Does Ownership of Stock Exchanges Matter?*

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OUTLINE

Abstract

Since the early 1990s there has been a trend among exchanges to consider alternative governance structures to the traditional models. In most cases, stock exchanges have been transformed from not-for-profit to for-profit organizations. The process of this conversion is often described as demutualization. However, the primary function of a demutualization is to reduce control of (particularly local) intermediaries over the strategic position of the stock exchange. The main reasons of demutualization have been competition, technology innovation, internationalization of membership and, in cases in which stock exchanges are listed, investor participation. The main effects of demutualization are related to the performance of stock exchanges and to regulatory issues.

A. Conceptual background and historical evolution

Historically, stock exchanges in developed countries have been mutual associations owned by their members. Generally, they have been operated on a not-for-profit basis. During the same time, stock exchanges mainly in emerging economies were owned by the government, while operating on a not-for-profit basis as well.

Since the early 1990s, and due to the factors analyzed below, there has been a trend among exchanges to consider alternative governance structures to the traditional models. In most cases, stock exchanges have been transformed from not-for-profit to for-profit organizations. This trend had an impact on ownership of the stock exchanges since:

- in the case of mutual ownership, stock exchanges have come under the ownership of investors and in several cases listed, and
- in the case of emerging economies they have come from state controlled companies under the ownership of investors, and in some cases listed.

The process of conversion of an exchange from a not-for-profit to a for-profit organization is often described as demutualization. However, the primary function of a demutualization is to reduce control of (particularly local) intermediaries over the strategic position of the exchange. In this sense, through demutualization exchanges acquire outside shareholders and become exposed to the same shareholder-value maximizing pressures as affect ordinary commercial companies whose shares are publicly traded. In other words, demutualization concerns the process whereby their equity is opened up to public ownership.

The first stock exchange to demutualize was the Stockholm Stock Exchange in 1993. Since then, 21 exchanges in developed market jurisdictions have demutualized - representing almost 40% of the membership of the World Federation of Exchanges. In contrast, the pace of demutualization in emerging market jurisdictions has been relatively slower. According to IOSCO, exchange demutualization has been completed in only 5 jurisdictions out of total of 76.

Further step of demutualization is usually public listing. Listing typically appears to de a consequence of market forces.

B. The case for demutualization

1. Competition

Exchanges are no longer monopolies but must be run as efficient business enterprises. Increasing competition, whether between traditional exchanges or between exchanges and other trading systems, requires exchanges to become more efficient in all activities, including their decision-making process.[1]

[1] Especially, new ways to trade securities (remote membership, electronic order-book trading, electronic communication networks, internalization of order book by intermediaries) became viable threats to the traditional exchanges, which were obliged to re-examine their role as trading arenas and to take measures that facilitate more competitive strategies.

Thus, along with capital necessary for investments in technology, demutualization is considered as a catalyst to set in motion a transformation of the exchange's business model to facilitate a more effective response to forces re-shaping the exchange business.

The result of a stock exchange demutualization is, ideally, a corporation that operates in a more customer-focused manner and is able to respond more easily and quickly to changes in the business environment and meet competitive challenges.

In addition, certain responses to competition, such as alliances and mergers between exchanges, may be facilitated by demutualization.

2. Technology innovation

In the era of automated auction, the placement and matching of buy and sell orders is done on computer systems, access to which is inherently constrained neither by the location nor the numbers of desired access points. The transactors on electronic networks look much more like what are normally considered as "clients" or "customers" of a firm than members of an association.

Moreover, since an electronic auction system is a valuable proprietary product, it is feasible for the owner to operate it, and sell access to it, as a normal for-profit commercial enterprise. The fact that an automated exchange can be operated as a commercial enterprise, unlike a traditional floor-based exchange, does not in itself make an economic case for a corporate governance structure.

However, such a case emerges naturally from an analysis of the incentive structures under which a corporate exchange operates. In the case of mutual associations exchange members derive profits from intermediating non-member transactions, thus they can be expected to resist both technological and institutional innovations, which serve to reduce demand for their intermediation services (for ex. LSE fought to block the adoption of electronic auction trading in the mid-1990s).

3. Internationalization of membership

Large international banks which are members of numerous exchanges have much less motivation to defend mutualization than local players. Local players have a strong incentive to maintain institutional barriers to disintermediation of their services, whereas larger international players tend to see governance reform as an effective weapon for increasing their strategic control of the exchange.

4. Investor participation

In cases in which exchanges are listed, the new corporation is considered to be more profit-oriented due to shareholder accountability. Unlike a mutual structure where often only broker-dealers may be members, a demutualized exchange affords both institutional investors and retail investors the possibility to become shareholders.

C. The effects of demutualization

1. Trading costs

Domowitz and Steil (2002) estimate total trading costs to be 28%-33% higher through NYSE and NASDAQ traditional broker members than through non-intermediated for-profit trading system operators. They also estimate that European trading fees alone would fall a massive 70% if the European exchanges were to move to an electronic communication network (ECN) governance model (eliminating membership and allowing direct investor access).

2. Conflicts of interest

The more commonly expressed concern is that in a demutualized exchange, the drive for profit increases both the scope and the intensity of the conflicts. Due to increased pressure to generate investment returns for shareholders, a for-profit exchange may be less likely to take enforcement action against customers or users who are a direct source of income for the exchange.[2]

According to IOSCO, although conflicts of interest may never be completely eliminated in a self-regulatory environment regardless of the form the exchange may take, the challenge is to create an environment in which conflicts are recognized, minimized and managed effectively.[3]

3. The exchange as a public good

In determining whether any special requirements should apply to a demutualized exchange, regulators need to consider the whole of the existing regulatory and market framework, including any statutory obligations, general corporate governance regime, and public transparency and accountability requirements.

The needs of an exchange as a commercial entity entitled to organize its affairs like all other businesses, free of unnecessary encumberment, should also be taken in account.

[2] By similar reasoning, a for-profit exchange may be less likely to suspend trading in the more liquid products listed on its market where this may impact adversely on transaction fees such trading would otherwise generate.
[3] Most approaches involve one or more of:
- corporate governance requirements, such as requirements for "public directors" to increase the likelihood that the board take its responsibilities for the integrity of the regulatory process;
- a clear statutory statement of the obligations of the exchange to provide a fair and efficient public trading market;
- rigorous oversight;
- enhanced transparency;
- mechanisms to enhance exchange accountability;
- functional separation of the commercial activities of the exchange from its regulatory functions.

4. Financial issues

As a demutualized enterprise, the exchange usually loses the right to demand that shareholders contribute additional capital. In return, it gains the flexibility to raise capital from a wider array of investors, with differing investment objectives and risk tolerances.

Regulators address concerns about the financial condition of financial intermediaries by imposing capital and other prudential requirements.

Given the public interest in the continued operations of an exchange, should capital requirements be placed on a demutualized exchange?

Other alternatives are to require a demutualized exchange to establish a reserve to address any shortfall in capital, or for the regulator to monitor the financial condition of an exchange and then to take remedial action if its financial condition begins to deteriorate.

D. The impact of demutualization on stock exchange performance

1. Sample of 9 traded stock exchanges[4] (Mendiola, O' Hara, 2004)

The main argument is that stock exchanges have changed their corporate structures to adapt better to changing economic conditions. This thesis would suggest that the conversion of stock exchanges from not-for-profit to for-profit companies is value-enhancing.

Main challenges arising:

- prior to conversion exchanges do not have traded stock, making it impossible to determine what the market performance would have been in the absence of the conversion,
- all privatizations occurred in the last years, a period of notable difficulty for asset-markets world-wide.

Accounting measures
of exchange performance
The Return on Assets (ROA) and Return on Equity (ROE) data provide mixed evidence on the relation between exchange performance and privatizations. Some exchanges such as Australia, have clearly fared much better after privatization than before, showing dramatic improvements in both ROA and ROE. Other exchanges, however, have fared less well. The Deutsche Börse, for ex-

[4] London Stock Exchange, Euronext, Deutsche Börse, Toronto Stock Exchange, Hong Kong Stock Exchange, Australian Stock Exchange, Singapore Stock Exchange, Athens Stock Exchange, Oslo Stock Exchange.

ample, has seen both its ROA and ROE drop precipitously. Based on the data collected, it would be hard to conclude that privatizations are value-enhancing in general.[5]

In summary, while the accounting data are not inconsistent with exchange equitizations leading to improved performance, the accounting evidence is too mixed (or too difficult to interpret) to provide much evidence to evaluate whether exchange conversions are value-enhancing.

Liquidity

Liquidity production is improving in the wake of exchange conversions. While some exchanges have not shown improvement, notably Deutsche Börse and Athens, overall the evidence is supportive of enhanced exchange performance.

Return-based measures of performance

Comparing the return for all exchanges measured from their listing to Dec. 31, 2002, five of the nine exchanges have positive returns, while four do not. Looking at returns after a year for the seven exchanges with sufficient history, we find that four exchanges had positive returns, while three did not. Interesting, most, but not all of the exchanges initiating trading had positive first day returns.[6] What can account for these differences in performance?

- A natural conjecture is that the future prospects of these markets is poor, and these underlying problems are causing the exchanges' stock to be viewed negatively.
- These exchanges are somehow subject to greater (or at least different) market risks than their constituent stocks, and so index *per se* is not capturing their risk exposure.

Risk-based measures of performance: Exchange listings and home country IPOs

The sample size of non-exchange IPOs ranged from 54 offerings in Singapore to 28 offerings on the Nasdaq. Most of these IPOs are occurring in the period 2000-2002, and their first day return behavior is far more restrained than was typically the case in the more frenetic 1990's. for example, the first day returns for IPOs on Singapore was 8.7%, for Euronext it was 6.25%, and for Nasdaq it was actually a negative 1.7%.

[5] The profitability data show general overall improvement in connection with the conversion. The Deutsche Börse, for example, saw its profitability from operations increase from 26.1% in the year ending December 2000 to 30.9% in December 2001, but its equity capital grew from 922.7 million Euro to 2,135.0 million Euro over the same period. This caused ROE to fall from 52.5% to 13.0% over this same period. The Asset Turnover data is ambiguous and for this reason it is not possible to suggest an overall trend in any case.

[6] If we compare Buy-and-Hold monthly returns of the exchange stock, the domestic exchange index, and the Morgan Stanley World Index, the data provide striking evidence that exchange stocks outperform the stocks of their underlying index. Looking over the entire sample period that ends December 2002, 6 of the 7 exchanges outperform their index and the world index, and the difference is both statistically and economically significant. What is particularly intriguing here is that 4 of the 7 stock indexes actually had negative returns over the relevant sample periods.

Turning now to the behavior of our exchange listings, 4 of our sample stocks exhibit under-pricing: Singapore's first day return was 21%, the Deutsche Börse shares rose 11.4%, Hong Kong shares rose 17.9% and Australia's first day return was 3.7%. Three exchanges shares fell on the offer day, with Euronext down by 8.4%, Athens by 6.4%, and the London Stock Exchange by 5.2%, while the Nasdaq market price was unchanged in its listing day.

Concluding remarks

- Using data from the universe of equity exchange conversions, it was found that listed stock exchanges generally outperformed both the stocks on their markets and the IPOs listed on these exchanges.
- The performance of stock exchanges with public offerings was positively linked to the fraction of the equity sold to outsiders.
- General improvement in measures of liquidity production following conversions.

While not every converting exchange exhibited enhanced performance, one could interpret the overall results as providing evidence that shifting corporate governance from a cooperative to a corporate structure is value-enhancing for exchanges.

2. The sample comprises on average 85% of the total equity trading volume on stock exchanges reported to the FIBV by roughly 75 exchanges (Serifsoy, 2005)

Contrary to the statements of other researchers, findings of Serifsoy do not support the view that an outsider dominated exchange is a precondition for dealing adequately with increased levels of competition in this industry. Therefore, the case for an IPO, a measure that involves considerable one-off and additional running costs cannot be advocated from a technical efficiency perspective.

However, a demutualization process that retains the exchange's customers as its main owners but realigns the ownership structure, for example more in congruence with the customer's respective volume of conducted business, seems promising from a technical efficiency point of view.

Assuming that productivity growth will also improve when the restructuring process is completed, this would make this decision even more sensible.[7]

[7] Moreover, the assumption that a demutualization process is necessary to install modern trading systems cannot be empirically confirmed. In the contrary, the mutual exchanges in the sample used by Serifsoy have a persistently higher position of electronic trading than the demutualized and listed exchanges of the same sample. Thus, it seems that mutual exchanges are well aware of the necessity to adapt to new trading technologies without changing their governance structure substantially.

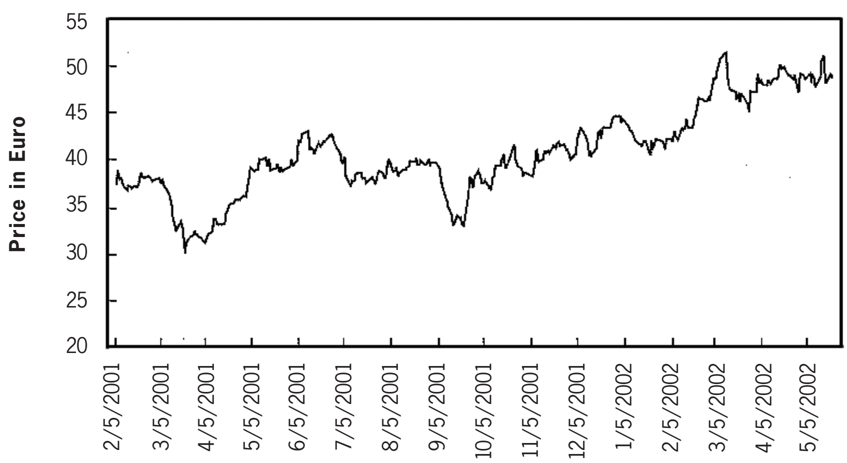
Serifsoy makes the conclusion that the rationale behind an IPO seems not primarily driven by efficiency-enhancing motives. An IPO is more likely to be used as a solution vehicle for the diverging interests between (few) large international financial intermediaries and (many) small local brokers.

E. Stock performance following listing (Aggarwal, 2002)

Deutsche Börse:

In February 2001 the exchange did an initial public offering. Shares of Deutsche Börse began trading on February 5, 2001 after its demutualization and listing on the Frankfurt Stock Exchange. The shares were offered at an initial IPO price of €33.50 and the closing price on the first day of trading was €36.20. The offering was oversubscribed 23 times and it resulted in more than 300 shareholders, including banks, brokers, and regional stock exchanges.[8]

STOCK PRICE PERFORMANCE OF DEUTSCHE BÖRSE

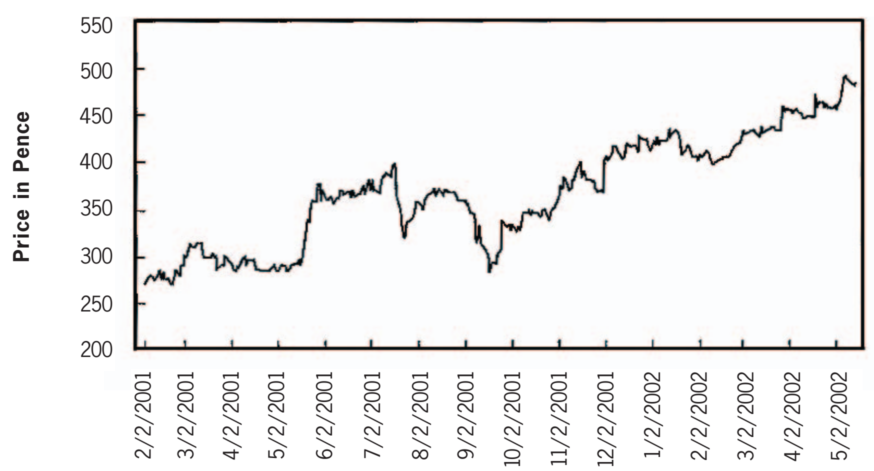


[8] Deutsche Börse shares have performed well in the aftermarket both on an absolute and on a relative basis. Fifteen months after going public at a price of €33.50 in February 2001, it was trading in the €48-51 price range (in May 2002). The company has also reported record earnings since going public, with the diversity of its businesses limiting its vulnerability to the slowdown in stock exchange activity.

London Stock Exchange:

The Exchange demutualized in June 2000, and was fully listed on July 20, 2001, with a market capitalization of one billion pounds. The LSE listed its stock for trading on the "Main Market" at a price of 365 pence in July 2001. As of May 2002, the stock was trading in the price range of 480-488 pence.

STOCK PRICE PERFORMANCE OF LONDON STOCK EXCHANGE



Australian Stock Exchange: As below

STOCK PRICE PERFORMANCE OF AUSTRALIAN STOCK EXCHANGE

Table

Stock performance following listing

Exchange	After 1 Year
Hong Kong Stock Exchange	66%
Hellenic Exchanges	-38%
Singapore Exchange	5%
Deutsche Börse	6%
Instinet	-55%
Euronext	11%
London Stock Exchange	21%

F. Efficiency costs

Domowitz and Steil (2002) estimate total trading costs to be 28%-33% higher through NYSE and NASDAQ traditional broker members than through non-intermediated for-profit trading system operators. They also estimate that European trading fees alone would fall a massive 70% if the European exchanges were to move to an electronic communication network (ECN) governance model (eliminating membership and allowing direct investor access).

The emergence of commercial rather than mutualized trading operations should also result in lower capital costs to listed companies. Domowitz and Steil demonstrate not only that distintermediating trading reduces trading costs, but that trading cost reductions in turn reduce the cost of raising equity capital. The halving of total trading costs which they document in the US between 1996 and 1998 resulted in an 8% decline in equity capital costs to S&P 500 companies. The authors further estimate that the elimination of mandatory broker intermediation at the European exchanges would result in at least a 7.8% savings to European blue-chip companies.

G. Questions arising

- Is the traditional model of stock exchanges owned by their members viable and for how long? In other words, demutualization should be considered as an important enabler or a necessity?
- What are the risks of demutualization in terms of performance and regulatory interventions?
- Is self-regulation inconsistent with demutualization?
- To what extent is regulatory intervention needed in case of demutualization? In order to respond to this question one should differentiate between listed and not listed demutualized stock exchanges.
- What are the main reasons for which demutualized stock exchanges have been listed?

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APPENDIX: TABLES

Table 1
Demutualized exchanges which have been listed

Exchange	Year of demutualization	Year of listing
Stockholm Stock Exchange	1993	–
Helsinki Stock Exchange	1995	–
Copenhagen Stock Exchange	1996	–
Amsterdam Stock Exchange	1997	–
Borsa Italiana	1997	–
Australian Stock Exchange	1998	1998
Iceland Stock Exchange	1999	–
Simex	1999	–
Athens Stock Exchange	1999	2000
Singapore Stock Exchange	1999	2000
Hong Kong Stock Exchange	2000	2000
Toronto Stock Exchange	2000	2002
London Stock Exchange	2000	2001
Deutsche Börse	2000	2001
Euronext	2000	2001
Nasdaq Stock Exchange	2000	–
Philippine Stock Exchange	2001	2003
Chicago Mercantile Exchange	2002	–
Bursa Malaysia Bhd.	2004	2005

Table 2
Potential legal structures of an exchange and its status accordingly as demutualized or not demutualized

	Not demutualized exchanges	Demutualized exchanges
Not-for-profit entity	+	
For-profit private company (state-controlled)	+	
For-profit private company (ownership stakes controlled exclusively by members)	+	
For-profit private company listed or not (their equity opened up to public ownership)		+