

# The Changing Landscape of Securities Trading

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The competitive landscape for securities trading is being affected by two opposing trends: on the one hand, the consolidation of exchanges, both within and across borders, and the formation of alliances between marketplaces specializing in different asset classes; on the other, the creation of new trading venues that offer the possibility of trading outside an exchange. This article examines how these changes are affecting competition among securities marketplaces. The focus here is on equity and derivatives markets that are built around a central system to match orders. Fixed-income markets (and over-the-counter market structures more generally) are not examined.

As the competitive power of traditional exchanges is challenged by the emergence of alternative trading systems (ATSs), the level of competition appears to be increasing. While the rise in ATSs has the potential to fragment markets, thereby reducing liquidity and hindering price discovery, this is mitigated by regulation and technological tools that consolidate prices across the multiple marketplaces where a security is trading.

The first section discusses the consolidation of securities exchanges, its causes, and factors that are acting as barriers to further consolidation. The second section focuses on the emergence of alternative trading systems, including dark liquidity pools, and examines the potential for fragmentation. Implications of these trends for competition are discussed in the third section. While the bulk of the discussion in this article is focused on global trends, the Canadian situation is presented briefly in the fourth section.

## The Consolidation of Securities Exchanges

In recent years, the securities industry has experienced a rapid transformation as marketplace operators formed various alliances. These have

ranged from full-blown mergers to looser forms of co-operation: for example, the creation of informal networks for cross-listing securities or for sharing technology. Marketplace consolidation has the potential to result in deeper, more liquid markets if the structures merging are well integrated and their order flow is, therefore, aggregated.

Marketplace consolidation is not new. A wave of exchange consolidation occurred in the United States as long ago as the 1930s, when several regional exchanges merged to better compete against the New York Stock Exchange (NYSE). What distinguishes the current environment is that, increasingly, alliances cross geographical borders. Stock exchanges are also looking to enter into derivatives trading by forming partnerships with derivatives exchanges. Table 1 presents a non-exhaustive list of the most important alliances formed since the beginning of 2006, when the pace of consolidation increased. Some of these mergers have not been finalized, pending approval either from regulators or from the exchanges' shareholders.

Developments in communication and information-processing technology play an important role in the consolidation of marketplaces. Almost all of the major exchanges around the world have adopted electronic systems.<sup>1</sup> In electronic markets, orders are routed to a central system using an electronic interface, and the process of matching prospective buyers with prospective sellers is largely automated.

The shift towards electronic trading has encouraged consolidation in several ways. First, it has increased the incentives for growth, since electronic

1. The New York Stock Exchange, the last important exchange that matches orders on a trading floor, is currently moving towards a hybrid model, where traders will be given the choice of trading on an electronic platform or on the trading floor.

systems can execute more trades than traditional venues, where traders physically interact with each other on a trading floor. Second, with a cost structure more heavily geared towards fixed costs, electronic trading increases the potential economies of scale resulting from a merger. Third, electronic trading permits linkages between exchanges that floor-based trading systems preclude because of geographical or space constraints. Fourth, since the cost of developing trading technology remains high, some alliances may be motivated by a desire to gain access to better technology.

Consolidation is also supported by changes to the governance of exchanges. In the past decade or so, most exchanges have evolved from member-owned mutual entities to profit-seeking corporations. Demutualization has increased the incentives for exchanges to gain a competitive edge and enhance value for their shareholders. It has also provided easier access to the capital needed to achieve their business plans.

As mentioned previously, the trend towards cross-border and cross-asset alliances suggests that exchanges want to diversify their operations geographically and to increase the scope of their services. In principle, the alliance of a market operator with a marketplace in a foreign jurisdiction could enhance the liquidity of the securities they trade, because they would have access to a larger investor base. Moreover, with multinational exchanges, investors could diversify away from country-specific risks or implement investment strategies involving multiple securities listed in different countries more easily and with less market risk than by trading in a number of different exchanges.<sup>2</sup> Alliances combining a stock and a derivatives exchange could have the same type of benefits if they facilitated the simultaneous trading of related cash securities and derivatives instruments.

Currently, however, regulatory constraints limit the benefits of cross-border consolidation. Regulators have oversight responsibilities for both the operation of exchanges and the securities listed on them, and most regulators restrict the access of marketplaces that they do not oversee to investors from their jurisdiction. This limits

**Table 1**  
**Significant Exchange Mergers, 2006 and 2007**

Mergers that combined trading in cash and derivatives	
Sydney Futures Exchange and Australian Securities Exchange	Completed in July 2006
International Securities Exchange (U.S.) and Deutsche Börse (Germany)	Announced in April 2007
Mergers of derivatives exchanges	
Chicago Mercantile Exchange and Chicago Board of Trade	Completed in July 2007
Mergers of stock exchanges	
New York Stock Exchange (U.S.) and Euronext (pan-European)	Completed in February 2007
NASDAQ (U.S.), OMX (Scandinavia), and Borse Dubai (U.A.E.)	Announced in September 2007
London Stock Exchange (U.K.) and Borsa Italiana (Italy)	Completed in October 2007

2. An example of such an investment strategy is a "long-short" trade, which involves buying a security while simultaneously selling short another, in the hope of profiting from changes in the price difference between the two securities.

the integration of market structures when exchanges from different jurisdictions merge. In most cases, the newly formed entity continues to operate two distinct marketplaces, each offering trading for a separate group of securities. Therefore, cross-border consolidation does not necessarily facilitate trading at present, and economies of scale can be limited. Such mergers may involve sharing technology. They may also increase revenues—for example, from listings—and diversify these revenue streams geographically.

This situation could change if the G-7 countries make significant progress in achieving free trade for financial securities. (See Highlighted Issue on p. 32.) Countries reaching such an agreement would allow investors within their borders direct access to foreign marketplaces. This would be made possible by a mutual recognition regime of rules and enforcement decisions of foreign regulatory authorities from participating jurisdictions. Free trade would facilitate the integration of marketplaces involved in a cross-border merger.

Another constraint to consolidation is the fragmentation of clearing and settlement systems. Clearing involves the confirmation of the terms of a trade by the buyer and the seller after the trade has been executed and the calculation of each party's obligations. Settlement entails the transfer of funds and assets between the buyer and the seller. Clearing and settlement processes are a key component of any securities transaction.

Many exchanges (for example, those trading derivatives) are vertically integrated, using their own subsidiary to perform this service.<sup>3</sup> Ownership of clearing and settlement systems can be profitable for exchanges, because it reduces their post-trading costs. It can also be a source of revenue, if clearing and settlement of trades conducted over-the-counter or in another marketplace is offered.

Differences in clearing and settlement systems complicate the integration of exchanges because of the lack of fungibility or interoperability between systems. Efforts are under way to enhance the interoperability of post-trading systems, both

within and across borders, which will reduce the difficulties of integrating two marketplaces. These efforts involve agreeing to common technical standards for messaging and communications, eliminating paper, and strengthening risk-management standards (Group of Thirty 2006).

It is difficult to anticipate how far convergence will go. Many believe that the industry will reach an equilibrium, where a small number of large exchanges with a global reach and offering trading in various types of assets may coexist with smaller exchanges specializing in the trading of particular securities: for example, those issued by firms from a given industry or country.

Most stock exchanges are actively looking to expand into derivatives markets—the most profitable and fastest-growing segment of the industry. Both NASDAQ and NYSE Euronext have expressed a desire to continue to expand geographically by merging with an Asian marketplace.

## The Emergence of Alternative Trading Systems

Many ATSs are simple order books in which buy and sell orders are electronically matched. They differ from traditional exchanges in two important ways. First, ATS operators can—and often do—grant direct access to their system to institutional investors, allowing them to trade without a securities dealer acting as an intermediary. Second, ATSs do not restrict trading to securities that meet certain admission requirements. Any security can, in principle, be traded on any ATS, provided its issuer is registered with regulators.

By allowing securities to trade on marketplaces other than those where they are officially listed, ATSs represent perhaps the most significant development for the competitive structure of markets. Traditionally, exchanges have enjoyed a natural monopoly in the trading of the securities listed on them, except when the issuer made the decision to list on multiple exchanges.

A particular type of ATS has recently been receiving considerable attention: internal crossing networks. These are also known as “dark liquidity pools” because they do not display standing orders to the public. Such systems without pre-trade transparency are ideally suited for conducting large trades that might move market prices if the order was disseminated publicly. In some ways, dark liquidity pools are a substitute for the “upstairs market” of a traditional

3. European stock exchanges are also largely vertically integrated. This contrasts with stock trading in Canada and the United States, where there is a central—and independent—clearing and settlement agency.

exchange, where large trades are matched outside of the central order book.

Most dark pools are operated by securities dealers that internally match order flows originating from their various business lines, such as their retail, institutional, or proprietary trading desks. Securities dealers have followed the practice of internalizing orders for decades. What is changing is that regulation in many jurisdictions is now requiring that internal trading be automated. Dark liquidity pools must also be linked to public markets in two ways. First, transactions must occur at prices that are, at worst, consistent with the best bid or offer posted across all public markets. In practice, most dark pools conduct trades within the bid/ask spread, thereby improving on market prices. Second, regulation requires that information on completed transactions be disseminated publicly. Dark pools are therefore not entirely opaque.

Many large institutional investors value dark pools, mainly because orders can be kept private until after they are executed. As for dealers, they can save on transaction fees by matching orders from various sources internally.

The emergence of ATSs is supported in many jurisdictions by rules to improve competition and increase the efficiency of markets. In Europe, for example, the recent Markets in Financial Instruments Directive (MiFID) allows investment firms to route orders to all types of marketplaces, not only their national exchanges, as was previously the case. This greater use of alternative systems is expected to increase trading speeds and cut trading costs. It will also take away business from traditional exchanges. MiFID is being credited with triggering the recent emergence of ATSs in Europe. Several projects are in the planning stage, the most important being Project Turquoise, which is a system owned by seven large securities dealers that accounts for about half the trading on European exchanges.

In the United States, the Securities and Exchange Commission adopted Reg NMS. This regulation connects marketplaces and contains a provision preventing standing orders on an automated market from being bypassed in favour of inferior orders submitted elsewhere. This protection existed before, but did not cover orders from ATSs. The Canadian Securities Administrators (CSA) released a proposal in the spring to extend similar "trade-through" protection to ATSs. It has yet to be implemented, since comments

received during a public consultation are still being reviewed.

The emergence of ATSs has raised concerns that they may fragment markets. Fragmentation arises in the context of securities markets when all orders do not interact with each other via a single order-execution mechanism. Fragmentation reduces market liquidity and hinders the price-discovery mechanism. Fragmentation is not a new concept. It occurs, for example, when a firm lists its shares on multiple exchanges. But the emergence of ATSs has brought this issue to the forefront, particularly the rise of dark liquidity pools, where orders are internalized. More traditional ATSs can also lead to fragmentation, unless quotes and trades from various markets where a security is traded are brought together to provide a consolidated overview of prices across all marketplaces.

Fragmentation is being offset by regulation requiring marketplaces to be linked together and by technological tools. These tools allow traders to connect to multiple marketplaces rapidly and inexpensively, to scan prices across them, and to direct orders to the marketplace in which the price is the most advantageous.

The development of ATSs can be seen as part of a broader response to changes in market structure, with dealers and investors attempting to counteract a possible rise in the competitive power of exchanges as they consolidate.

## What Does This Mean for Competition?

The net impact on competition of these two trends is difficult to assess. Economic theory suggests that consolidation increases the market power of the firms left in the industry and that they may raise their prices. But the threat of competition from new entrants, such as ATSs, may limit their market power.

The limited data available indicate that trading costs are trending downwards, which suggests that the emergence of new marketplaces is increasing competition in the industry. According to data from Elkins/McSherry, average trading costs for stock transactions during the periods July 2004 to June 2005 and July 2005 to June 2006 decreased by about 6 basis points from the first period to the second. These average costs declined by about 29 basis points over the past 10 years (Paulden 2006; Willoughby 1998).

While this is an average over the 42 countries that Elkins/McSherry track, trading costs have consistently decreased in most countries. In Canada, for example, the TSX Group reduced trading fees up to 20 per cent in August 2007. It should be noted that the Elkins/McSherry estimates of trading costs are not entirely determined by marketplaces. They combine marketplace fees, dealer commissions, and the market impact of trades. All three components have been trending downwards.

Marketplaces collect two types of fees from traders: one for the right to access the market (these are akin to periodic membership fees) and one for conducting a trade. With electronic trading platforms, the cost of executing a trade for a marketplace is generally very small (anecdotal evidence suggests that it is close to zero in many instances). The Elkins/McSherry data suggest that most of these savings have been passed on to customers. They indicate that in developed countries, marketplace fees account for about 2 to 5 per cent of the total cost of conducting a trade.

Reduced trading costs cannot be directly attributed to increased competition—or the threat of competition—from ATSSs, at least not entirely. The increasing use of electronic trading and its enhanced efficiency over traditional floor-based systems do play a role. It appears, however, that increased competition from emerging trading venues, such as dark liquidity pools and other ATSSs, may be curbing the enhanced pricing power that might otherwise arise from consolidation.

Trading facilities compete for securities orders on the basis of factors other than costs. As the number of trading venues increases, operators are using issues of market design (for example, the degree of transparency or the speed of execution) to distinguish themselves from their competitors and attract order flow. Since different types of traders value these factors differently, trading venues are being shaped according to which type of trader they wish to attract.

It should be noted that the amount of trading for a given security in a given marketplace improves the competitive position of the marketplace for trading in that security. This is because liquidity is self-reinforcing. Simply put, a liquid market will, everything else being equal, attract more orders than an illiquid one, and, as these new orders are placed, liquidity will continue to improve. This partly explains the advantage that

incumbent marketplaces have had when competing with less-established venues.

## Canadian Developments

Canada currently has two stock exchanges: the TSX Group, which operates a “senior” marketplace for companies with a large capitalization, as well as a venture marketplace; and the Canadian Trading and Quotation System Inc., which operates a marketplace for micro-cap stocks. Five ATSSs have been launched in the past two years, and other facilities are at an advanced planning stage. These facilities will offer trading in all stocks listed on the “senior” TSX marketplace.

Three types of ATSSs are emerging in Canada. The first group consists of transparent central limit-order books. The first two Canadian ATSSs in that category, Pure Trading and Omega, were launched this autumn. Two more, ICX and Alpha, are expected to be launched by the end of 2008. Alpha will be owned by Canaccord Capital, the Canada Pension Plan Investment Board, and the securities dealers linked to the six main Canadian banks. Its shareholders account for about 65 per cent of trading volume on the TSX.

The second group of ATSSs consists of dark liquidity pools. The first Canadian dark pool, Match NOW, has been operational since July 2007 and guarantees that any trade executed on the system will be within the best bid and ask quotes available across transparent markets. Another dark pool, ATX, will be operated by the TSX and is awaiting regulatory approval.

The third group of ATSSs is for trading large blocks of securities. Two facilities, BlockBook and Liquidnet, operate systems that are accessible to either dealers or institutions and allow traders with opposite needs to negotiate prices electronically while preserving their anonymity. The ability to negotiate prices is an important difference between these facilities and the dark pools. On the latter, prices are established by a mechanism according to prevailing conditions across all public markets.

The Montréal Exchange (MX) is currently the only exchange for derivatives trading in Canada. But the TSX Group has announced plans to offer derivatives trading in 2009 upon the expiration of a non-competition agreement signed by Canadian exchanges in 1999, when they

restructured markets. The TSX Group has formed an alliance with the International Securities Exchange to create DEX, a new exchange that, based on an agreement signed with Standard & Poor's, will have exclusive rights for trading derivatives on the TSX-S&P equity indexes. The Montréal Exchange is the majority shareholder in the Boston Options Exchange.

## Concluding Remarks

Improvements in information technology, the globalization of financial markets, and regulatory changes are altering the competitive landscape for market providers. The capabilities of traditional exchanges to compete in each other's markets have increased, and exchanges are merging and reaching strategic alliances within and across borders. They are also facing increasing competition from alternative trading systems, which raises the potential for market fragmentation. But, to date, fragmentation appears to be more than offset by regulation and by technological tools that allow greater connectivity across marketplaces.

The structure of the industry is changing rapidly, and its future will likely be determined to a large extent by the ability of new ATSs to gain market share and by the success of policy-makers and market participants in removing the remaining barriers to consolidation.

## References

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