DEMUTUALIZATION AND CORPORATE GOVERNANCE OF STOCK EXCHANGES

*by Reena Aggarwal, Georgetown University**

Starting in the early 1990s, stock exchanges around the world have been undergoing major organizational and operational changes. One of the most visible has been the trend toward demutualization—the process of converting exchanges from non-profit, member-owned organizations to for-profit, investor-owned corporations. In 1993, the Stockholm Stock Exchange became the first exchange to demutualize. It was followed by several others, including the Helsinki Stock Exchange in 1995, the Copenhagen Exchange in 1996, the Amsterdam Exchange in 1997, the Australian Exchange in 1998, and the Toronto, Hong Kong, and London Stock Exchanges in 2000. (For a complete list of the exchanges that have demutualized, see Table 1.)

In some cases, the demutualized exchanges have taken the further step of becoming publicly traded companies. For example, following a demutualization process that began in 1996, the Australian Stock Exchange issued shares to the public and began listing on its own exchange in 1998. And shares of the London Stock Exchange, which converted into a for-profit corporation in June of 2000, became fully listed in July of the following year.

In business as elsewhere, structure tends to follow strategy. And these dramatic changes in the organizational *form* of the exchanges reflect major changes in their business environment—notably, the rise of global competition and technological advances—and in the competitive strategies designed to respond to such changes. Until recently, the main sources of revenue for exchanges have been transaction fees, listing fees, membership fees, and sales of information services such as market data. But, as competition among exchanges intensifies and more corporations have the option of listing on overseas exchanges, exchanges are being forced to reduce their listing fees. In fact, it's not even clear that the exchanges themselves will continue to certify companies for listing. As discussed in more detail below, that function may increasingly be left to other entities. Membership fees are also likely to fall in a demutualized environment, as broker-dealers find it advantageous to trade on multiple exchanges rather than committing themselves exclusively to one. At the same time, technological innovations have sharply reduced the cost of providing data on quotes and trades, thereby diminishing the importance of this source of revenue. What is likely to produce revenue, however, is trading commissions. And the key to an exchange's success in generating commissions is likely to be its ability to generate trading volume. As the industry continues to consolidate to achieve scale economies, the eventual winners in the process will be the exchanges that attract order flow and so provide liquidity to investors.[1]

For the dominant exchanges, then, the major source of revenue will be transactions and related services. Most exchanges can also be expected to expand their offering of products and services. For example, the businesses of European exchanges like the Deutsche Börse now include derivatives trading, clearance and settlement, and information technology and services. Nasdaq has introduced the exchange traded fund, QQQ, that has been extremely popular and achieved high trading volume.

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1. As discussed by Rubin Lee (2002), "The Future of Securities Exchanges," Brookings-Wharton Papers on Financial Services, January 10-11. It is not too difficult for new entrants to set up a trading system and even outsource some required regulatory functions. However, investors will be reluctant to move their order flow to a new trading system until that system can attract sufficient liquidity. If most investors wait for this liquidity to be generated before changing, it will be difficult for new entrants to oust the incumbents.

TABLE 1 ■ EXCHANGES PRIVATIZATION/DEMUTUALIZATION[2]

Demutualized Exchanges	Year	Demutualized Exchanges	Year	Demutualized Exchanges	Year
Stockholm Stock Exchange	1993	Athens Stock Exchange	1999	Chicago Mercantile Exchange	2002
Helsinki Stock Exchange	1995	Stock Exchange of Singapore	2000		
Copenhagen Stock Exchange	1996	Hong Kong Stock Exchange	2000		
Amsterdam Stock Exchange	1997	Toronto Stock Exchange	2000	**Proposed Demutualizations**	
Borsa Italiana	1997	London Stock Exchange	2000	NYMEX	
Australian Stock Exchange	1998	Deutsche Börse	2000	International Petroleum Exchange	
Iceland Stock Exchange	1999	Euronext	2000	Chicago Board of Trade	
Simex	1999	The Nasdaq Stock Market	2000	Chicago Board of Options Exchange	

One way to accomplish such product and revenue expansion is through strategic alliances or joint ventures. In the 1990s, a number of alliances were formed between exchanges. Particularly for exchanges in emerging markets, such alliances were seen as a means of ensuring survival. For many of the local Bolsas, the recently acquired ability of their own blue-chip companies to list on the New York or London Stock Exchanges resulted in sharp declines in their trading volumes and listings. In response to this competitive threat, the Bolsas formed alliances designed to coordinate trading technology, membership, listing requirements, and order execution—all with the ultimate aim of building revenue and reducing costs. Securities commissions from different countries also signed a number of memoranda of understanding to achieve standardization of regulatory requirements.

Part of the attraction of such alliances was that they enabled the exchanges to maintain their individual identities—something that would not have been possible with an outright acquisition or merger. However, in most cases, the proposed linkages and benefits have failed to materialize either because of regulatory hurdles or because all parties involved were not able to achieve proportional benefits. And because of the disappointment with such alliances, there is once again a trend toward outright mergers and acquisitions of exchanges. At the same time, the smaller exchanges now find themselves in a very difficult position: they cannot survive independently and there is little if any demand to acquire them.

This paper examines the future of stock exchanges and the likely role of demutualization. After a brief overview of the process of demutualization, I discuss the two main causes of this trend—technological change and globalization. Next, I consider the importance of demutualization for the regulatory structure of stock markets. Until recently, most developed stock exchanges have been self-regulatory organizations (SROs). But because demutualization is at least perceived to create a conflict of interest between the profit motive of an exchange and its regulatory function, there have been a number of major changes—some proposed and some actually implemented—in the regulatory requirements and oversight of stock exchanges. Fourth and finally, I examine the operating and stock price performance of three large exchanges that have demutualized and then become publicly traded corporations. Such evidence, however preliminary, may help us better understand the potential of a stock exchange as a for-profit business.

THE PROCESS

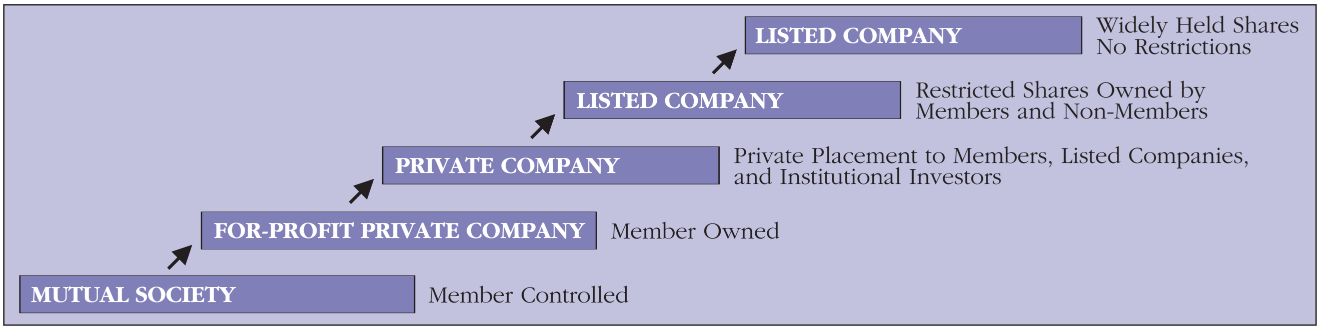
As stated earlier, demutualization is the process of converting a non-profit, mutually owned organization to a for-profit, investor-owned corporation. The members of mutually owned exchanges—that is, broker-dealers with "seats" on the exchange—are also its owners, with all the voting rights conferred by ownership.[3] In contrast, a demutualized exchange is a limited liability company owned by its shareholders. Trading rights and ownership can be separated; shareholders provide capital to the exchange and receive profits, but they need not conduct trading on the exchange. And as discussed later, although demutualized exchanges will continue to provide many if not most of the same services, they will have different governance structures in which outside shareholders are represented by boards of directors.

2. See Di Noia (2000) for details.

3. For more discussion on ownership issues, see, for example, Report of the Technical Committee of the International Organization of Securities Commissions, "Issues Paper on Exchange Demutualization," June 2001 and Jennifer Elliott, "Demutualization of Exchanges—The Regulatory Perspective," 2000, International Monetary Fund Technical Note.

These dramatic changes in the organizational *form* of the exchanges reflect major changes in their business environment—notably, the rise of global competition and technological advances—and in the competitive strategies designed to respond to such changes.

FIGURE 1 ■ THE PROCESS OF EXCHANGE DEMUTUALIZATION



As summarized in Figure 1, the process of demutualization takes place in stages and can ultimately take several different forms. In the first phase, the members are typically given shares in and so become legal owners of the organization. Then, or in some cases even as part of phase one, the organization raises capital through a private placement, typically from outside investors as well as members. Having thus become a privately owned corporation, demutualized exchanges then have two basic options: (1) The exchange can stay private; and (2) The exchange can list and remove all restrictions on trading.

As of this writing, both the Toronto Stock Exchange and Nasdaq have demutualized but remain private companies.[4] But for many exchanges, the private placement is clearly just an interim step. As mentioned earlier, in 1998 the Australian Stock Exchange became a publicly traded company with shares listed and traded on its own exchange. And the London Stock Exchange, after demutualizing in June 2000, completed the same transformation to public ownership (though during the interim period, trading in LSE shares was conducted through an off-market trading facility). Other exchanges that have become publicly traded companies include the Deustche Börse, and the Oslo, Hong Kong, and Singapore Stock Exchanges (see Table 2).

Rather than become a standalone company, a demutualized exchange can also become a wholly owned *subsidiary* of a publicly traded company. For example, after demutualizing in 1993, the Swedish Stock Exchange became a subsidiary (called the OM Stockholmsbörsen AB) of the OM Group, a publicly traded and listed company. Many exchanges continue to have some ownership or voting restrictions after demutualization. For example, ownership or voting rights for any one stockholder are typically limited to 5%.

MOTIVES FOR DEMUTUALIZATION

Having briefly discussed the "how" of demutualization, let's now consider the "why." There are two main forces driving stock exchanges to demutualize: (1) increased global competition and (2) advances in technology. I discuss each in turn below.

Global Competition

Competition among the exchanges and with electronic communications networks (ECNs) has increased, and not just at the national level, but at the regional and global levels as well. In the new environment, exchanges are no longer monopolies but must now be run as efficient business enterprises. Heightened competition has thus been a major factor in decisions to demutualize.

In the past, floor-based exchanges had limited space and so permitted only a limited number of memberships (or "seats"). And all exchanges—even those that were not floor-based, including the Nasdaq and several European stock exchanges—were organized as mutuals owned and controlled by their members. Thus, the mutual organization predominated when exchanges had monopoly power and the interests of members could be protected. In the new competitive environment, the promise of demutualization is that, along with the capital necessary for investments in technology, the sharehold-

4. The Nasdaq, which has declared its intent to do an IPO and become a public company, has applied for exchange status and is technically not a registered exchange.

TABLE 2 ■ LISTED EXCHANGES

Exchange	Listing Date
OM Group	1987
Australian Stock Exchange	October 1998
Hong Kong	June 2000
Hellenic Exchanges	August 2000
Singapore Exchange	November 2000
Deutsche Börse	February 2001
Oslo Exchange	May 2001
Instinet (ECN)	May 2001
Euronext	July 2001
London Stock Exchange	July 2001

ers of the newly demutualized exchanges will provide a new corporate governance structure that is far more effective in managing conflicts among market participants. Thus, rather than being set up mainly to preserve the current revenue stream of the exchange members, the new organization would be designed to maximize the "residual" value of the enterprise that accrues to the shareholders. Although the members may continue to be the dominant owners for some time, demutualization is likely to end up transferring considerable ownership and decision-making power to outside investors. And this means that the old consensus decision-making of the exchange members is eventually going to be supplanted by a professional management team presumably motivated by significant share ownership to increase efficiency and profits.

Technology

Major changes in the structure and operations of stock exchanges have generally coincided with breakthroughs in communication and data processing technologies. Prime examples are the emergence of telegraph technology, which helped the NYSE establish its dominance in the late 19th century, and the advances in network technology that led the way to the development of Nasdaq in the 1980s. More recent technological improvements have enabled the development of the continuous electronic auction market in Europe. Continuous auction systems are trading systems that allow automatic execution of matching buy and sell orders. At present, all the European stock exchanges operate some version of this continuous electronic trading system.

In the U.S., however, many registered exchanges continue to operate as traditional, "floor-based" systems, in which only members are allowed to be on the floor and trade. For such exchanges, electronic trading systems represent a major competitive challenge. A recent article in the *Financial Times* discusses the challenges for the Chairman of the Chicago Board of Trade to "reconcile the powerful interests of floor traders and customers's changing demands." The article points out that "management recognizes the inherent logic in electronic trading as a means of keeping costs down, yet still must satisfy the wishes of its members, who have paid handsome fees to trade in the pits and who fear that any move towards electronic trading will drive them to extinction."[5]

In the U.S., Nasdaq is also facing the threat of "disintermediation" posed by ECNs and alternative trading systems (ATSs). Since 1997 ECNs like Instinet, Island, and Archipelago have provided trading platforms that can match customer orders anonymously. Such systems were developed by and for institutional investors to enable trading among themselves without the interference of middlemen. Now ECNs like Island have successfully reached out to obtain retail order flow. At present, ECNs currently handle more than 30% of the trading volume in Nasdaq stocks. But Nasdaq's introduction of SuperMontage (a central limit order book) is expected to provide some of the same benefits as the ECNs, and to reclaim market share from them. ECNs have not been a major factor in Europe because most exchanges in Europe are electronic limit order books. And even the ECNs are not immune to industry-wide developments. The recent announcement of a merger between Archipelago and REDIBOOK, and between Instinet and Island, suggests the beginning of a trend toward consolidation.

Decisions by exchanges to demutualize, then, are based on the recognition that the old member-owned association structure fails to provide the flexibility and the financing needed to compete in today's competitive environment. Over the long run, for-profit stock exchanges run by entrepreneurs and disciplined by profit-seeking investors should produce better-financed organizations with greater ability to respond quickly to preserve the value of their franchises. Besides helping exchanges adapt to a fast-changing marketplace, demutualization is also

5. P. 10, June 18, 2002.

In the new competitive environment, the promise of demutualization is that, along with the capital necessary for investments in technology, the shareholders of the newly demutualized exchanges will provide a new corporate governance structure that is far more effective in managing conflicts among market participants.

expected to promote the exchanges' efforts to leverage their brand values by expanding into new businesses. In sum, equipped with better financing, more flexible decision mechanisms, and heightened accountability (to shareholders), demutualized exchanges are likely to emerge as leaner, more competitive, and more transparent organizations.

REGULATORY IMPLICATIONS OF DEMUTUALIZATION

The conversion of stock exchanges to for-profit entities raises several questions about the regulation of stock exchanges and financial markets. What role should governments play in regulating private stock exchanges? What role should private stock exchanges play in regulating exchange activities and members? And what happens in a country with only one major stock exchange that suddenly goes bankrupt?

In many European and several developing countries, stock exchanges were government-owned because they were viewed as serving a public interest. Exchanges play an important role in both the financial sector and the functioning of the overall economy. The possibility that for-profit exchanges may fail and go out of business can create serious problems if listed companies suddenly find it difficult to raise capital and investors face reduced liquidity for their holdings. Of course, to the extent there are competing exchanges, the effect of a failure by one would be limited by the ability and willingness of other exchanges to buy the financially troubled exchange. But even so, regulators may need to closely monitor the financial condition of demutualized exchanges. For example, in Australia a reserve fund was created to provide a capital cushion. The Toronto Stock Exchange provides an early-warning reporting system whereby the exchange is required to maintain certain financial ratios and to notify regulators when not in compliance.

Stock exchanges are regulated entities in the sense that they must apply to regulators for a license to operate and must comply with certain regulatory guidelines in setting up their own procedures and rules. But, in the U.S. and most developed countries, regulators also have the authority to delegate certain regulatory functions to the exchange.[6] As a result, most exchanges in developed countries have historically operated as self-regulatory organizations (SROs). A major concern among regulators is that the attempts to maximize profits and shareholder value by demutualized exchanges will come at the expense of reduced self-regulation and supervision.[7]

The self-regulating functions of exchanges typically consist of the following:

- **Trading**: Setting rules for trading, conducting surveillance, and enforcing the rules.
- **Market manipulation**: Overseeing the trading system to prevent abuses.
- **Membership**: Establishing rules to govern the conduct of members and monitoring compliance with and enforcement of rules.

These functions must continue to be carried out by exchanges that demutualize. A number of regulatory models have been proposed and/or adopted, and I now briefly discuss three of them.

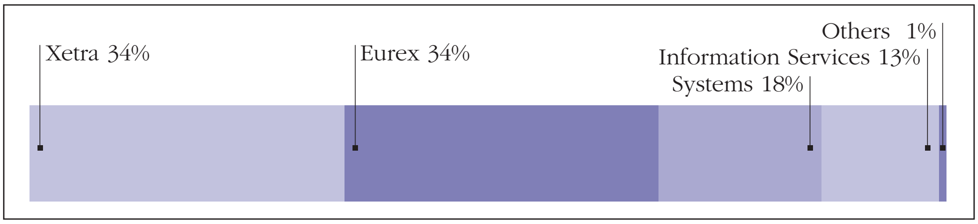
1. A demutualized exchange continues to perform all of its regulatory functions, even after becoming a for-profit organization. Although conflicts of interest arise in both non-profit and for-profit exchanges, concerns have been raised about whether a demutualized exchange will take enforcement actions and impose penalties on those who are major providers of revenue. The NYSE, for example, has argued that the regulatory function is an integral part of the exchange's reputation; and it has backed away from demutualization because of the SEC's insistence that the NYSE first set up an independent regulatory body. Exchange reputation and branding is even more important in a demutualized environment to protect the commercial viability of the exchange.

The OM Group of Sweden has adopted this model. The exchange's founder and chairman, Olof Stenhammar, makes the case as follows: "Privately operated and owned market places do not stand in any opposition to high regulatory and supervisory standards required by the market and the authorities. It is not just a question of morality. To me it is a question of being a good businessman." And as he goes on to say, "a privately owned exchange can take

6. In the United States under the Securities and Exchange Act of 1934, stock exchanges need to register with the SEC and are responsible for regulating the activities of their members, assuring compliance by members and by issuers whose companies are listed on the exchange with the rules laid out in the Act. According to the Act, regulation and self-regulation are supposed to protect investors and serve the public interest by ensuring fair and orderly markets.

7. For details see, Reena Aggarwal, "Integrating Emerging Market Countries into the Global Financial System: Regulatory Infrastructure Covering Financial Markets," The Brookings-Wharton Papers on Financial Services, January 2001 and "Capital Market Development: Strategies for Latin America and Caribbean," Inter-American Development Bank's Conference, "A New Focus for Capital Market Development in Latin America and the Caribbean," February 2001.

FIGURE 2
DEUTSCHE BÖRSE: MAJOR SOURCES OF REVENUE



full responsibility in building and enforcing a good regulatory framework."[8] Such a framework is critical to an exchange's commercial success.

2. For-profit exchanges can establish a separate entity to conduct regulatory functions, thereby avoiding some of the conflict-of-interest issues. Nasdaq has taken this approach. In April 2000, the NASD started to demutualize and created two subsidiaries: NASD Regulation Inc. (NASDR), which was the regulatory arm, and the Nasdaq Stock Market, the commercial trading arm. This set-up reduces the problem of conflict of interest. The Chinese walls between NASDR and Nasdaq have been strengthened as Nasdaq moves ahead with its plans for a public offering. In January 2002 NASD sold its remaining 27% ownership to Nasdaq, thereby completing the spinoff. NASD is moving in the direction such that other exchanges will outsource their regulatory activities to NASD.

3. An exchange can also outsource its regulatory functions to a completely independent third party. This approach may help avoid the perception of conflict of interest. However, there must be some way to ensure that the third-party regulator is accountable and will perform its functions effectively to avoid harm to the reputation and brand name of the exchange. In the U.S. futures market, the National Futures Association performs this function for several exchanges. This third party can be a registered futures association, or an entity registered with and regulated by the Commodity Futures Trading Commission, to ensure direct governmental oversight of the party carrying out the regulatory function.

In conclusion, it's important to keep in mind that both for-profit and non-profit exchanges can be inadequately regulated, particularly if they have market power. With the rise of competition, for-profit exchanges are likely to have even stronger incentives to self-regulate. But one thing is clear: Competition and globalization will continue to make the regulatory question even more challenging as cross-border mergers and alliances between exchanges take place during the consolidation phase.

THE PERFORMANCE OF PUBLIC STOCK EXCHANGES

A number of European stock exchanges have gone public recently, and several other exchanges have announced their intention to do so, including the U.S. Nasdaq and the Chicago Mercantile Exchange. We now take a brief look at the ownership and performance to date of three exchanges that have become publicly traded companies: Deutsche Börse, the London Stock Exchange, and the Australia Stock Exchange.

Deutsche Börse

Deutsche Börse is in a variety of different businesses. In addition to the traditional stock exchange business of "cash trading," it also engages in derivatives trading, clearing, settlement, and the provision of information services and technology. The Börse's cash trading platform, called Xetra, is Europe's second largest cash market. It is an electronic order-driven trading system for liquid stocks that also allows for quote-driven trading and auctions for less liquid stocks. The Börse also operates and has 50% ownership of Eurex, which is the world's largest derivatives exchange. In addition to its trading businesses, the Börse owns 50% of Clearstream, a settlement and custody business that generates substantial profits. And it also has a significant information technology division that both provides in-house technology and operates and develops technology for third parties.[9] This diverse group of businesses (see Figure 2, for a breakdown of DB's revenues by business line) was

8. Speech given at 26th Annual Conference, International Organization of Securities Commissions, Stockholm, June 2001.

9. For details see UBS Warburg Equity Research Report on Deutsche Börse AG, August 2001.

Over the long run, for-profit stock exchanges run by entrepreneurs and disciplined by profit-seeking investors should produce better-financed organizations with greater ability to respond quickly to preserve the value of their franchises.

FIGURE 3
STOCK PRICE PERFORMANCE OF DEUTSCHE BÖRSE

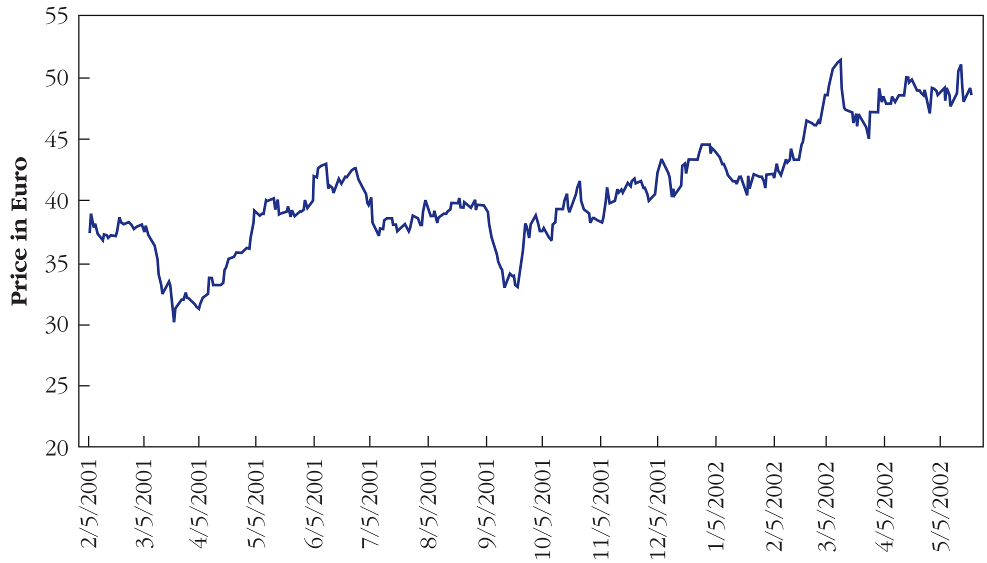
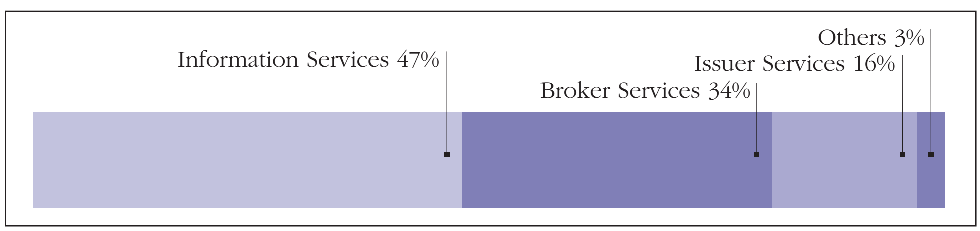


FIGURE 4
LONDON STOCK EXCHANGE: MAJOR SOURCES OF REVENUE



formed in 1990, and in February 2001 the exchange did an initial public offering.

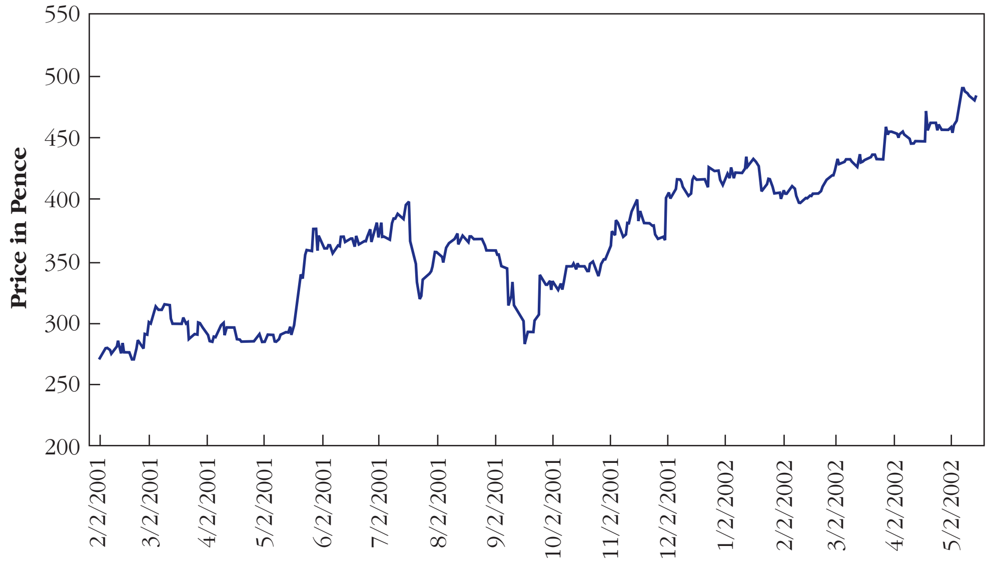
Shares of Deutsche Börse began trading on February 5, 2001 after its demutualization and listing on the Frankfurt Stock Exchange. The shares were offered at an initial IPO price of €33.50 and the closing price on the first day of trading was €36.20. The offering was oversubscribed 23 times and it resulted in more than 300 shareholders, including banks, brokers, and regional stock exchanges. In addition to strategic investors such as banks, brokers and regional stock exchanges who have a controlling 51% stake in the company other German institutions own 15%; U.S. institutions own 13%; U.K. institutions own 12%; other institutions own 7%; and retail investors own 2%. The five largest shareholders as of May 2002 were Deutsche Bank (10.1%), German regional exchanges (7.2%), Hypobank (4.7%), Commerzbank (4.6%) and BHF Bank (2.6%). The above ownership percentages, as well as the roughly 25% share allocation to non-German investors, reflect limits on maximum ownership that stem from concern about the stock exchange's role as provider of a public good.

Deutsche Börse shares have performed well in the aftermarket both on an absolute and on a relative basis (see Figure 3). 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 London Stock Exchange is the largest exchange in Europe based on the value of trades, the number of companies listed, and the total value of companies listed. The Exchange demutualized in June 2000, and was fully listed on July 20, 2001, with a market capitalization of one billion pounds. Institutional investors now own about 25% of shares outstanding, up from the original 15-20%; and ownership by members has fallen. As of March 2002, the major shareholders included Fidelity (9.2%), Warburg Dillon Read (4.2%), Cazenove Fund Managers (4.1%),

FIGURE 5
STOCK PRICE PERFORMANCE OF LONDON STOCK EXCHANGE



Credit Suisse Asset Management (2.9%) and Legal & General Investment Management (2.8%).

The Financial Services Authority (FSA), which is the regulator of all stock trading in the U.K., is also charged with listing authority for the LSE. The exchange provides secondary market trading for 13,000 securities, and its three major sources of revenue—broker services (exchange and membership fees), listings, and information services—are all related to cash trading. U.K. equities make up 67% of the LSE's trading activity, while international equities account for 26% and AIM, the market for small growth companies, accounts for another 5%.

Unlike the Deutsche Börse, then, LSE's business model focuses only on stocks. As shown in Figure 4, the exchange obtains 16% of its revenue from listing fees, 34% from trading activities, and 47% from information services (or data sales). But, as stated earlier, listing fees and data sales are likely to fall as the globalization of markets further erodes exchanges' monopoly powers and the Internet increases investor access to information.[10]

The LSE listed its stock for trading on the "Main Market" at a price of 365 pence in July 2001. As of this writing (May 2002), the stock was trading in the price range of 480-488 pence as seen in Figure 5.

Australian Stock Exchange

The Australian Stock Exchange was formed in 1987 through the merger of six Australian regional exchanges. The demutualization process commenced in September 1996, and ASX was listed on October 14, 1998. The initial shares of ASX were distributed to the members of the exchange. The Act that created ASX limits ownership by any single shareholder to a maximum of 5%.

The Exchange derives most if its revenue from four sources:

1. Listings provides almost 25% of revenue, 70% of which is from initial listing fees and the remaining 30% from subsequent listing fees.

2. Equity trading, clearance, and settlement generate an additional 39% of the revenue. Equity trading is conducted via the ASX's Stock Exchange Automated Trading System (SEATS).

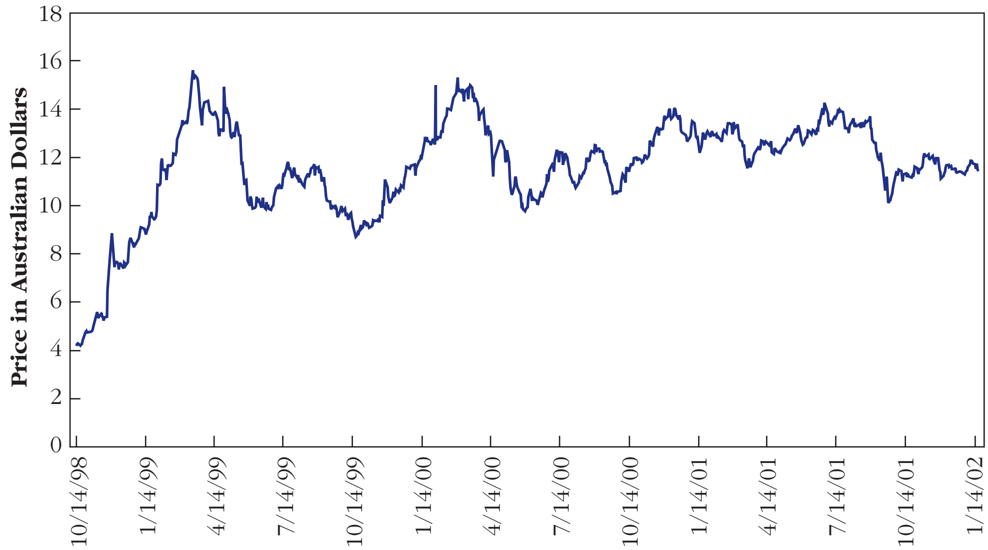
3. Trading in options and warrants is also conducted on the exchange and contributes 16% of revenue. Warrants are traded via SEATS and options are traded on ASX's Derivatives Trading Facility.

4. Another 16% of revenue is obtained from the sale of market data.

The stock price performance of ASX is shown in Figure 6.

10. Source: Adapted from HSBC and Schroder Salomon Smith Barney company report on the London Stock Exchange, August 2001 and September 2001, respectively.

FIGURE 6
STOCK PRICE PERFORMANCE OF AUSTRALIAN STOCK EXCHANGE



SUMMARY

Global competition and advances in technology costs are causing stock exchanges around the world to examine their business models and become more entrepreneurial. Many exchanges have responded by demutualizing, which is bringing about major shifts in ownership and corporate governance structure. By converting member-owned, non-profit organizations into profit-driven investor-owned corporations, demutualization will give exchanges access to capital that can be used both for investment in new technology and for participation in the ongoing consolidation of the industry. In the process of providing the exchanges with capital, demutualization is also expected to strengthen the corporate governance of the exchanges.

It is too soon to tell whether demutualization will live up to its promise. And demutualization might not be the answer for all exchanges in all countries. But what evidence we have—in the form of the stock-price performance of three exchanges that have been operating as publicly-traded companies for at least one year—is encouraging.

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