

# Discussion: "Auctions and Quote Competition"

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# Auction used to match (not improve) NBBO

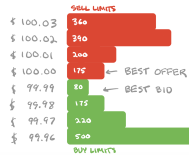


A LIMIT ORDER BOOK



NBB

A LIMIT ORDER BOOK



NBB

# Auction used to match (not improve) NBBO



-31%



A LIMIT ORDER BOOK



NBB



A LIMIT ORDER BOOK



NBB

# Auction used to match (not improve) NBBO



NBB



NBB

# Auction used to match (not improve) NBBO



P

=

NBB

+17%



P

=

NBB

# Auction exchanges less likely to be at NBBO

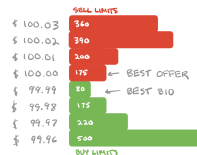


A LIMIT ORDER BOOK



NBBO (76%)

A LIMIT ORDER BOOK

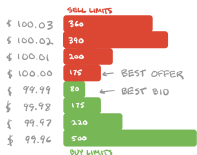


NBBO (88%)

# Auction exchanges less likely to be at NBBO



A LIMIT ORDER BOOK



NBBO (76%) (35%)

A LIMIT ORDER BOOK



NBBO (88%) (65%)

Restricting auctions  $\rightarrow$  quoted spreads  $\downarrow$  0.6¢; effective spreads  $\downarrow$  0.2¢

- Natural experiment: Jan 2017 rule change restricting auctions at \$0.01 quoted spreads
- Treatment: Option series more likely to have \$0.01 quoted spreads
- Restricting auctions  $\rightarrow$  quoted spreads  $\downarrow$  0.6¢; effective spreads decline less  $\rightarrow$  EQ ratio  $\uparrow$
- Conclusion: Auctions reduce competitiveness despite price improvement benefits



## Suggestions #1: A toy model?

Mechanism: Auction is an option  $\rightarrow$  less competitive quotes to preserve its option value

- $M$  market makers choose their quotes, knowing external BBO is randomly drawn upon arrival of an order
- Offering less competitive quotes  $\rightarrow$  more likely to have the option of running an auction to match the external BBO
- Heterogeneity: Effect concentrate at segments with lower  $M$
- Counterfactual: Restricting auction improves effective spread?

## Suggestions #2: External validity in equities markets?

- Policy Implications for SEC's proposed equity auction rule
- External Validity: Results from options markets may differ in equities due to off-exchange internalization structure
- Counterfactual in equities: order-by-order auction vs. off-exchange internalization
- Counterfactual in equities: auction vs. no auction

## Suggestions #2: External validity in equities markets?

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- External Validity: Results from options markets may differ in equities due to off-exchange internalization structure
- Counterfactual in equities: order-by-order auction vs. off-exchange internalization
- Counterfactual in equities: auction vs. no auction
- Alternative auction design: e.g., conditional auction access, requiring market makers to bid within a percentage of the best quotes on the auction exchange

## Suggestion #3: Cream-skimming generates overlapping predictions

- Certain auctions allow participants to reveal identity (e.g. SpiderRock Block Auctions)
- Bids can condition on the order submitter's identity
- Auction can cream skim less likely informed orders, worsen adverse selection for market makers who widen spreads in response (payment for order flow, Seppi, 1990; Desgranges and Foucault, 2005; Lee and Wang, 2025)
- Some pointers to decipher mechanism

## Suggestion #4: Retail vs. institutional orders

- Any way to identify retail orders in the option market?
- Are retail orders more likely to trigger auctions (when the auction exchange is not at NBBO)?
- more likely to receive price improvement (when the auction exchange is not at NBBO)?

## Suggestion #5: Strategic quoting behavior

- Whether market makers adjust depth vs. top of book
- Dynamic quoting responses around auction initiation

# Summary

Nice story and rich results

Main suggestions:

- Toy model to generate hypotheses & more testable predictions
- Discuss difference in counterfactuals for equities
- Pointers to rule out the cream-skimming story