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Module: High Frequency Trading

Week 5: Liquidity and Information

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Measuring Liquidity

- Liquidity is a broad term that summarizes the level of cost and difficulty that we encounter when we try to trade.
- Liquidity varies across securities and varies across time.
- Liquidity is sometimes characterized as a network effect or network externality.

Liquidity Provision

- Inventory cost and risk
- Information asymmetry
- Competition among liquidity providers

Transparency

- Transparency refers to the amount of information available about the market and trading process.
- Transparency is an attribute of the market, not the security being traded.
- The term pre-trade transparency refers to information available before the trade, such as the bid, the offer, and recent price history.
- Post-trade transparency refers to information available after the trade, such as the trade price, executed volume, and (sometimes) identity of the counterparty.

Dark Market

- If we did not see the bid or ask before the trade occurred, then trade is considered dark.
- The reason behind darkness
  - The price matcher avoids the expense of determining and updating advertised prices
  - In the presence of a price matcher, the advertiser has a reduced incentive to post an aggressive price

Regulation

- In an economics class, the rules of trade are of lesser importance.
- In a securities market, rule is very important. Why?

Public Information

Prices generally adjust to reflect changes in this information, and trades are often a part of the adjustment process.The doctrine that a security price fully reflects all available public information is one form of the efficient market hypothesis.
What happens in

- Scheduled public announcements
- Unscheduled announcement
- Public misinformation (pump and dump; painting the tape)

Private Information

why should the price of a security reflect private, non-public information? (The answer is given by the market microstructure theories)

- Market prices (in the general sense of bids, asks and trades) follow the order flow.
- Since the order flow reflects on average the true value outcome, the private information is revealed in the market prices over time.
- Order flow is a signal, a window onto things not yet public

Social Value and Social Cost of Informed Trading

Social Value

The process of arriving at the new price, involving a complex interplay of bids, asks, and trades, is called price discovery.

- Information is costly to produce
- Informed trading helps price discovery

Social Cost

- Private information raises the possibility of market failure.
- Latency of the communication process

High Frequency Trading

Let's summarise how high frequency traders can make money:

- Latency(speed)
- Statistical trading
- Information exploit (event arbitrage)
- Liquidity provision

Role-play Game

Let's play a role-play trading game. Roles include:

- Informed traders
- Liquidity traders
- Liquidity providers/ Day Traders

Game Setting

- Seven rounds of trading from 9:00-16:00
- Submit orders or take the orders
- Orders prioritised by price and time