Equity Market Structure

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About me

• Finance professor at Georgetown
• I study financial market structure.
• Visited over 70 stock exchanges around the world.
• 12 fintech patents
• Testified 6 times before U.S. Congress
• Served on U.S. Federal Reserve’s Faster Payments Task Force
• Work experience:
  • PGandE, BARRA (later part of Morgan Stanley), Nasdaq, Shanghai Stock Exchange
  • Board of Directors: DirectEdge Stock Exchange 2010-2014

• BS Caltech, MBA Harvard Business School, Ph.D. U.C. Berkeley
• At Georgetown +/- since 1991
  • Wharton (2012-2014)
US Equity Market Structure

• Competitive by design
• 16 exchanges
• 20+ automated trading systems
• Numerous broker-dealers

• The NETWORK IS THE MARKET
  • Exchanges and ATS are just hubs in the market network.
Markets are linked by market data!

- Securities Information Processors (SIPS) regulated by law
- All market participants (even “dark pools”) must report trades instantly to consolidated tape.
- Exchanges report best bids and offers (“top of book”) that are combined into the “National Best Bid and Offer” NBBO
No one exchange dominates the market

- Big exchange operators (NYSE, Nasdaq, and Cboe operate numerous exchanges.
  - Different pricing models and market models
  - Market segmentation
- 40% off-exchange
Brokers have a duty of “best execution”

- FINRA Rule 5310
- Simple to monitor as NBBO must be displayed.
  - SEC Rule 603(c)
Retail flow is less “toxic” than institutional flow

• Small retail orders don’t move the market.
  • A dentist’s 100 share order has less information than a 100 share “child” order from an institution’s 100,000 share “parent” order.

• Market makers love to buy from retail at the bid and sell at the offer.
  • Happy to share profits with brokers.
  • Payment for order flow (PFOF) for market orders
    • While exchanges generally charge market orders to execute trades.
    • Pay rebates to limit orders that “make” liquidity
PFOF has led to commission-free trading

• Changing business model of brokers
  • Old model: Charge commissions on each trade
  • New model: Act like commercial banks

• Now:

• Commercial banks
  • Customer deposits money, bank lends out
  • Customer gets free bill paying as a perk.

• Brokers
  • Customer deposits cash and securities, broker lends out.
  • Customer gets free trading as a perk
GameStop

• More retail order flow due to pandemic boredom
• Difference of opinion among investors
  • Moribund retail operation about to die in retail apocalypse?
  • Or nascent game streaming powerhouse with big growth opportunities?
• Stock became very volatile.
• NSCC (subsidiary of DTCC) demanded high collateral for trades in process.
  • Even “fully paid” shares
  • SEC Rule 15c3-3 (“Customer protection rule”) did not allow customer funds to be used for NSCC margin.
  • Brokers restricted trading to reduce NSCC collateral and communicated poorly.
• Cries for reform. T+1 coming in 2023.