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Liquidity, Transaction Costs, and Reintermediation in Electronic Markets

Comments

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An unbiased view?

- Goldman Sachs is a fully diversified firm
  - upstairs desk
  - NYSE floor brokers
  - NYSE specialist operations
  - investment in several electronic markets
- I have no axe to grind….

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Overview

- The future of trading is indeed electronic
- But is not going to look anything like the electronic trading systems around today
  - current systems are the first step
  - a catalyst for change
- Markets are currently in transition
  - fragmentation
  - experimentation
- Where is the liquidity?
  - increased need for intermediation
- Are trading costs lower on electronic trading systems?

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Electronic trading systems

- Open electronic limit order books
  - displayed priced orders, potential price discovery
  - NYSE Display Book
  - SETS (London), NSC (Paris), Xetra (Frankfurt), CATS (Toronto) and many more
  - ECNs: Instinet, Island, etc.
- Crossing networks
  - passive, no price discovery
  - by definition marginal
  - POSIT, The Crossing Network
- Other
  - AZX, Optimark (1/99 – 9/00), Primex (spring 01)
  - more to come

Convergence to open electronic limit order books

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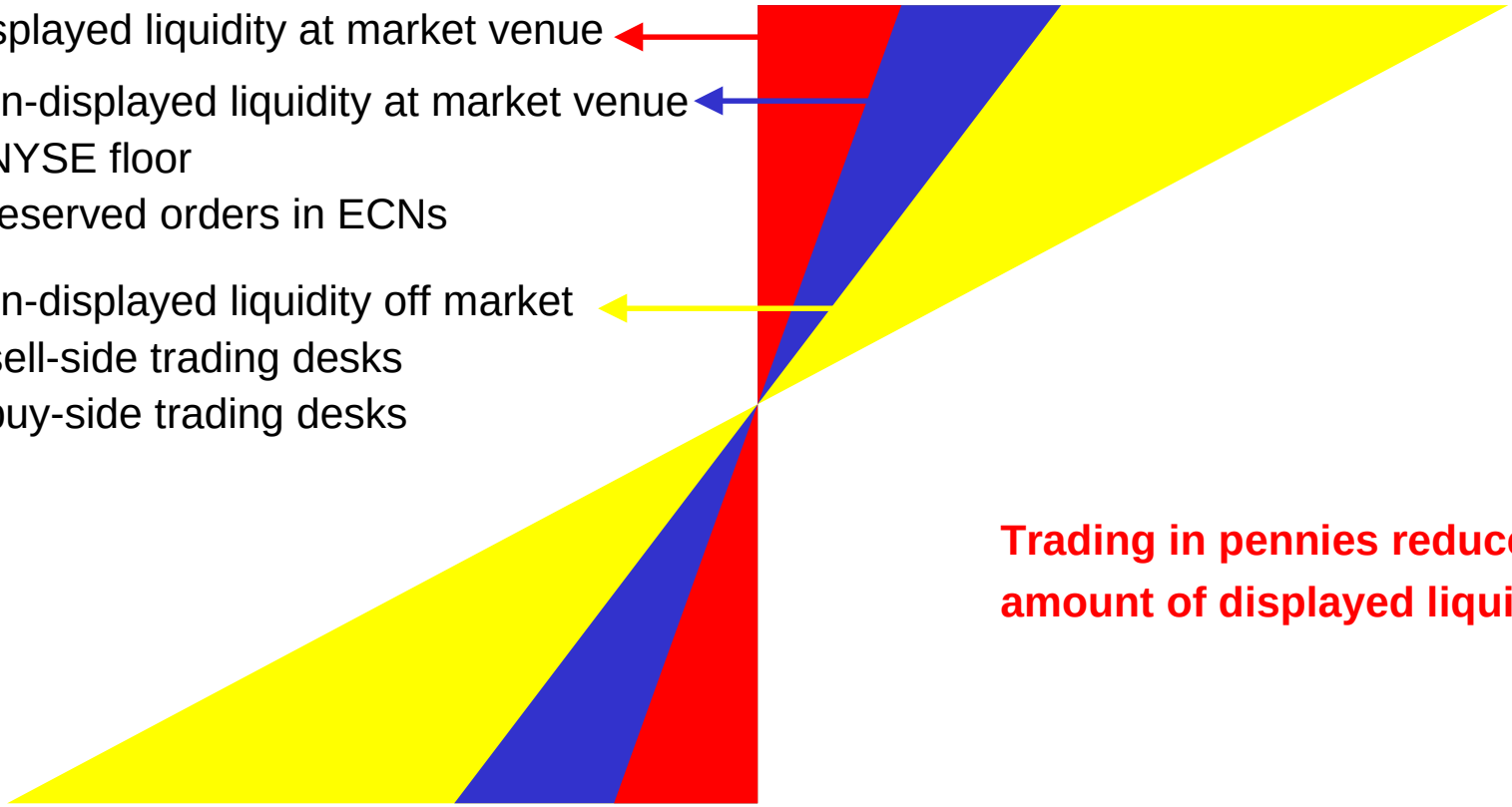
Open electronic limit order books

- Three types of liquidity

Displayed liquidity at market venue

Non-displayed liquidity at market venue
– NYSE floor
– reserved orders in ECNs

Non-displayed liquidity off market
– sell-side trading desks
– buy-side trading desks



Trading in pennies reduced the amount of displayed liquidity

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Is this the best system?

- Problem: most of the liquidity is not displayed

NYSE	50 percent of executed share volume represented by floor brokers on the floor
Nasdaq	70 percent of share volume is executed in the upstairs market
Frankfurt London Paris Toronto	40-60 percent of share volume is executed in the upstairs market*

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* Often reported through the electronic book.

A myth

- "Stock exchanges all over the world are closing their trading floors and going fully electronic"
- Yes, they are closing their trading floors
- But no, they are not going fully electronic
  - a big part of the liquidity migrates upstairs
  - not in the electronic book
- If close the NYSE floor where will floor orders go?
- Most likely
  - to the upstairs market
  - not in the electronic book!

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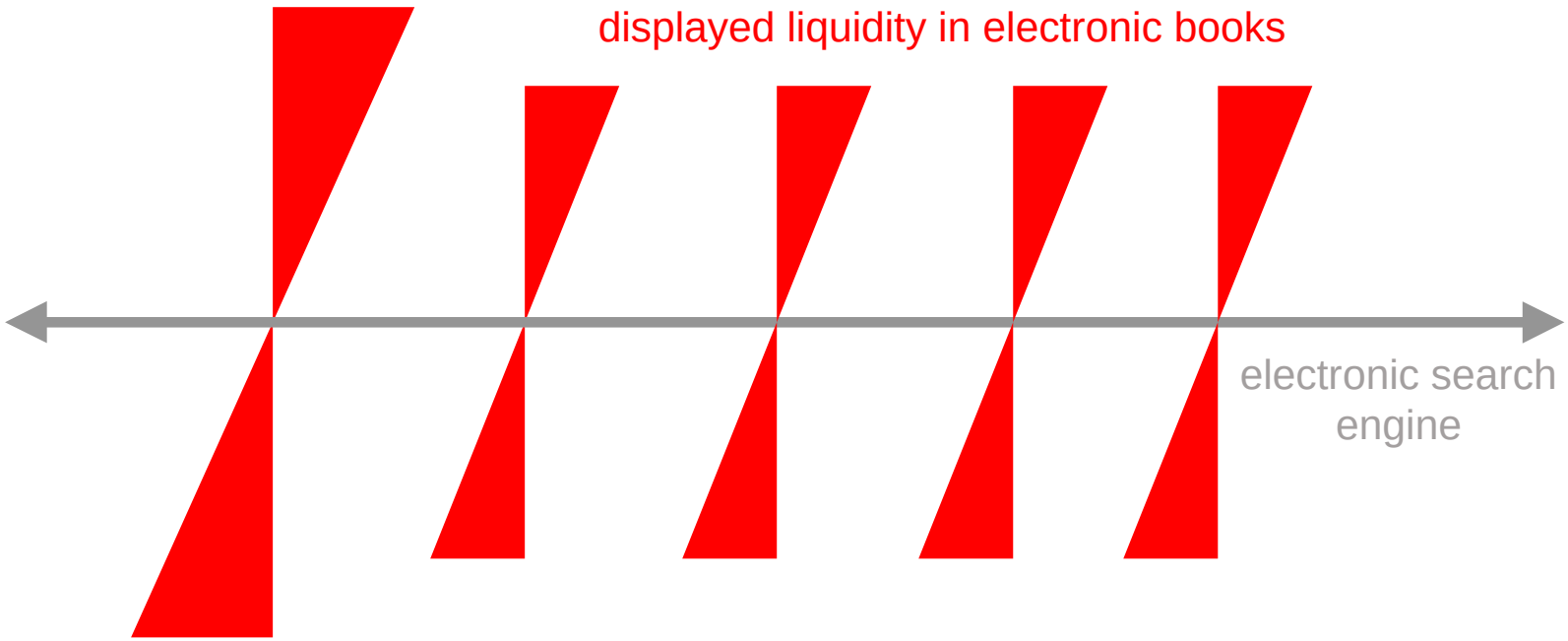
Electronic search engines

- Electronic search engines can only access displayed liquidity
- If most liquidity is not displayed then search engines are not minimizing trading costs



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Intermediation

- As long as there is non-displayed liquidity an important role for broker-dealer intermediaries is to access this non-displayed liquidity

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The problem with electronic books

- Too much transparency for large difficult trades
  - investors trading in size want to see everybody else's orders but hide their own

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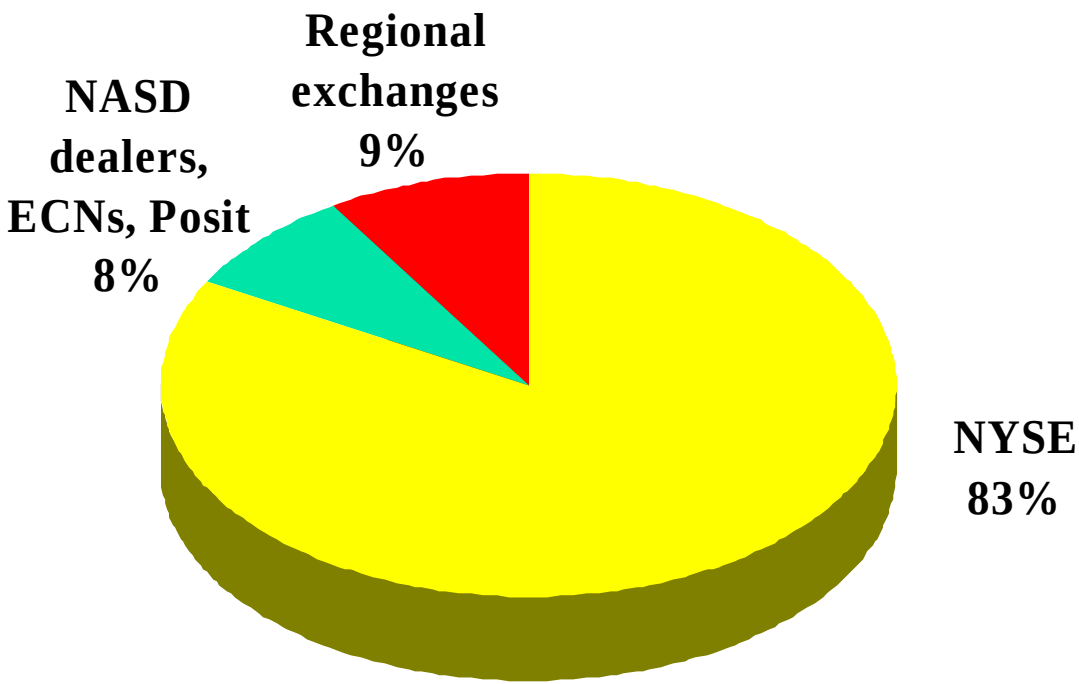
A case study: the NYSE

- NYSE share of trading volume in listed stocks



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Source: New York Stock Exchange. 2000 share volume, trading reported to the Tape. The Crossing Network is also included in NASD dealers; Optimark reports through PCX and is included in regional exchanges.

A better trading platform?

- The NYSE managed to maintain its dominant position in trading listed stocks
- Why?
  - Rule 390
    - eliminated May 5, 2000
    - little effect
  - ITS access restrictions
    - being eliminated
  - first mover advantage
    - counter examples: LIFFE & DTB, Mumbai SE & National
  - a better trading platform?
    - the trading floor for large orders

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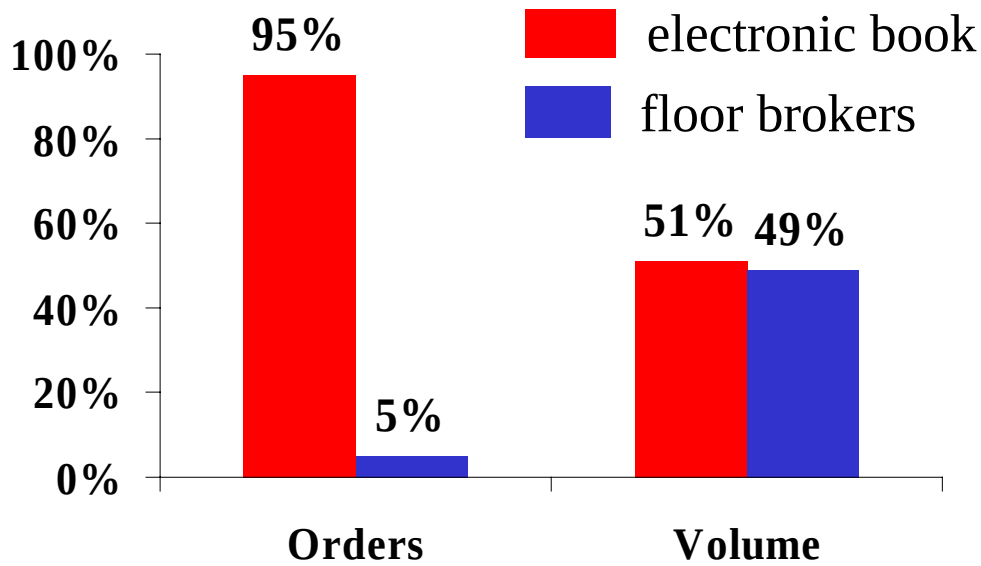
The value of the trading floor

- NYSE provides a choice
  - electronic book
  - floor brokers
- 95% of orders choose the electronic book
- But large orders choose floor brokers
  - 50% of volume
- Why use a floor broker?
  - information
  - direct access
  - minimize market impact



reserved orders with brains

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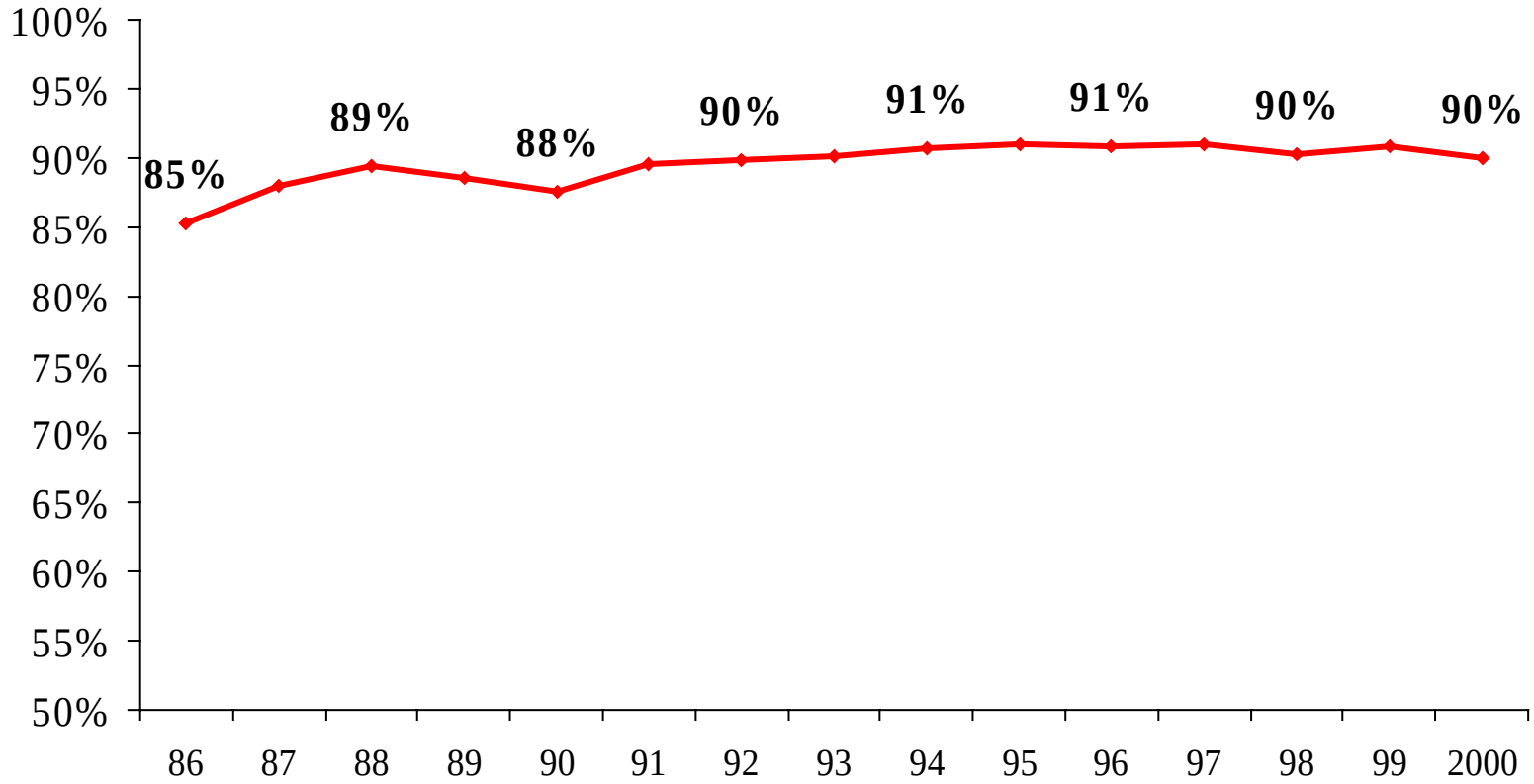
Source: New York Stock Exchange; figures for 1H99.

NYSE share of block volume



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Source: New York Stock Exchange. Trading volume in NYSE stocks reported to the Tape; prints 10,000 shares or more.

Trading cost comparisons

- Are trading costs lower on electronic trading systems?
  - Domowitz & Steil (1999)
  - Conrad, Johnson and Wahal (2001)
- Current research measures trading costs on electronic trading systems conditional on execution
- But what is the probability of non execution?
  - data are not available to calculate
- And what is the opportunity cost of non execution?
- The problem is worse
  - cost of non-execution is ascribed to the “liquidity supplier of the last resort”

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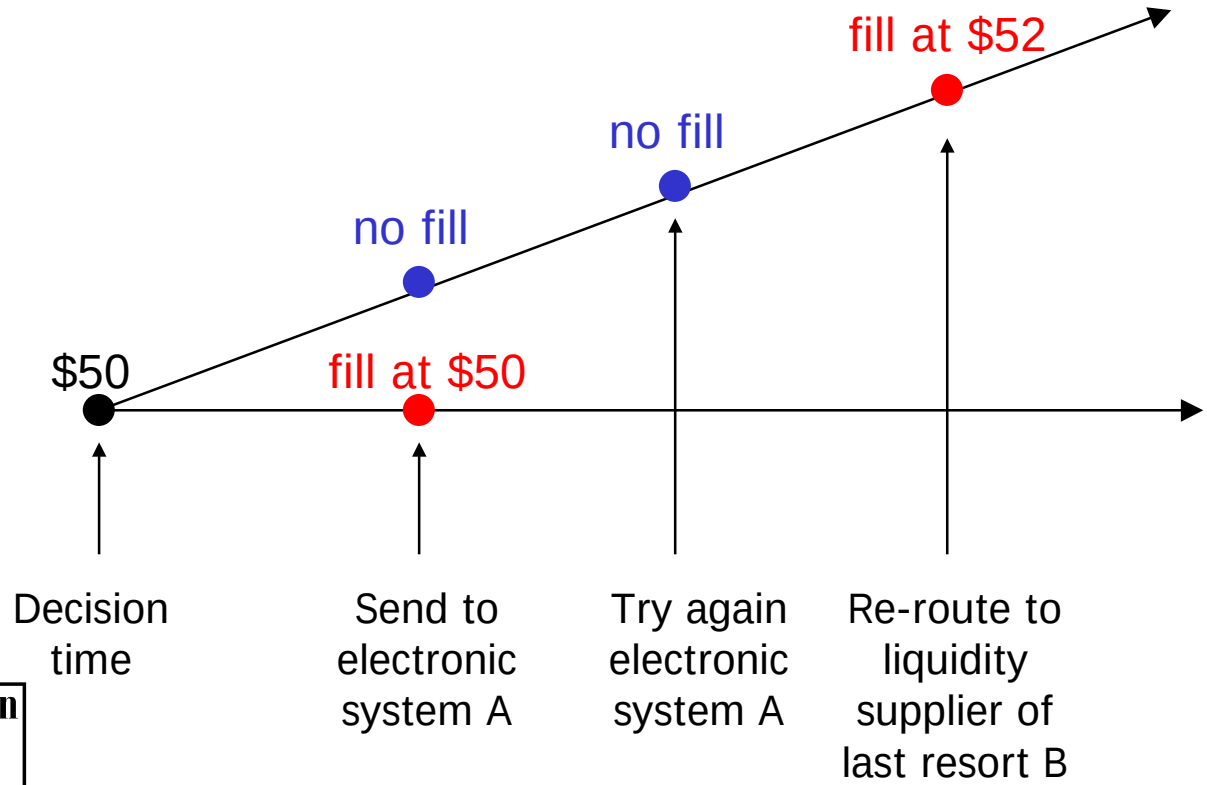
An example

- A buy order



Case 2: fast up market

Cost: 400 basis points

But whose cost is it?

Current research ascribes it to market B

But it is really market A's cost!

Case 1: slow flat market

Cost: 0 basis points

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Selection bias

- Less likely to get a fill on an electronic system during fast-moving volatile periods
- Less likely to submit orders to an electronic system during fast-moving volatile periods
- Once an order is not filled in an electronic system the liquidity supplier of last resort gets penalized!

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The challenge for electronic systems

- Encourage the display of liquidity
- Access non-displayed liquidity
- Mimic the subtle exchange of information that takes place on the NYSE trading floor

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