Frictions: Lessons from the history of financial market microstructure

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Investors and traders face a wide range of transaction costs. These costs vary depending on:

- The nature of securities traded
- Market organization
- Trading technology
- Government regulation

Market microstructure influences:

- A market's behaviour under normal conditions
- A market's response to unusual events

Asymmetric information causes frictions that impede market quality. These frictions lead to transaction costs. Microstructure is the study of these transaction costs.

The cost of trading of a market participant includes:

- Order processing costs
- Costs associated with holding inventory
- Charges for accepting the risk of trading against insiders

Order processing costs

Order processing costs remain largely fixed and do not change with price or trade size. They include the monopoly rents that market makers can capture. Order processing costs will exceed competitive rates in monopolistic markets and will be higher for less frequently traded securities.

Inventory holding costs

These costs compensate market makers for the risk of order imbalances. The risk will vary according to the volume, volatility and liquidity of the market and of the particular security traded.

Adverse selection costs

Important information about a security may be private. Once the information is revealed, the market maker may experience losses.

Market quality

Liquidity is one of the measures of market quality. Liquidity is reflected in transaction costs, the speed of price discovery, price impact and volatility.

Markets cope well with risks in situations where returns vary depending on the state of the world but market participants have a good idea of the distribution of the possible states and outcomes.

Uncertainty arises when we do not know the distribution of possible outcomes. This can happen because of a macro economic shock or a firm specific problem.

Markets are generally well equipped to handle idiosyncratic risks. But private information may lead to front running and insider trading. Under such circumstances, market quality is seriously affected. Uninformed participants may refuse to trade.

Consolidation brings together traders and potentially improves information efficiency and the speed of price discovery. Eliminating competition however gives market makers monopoly power and raises costs.

The earliest securities exchanges were essentially organized groups of several brokers meeting in a particular spot on a regular basis. Slow and costly transportation and information technology limited the scale and scope of these early markets and tended to locate them in historically important trading locations.

Early exchanges generally organized trading with call auctions. By gathering all participants interested in the same asset in the same location simultaneously, an auction incorporates all the information available at a given point of time into transaction prices. The alternative, continuous trading with a specialist market maker, tends to fragment information over time because of the random arrival of buyers and sellers and their associated knowledge or assessment of asset values.

Technologies for moving people and the dissemination of information have shaped the evolution of financial markets. The invention of the telegraph in 1844, the opening of the trans-Atlantic cable in 1866 and the ticker invented in 1867 revolutionized stock market communication. But individual investors could access quotes only by going to a broker's office.

Computerization in the 1960s set off another round of reorganization of trading practices. The internet and related technology fundamentally reshaped the trading industry in the early 21st century.

Multiple market places can fragment information and transfer power to informed insiders. But multiple trading can push investors to pick up new information, that would not be generated in a single venue.

Dual traded stocks traded with lower spreads and reacted less negatively to the severe liquidity crisis during the panic of 1907.

Illiquidity increases with macro shocks and also varies consistently with idiosyncratic risk. Volume alone does not indicate market liquidity. Rising volumes created information gaps during the 1920s as market makers struggled to keep pace with orders and make sense of the information they contained.

Opaqueness about the company can cause uncertainty. Opaqueness tends to be high when corporate governance and accounting standards are lax. Under these circumstances, information is distributed more unevenly among traders and investors.

When information is absent or too complex to understand immediately, the market cannot achieve reasonable liquidity immediately. Market quality can be restored by taking a holiday as this provides traders the time they need to acquire and analyse information. Quick resolution and restoration of transparency eliminate the need for a trading holiday.