Change à la Bourse

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A Sea Change

- The past decade has seen dramatic change in the trading of financial instruments on organized exchanges
- Technological change
- Organizational change
- How are these changes linked?—Very closely!

The Changes in Brief

- Technological: Shift from “open outcry” auction trading to electronic trading
- Organizational: Shift from mutual ownership and non-profit form to investor ownership and for-profit form
- Organizational: consolidation
- Organizational: Controversies over integration of various trading functions

What has driven the organizational changes?

- Electronic trading has eroded importance of specific assets that drove mutual ownership and non-profit form
- Electronic trading has also increased scope economies across products and across space

An outline of the talk

- An overview of the process of trading financial instruments
- Trading technologies and their evolution
- Organizational implications of trading technologies
- Integration debates—“Silos”
- Self-Regulatory controversies

The Trading of Financial Instruments

- Financial instruments include stocks, and various derivatives (futures & options)
- Some instruments are traded “over-the-counter”
- Others are traded on organized exchanges
- Exchanges are formal organizations that supply trading infrastructure, and promulgate and (sometimes) enforce rules governing the trading process

Financial Transactions

- Completion of a financial transaction involves numerous, complementary processes
- Pre-trade (information/quotation dissemination)
- Trade execution
- Post-trade
  - Clearing—matching of trades and sharing of performance risk
  - Settlement—formal legal transfer of ownership

Trade Execution—Old School

- Stocks and derivatives have been traded by "open outcry" auctions since organized trading of financial instruments began in the 19th century
- In an open outcry auction, buyers and sellers congregate in a single place, and indicate the prices at which they are willing to buy or sell through shouts and gestures

The Old School Division of Labor

- Extensive specialization in open outcry auctions
- Floor brokers represent customer orders on the floor
- Brokerage firms manage customer accounts and relations, and direct orders to floor
- Liquidity suppliers (“locals”, “specialists”, “market makers”, “jobbers”) trade on their own account and provide bids and offers

Specific Assets

- Each of these functions require(d) very specific human capital (“do you want fries with that?”)
- Locational specificity
- Physical capital of an exchange also highly specialized (do you really need a zeppelin hanger in downtown Chicago?)

Organizational Implications of Specificity

- Specificity of human and physical capital makes it beneficial for owners of human capital to own exchange—"mutual" form
- Most exchanges were once "member" organizations
- The intermediaries that traded on the exchanges (the brokers, locals, etc.) owned them

Heterogeneity

- Exchange memberships heterogeneous
- Skills and assets suitable for one function (e.g., floor brokerage) not suitable for other (e.g., liquidity supply)
- Trading functions are complementary
- Even heterogeneity within a particular function

Organizational Implications of Heterogeneity

- Can have a for-profit mutual firm
- For-profit exchange could distribute profits to members
- Due to heterogeneity, an exchange could redistribute wealth among members through pricing and distribution decisions
- EG, small traders would prefer high exchange fees and distribution of profits equally to each member; this would redistribute wealth from large traders

More Implications of Heterogeneity

- Non-profit form limits the ability of a firm to redistribute rents among its “owners”
- Non-profit form therefore can mitigate rent seeking among heterogeneous agents
- Open outcry exchanges were almost always non-profits—even thought their “owners” were about as profit/money driven as one could imagine

Yet More Implications of Heterogeneity

- Exchange trading rules can also distribute wealth
- Understood in political institutions (e.g., Weingast-Marshall) that committee-dominated governance and agenda control can mitigate rent seeking and facilitate the enforcement of enduring Coasean bargains among disparate interests
- Traditional exchange governance was notoriously political and committee dominated

Electronic Trading Changes Everything

- Electronic trading dramatically undercuts specialization and heterogeneity
- Market making particularly transformed
- Local lock-in much attenuated
- Thus, electronic trading undermines the need for organizational forms and governance structures crafted to protect highly specific and heterogeneous human and physical capital

What We've Seen

- The last 12+ years have seen a simultaneous growth of electronic trading and a transformation of exchange ownership and governance
- 90+ pct open outcry to 90+ pct electronic
- Virtually all exchanges have transformed from mutual non-profit form to investor-owned for-profit form
- Exchanges have become pretty much "normal" firms, whereas they were once quite organizationally distinctive

Organizational Choices--Integration

- A controversy currently rages on both sides of the Atlantic over the appropriate organization of trade and post-trade services
- Vertical integration (“silos”) vs. “disintegration”
- Many market participants and regulators and editorialists (esp. *FT*) consider integration of trading, clearing, and settlement to be anticompetitive
- They prefer that non-profit cooperatives supply post-trading services

The Economics of Integration

- An analysis of the economics of the trading process demonstrates, however, that fundamental economic forces can make integration efficient
- Pervasive scale economies—natural monopoly in complementary functions

Economies of Scale--Trading

- Liquidity network effects
- In the presence of informed trading, uninformed traders prefer to concentrate on a single market—this limits their losses to trading with those with better information
- Liquidity exerts strong centripetal force
- “Tipping”
- Example—Deutsche Börse & LIFFE

Economies of Scale--Clearing

- Clearing often involves the sharing of counterparty/performance risk (“central counterparty”)
- It is well known that due to diversification effects that the cost of insuring risks is declining in the size of the pool of shared risks

Problems of Separate Provision

- Separate provision of trading and post-trading services by for-profit entities poses serious problems:
  - Double marginalization
  - Transactions costs, especially in achieving coordinated responses to technological, regulatory, and financial shocks

The Benefits and Costs of Integration

- Integration of trading and post-trading services eliminates the possibility of double marginalization and mitigates transactions costs
- Low powered incentives—but proposed alternatives also face this problem

Competitive Implications

- Advocates of “disintegration” argue that exchanges use control over natural monopoly clearing function to impede/foreclose competition in execution
- This is bad economics

Remember the Chicago School?

- It has been known since the 70s that if one complementary function is potentially competitive, and the other is a natural monopoly, the monopolist has an incentive to encourage competition in the complementary one in order to enhance derived demand for the monopoly service/product

Empirically Deficiencies

- Disintegration view asserts that execution is potentially highly competitive
- Absent aggressive regulatory intervention to weaken the liquidity network effect, this is a dubious proposition
- Historical experience and empirical evidence strongly supports the view that absent socialization of order flow, execution is “tippy”

Is the Cure Worse Than the Disease?

- One advantage of expansive clearing cooperative is that it could exploit cross-exchange scope economies, but . . .
- Transactions costs at interface between exchange and clearer
- Clearing cooperative can exercise market power (resulting in double marginalization) even if it is a non-profit—by restricting entry
- Entry restricting non-profits that exercise market power are not unknown—CLS and . . . Traditional exchanges!

Regulatory Controversies

- Exchanges have traditionally exercised self-regulatory responsibilities
- There is unease in some quarters as to whether for profit exchanges will regulate trading activity efficiently
- Understanding the motivation for organizational form should allay these concerns

When Can Non-Profit Form Facilitate Quality Control?

- Low powered incentives (such as NP form) can facilitate quality control (i.e., “self-regulation”) when there is private information
  - Non-contractible quality
  - Monitoring quality

But. . . That's Not Why Exchanges Adopted NP Form

- As noted earlier, NP form was adopted to address information-related quality control issues—it was adopted to address internal, distributive concerns
- NP exchanges may actually have weaker incentives to regulate
  - Many matters of regulatory concern involve abuse of agency relationship. . . But the NP exchange is owned by the agents!
  - A FP exchange may want to crack down on agency abuse because resources transferred to agents by such abuses reduce derived demand for exchange services

Summing Up

- Exchanges are important economic institutions (price discovery, risk transfer, capital allocation)
- Bourses around the world have undergone radical organizational changes in the past decade or so, and may face additional changes going forward
- A detailed, microanalytic and integrative (transactions costs, property rights, and traditional IO) approach can advance our understanding of these changes, their causes, and their effects. It can also help us understand what is likely to transpire in the future.