

Ian Domowitz

# Liquidity, Transaction Costs, and Reintermediation in Electronic Markets

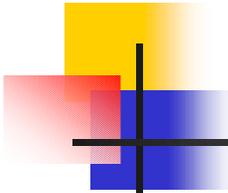
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Comments

George Sofianos

February 23, 2001

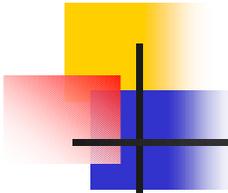
**Goldman  
Sachs**



# An unbiased view?

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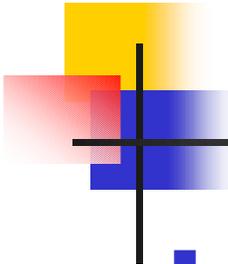
- Goldman Sachs is a fully diversified firm
  - upstairs desk
  - NYSE floor brokers
  - NYSE specialist operations
  - investment in several electronic markets
- I have no axe to grind....



# Overview

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- 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?



# Electronic trading systems

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- 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

# Open electronic limit order books

## ■ Three types of liquidity

Displayed liquidity at market venue ←

Non-displayed liquidity at market venue ←

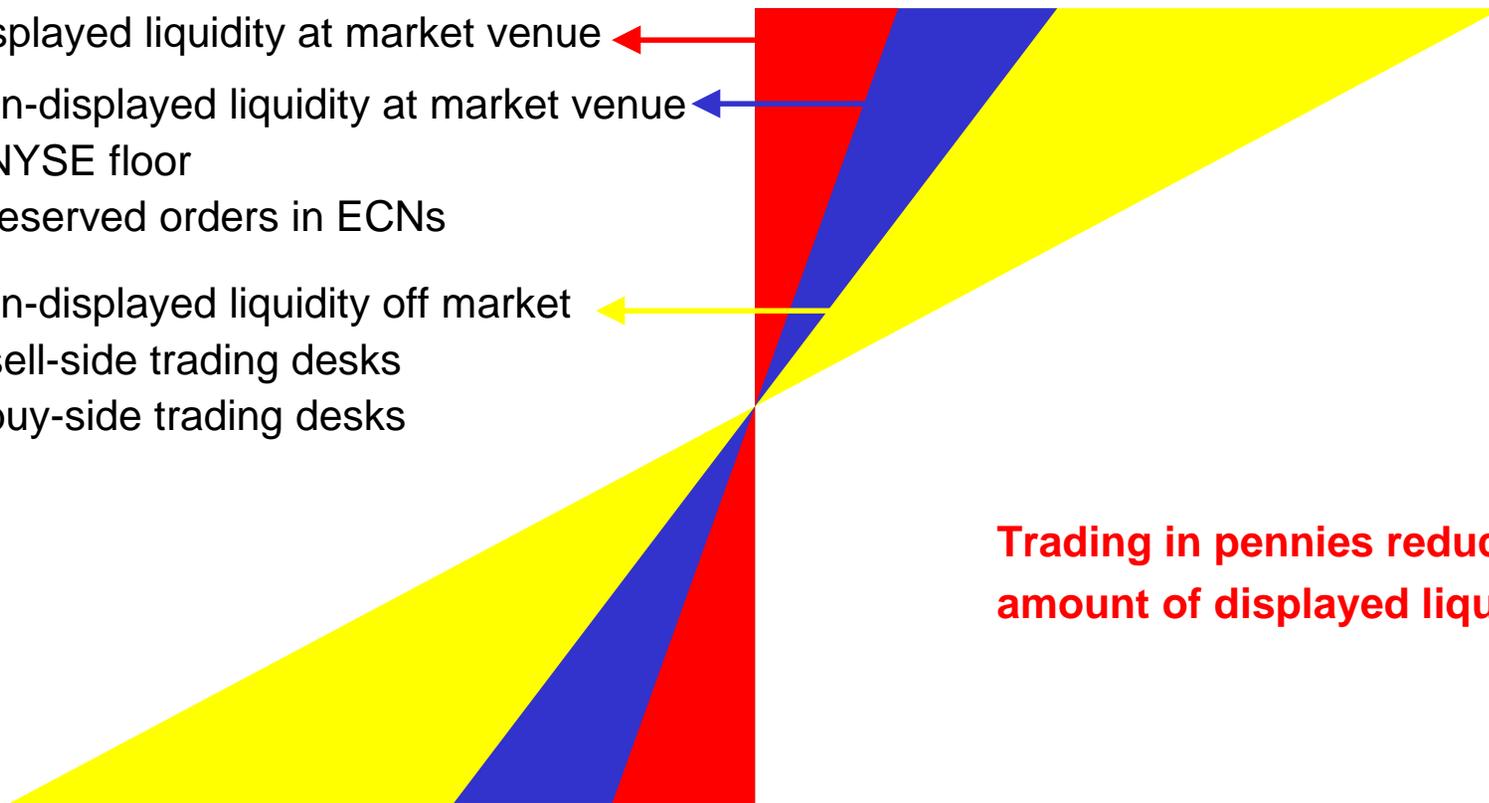
– NYSE floor

– reserved orders in ECNs

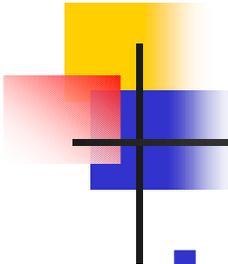
Non-displayed liquidity off market ←

– sell-side trading desks

– buy-side trading desks



**Trading in pennies reduced the amount of displayed liquidity**



# Is this the best system?

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- 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

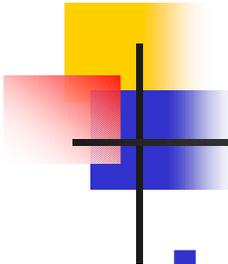
- Frankfurt

- London

- Paris

- Toronto

- 
- 40-60 percent of share volume is executed in the upstairs market\*



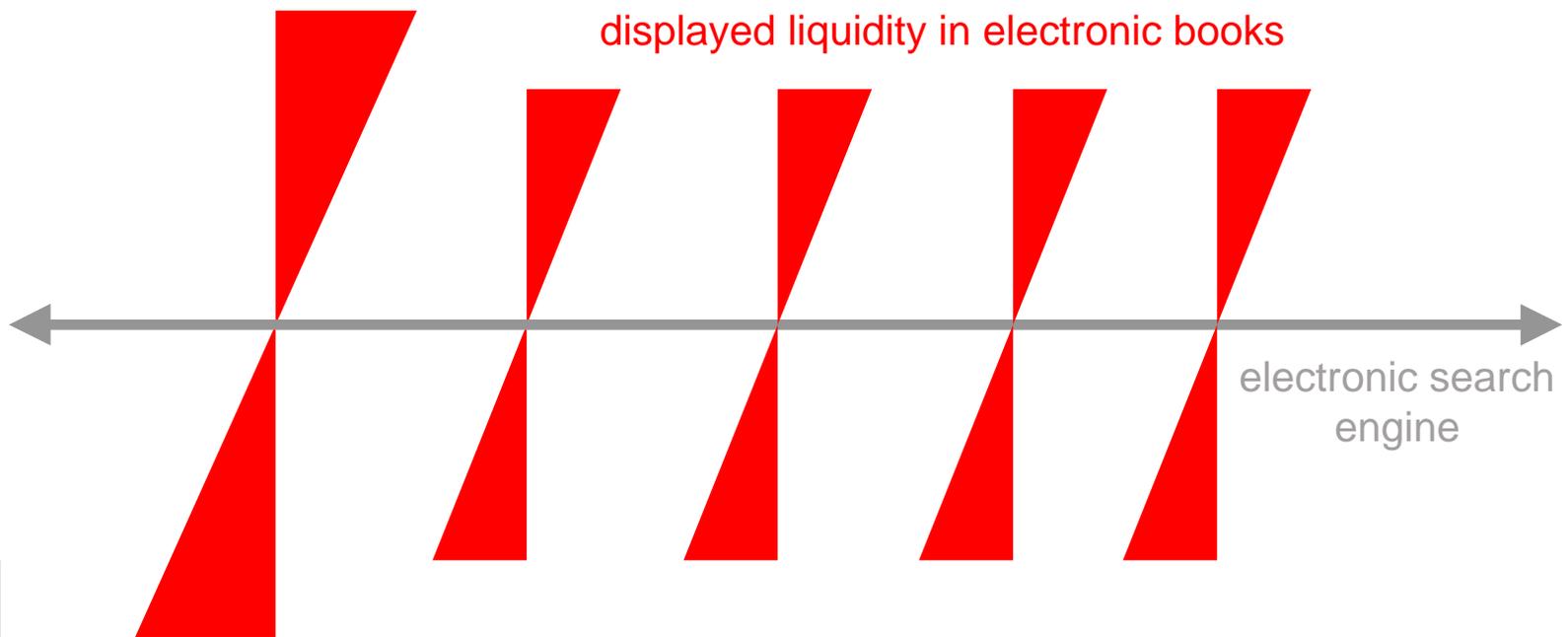
# A myth

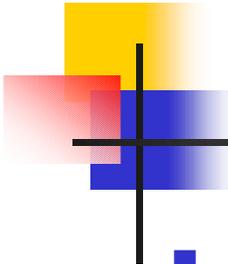
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- “Stock exchanges all over the world are closing their trading floors and going fully electronic”
- Yes, they are closing their trading floors
- But no, they are not going fully electronic
  - a big part of the liquidity migrates upstairs
  - not 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!

# 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

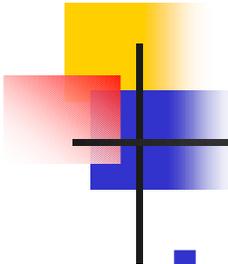




# Intermediation

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



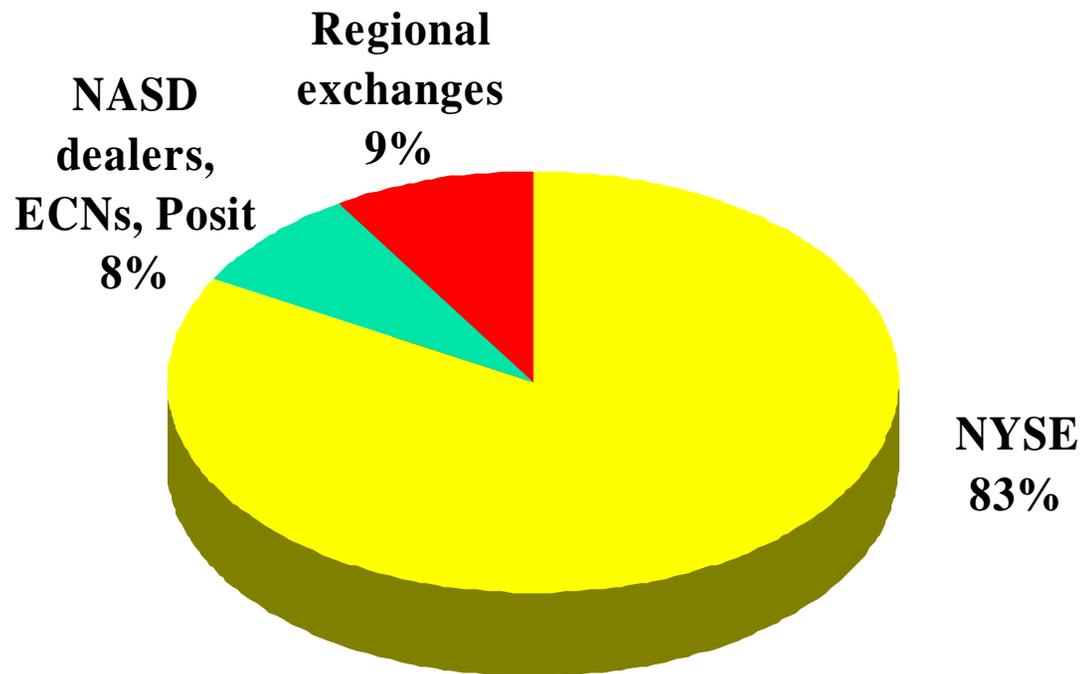
# The problem with electronic books

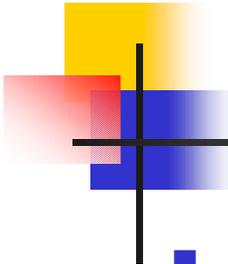
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- Too much transparency for large difficult trades
  - investors trading in size want to see everybody else's orders but hide their own

# A case study: the NYSE

- NYSE share of trading volume in listed stocks





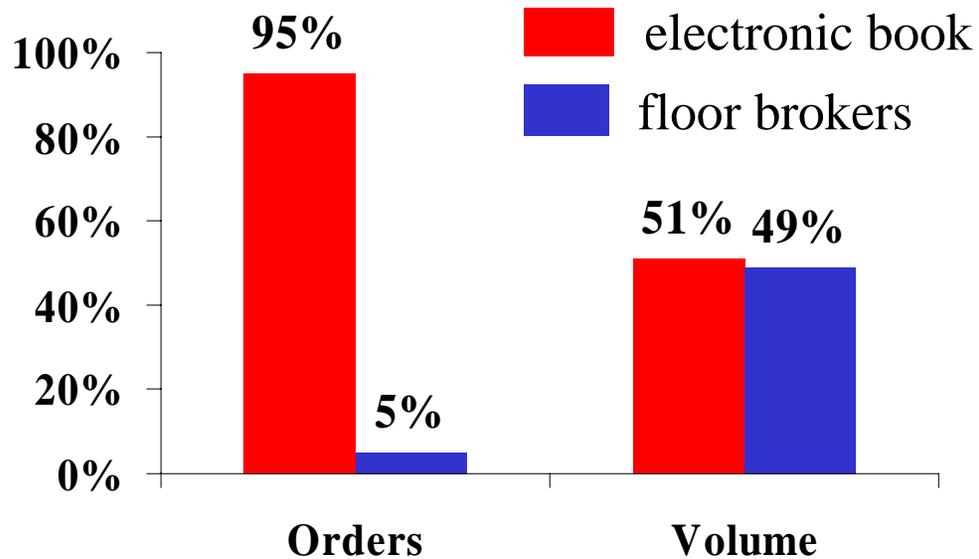
# A better trading platform?

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- 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

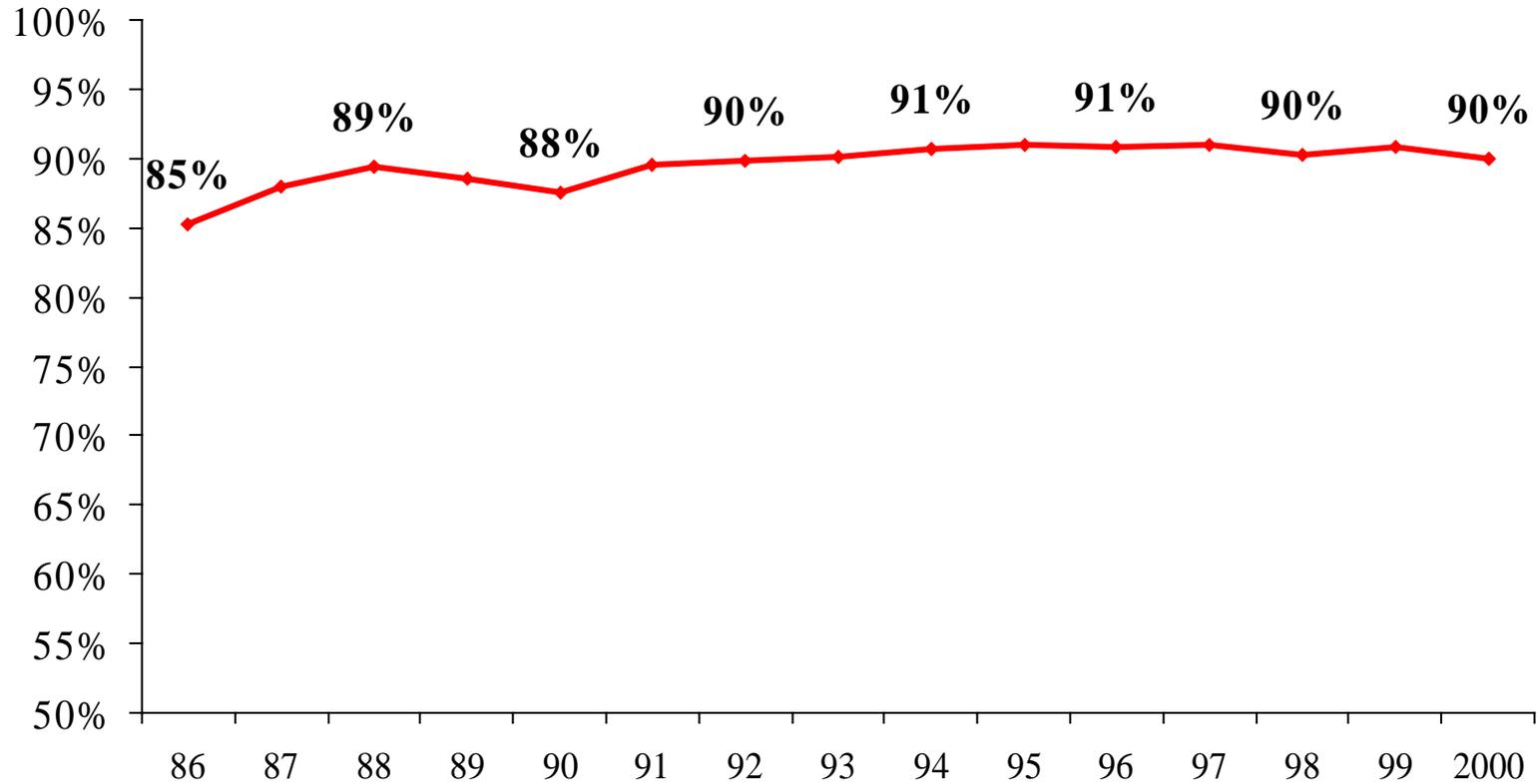
# The value of the trading floor

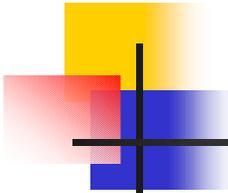
- NYSE provides a choice
  - electronic book
  - floor brokers
- 95% of orders choose the electronic book
- But large orders choose floor brokers
  - 50% of volume
- Why use a floor broker?
  - information
  - direct access
  - minimize market impact



**reserved orders  
with brains**

# NYSE share of block volume





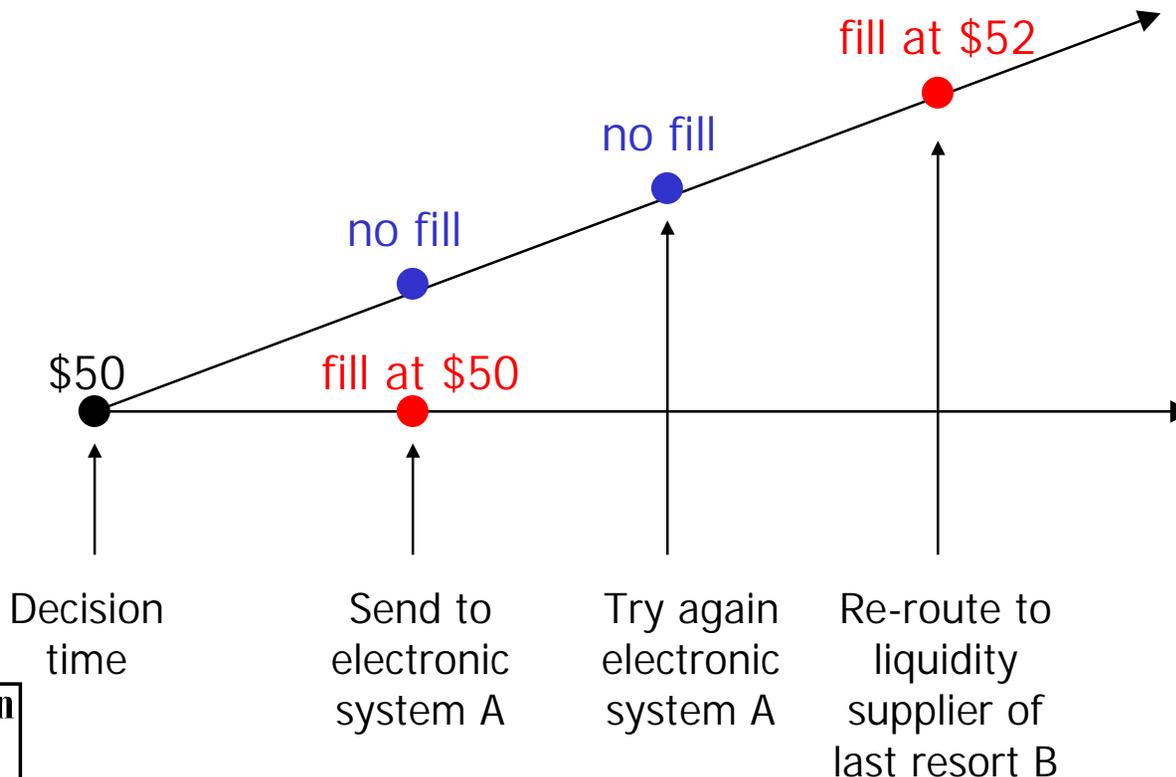
# Trading cost comparisons

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- 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”

# An example

- A buy order



Case 2: fast up market

Cost: 400 basis points

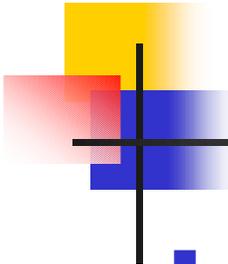
But whose cost is it?

Current research ascribes it to market B

But it is really market A's cost!

Case 1: slow flat market

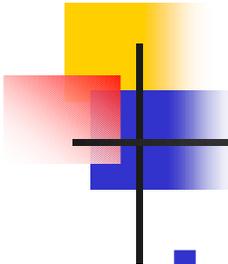
Cost: 0 basis points



# Selection bias

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- 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!



# The challenge for electronic systems

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- 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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