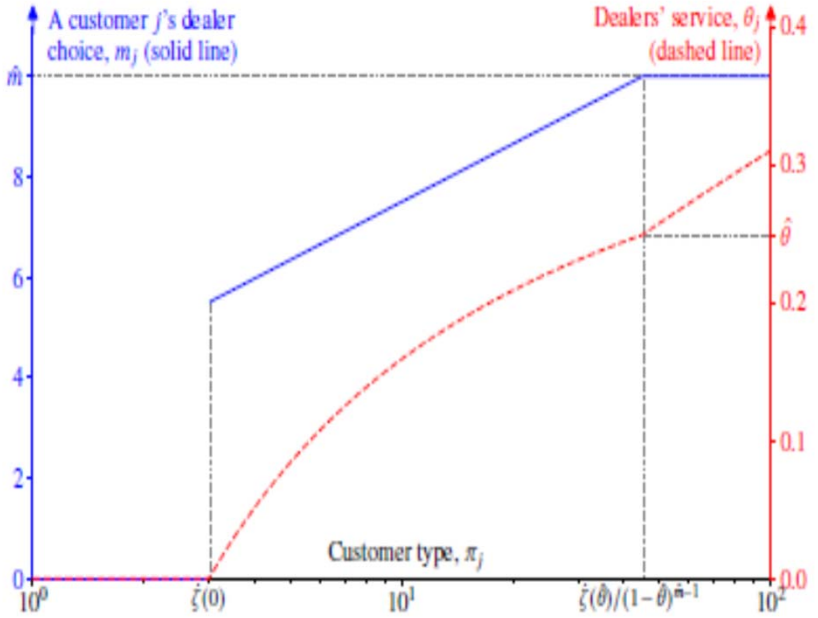
	Auction Time Length (Minutes)	Number of Dealers Queried	Dealers Response Rate (%)	No Response (%)	Fill Rate (%)
All Bonds					
Micro (1–100K)	12.1	27.7	15.2%	8.2%	73.4%
Odd (100 K–1M)	11.0	27.2	20.3%	8.6%	68.7%
Round (1–5M)	10.3	26.6	25.5%	9.7%	66.1%
Max (5M+)	9.5	25.1	28.9%	14.7%	51.0%

Source: Hendershott and Madhavan (2015), Journal of Finance. Data: 467,614 RFQs on MarketAxess in 2010/2011.

Observation: The number of dealers queried ("m" in the model) decreases with trade size but the response rate (θ in the model) increases with trade size. Can the model explain this pattern? Unclear…See next slide.

Example

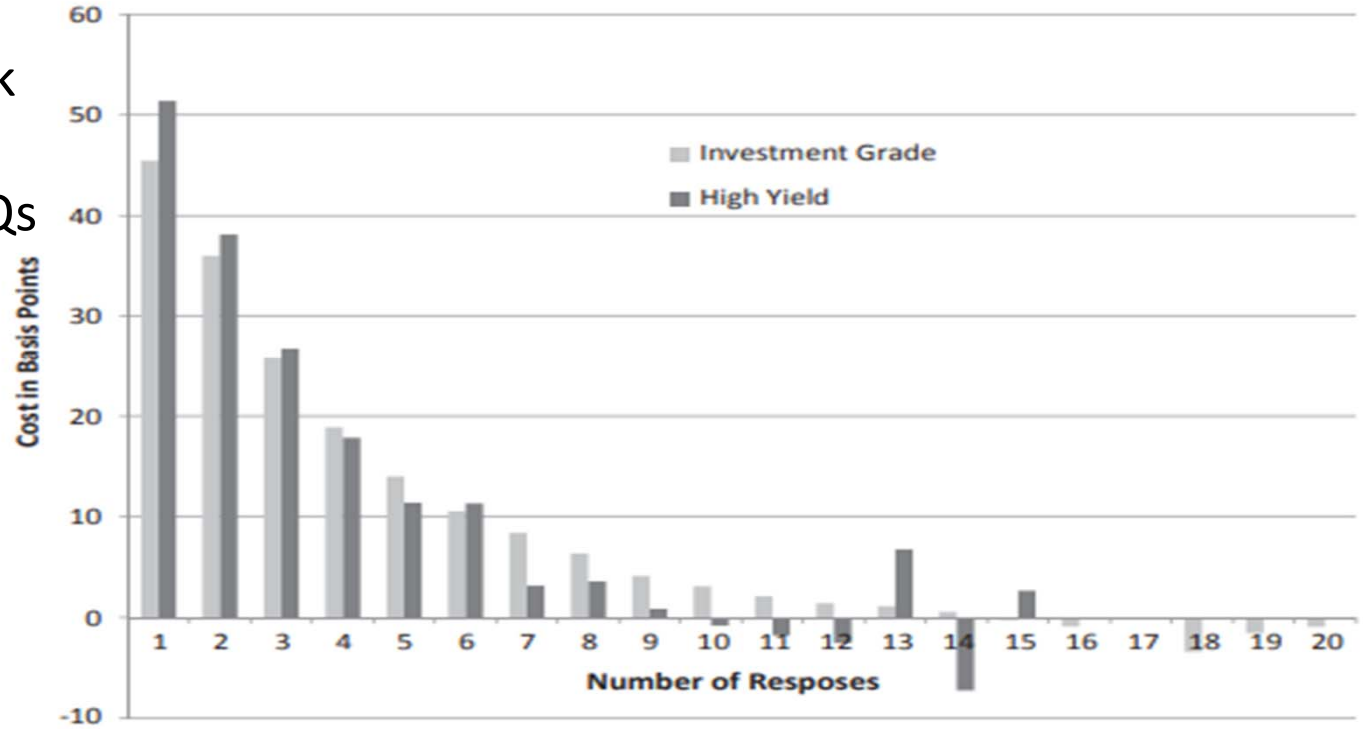




- The model implies that dealers' response rate and the number of contacted dealers are **jointly determined. How one can test the "less is more effect"? Which instrument to establish causality?**

Example

Measure of bid-ask spread cost for Trades filled in RFQs



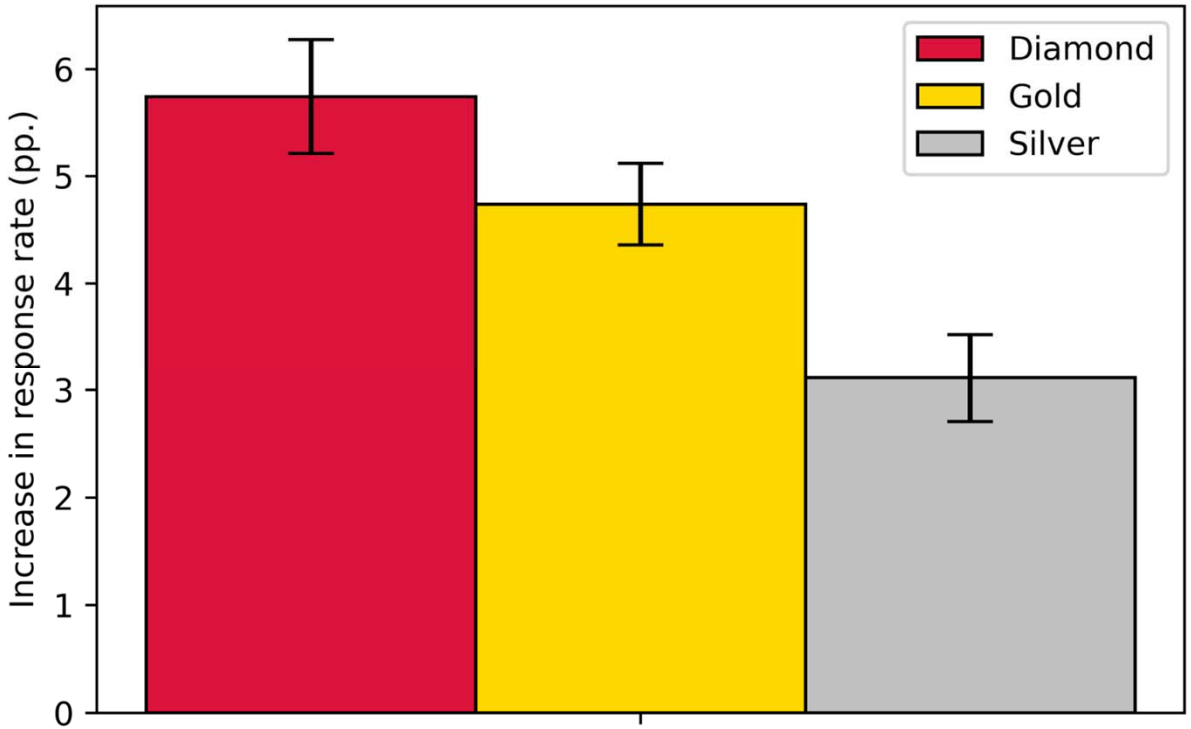
Source: Hendershott and Madhavan (2015), Journal of Finance. Can the model explain this pattern?
Maybe but makes this explicit.
Note: In the data, **variations in dealers' inventories** is likely to be a key determinant of spreads.
Can the theory account for this effect?

Comments: Relationships Matter

- **Importance of relationships in OTC markets has been documented in many papers (DiMaggio et al (2017), Jurkatis et al. (2022), Allen and Wittwer (2023, Riggs et al (2020) etc.).**
  - Key difference with anonymous electronic markets

- **I expect relationships to be an important determinant of dealers' response rate to requests in RFQs (see Bak-Hansen and Sloth (2023)/next slide)**
  - How can the theory account for this?
  - Allow for asymmetric costs of responding to a request?

Comments: Relationships Matter



Source: Bak-Hansen and Sloth (2023): "Dealer Customer Relationships in OTC Markets", Working Paper, HEC Paris. Data: Large European Dealer (2018-2022); 1.3 mio requests in fixed income. Y-axis: Dealers' Response Rates-X-Axis: various categories of clients ("Diamond": Best relationship)

Comments: What is the cost of servicing a request?

- **A key assumption of the theory is that responding to a quote request is costly for a dealer.**
  - Why is it so in reality? Need more motivation.
  - **Expertise** is likely to be important. Dealers are likely to find more costly to respond to a request for assets in which they have little expertise.
  - Again suggest that the case with asymmetric costs functions is important.

Comments: Differentiate from other theories

- **Identify better what your theory of RFQs can explain that other existing theories cannot.**
- **Other theories:**
  - **Clients limit the number of dealers they contact to limit front-running (Baldauf and Mollner (2022)).**
    - Implication: Clients contact fewer dealers for trades that take more time to "hedge"/unwind.
  - **Clients selectively contact dealers based on whether they trade on private information or not (Desgranges and Foucault (2005)).**
    - Implication: Clients do not contact relationship dealers when they have private information.

Comments: Market Design

- **Market design.**
  1. You consider direct interventions that mandate the number of queried dealers.
  2. Why not consider **fees** charged by the platform to the client depending on (i) the number of contacted dealers, (ii) the outcome of the RFQ (trade/no trade)?
  3. Would a for-profit platform set up the fees that maximize total welfare?

Conclusions

- Interesting theoretical framework to analyze RFQs platforms.

- Very useful for empiricists studying such platforms.
  - Develop empirical implications and discuss them more in light of existing studies.
  - Fine tune the model to account for important features of the data (inventory effects, relationships).