Finance 434
Costs of Trading: Focus on Nasdaq

Auction versus Dealer Markets: NYSE vs. Nasdaq

- much recent discussion related to the Christie-Schultz paper that found many Nasdaq stocks that are almost never quoted on odd
  - some of these included the most actively traded Nasdaq stocks (e.g., Microsoft, Intel, . . .)

- Much civil litigation and regulatory activities
  - Dept. of Justice and SEC rulings in late 1996

NYSE Auction Market

All retail orders flow to the floor of the NYSE and are handled by a single specialist [market maker]
- except in the case of very active stocks which have multiple specialists
- specialist maintains the limit order book of unexecuted orders from investors
- specialist also posts his own quotes at all times, and must be willing to trade when the gap between limit orders is too large
- order handling fees (commissions) are charged by the specialist when public orders are crossed
Nasdaq Dealer Market

Computer screens merely show the prices at which different dealers [market makers] are willing to pay for (bid) or willing to sell (ask) a

- all trades by investors are with a dealer, even if another investor order exists on the other side of
  - market makers do not (always) charge commissions for handling orders
- recent changes show limit orders on Nasdaq

Quote Rounding:
Avoidance of Odd Eighths

If you never use 1/8, 3/8, 5/8, 7/8 in either bid or ask quotes, the minimum spread is 1/4

- This "convention" can be used by multiple traders to create a minimum inside spread, even when most dealer spreads are much larger
  - e.g., Goldman Sachs might quote a stock at 46.25
  - Merrill Lynch might quote the same stock at 45.75
  - both have a 3/4 point dealer spread, but the inside spread is 1/4 (at least)
Quote Rounding: Avoidance of Odd Eighths

Example of Nasdaq Dealer and Inside Spreads

Quote Rounding: No Avoidance of Odd Eighths

Example of Nasdaq Dealer and Inside Spreads

Note that ML and CS are quoting on odd eighths.
Quote Rounding:
Avoidance of Odd Eighths

Note that when any dealer adjusts his quotes by moving just 1/8th, the inside spread is much more likely to be 1/8 than 1/4

- for many active Nasdaq stocks there are as many as 40-60 market makers posting quotes

Preferencing

1) **Vertical integration** - Merrill Lynch market makers execute retail trades from ML at current

   - even though ML dealer quotes might not be on either side of the market

2) **Payment for order flow** - market makers without retail networks pay retail brokers who are not vertically integrated about $0.03 per
Preferencing

Argument is that this reduces the cost of seeking buyers/dealers
- don't have to make multiple phone calls to
  - except for Small Order Execution System (SOES), which executes trades at posted inside quotes against dealers posting those quotes, and systems like Instinet, SelectNet, etc., all other orders are executed by telephone confirmations

It also reduces the incentive to compete by changing quotes, since it won't necessarily generate more order flow

Evidence:
Christie & Schultz *J Fin*(1994a,b)

1994a:
- many large & active Nasdaq stocks almost never trade on odd eighths
- spreads are likely to be larger as a result
  - e.g., you can never see a spread of 1/8

1994b:
- when the prior paper received publicity, five top Nasdaq stocks immediately switched from a 1/4 inside spread to a 1/8 inside spread
  - Was it unprofitable afterwards?
  - Or, too profitable before?
Evidence:
Huang & Stoll *JFE* (1996)

Compared several costs of trading Nasdaq stocks with a matched sample of NYSE stocks
- quoted spreads were higher

- effective spreads were higher
  - difference between the trade price and the midpoint of the bid-ask spread, times 2
  - this shows that inside the spread negotiation on Nasdaq does not offset higher quoted spreads

Evidence:
Huang & Stoll *JFE* (1996)

Effective spreads were higher for all size trades
- difference was largest for smaller trades

- Nasdaq quotes are required to be good for up to 1,000 shares, so proponents argue it is optimized for greater "depth"
  - ability to trade volume without affecting the price

- It is not surprising that larger traders can make market makers compete more effectively than small traders, but information costs should be
Evidence:
Bessembinder *JFE* (1997)

Quoted and effective spreads were higher for 300 matched Nasdaq (compared with NYSE)

- higher spreads are related to odd eighths quoting behavior (price rounding) on Nasdaq,

- price impacts are bigger on Nasdaq
  - more fragmented market?

Evidence:
Barclay *JFE* (1997)

Quoted and effective spreads fell for 472 Nasdaq stocks that moved to the NYSE or Amex

- biggest changes were for Nasdaq stocks that rarely traded on odd eighths

Why do firms that could have lower spreads (apparently) stay on Nasdaq?

- avoid listing fees
- asymmetric - hard to leave NYSE
- Nasdaq runs ads promoting these prominent

- MCI is hired to handle Nasdaq's network business
Evidence:  
Kandel & Marx *JFE* (1997)

They argue that competing market makers might choose an equilibrium where inside spreads equal the cost of market making plus twice the minimum tick size

- minimum tick size is 1/16th up to $10 per share, and 1/8th over $10 per share
- K&M find much more use of odd eighths for stocks below $10 (but above $5) per share
- They conclude that average quoted spreads are higher by about $0.20 per share when odd eighths are avoided

Evidence:  
LaPlante & Muscarella *JFE* (1997)

They examine block trades on Nasdaq compared with similar NYSE stocks

- more price pressure
  - less zero tick trades on NYSE
- smaller blocks on Nasdaq
- larger effective spreads on Nasdaq
- Overall, Nasdaq market has less depth
  - of, at least, the stocks traded actively on Nasdaq have less depth than those identified as similar on
Evidence:
www.nasd.com

Nasdaq has posted some preliminary results on its home page for 150 stocks that began trading by including limit orders with dealer quotes on the Nasdaq system

- SOES shuts down when a limit order is part of the inside spread
  - because there is no dealer to automatically trade

- stocks were picked to include many large stocks, but also many stocks with less trading activity

Evidence:
www.nasd.com

Preliminary conclusions from the Nasdaq

- which was forced by the DoJ and SEC
- spreads are down 30%
- effective spreads are down 24%
- these effects seem to exist even for inactively

- number of market makers has not fallen in these
  - you might expect market makers to withdraw if trading became unprofitable
Conclusions

1) It looks like the auction market on the NYSE has greater liquidity (lower transactions costs) than the linked dealer market of Nasdaq

2) It looks like the NYSE practice of letting customer limit orders transact with other customers, for an order handling fee, reduces transaction costs on average

3) Most of these results were not known before the spate of recent papers (& lawsuits)

Questions

1) Why would a firm like Microsoft, MCI, or Intel remain on Nasdaq when it looks like trading costs would be lower on the NYSE?

2) Are there some traders who might prefer Nasdaq to the NYSE? Why?

3) What incentives would any of the existing Nasdaq actors (e.g., market makers) have to propose a change in the microstructure to move toward an auction system?