# Market Transparency

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# Outline

Theory

- Asymmetric information
- Inventory management

Empirical studies

- Changes in transparency
- TRACE
- Exchange traded bonds (Order Display Facility)

# Market Transparency

- Transparency will affect market liquidity
    - Liquid market = fair prices when you want to transact.
    - Bid-ask spread is a proxy for market liquidity.

- Market liquidity affects asset prices. Higher liquidity:
    - Market prices close to the fundamental value.
    - Effecient allocation of resources.

# Asymmetric information

- Trading is a zero-sum game.
    - Bid-ask spread is a defense against informed traders.

- Changing transparency will redistribute trading gains.

Informed Trader

Market Maker


Uninformed trader

# Pre-trade transparency

- Assume a qoute schedule (Foucault, Pagano & Roëll 2013):

$$P = \mu + \lambda q$$

- Price impact λ can be known (transparent) or unknown.
  - Same as only knowing qoutes from a fraction of dealers.

- Investor's private valuation is μ + τ.
  - Maximizes expected (private) value by trading.

# Pre-trade transparency

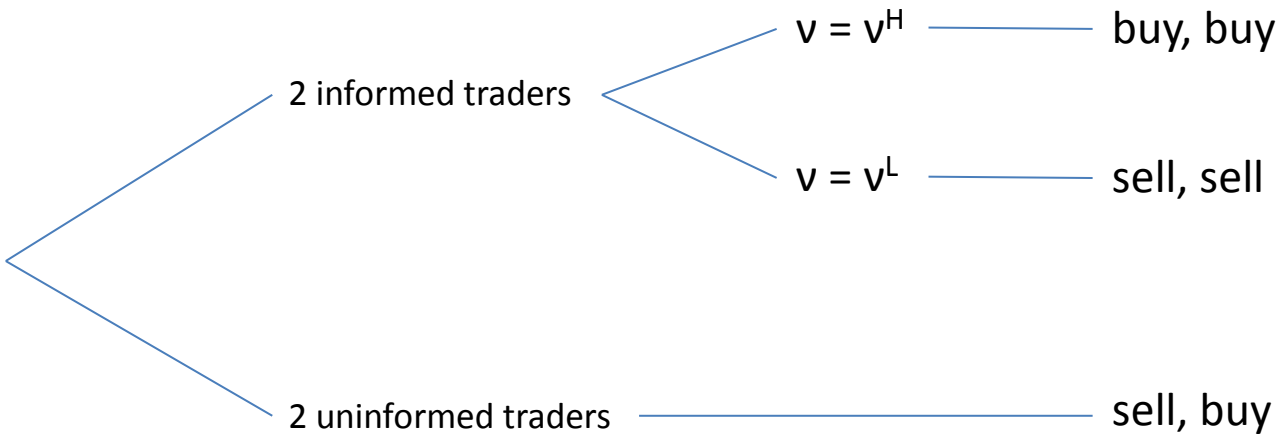
- Without qoute transparency:
  - Investors unable to adjust to market conditions.
  - Trading at the wrong time in the wrong amount.

- With qoute transparency:
  - Investors can optimally time their trading activity.
  - Induces higher paticipation (higher volume).
  - Higher expected trading gain for investors.

    → Investors willing to pay for qoute info (transparency).

# Order flow transparency

- Orders arrive simultaneously in the market to different dealers.
  - Informed trading generates pos. correlated flow.



# Order flow transparency

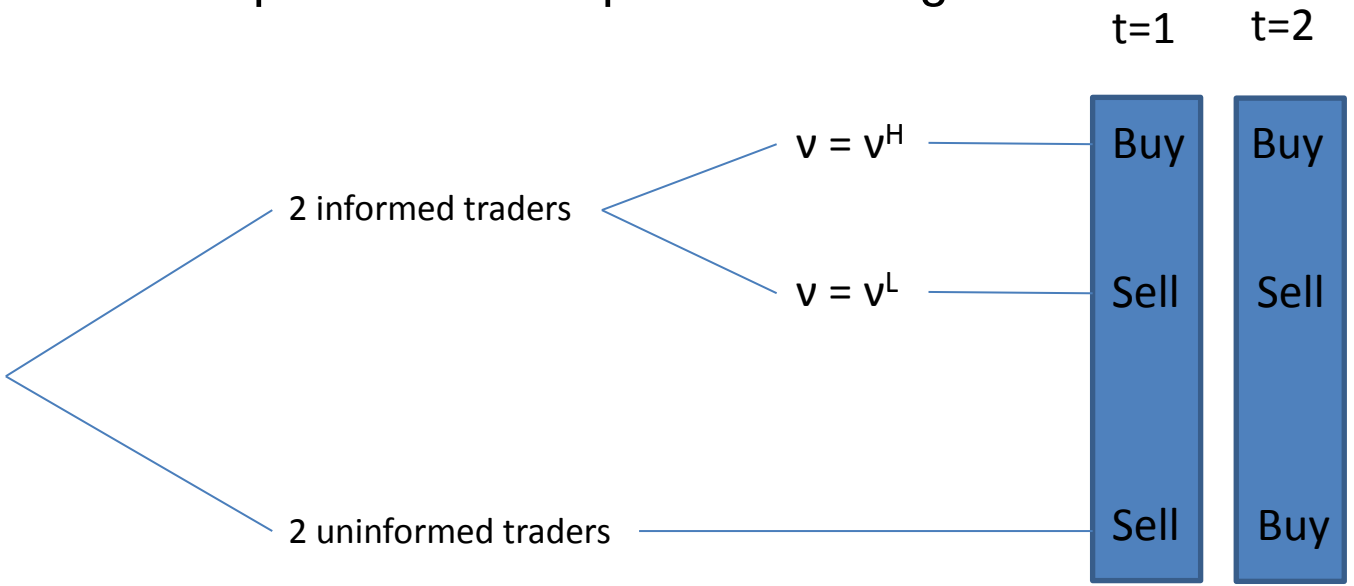
- Transparency: Dealers can see entire market order flow.

- Without transparency:
  - High bid-ask spread as safeguard against informed trading.

- With transparency:
  - Dealers can discriminate/adjust prices.
  - Improved price discovery (trade price ≈ fundamental value).
  - Uninformed traders face lower cost (Pagano & Röell 1996).
    - At the expense of informed traders.

# Post-trade transparency

- Same setup - but with sequential trading.



# Post-trade transparency

Time 1:

- Dealers set bid-ask spread to safeguard against informed traders.
- Dealer A makes a transaction.

Time 2:

- Dealer A can adjust bid-ask spread based on prior transaction.
- Other dealers still have the same information as at t=1.

# Post-trade transparency

- Without transparency:
  - Dealer A can extract rent from uninformed trader at t=2 and can avoid informed traders.
  - Dealers are willing to pay for increased order flow.
    - Lower t=1 spread to attract trading (Bloomfield and O'Hara 1999, 2000).

- With transparency:
  - All dealers can adjust prices and identify traders at t=2.
    - Competition between dealers.
  - Uninformed traders receive lower bid-ask spread at t=2.

# Revealing trading motives

- Anonymous trading vs. Identity known:
    - Limit-order book vs. Sunshine trading

- Investor signals motives to entire market:
    - Uninformed traders are better off.

- Unable to signal to *entire* market:
    - Informed dealers can extract rent from uninformed traders.
    - Cream skimming.

# Why do opacity persist?

- Market makers can extract rent from uninformed traders.
    - Equilibrium is to seek opaque venues.
    - Opaque venues outperform transparency.
        - Scope for regulation.

- Dealer collusion difficult in opaque markets.

- Opacity can benefit uninformed traders in limit-order-markets.
    - Stale limit orders can get preyed upon by informed traders.

# Inventory management

- Dealer inventory positions are visible with transparency.
    - Can be backed out from trading flow.

- Assume market makers agree on fundamental value but differ in inventory positions.
    - No difference in liqiudity with or without transparency (Biais 1993).
    - If market makers are very risk averse then lower spreads in opaque market (de Frutos & Manzano 2002).
    - However, with search costs included more liquidity in transparent market (Yin 2005).

# Inventory management

- Standard argument:

  After a large order in a transparent market, the market maker will be in a difficult bargaining position to unwind her inventory.

- BUT there is a counter-argument (Naik, Neuberger & Viswanathan 1999):
  - Without transparency:
    - Dealer unwinds by a series of small trades to minimize price impact.
    - Reduces the ability to share risk.
  - With transparency:
    - The market has already taken the information contents into consideration.
    - The dealer can unwind without price impact (no information content in unwinding).

# Fixed costs of market making

- Biais et al. (2006) argues against too much transparency.

- Some dealers acquire information in opaque markets.
    - These dealers can set better prices than others.
    - Winner's curse for non-info collecting dealers.
    - Higher spreads to avoid winner's curse.
    - Less information acquisition with transparency.

- Dealers need to cover their fixed costs.
    - Can be a problem with transparency for thinly traded bonds.

# Theoretical studies - summary

- Transparency will reduce information asymmetry.
  - Is information asymmetric a problem right now?

- Transparency will redistribute trading gains.
  - The market will on average be more liquid.
  - Uninformed traders will be better off.

- Counter-arguments (mainly non-theoretical)
  - Transparency could discourage market making in illiquid securities.
  - Inventory management becomes more costly.

# Empirical studies

- Change in pre-trade transparency
    - Open Book on NYSE in 2001 – more liquidity.
    - Toronto SE in 1990 – less liquidity.

- Change in post-trade transparency
    - Changes in reporting delay on LSE – no impact on liquidity.
    - CDS price dissemination – more liquidity for illiquid assets.

# TRACE

- Transactions in US corporate bonds are dissiminated with a delay.
    - Empirical studies show that this increased liqudity for large transactions.
    - Asquith et al (2013) argue that it has decreased trading activity for smaller, more risky bonds (high yield).
    - Bessembinder et al (2016) finds no decrease in dealer capital commitment after post-trade transparency.

- Adverse selection may not be a dominating issue.
    - Spreads are smaller for larger transactions.
    - Bargaining/market power is more important.

# Exchange traded bonds

- US corporate bonds:
  - Harris (2016):
    - Situation comparable to NASDAQ stocks in the 1980s.
    - Dealers should at least disclose mark-up on pass-through trades.
    - Limit-order display systems – less dealers will be balanced by buy-side to buy-side transactions.
  - Hendershott and Madhavan (2015):
    - Electronic trading benefit investors in many different types of bonds.
    - Also in thinly traded bonds.

# Exchange traded bonds

- Statement of the Financial Economists Roundtable (2015):
  - Corporate Bond (illiq) = Riskfree Bond (liq) + Stock (liq).
  - Private investors switch from stocks to bonds later in life.
  - Public order display facilities where brokers must post customers' limit-orders will increase liquidity.
  - If dealers drop out it is because others (buy-side) took over.

- Tel Aviv stock (and bond) exchange:
  - Corporate bonds are traded like stocks with a Limit-order-book.
  - Corporate bonds are more liquid than the stocks.
  - Larger trades are negotiated off the exchange.

# Conclusion

- Theoretical and empirical studies support that more pre- and post-trade transparency increase liquidity.

- Potential pitfalls (dealer perspective):
    - More difficult to unwind inventory.
    - Less information acquisition by dealers – higher bid-ask spread.
        - Posted prices may become stale (expected loss for dealers).