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The Role of Stock Exchanges in Corporate Governance

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This report highlights the key issues that arise in connection with developments in the stock exchange industry and its impact on corporate governance of listed companies. In accordance with the decision by the Steering Group at its April meeting, the report was derestricted by written procedure on 15 June 2009.

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

Historically, stock exchanges have played an important role in the regulation of listed companies and the promotion of corporate governance objectives among them. The primary direct contribution of exchanges to corporate governance has been the issuance of listing and disclosure standards, and the monitoring of compliance. Additional contributions to enhancing corporate governance have taken two forms. First, stock exchanges contribute to an effective corporate governance framework by collaborating with, or acting as an agent of, other supervisory, regulatory and enforcement agencies.

Secondly, stock exchanges have established themselves as promoters of corporate governance recommendations for listed companies. Some of these focus on a limited number of issues closely linked to the listing and supervisory functions of exchanges; others address a wide palette of corporate-governance related topics of interest to investors. Subsequent to the promulgation of the *OECD Principles of Corporate Governance,* many stock exchanges issued such codes and recommendations themselves, or participated actively in the development of other national codes.

The demutualisation and the subsequent self-listing of stock exchanges have spurred an active debate on the regulatory role of exchanges. Regulators have been essentially concerned about the conflicts of interest that could arise between exchanges' for-profit activities and their regulatory responsibilities. On one hand, exchanges are expected to maximise profit and may have a fiduciary duty to do so. On the other hand, exchanges are expected to exercise their regulatory function through, for example, refusing issuers or sanctioning non-compliant companies. Additional conflicts of interest that could arise from the self-listing of exchanges have also been on the minds of regulators.

The conversion of exchanges to listed companies is thought to have intensified competition among them. And, the sharper competition has forced the question of whether there is a risk of a regulatory “race to the bottom”. A race to the bottom might occur if exchanges feel pressures to use their regulatory regimes as a competitive parameter. In such a case, issuers could engage in a regulatory arbitrage, listing on venues with less stringent regulatory requirements, forcing other exchanges to revise their own requirements or grant derogations. So far, there have been occasional suggestions, that this may be the case, but no systematic evidence.

A second effect of the intensified competition has been a significant re-structuring of the industry, including a process of national and cross-border consolidation of exchanges. This, in turn, has raised important additional questions concerning the exercise of regulatory functions. The area of greatest concern so far has been the application of regulation (including governance codes) by exchange groups operating in multiple jurisdictions. Some OECD countries have sought to protect the regulatory prerogatives of their exchanges and regulators from “regulatory spillovers” by introducing targeted legislation.

An intriguing recent development is the rise of alternative trading systems (ATS), first in the United States and more recently in Europe. In the United States, electronic communication networks already in the 1990s succeeded in gaining trading from traditional exchange venues. In the European Union, the introduction of the Markets for Financial Services Directive (MiFID) in 2007 has resulted in competition between exchanges and new entrants. While ATSs are a far from a homogenous group, differing for instance in terms of market segments, trading technologies and transparency, they have had a profound impact on the exchange industry. Their existence has already induced exchanges to cut fees and in some cases launch their own off-exchange trading platforms or acquire existing ones.

The effect of the rise of ATS on corporate governance is, from a theoretical viewpoint, not clear. On the one hand, off-exchange trading is often regulated and supervised in a different manner than incumbent exchanges and risks being less transparent. On the other hand, insofar as listed companies have to comply with listing and disclosure rules and applicable governance codes by virtue of their primary listing, their reporting function *vis-à-vis* the stock exchange is not affected by the migration of trading to off-exchange platforms. Two practical concerns voiced so far are, first, that trading fragmentation may lead to deterioration in transparency of the markets for corporate control and adverse consequences for price discovery. Secondly, exchanges are uneasy about the prospect of having to continue performing their traditional regulatory and other corporate-governance enhancing functions amid a shrinking revenue base.

INTRODUCTION

Background

1. According to the Programme of Work and Budget (PWB) for 2009-2010, the Steering Group on Corporate Governance will undertake a project on *The Role of the Stock Exchanges in Corporate Governance*. In endorsing the PWB, the Steering Group agreed that such an exercise would be useful in establishing a better understanding of how stock exchanges may encourage and uphold better governance of listed companies. The present paper serves the dual purpose of, first, providing an initial stocktaking of some of the commonly agreed main aspects of stock exchanges' influence on corporate governance; and, secondly, suggesting a number of issues arising from recent changes in the role of the exchanges.

2. The role of stock exchanges in corporate governance has been already addressed by the work of the Steering Group. In particular, the *Survey of Corporate Governance in OECD Countries* (2004) indentified and discussed corporate governance codes and recommendations in a number of OECD countries. The role of exchanges in corporate governance has also been examined in work with non-member countries and further work on this topic is foreseen in the context of the *Asian* and *Latin American Corporate Governance Roundtables*.[1]

3. Other international organisations and industry groups have also in recent years considered stock exchanges' regulatory functions, and the closely related topic of competition between exchanges. This includes work by the International Organisation of Securities Commissions (IOSCO) in 2006 as well as the World Federation of Stock Exchanges (WFE). However, it is fair to say that in the central topic of the present paper – the evolving role of exchanges in respect of corporate governance – has so far been addressed only tangentially. Independent academic literature, on the other hand, has addressed some of the issues of this paper. Even since the first demutualisation of an exchange (Stockholm in 1993) studies of listing, competition, consolidation and internationalisation of exchanges has become a rapidly growing industry[2].

Coverage of the paper

4. For the purpose of this paper, ten of the world's largest stock exchanges[3] were selected as illustrative examples. The choice of exchanges was guided not only by their prominence in global capital markets, but also by the necessity to look at diverse regulatory and as well as ownership models. The ten exchanges and a few of their salient features are listed in Table 1.

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[1] Other OECD forums have discussed related topics. The evolving structure and regulatory function of stock exchanges was examined by the *Committee on Financial Markets* already five years ago (Schich and Wehinger, 2003).

[2] The term "demutualisation" as used in the paper may in some cases be a bit too narrow, since not all exchanges were originally mutual companies. In some transition economies the privatisation of previously state-owned exchanges has produced outcomes that are observationally equivalent to demutualisation.

[3] Though some of these exchanges have recently emerged under a single entity (e.g. NYSE Euronext), they will be treated somewhat separately here given the differences in regulatory regimes that they are subject to and that apply to listed issuers.

Table 1. An overview of selected stock exchanges

Name	Status	Equity Market Capitalisation ($US billion)[1]	Total Value of Equity Trading ($US billion)[2]
Australian Stock Exchange (ASX)	Listed	1,238.1	753.2
NASDAQ market	Listed	3,603.2	7,349.8
New York Stock Exchange (NYSE)	Listed	14,413.3	17,077.0
Euronext	Listed	3,500.9	2,605.0
London Stock Exchange (LSE)	Listed	3,308.7	3,966.9
NASDAQ OMX Nordic Exchanges	Listed	1,043.5	802.1
Tokyo Stock Exchange (TSE)	Demutualised (not listed)	4,042.8	3,067.8
Toronto Stock Exchange (TSX)	Listed	2,168.0	937.0
Six Swiss Exchange (SWX)	Demutualised (not listed)[3]	1,182.7	885.4
Warsaw Stock Exchange (WSE)	State-owned[4]	181.9	39.6

Sources: Websites of stock exchanges, World Federation of Stock Exchanges.

Notes:
1. As of June 2008; market value excludes investment funds.

2. Data provided on a year-to-date basis (January-June 2008). Exchanges impacted by the application of the MiFID Directive report their share trading in accordance with the WFE definitions – the figures may therefore not reflect the overall size of the market.

3. The Six Swiss Exchange is a part of the SIX Group, or more precisely, its Cash Market Division. The Division also encompasses the London-based international securities exchange SWX Europe as well as financial market data vendor SIX Exfeed. The SIX Group is jointly owned by 160 domestic and foreign shareholders, who are also the users of the infrastructure.

4. Poland's Treasury Ministry currently owns 98% of the exchange. Poland's government has invited 4 international stock exchanges to talks of the potential sale of the WSE. The government is reported to wish to sell 74% of the exchange, with 51% going to a strategic buyer.

5. The main purpose of the paper is to discuss the likely impact of the changing ownership of, and competition among, stock exchanges on the corporate governance of listed companies. The most prominent channel for such influence is exchanges' traditional oversight of listing, maintenance and disclosure requirements – whether in a self regulatory capacity or acting on behalf of regulators.

6. Important additional considerations, not least in the context of the emergence of new categories of competitors, arise from the risk that the "markets for corporate control" (broadly defined as the mechanisms by which ownership and control of companies is transferred from one group of investors and managers to another) could be affected. This consideration is reflected in section II.E of the OECD Principles of Corporate Governance which stresses the importance for corporate governance of markets for corporate control functioning in an efficient and transparent manner. This does not imply that every aspect of the functioning of securities exchanges shall be seen as reflecting the markets for corporate control. The Methodology for Assessing the Implementation of the Principles highlights *inter alia* the need to secure a

"timely disclosure to shareholders and regulators of a substantial acquisition of shares" and that "plans and financing of the transaction are clearly known" to shareholders.

7. The paper is structured in the following manner. Part I discusses the main means at the disposal of stock exchanges to help enhance the corporate governance of their listed companies. Part II introduces challenges to this traditional role of exchanges, discussing the possible ramifications of demutualisation and listing of exchanges. It also reviews the consequences of increasing competition and consolidation within the sector. Finally, the rise of alternative trading platforms and the likely impact of this phenomenon on stock exchanges and corporate governance are examined.

PART I. THE TRADITIONAL ROLE OF EXCHANGES IN CORPORATE GOVERNANCE

The regulatory function of stock exchanges was in the past mostly limited to issuing rules and clarifying aspects of existing frameworks. The standard-setting role of stock exchanges was essentially exercised through the issuance of listing, ongoing disclosure, maintenance and de-listing requirements. On the enforcement side, stock exchanges have shared their regulatory function with capital market supervisory agencies. In addition to overseeing their own rules, stock exchanges were assigned the role of monitoring the compliance with legislation and subsidiary securities regulation. Since the promulgation of the OECD Principles of Corporate Governance, stock exchanges have often enlarged their regulatory role to embrace a wider palette of corporate governance concerns. They have contributed to the development of corporate governance recommendations and encouraged their application to listed companies. The objective of the following part of the paper is to summarise these key channels for exchanges' contributions to good corporate governance in listed companies.

1. Exchanges' regulatory function

8. Exchanges have suggested several complementary rationales for establishing themselves as a source of corporate-governance related regulations. In essence, by raising transparency and discouraging illegal or irregular practices, exchanges are themselves able to accumulate an amount of "reputational capital". The responses provided by stock exchanges to the IOSCO Consultation Report on *Regulatory Issues Arising from Exchange Evolution (2006)* generally took issue with the report's suggestion that "for profit exchanges may be tempted to lower standards to try to generate additional revenue." In particular following demutualisation, this line of argument has increasingly become a cornerstone of exchanges' defence of their regulatory functions.

9. The regulatory function of exchanges is exercised in the context of an existing legal framework. Exchanges' ability to introduce and enforce regulations is obviously circumscribed by the authority of the relevant market regulators and that of the legislature/executive responsible for promulgating securities and corporate law. Part of what is commonly referred to as exchanges' "regulatory functions" is often a delegated authority exerted on behalf of the securities regulators. In consequence, the scope of exchanges' rulemaking authority and the possibility to create "issuer choice"[4] is in practice more limited than it may first appear.

10. To the extent that the relevant laws or securities regulation already address corporate governance of listed companies, the role of exchange regulation can therefore only be complementary. For instance, rules on prospectus issuance follow largely from national securities law, and international harmonisation initiatives (notably the EU Prospectus Directive) may have further limited the scope of standards setting by exchanges. Even in jurisdictions where exchanges are empowered to issue regulations, they may be subject to an approval by another regulatory authority, e.g., in the U.S., proposed changes to exchange rules must be filed with the SEC.

[4] The concept of issuer choice refers to companies being able to choose the regime of securities regulation that will govern it. Specific proposals to create issuer choice regimes have been put forth by Romano (1998) and Choi and Guzman (1998).

11. In North America, certain regulatory functions of exchanges have been delegated or contracted to third party non-governmental regulators (FINRA[5] in the United States and IIROC[6] in Canada), while others, notably in the area of listing, have been retained by exchanges themselves. In Europe, in most cases, it is the capital market regulators, not exchanges, who have an upper hand in issuer regulation according to national and, in many cases, EU legislation.[7] For instance, in Poland, the company is required to submit a draft of the issue prospectus to the Polish Financial Supervision Authority, which has the authority of approving it (or not), even before the company submits an application for the admission of shares to the WSE Management Board.

12. The responsibility for company listing in many other OECD member countries is shared between the stock exchange and the securities regulators. In France, for instance, while it is the Board of Directors of Euronext Paris that decides on the admission of financial instruments on its market, it consults with the Autorité des Marchés Financiers and seeks its observations before listing. Likewise, in Australia, the responsibility for listed companies' compliance with Listing Rules is shared between the ASX and the Australian Securities and Investments Commission (ASIC). In jurisdictions with more extensive self regulation, listing authority tends to be delegated to exchanges. For example, in the United States, the decision to list a particular issuer is made by the exchange. In addition, an issuer must comply with all SEC requirements applicable to listed companies.

13. Monitoring of ongoing disclosure requirements is also not typically the sole purview of exchanges. Given that at least some aspects of disclosure regimes are not based on stock exchange rules but on legislation or regulatory authority rules (i.e., in the area of takeovers or accounting standards), exchanges may have a minor role in enforcing non-compliance. More often than not, the thrust of exchanges' responsibility in the enforcement function lies in their capacity to monitor market developments and bring cases to the attention of securities regulators. Hence, exchanges can obviously make an important contribution to the prevention of fraud and other abusive practices. Exchanges are usually committed to report breaches of market integrity or disclosure rules by virtue of memorandums of understanding with market regulators or subject to similar statutory or regulatory obligations.

14. The ability of exchanges to set independently or enforce standards was intensively debated during the process of demutualisation (further discussed below). A variety of measures were implemented to safeguard exchanges regulatory role, aimed at ensuring that exchange regulation is subject to appropriate incentives, checks and balances. A key mechanism introduced by several exchanges is the separation of exchanges' profit making and regulatory functions. For instance, in connection with the demutualisation and self-listing of NYSE, *NYSE Regulation* – a non-profit subsidiary of NYSE – became responsible for market surveillance and enforcement of rules that relate to trading on NYSE and through a regulatory services agreement, provided oversight for NYSE Arca regulation. The OMX Nordic Exchanges have also

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[5] FINRA was created in 2007 through the consolidation of the National Association of Securities Dealers (NASD) and the member regulation, enforcement and arbitration functions of NYSE. It performs market regulation under contract from the NASDAQ market, AMEX, the International Securities Exchange (ISE) and the Chicago Climate Exchange (CCX). FINRA registers and educates industry participants; examines securities firms; writes rules governing its members; enforces those rules and the federal securities laws; informs and educates the investing public; provides trade reporting and other industry utilities; and administers a dispute resolution forum for investors and member firms.

[6] IIROC is the national self-regulatory organisation which oversees investment dealers and trading activity on debt and equity marketplaces in Canada. Created in 2008 through the consolidation of the Investment Dealers Association of Canada and Market Regulation Services Inc., IIROC's functions include setting regulatory and investment industry standards, protecting investors and strengthening market integrity.

[7] In a notable departure from this trend, the SWX Swiss Exchange is considered to be the listing authority for Swiss Securities.

established a separate structure (though not an independent legal entity) responsible for monitoring issues related to self-listing and market surveillance. Reporting relationships have evolved to reflect these new structures. At the beginning of 2009, the Six Group - of which the Six Swiss Exchange is a part - has separated the firm's regulatory functions from operational activities. Going forward, rule-making will be the task of the Regulatory Board, whereas enforcement of rules will be conducted by the SIX Swiss Exchange Regulation Unit (a new structure to address issuer regulations and supervise securities trading).[8]

15. Academic literature has raised questions about the effectiveness of such arrangements, pointing out that a "regulatory arm" of an exchange can be financed through the budget of the profit making entity. Unless the budget of the regulatory arm is both independent and substantial, the number of instances that it can investigate may arguably be insufficient (Brown, 2008). The importance of further insulating the regulatory entities which are part of exchange groups has therefore been repeatedly stressed in public debate. Entities such as FINRA, which performs market regulation under contract from several large American exchanges, has been highlighted by some as representing a good practice in this respect. Insulation of the regulatory function from exchanges via segregation or outright outsourcing, coupled with the fact that these regulatory powers are circumscribed by existing regulation/legislation (and in some instances subject to approval from other regulatory agencies), puts the regulatory function of exchanges in context.

2. The traditional contributions of stock exchanges to corporate governance

2.1 Corporate governance codes and recommendations for listed companies

16. Following the adoption of the path-breaking Cadbury Code in the United Kingdom in 1992 national corporate governance codes have proliferated. Already four years ago, they were estimated at over 50 globally (McKinsey, 2004), and this figure has certainly grown subsequently with the adoption of codes in a number of emerging markets. As mentioned earlier, whilst not initially in the driving seat, stock exchanges – in some cases alongside with capital market regulators and investor organisations – soon became key players in developing corporate governance codes and recommendations.

17. For instance the Australian Corporate Governance Council, which developed the national corporate governance recommendations, was formed and chaired by the ASX. Likewise, The Danish recommendations for corporate governance have been drafted by the Committee on Corporate Governance of the Copenhagen Stock Exchange (now part of NASDAQ OMX). The Euronext participated in the Lippens Commission which drafted the Belgian corporate governance code. Similar initiatives by stock exchanges are ongoing – last year, Euronext Lisbon contributed to the work of the Portuguese Institute for Corporate Governance which drafted the proposal for a code currently under consideration. Table 2 summarises the relevant governance codes and recommendations for the exchanges examined for this paper, the type of disclosure required by them, as well as the role of stock exchanges in creating and enforcing them.[9]

18. While it is not the primary objective of this paper to discuss differences between national codes, a number of distinguishing characteristics nevertheless bear mentioning. A first important variable is the scope of corporate governance codes or recommendations. Naturally, most codes examined for this paper (and in most other member countries) address issues such as the equitable treatment of shareholders,

[8] All rules laid down by the Regulatory Board must be submitted to the Swiss Financial Market Supervisory Authority (FINMA) for approval.

[9] A complication not covered by this table relates to the fact that some codes apply to companies operating under national securities legislation whereas others are linked to stock market listing – which in the case of cross-border listing implies that some companies may be subject to two codes, and others to none.

operation and accountability of boards and management, transparency and disclosure, as well as minority shareholder protection. However, while a number of corporate governance codes and recommendations purport to have been modelled after the *OECD Principles of Corporate Governance,* they differ markedly in terms of coverage and concreteness of their recommendations.

Table 2. Stock Exchanges' Role in Designing and Monitoring Corporate Governance Standards

Stock Exchange	Applicable Governance Code/ Recommendations	Disclosure Requirement Imposed[1]	Exchange Input in Standard Setting	Exchange Input in Surveillance/ Enforcement
Australian Stock Exchange	Australian Corporate Governance and Best Practice Recommendations (revised 2007)	Comply or explain[2]	yes	yes
NASDAQ market	Corporate governance requirements part of the Listing Rules (no code)	Mandatory disclosure	yes	yes
NYSE	Corporate Governance Listing Standards (2003)	Mandatory disclosure	yes	yes
Euronext	*Belgium:* Code on Corporate Governance (2004)	Comply or explain	yes	yes
	France: Combined Code (2003)	Comply or explain[3]	no	no
	Portugal: Code of Recommendations (2001)[4]	Comply or explain		
	Netherlands: Dutch Code for Corporate Governance (2003)	Comply or explain	yes	no
London Stock Exchange	The Combined Code (revised 2006)	Comply or explain	yes	no
NASDAQ OMX Nordic Exchanges[5]	*Denmark:* Recommendations on Corporate Governance (revised 2008)	Comply or explain (as of 2006)	yes	yes
	Finland: Corporate Governance Recommendations (2003)	Comply or explain	yes	yes
	Iceland: Guidelines on Corporate Governance (revised 2005)	Comply or explain	yes	yes
	Sweden: Swedish Code for Corporate Governance (revised 2008)	Comply or explain	yes	yes
Tokyo Stock Exchange	Principles for Corporate Governance of Listed Companies (2004)[6]	Hybrid[7]	yes	no
Toronto Stock Exchange	National Instrument 58-101 Disclosure of Corporate Governance Practices (2005)[8]	Mandatory disclosure	yes	yes
Six Swiss Stock Exchange	Corporate Governance Directive (2002)	Comply or explain	yes	yes
Warsaw Stock Exchange	The Code of Best Practice for WSE Listed Companies (revised 2007)	Comply or explain[9]	yes	yes

Source: Websites of stock exchanges, OECD Secretariat.

Notes:

1. In column 3, disclosure requirements refer to the mandatory disclosure required under the applicable corporate governance code/recommendations. Other disclosure requirements arising by virtue of companies being reporting corporations are not taken into account for the purposes of this Table.
2. For most provisions, except those included in Listing Rules.
3. The 'comply or explain' rule is a recommendation from the Autorité des Marchés Financiers, not from Euronext.
4. Corporate governance issues are addressed by a Code by the Securities Commission. Proposal for an actual Corporate Governance Code has been put forth in 2007 by the CMVM. Listed companies on the regulated market are subject to the Portuguese Statutory Law and are required to publish a detailed report on governance structure and practices pursuant to the CMVM regulation of 2003.
5. Since the focus of this note is on member countries, Baltic exchanges have been excluded.
6. Complemented by a mandatory Code of Conduct.
7. Regulators may make specific mandatory disclosure requirements on corporate governance disclosure reports, but principles themselves are generally not specified in the form of general legal requirements.
8. Complemented by voluntary guidelines.
9. Sections II, III and IV operate on a "comply or explain" basis, whereas section I is comprised of general aspirational statements and is not subject to such disclosure.

19. In practice, the two defining characteristics of the codes are their topical coverage and the specificity of the underlying recommendations. An example of a very comprehensive instrument might be the Belgian Code on Corporate Governance (2004). Not only does it cover the same topic areas as the *Principles,* it also provides supplementary interpretations and concrete guidance for their implementation.[10] In an alternative model, the TSE Principles of Corporate Governance (2004), also modelled on the *Principles*, are broader and less concrete in terms of issues for companies to address. The subsequent issuance of a TSE Code of Conduct may be seen as an attempt to fill the lacuna[11].

20. In a third model, the NYSE Corporate Governance Guidelines are, on the one hand, less comprehensive in terms of coverage of corporate governance issues.[12] On the other hand, they are very specific and prescriptive concerning recommendations and implementation. Implementation of these standards is mandatory by virtue of the listing requirements, and it is supported by detailed commentary.[13]

2.1.1. Compliance requirements of the governance codes and recommendations

21. The compliance with corporate governance codes required by stock exchanges has varied. To date, most governance codes introduced in OECD member countries - including a majority of those examined for the purposes of this discussion note - employ the "comply or explain" (CoE) approach according to which listed companies may disregard aspects of the code, but in that case should disclose this fact as well as their motives. The alternative to the CoE approach in OECD countries is mostly to require full disclosure of companies' corporate governance arrangements relative to the topic areas covered by the national codes. In the European Union countries, the adoption of CoE was facilitated by the adoption of the Directive 46 (2006) which has been integrated into the national regulatory frameworks of member states.[14] In market places operating by CoE, a primary role for stock exchanges has been to ensure that company disclosures remain meaningful and are not reduced to a box-ticking exercise.

22. The CoE approach permits a number of permutations in terms of the level of disclosure and enforcement. For example, a listed company may be requested to disclose whether it is in compliance with individual recommendations of the code or merely with the code globally. In terms of the enforcement, the ability of exchanges or other regulators to pursue companies which do not provide adequate levels of disclosure also varies. In most cases, CoE codes are subject to some form of regulatory enforcement, but

[10] The Code contains three levels of rules: Principles, Provisions, and Guidelines. The Principles are formulated as broad recommendations, the Provisions are recommendations describing how to apply the Principles, and the latter are supplemented by Guidelines which provide guidance on how a company should implement or interpret the Provisions. The 'comply or explain' requirement applies at the level of Provisions, while the level of Guidelines is exempt of the 'comply or explain' obligation.

[11] The Code is mandatory for listed companies, but sanctions for non-compliance are generally limited to a public pronouncement by the TSE. At the other extreme, TSE reserves the right to delist the listed companies in case of material/serious non-compliance, but in practice this has so far been done only on a very few occasions.

[12] However, NYSE listed companies are subject to all applicable SEC disclosure requirements.

[13] Refer, for instance, to the definition of an "independent director" provided in these standards.

[14] Directive 46 establishes that company whose securities are trading on a regulated market shall include a corporate governance statement in its annual report. That statement shall contain a reference to (i) the corporate governance code to which the company is subject; and/or (ii) the corporate governance code which the company may have voluntarily decided to apply; and/or (iii) all relevant information about the corporate governance practices applied beyond the requirements under national law. To the extent a company departs from a given corporate governance code it must provide an explanation by the company as to which parts of the corporate governance code it departs from and the reasons for doing so.

they may also be subject to enforcement largely by shareholders (e.g. Netherlands[15]), or the question of enforcement may be more or less left to market forces (e.g. France). In most instances, stock exchanges are in some way involved in monitoring the compliance status – although, again, their ability to take enforcement action differs based on the legal basis of the code and the national securities regulation frameworks.

23. The most direct power of stock exchanges to enforce compliance obviously pertains to those standards which are also incorporated in the listing requirements. For instance, in the Australian model only those recommendations of the Code which are also part of the Listing Rules are subject to regular surveillance and enforcement by the ASX[16], whereas others recommendations are to be observed on the CoE basis. The NYSE can also enforce compliance with its Corporate Governance Listing Standards through a letter of reprimand or de-listing as the Standards are mandatory for listed equities[17], having been approved by SEC. Likewise, the Six Swiss Exchange can impose a variety of sanctions when the listing requirements and its implementing provisions (including those dealing with governance issues) are not complied with. Conversely, Euronext Paris is not equally empowered to take any enforcement actions given that the relevant governance recommendations are not part of its Listing Rules and have no legal status.

24. As most governance recommendations remain in the form of contractual "soft" rules, punitive measures that can be adopted by exchanges in relation to breaches of governance requirements are limited in most cases. In instances of significant and continued non-compliance, a typical response by an exchange would be to forward the matter to the appropriate securities regulator. In the short run, the stock exchange in most cases has the option of disclosing its unease about any given company's commitment to good practices of corporate governance. Following this, investors' assessment of the situation can be reflected through the pricing mechanism.

2.2 Listing and disclosure requirements

25. Listing standards may or may not address governance issues directly and/or compliance with an applicable governance code may well be part of individual listing agreements. In some instances, as mentioned above, listing standards incorporate elements of the governance code (cf. the Australian example). In other jurisdictions, additional governance standards - over and above the governance code - have been introduced as part of the listing requirements. For instance, the Stockholm Stock Exchange and the TSX both impose such standards (e.g. in relation to the composition, competence and independence of the Board) as part of their listing requirements. Likewise, NYSE's and Nasdaq market's corporate governance requirements for listed issuers are part of their listing standards. More often, exchanges prescribe quantitative measures bearing on the minimum public distribution and/or free float.

26. Some stock exchanges have a degree of discretion in applying these requirements. The application of listing standards to prospective issuers in many instances is subject to the discretion of the stock exchanges, which find themselves facing intensifying competition for issuers. For instance, the NASDAQ OMX Nordic Exchanges explicitly state that they retain the right to approve the listing even if a company does not fulfil all the requirements for listing, "…as long as it is satisfied that the objectives

[15] In the Netherlands, though listed companies are required to make annual disclosures on a CoE basis, it is up to the shareholders of the company to enforce adherence to "material rules" and decide whether boards have provided "sufficient explanation" in case of non-compliance. The Securities Regulator enforces transparency and examines the coherence of explanations.

[16] In Australia, Listing Rules are enforceable by the Corporations Act.

[17] Certain provisions do not apply to controlled companies, limited partnerships, companies in bankruptcy, closed and open end funds.

behind the listing requirements are not compromised or that they can be achieved by other means." The TSX also reserves the right to exercise its discretion in applying the minimum listing and de-listing criteria. A number of exchanges have come under criticism precisely on this account. The ASX was recently criticised, including by proxy advisors, for waivers to its listing requirements it has granted, despite the fact that like NASDAQ OMX Nordic Exchanges[18], it has a legal basis for doing so.[19]

2.3 Other initiatives by stock exchanges to improve corporate governance

27. In contributing to the design of the corporate governance framework for listed companies, exchanges have been active in providing incentives to already listed companies to commit to higher governance standards. Perhaps the most widely known manifestation of this approach has been the establishment of *Novo Mercado*[20] by the Brazilian Stock Exchange. This approach effectively provides an incentive for already listed companies motivated by the prospect of index-trading to improve their governance.

28. In addition to creating higher governance segments, exchanges have also sought to create custom governance regimes through the creation of standards targeted to specific tiers or compartments, in order to facilitate capital needs of a variety of listed companies. For example, the LSE has differentiated the application of the Combined Code such that AIM-listed companies are exempt from it and the FSA Listing Authority Rules, while Main Market companies are to observe it on a CoE basis. Instead, AIM-listed companies are subject to lighter governance requirements that seek to address more basic shareholder protection issues (i.e. shareholder approval of significant transactions).

29. On the one hand, some have interpreted this approach as a relaxation of governance standards on lower tiers or on the market more generally.[21] For instance, Alternext-listed companies are not subject to any of the corporate governance codes applicable in the four jurisdictions covered by the Euronext main market. On the other hand, insofar as these new segments mostly do not compete head-to-head with old exchanges for the same listings the approach can equally be seen as an adaptation of governance requirements to suit the size and type of prospective issuers. Through multiple listing tiers, exchanges may actually have improved the governance and transparency of small and medium size issuers, which might not have listed in the absence of such preferential treatment.

30. In multiple-tier markets, stock exchange operators have also supported the transition of companies from less regulated compartments for small cap companies to their main markets, in a number of instances providing assistance to companies adopting the required higher governance standards. For instance, the TSX facilitates the transition of companies from its Venture Exchange[22] to its main market, which features higher governance requirements. The TSX also provides a range of incentives for

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[18] At the NASDAQ stock market, on the other hand, staff does not exercise such discretion except that they can deny listing even to a seemingly qualified company under specific circumstances, in order to protect the public interest.

[19] According to its rules, the ASX may at any time waive a part of a listing rule or part of a rule unless the rule specifies that it cannot be waived.

[20] Novo Mercado is a listing segment designed for companies willing to abide by higher governance requirements than those applicable under the Brazilian law.

[21] Though multiple governance regimes created by different tiers can be in general viewed as contributing to governance, to the extent that there is an incentive for companies listed in the higher tier to switch to a lower tier, these 'governance gains' may indeed be reversed. For evidence of this, refer to Jenkinson and Ramadorai, 2007 who provide evidence of LSE Main Market-listed companies switching to the less regulated AIM in order to avoid the associated higher reporting requirements.

[22] The TSX Venture Exchange offers access to enterprises at early stages of their growth.

companies wishing to switch, such as waiving listing application fees or reducing documentation requirements.

31. In addition to being at the forefront of development of governance codes and recommendations, some exchanges have been actively involved in increasing the awareness around the value of good corporate governance. For instance, in 2008 the Warsaw Stock Exchange has decided to establish a group of educational partners from across the country to co-organise training sessions and other educational projects in order to increase the awareness of good governance practices and the recently amended Code of Best Practice for WSE Listed Companies.

32. Finally, stock exchange alliances and increasing collaboration is acting to improve governance standards globally. Through exchange alliances and initiatives to attract dual listings, exchanges are also helping to spread good governance standards globally. For instance, NASDAQ OMX has been active in providing counselling to exchanges in Eastern Europe and the Middle East on how to improve transparency and disclosure in their local market though sharing its experiences in this area. Though it is debatable whether such initiatives will lead to regulatory harmonisation, it is clear that they can lead to potential improvements of governance standards in emerging markets.

PART II. CHANGING LANDSCAPE IN THE STOCK EXCHANGE INDUSTRY

Over the last 15 years, the exchange industry has been in a state of continued flux. Exchanges have demutualised and in most cases become listed, they have consolidated through mergers and acquisitions, and they have become subject to stiff competition from a host of new alternative trading venues. In other words, stock exchanges have become engaged in an intensified competition and are refashioning themselves to meet the challenge. This, in turn, is creating a new reality in exchanges' role in the capital markets regulatory framework, including with respect to corporate governance. The objective of the following sections is to discuss developments in the stock exchange industry with special regards to their impact on the role of exchanges standard setting and enforcement functions is examined.

3. Demutualisation and self-listing

33. A precursor to most of the recent structural changes in the stock exchange industry has been the process of demutualisation (or, in some cases, privatisation), which took its beginning with the Stockholm Stock Exchange in 1993. Virtually all stock exchanges in OECD countries have followed suit. In the sample covered by this paper, all exchanges have demutualised and only three of them (TSE, WSX, SWX) have not yet listed.[23] Exchanges outside the OECD area, including regions such as South America and the Middle East, have only recently begun to demonstrate an interest in demutualisation. It is expected that the gradual spread of this model to emerging markets may lead to a growing interest in the work of the Steering Group, which could be channelled via the Group's regional Roundtables.

34. The listing of stock exchanges, perhaps even more than their demutualisation, has transformed their business model. Although demutualisation is claimed to have changed the ownership of stock exchanges, significant ownership stakes were often retained by previous member firms (Steil, 2002). Therefore, the fundamental governance structure of exchanges was not significantly impacted. Self-listing and the subsequent dispersion of ownership of exchanges have finally divorced their interests from those of broker dealers. As a result, exchanges started to face multiple constituencies with diverging motivations, putting a further pressure on them to satisfy multiple demands.

3.1 Implications for corporate governance

35. Exchanges point to the fact that the transition to a joint stock ownership model was accompanied by regulatory reviews and an introduction of appropriate measures to align their incentives and to address some unavoidable conflicts of interest related to self-listing.[24] Regulators have intensified their oversight over exchanges and a multitude of measures have been adopted. For instance, in the U.S., SEC reviews any proposals for demutualisation to make sure they satisfy certain governance requirements and to ascertain the independence of an exchange's regulatory function. In Australia, the ASIC holds the listing authority related to ASX's own listing. In Canada, the Ontario Securities Commission (OSC) has amended the terms

[23] The TSE group aims to list at the earliest opportunity available during or following fiscal year 2010.

[24] It bears mentioning that the demutualisation of exchanges has not created conflicts of interest where none existed, since the previous ownership of exchanges by the largest securities firms used to be the source of a range of other concerns.

and conditions of the TSX's listing and now requires that the exchange provide certain additional disclosures.

36. Despite the occasional transfer of regulatory responsibility for self-listing to another body, the conflicts of interest relating to self-listing have not necessarily been entirely resolved. Additional mechanisms have therefore been adopted. In Australia, the process for managing the conflict of interest arising out of ASX's self-listing is based on the MOU between the exchange and the capital markets supervisory body, ASIC. Some observers argue that such measures are not sufficient, putting forth more drastic proposals such as mandatory dual listing for stock exchanges (Fleckner, 2006).[25] NYSE may indeed be the first stock exchange to do so if it is permitted to list in Shanghai, though this decision is likely to be motivated by commercial reasons (i.e. the hope that this will help it position itself as a choice of listing venue for Chinese companies (Economist, 2008).

37. In jurisdictions where the perceived conflicts of interest could not be resolved through the separation of functions or the introduction of new governance arrangements, exchanges have also witnessed a transfer of a wide range of regulatory responsibilities. An obvious illustration of this model is the United Kingdom, where following the demutualisation of the LSE, the listing responsibilities were transferred to the FSA (FSA Listing Authority), which is now responsible for listing and aspects of enforcement.[26] The FSA may also modify listing or disclosure rules, or suspend trading of a financial instrument. In a slightly different model adopted in Canada, the TSX, upon approval by the OSC, has contracted market surveillance functions to the Investment Industry Regulatory Association of Canada (IIROC).[27] These measures have been aimed to address not only the conflicts of interest related to self-listing, but also to conflicts of interest related to issuer regulation.

4. Increasing competition among stock exchanges

38. While competition among stock exchanges is not new, it has intensified in recent years in various areas of exchange activities, including trading, listing and settlement. In addition to the obvious effects of demutualisation and listing of exchanges, a rapid improvement in information technology and the creation of innovative financial instruments have also been among the key factors. In consequence, the traditional view of exchanges as the controllers of – at least some – incipient monopolies has been severely shaken. Exchanges are increasingly seen as providers of specific services in competitive markets, which include trading, but may or may not include settlement and other activities (Bagheri and Nakajima, 2004).

39. Moreover, the scope of competition has broadened from the national to the international level. While yesterday's competitors were, for example, domestic exchanges such as NYSE and NASDAQ, today's competition is between large consolidated groups operating in an internationalised financial market place. The emergence of international exchange groups in fact mirrors the evolution of the listed

[25] The rationale behind this proposal is that dual listing will result in external monitoring of the self-regulatory function of exchanges, thereby putting an extra check and balance mechanisms on the application of exchanges' regulatory standards to themselves. This mechanism, does not, however, purport solve exchanges' conflicts of interest in relation to issuer supervision.

[26] While the LSE is still responsible for maintaining admission criteria and ensuring that trading is conducted in accordance with the FSA rules, the FSA has wide regulatory powers vis-à-vis the issuers and supervision of the LSE as a self-listed company. In order to list, a company's sponsor needs to apply to both the LSE and the FSA Listing Authority.

[27] The OSC mandates that the TSX shall retain the IIROC to provide certain regulation services approved by it, primarily in the area of market surveillance. The listing functions are still performed by the TSX. The TSX shall provide to the Commission a list of regulation services provided by IIROC and those performed by the TSX. The TSX shall perform all the regulatory functions not performed by IIROC and is not permitted to delegate this function without a prior approval of the OSC.

companies sector itself. Historically, the focus of exchanges was on attracting domestic issuers, which encouraged competition for listings among different national exchanges. As this focus has shifted on attracting large international companies, including foreign ones, exchanges' basis of operations has shifted accordingly. Competition between exchanges, both for domestic and foreign listings, has therefore intensified.

4.1 Implications for corporate governance

40. With regard to the functioning of securities markets (and, potentially, the market for corporate control) competition between exchanges can produce conflicting results (Di Noia, 2001). On the one hand, greater liquidity may be generated due to enhanced inter-market competition (Bagheri and Nakajima, 2004). On the other hand, insofar as competition may result in trading fragmentation, concerns regarding market transparency and indeed financial stability of exchanges emerge, since illiquid markets tend to be less resilient in periods of volatility. In the latter regard, competition among stock exchanges may potentially have similar effects than exchanges' competition with alternative trading platforms.

41. Concerning the ability of stock exchanges to enhance corporate governance of listed companies, competition between stock exchanges, in the absence of minimum standards set by the regulators (or weak enforcement of such standards), raises concerns. The incentives faced by exchanges to establish and maintain high regulatory standards might weaken as they weigh the risk of deterring listings altogether or losing them to competing market places. This risk may be exacerbated by the pressures a demutualised exchange is subject to from its shareholders to give top priority to maximising profitability.

42. Reflecting such concerns, the dichotomy between a listed exchange's regulatory function and its role as a for-profit entity has given rise to an active debate regarding their incentives to regulate. For instance, 2006 IOSCO consultation report aimed to examine regulatory issues related to exchange evolution, in particular in relation to the fulfilment of objectives established by the IOSCO Principles.[28] The report underlined the potential conflicts of interest that could be faced by demutualised exchanges, including risks to the maintenance of a proper balance between an exchange's public interest obligations and its commercial interests and the potential misuse of regulatory powers for commercial purposes. Essentially, a key concern raised by this and other analyses primarily relates to the potential conflicts of interest faced by exchanges in regulating issuers.

4.1.1 Incentives faced by exchanges to maintain a high regulatory standard

43. A number of historical examples illustrate that the adoption of stringent regulations – and their vigorous enforcement – may have put exchanges at a competitive disadvantage. For example, academic literature has claimed that the LSE gained a competitive advantage over NYSE in 1990s due to lighter listing requirements, and that it did the same in a race against the Paris Bourse by allowing dealers to delay the reporting of block trades for several days (Blommfield and O'Hara, 2000). The American Stock Exchange (AMEX), now known as NYSE Amex, has traditionally attracted issuers that failed to comply with NYSE Listing Rules. Likewise, in the 1980s, NASDAQ has gained competitive ground over NYSE since the former permitted the issuance of multiple class stock when the latter did not. Indeed, some research concludes that while exchanges can signal their quality by denying listings, this has rarely occurred (Cain, 2003).

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[28] Notably, IOSCO Principle 26 states that "there should be ongoing regulatory supervision of exchanges and trading systems which should aim to ensure that the integrity of trading is maintained through fair and equitable rules that strike an appropriate balance between the demands of different market participants." In addition, IOSCO Principle 7 provides that "SROs should be subject to oversight of the regulator and should observe standards of fairness and confidentiality when exercising powers and responsibilities".

44. More recently, the adoption of Sarbanes-Oxley (SOX) legislation led to an active discussion of its impact on the competitiveness of American exchanges. A widely discussed report commissioned by the mayor of New York City cited SOX as one of the reasons for a loss of competitiveness of US capital markets (McKinsey, 2006). This report criticised the US regulatory framework and the "flawed implementation of the 2002 Sarbanes-Oxley Act" citing these as key behind the rapid growth of E.U. capital market revenues (20% annually), compared to 7% in the US. The report also noted the falling share of the United States in the global IPOs market (a decline from 57% in 2001 to 16% in 2006), at the same time as EU IPOs have increased by 30%. Leuz, Tiantis and Wang note that in 2003 alone, over 200 listed companies deregistered their stock, possibly motivated by the introduction of the Sarbanes-Oxley Act in the previous year (2004). It must be acknowledged that these conclusions are not undisputed, and other recent studies have minimised the impact of SOX on the competitiveness of American capital markets.[29]

45. Exchanges' investment in their regulatory capacity might be motivated by their unbundling of services in light of greater competition, whereby regulation has become one of their “core competences”. The resultant competitive advantage would help explain why exchanges have rigorously defended their prerogative to maintain the regulatory function, introducing a variety of mechanisms to address the potential conflicts of interests that arise with respect to self- and issuer oversight. In support of such “reputational capital” arguments, a number of exchanges reviewed by the IOSCO paper responded that their emphasis on the regulatory function has indeed increased. The *Regulation of Markets Survey* produced in 2004 by the World Federation of Stock Exchanges noted that almost 70% of exchanges indicated that regulation was more intensive than 3 years previously. Having committed additional resources to their regulatory departments, exchanges are certainly of the view that they should retain their prerogative to introduce rules and monitor issuers' compliance with them. Some exchanges such as the Six Swiss Exchange, have been able to retain SRO functions, subject to the relevant legislation (Federal Act on Stock Exchanges and Securities Trading) and supervision (by FINMA).

4.1.2 Enforcement functions performed by exchanges vis-à-vis issuers

46. From the perspective of the exchanges, to the extent that rules and regulations are not a part of the listing requirements and are not mandatory, exchanges may be tempted to design their enforcement regime such that it does not provide sufficient incentives for listed companies to take such standards seriously. From the viewpoint of share issuers, the credibility of the de-listing threat has to be viewed in the light of their ability to obtain a comparable listing (i.e. providing comparable liquidity, etc.) elsewhere. Indeed, if exchange services are seen as close substitutes, and reputational and financial costs associated with de-listing are not excessive, exchanges' regulatory power may erode. The key concern here is that the prospect of de-listing may become a weapon in the hand of issuers instead of a punitive measure exercised by exchanges. One capital markets survey suggests that in the past 3 years, approximately 1 in 12 companies surveyed considered switching their listing venue (DLA Piper, 2008). This would seem to suggest that regulatory obstacles and costs associated with the switching decision are perhaps not insurmountable.

47. Aside from relatively extreme measures such as de-listing, exchanges have (as mentioned above) other means of enforcement, through publication of opinions on compliance or levying financial penalties. In the case of governance codes, exchanges may publicise cases of breaches of them or force companies to disclose non-compliance with its provisions. With the exception of jurisdictions where governance recommendations are mandatory, de-listing as a result of governance breaches *stricto sensu* is extremely

[29] Doidge, Karolyi and Stultz (2007) that the competitive position of U.S. stock exchanges in attracting cross-listings have not declined, that there remains a significant premium for U.S. exchange listings, and that it has not significantly declined in recent years.

rare. On the contrary, anecdotal evidence suggests that instead of penalising non-compliance, exchanges have at times been induced to change their regulatory standards.

48. Recent cases demonstrate the reluctance of stock exchanges to take punitive measures in cases dealing with corporate governance concerns, but which are not related to breach of legislation or fraud. An example quoted by some academic studies is the fact that Deutsche Börse has decided not to de-list Porsche, despite the latter's refusal to comply with the applicable disclosure requirements for over 7 years.[30] Some have even argued that incentives to help enforce market abuse rules can be critically weakened, insofar as many abusive strategies lead to increasing trading volumes (Pritchard, 2003; Pirrong, 1995).

49. An additional interesting question – related to the broader issue of well-functioning markets for corporate control – arises in the context of exchanges regulating their emerging competitors. As mentioned, exchanges are often in position to regulate the investment banks which operate competitive trading platforms or data vendors which may be in direct competition with them. To the extent that stock exchanges expand their areas of operations, the opportunity for unfair regulation vis-à-vis companies offering competing services (trading, data provision, etc.) may increase, possibly in the absence of mechanisms for these actors to address their possible grievances. A similar concern arises in the context of stock exchanges regulating their stockholders.

50. To date, few academic studies have examined the impact of exchange competition on enforcement of stock exchange regulations. However, it was addressed at length a few years ago by the US Securities and Exchange Commission (SEC, 2004). Its release noted that the increased competition among markets for listings and trading volume had applied pressure on SRO regulatory efforts and sources of funding. It moreover argued that the advent of for-profit shareholder owned SROs has introduced potential new conflicts of interest and issues of regulatory incentives. The SEC release further opined that recent failings or perceived failings with respect to SROs fulfilling their self-regulatory obligations have sparked public debate as to the efficacy of the SRO system in general. Available academic research seems to support this observation. De Marzo, et al. (2001) concluded that stock exchanges organised as SROs tend to choose a more lax enforcement policy with less frequent investigations and lower penalties.

4.1.3 Further on regulatory arbitrage

51. Importantly, regulatory arbitrage is limited by preference of issuers to list in home jurisdictions and by other considerations in listing decisions. First, "exchange shopping" is likely to be minimised by companies' preference to list in their home country.[31] Second, harmonisation initiatives, both within single exchange platforms (i.e. Euronext or the OMX Nordic Exchanges) and among jurisdictions, often narrow the scope for regulatory arbitrage. In EU countries, the introduction of the *Prospectus* and *Transparency Directives* had precisely that effect. Even exchanges which operate in multiple jurisdictions have different regulatory frameworks defined at the national level, despite attempts at harmonisation. Both Euronext and the OMX Nordic Exchanges, despite efforts at internal harmonisation, impose different issuer regulation in the respective jurisdictions, and issuers in these jurisdictions are subject to different governance codes.

[30] The Deutsche had initiated proceedings to de-list Porsche from its main index in 2001, following the introduction of a requirement to file quarterly reports, with which Porsche has refused to comply with. In 2003, Porsche sued the Frankfurt Exchange (and Deutsche Börse as the parent company) arguing that its shares should be part of the index without the requirement to report on a quarterly basis. In 2008, the parties declared the dispute resolved amicably following Porsche's inclusion in the DAX International Index recently created by Deutsche Börse.

[31] Other benefits brought by a choice of listing such as liquidity or international recognition may sometimes be the deciding factors, which explains the international interest in exchanges such as NYSE or LSE, though they have relatively high listing and disclosure standards.

52. The risk of regulatory arbitrage in the context of dual listing arguably merits particular attention. This risk is exacerbated by the fact that a number of OECD exchanges and/or their regulators have entered into mutual recognition agreements, whereby compliance with domestic governance standards is considered sufficient for secondary listing. Mutual recognition agreements result in situations where compliance with a domestic governance code excuses the issuer from compliance with the code of the secondary jurisdiction, again raising the possibility that companies from "weak governance regimes" might list on exchanges with a "stronger governance regime." In practice, this risk is mitigated by the fact that mutual recognition arrangements are subject to lengthy evaluations in terms of the equivalency[32] which - among other things - aim to limit regulatory arbitrage.

53. Where dual listing is not subject to a recognition regime, exchanges have an important role in setting standards for foreign issuers. This function of exchanges has been viewed rather positively by academic sources which tend to expect dual-listing to produce governance benefits. The governance enhancing features of dual-listing have been highlighted by many, (e.g. Black, 2001), who suggest that cross-listing on a foreign stock market can serve as a bonding mechanism for corporate insiders to commit credibly to a better governance regime. However, to the extent that dual listing is not subject to the same standards as domestic listing, it may potentially send the wrong signal to investors. [33] As dual-listing and foreign listing become more widespread, the risk of such under-regulation may merit further examination.

5. Cross-border consolidation of stock exchanges

54. Stock exchange consolidation has been ongoing for decades[34], but the transformation of exchanges into listed companies has unleashed a new wave of mergers and acquisitions (M&A) – and has added a strong cross-border dimension. The combination of NYSE and Euronext in 2006, Nasdaq's acquisition of the OMX and Bourse Dubai's investment in Nasdaq in 2007, Qatar's investment in the London Stock Exchange and the latter's merger with Borsa Italiana in 2007 provide just a few examples of the dramatic restructuring of the industry. Industry consolidation appears to be continuing, especially in North America and Europe. This has raised concerns, particularly in terms of potential impacts on competition (Kokkoris and Olivares-Caminal, 2007).

55. Recent international mergers and acquisitions were to some extent facilitated by the previous consolidation of exchanges at the national level. Exchanges have in some countries been combined to form "industry champions", which were in turn positioned to acquire internationally. In parallel, the capitalisation of stock exchanges in emerging countries has grown dramatically, positioning them as active players in cross-border M&As as both acquirers and targets.[35] Emerging country exchanges have been also subject of increasing interest by exchanges in OECD countries as they seek to diversify and increase their international presence.

56. Rather than engaging in cross-border acquisitions, other stock exchanges have sought to solidify their position by entering into alliances, formalised legally through MOUs. Key aims of such agreements

[32] For instance, the mutual recognition agreement signed by the French Autorité des Marchés Financiers and the Israeli Securities Authority has taken over 5 years to negotiate.

[33] For instance, Licht (2004) sites case study of Israeli corporations which were lured to list on NASDAQ instead of the Tel-Aviv stock exchange due to the more lax governance requirements for foreign issuers on NASDAQ.

[34] For example, there were 25 stock exchanges in the United States in 1935, which were consolidated to the point where NYSE and NASDAQ have clear market dominance. The same trend can be witnessed in Europe as well. For instance, in France, trading has shifted from provincial bourses to the Paris Bourse (Bagheri and Nakajima, 2004).

[35] In particular, exchanges domiciled in the Gulf Cooperation Council Countries (GCC), have been active as illustrated by the Bourse Dubai acquisition of stakes in both the London Stock Exchange and NASDAQ.

have been cost reduction, liquidity growth and development of new products and services. Global stock exchange alliances, since they are commonly limited to several areas of cooperation, mostly do not raise the same regulatory issues as stock exchange consolidation. A possible caveat to this statement is when alliances incorporate agreements aimed to attract dual listings (i.e. alliance between NYSE and TSE). These types of alliances necessitate the mutual consideration of the adequacy of the regulatory regime in the partnering exchange's jurisdiction.

5.1 Implications for corporate governance

57. Exchange consolidation raises important issues concerning the exercise of regulatory functions. In principle, one could argue that cross-border consolidation simply implies the formation of single operators of distinct markets from legal or regulatory points of view. Questions have, however, been asked about the legal basis of regulation by stock exchanges domiciled in a different jurisdiction than the issuers they are to supervise. Concerns have also been raised regarding a possible forced harmonisation of governance standards across companies listed on cross-jurisdictional exchanges (i.e. NYSE and Euronext). Practical problems could also arise when exchange platforms owned by investors located abroad have to cooperate with domestic securities regulator in enforcing the stock exchange rules.

58. The issue of cross-jurisdictional operation of stock exchanges has been addressed at different levels. Most basically, a number of OECD countries have introduced restrictions on the ownership and acquisition of stock exchanges including notification requirements, ownership caps and fit-and-proper requirements.[36] Of greater consequence from the perspective of this paper is the scope of self-regulation by exchange groups operating in multiple jurisdictions. Specifically, the risk of regulatory spillover has been of concern to regulators, stock exchanges and market participants. In several international mergers such as between NYSE and Euronext or NASDAQ and OMX, specific provisions have been negotiated to eliminate such risk. For instance, under the terms of the NYSE-Euronext combination, both groups remain distinct corporate entities owned by a single holding company, with the result that Euronext does not register as a “US Securities Market” and therefore its issuers are not subject to the U.S. securities legislation (Aggarwal et al., 2007).

59. Some OECD governments have sought to protect the regulatory authority of national exchanges and regulators more explicitly. The UK government has introduced the *Investment Exchanges and Clearing Houses Bill* which "…ensures that the UK's regulatory approach cannot be threatened by any takeover of UK exchanges or clearing companies" [37] (Balls, 2007). Sweden is implementing similar legislation to address the risk of regulatory spillover raised by NASDAQ's acquisition of the OMX. In jurisdictions where governments have not taken similar measures, the risk that a governance regime of the target exchange may be subjugated to that of the acquiring one may be higher. In practice however, the imposition of regulatory standards by an acquiring exchange has so far not materialised.

60. In relation to corporate governance, further complexities may arise. Specifically, how and to what extent can a multinational exchange address the governance of listed foreign issuers (or, more precisely those which are not domiciled in one of the jurisdictions where the said stock exchange operates)? While French, Belgian or Portuguese companies listing on Euronext are subject to their national legislation and the relevant governance codes, it is for instance less clear what governance requirements – if any – a Chinese company listing on Euronext should be subject to.

[36] For an overview of individual countries’ restrictions, see IOSCO (2006).

[37] The legislation ensures that the regulator of the LSE would remain the Financial Services Authority. Another motivation behind the legislation was the wish to preserve the Combined Code as the relevant corporate governance standards.

61. In most jurisdictions examined for the purposes of this discussion paper, stock exchanges can only impose listing or disclosure standards on a national basis. As discussed, foreign issuers are typically accepted based on their compliance with their domestic standards, on the assumption of equivalency. In reality, as already mentioned, foreign issuers often receive a number of significant exceptions. [38] For instance, foreign issuers are exempt from the Corporate Governance Certification Form required of NASDAQ market listed companies, provided they are following home country practices instead of the NASDAQ's requirements. The issuer who chooses to do so must only provide the NASDAQ market with a letter from the outside counsel in the issuer's home country certifying that the issuer's practices *are not prohibited* by domestic law. That being said, foreign issuers must follow certain provisions such as those relating to the audit committee and going concern of issuers.[39]

62. Few exchanges extend their governance requirements to foreign companies. One example is OMX Nordic Exchanges, which require foreign issuers above a certain market capitalisation to apply one of the governance codes applicable in its jurisdictions, provided the issuer is not subject to a code in its domestic jurisdiction.[40] In another example, the SWX Corporate Governance Directive applies to SWX-listed companies whose registered office is not in Switzerland.[41] This implies that some foreign issuers wishing to list on these exchanges can be subject to a governance code which is not part of their domestic regime. This demonstrates the ability of exchanges to impose some degree of “soft regulation” internationally. Another oft-cited example of this is of course the imposition of Sarbanes-Oxley requirements on foreign issuers listed in the United States.

6. Emerging competitors: Alternative Trading Systems

63. Exchanges have long faced competition from off-exchange trading platforms such as over-the-counter (OTC) markets and order internalisation by broker-dealers. However, technological advances coupled with the emergence of the demutualisation trend, have amplified the competitive challenge in recent years. Beginning in mid 1990s, alternative trading platforms (ATS – briefly introduced in Box 1) became increasingly prominent, allowing market participants to effectively circumvent exchanges as trading venues. Their initial appearance was in the United States dates back to late 1960s, where a type of ATS termed the electronic communication networks (ECNs) entered the markets. It soon became clear though that ECNs could execute transactions as effectively as the incumbent exchanges (McAndrews and Stefanadis, 2000), and they soon began to capture a sizeable share of trading in certain instruments.

6.1 The rise of ECNs and MTFs

64. The rise of ECNs[42] in the United States was facilitated by various industry developments. In 1996, SEC has decided to give ECNs access to NASDAQ, with the aim of integrating ECN markets with broader public markets to ensure fair and efficient treatment of all orders. At the same time, the adoption of order display and quote rules effectively ended ECN privacy by inducing the networks to post their quotes on the NASDAQ market (McAndrews and Stedanadis, 2000). Reflecting both regulatory and other

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[38] Refer to previous section on discussion regarding dual listing and mutual recognition.

[39] Refer to Nasdaq Rule 4350.

[40] This requirement applies on a CoE basis, as it does to domestic OMX issuers.

[41] In addressing a potential conflict of law, the Swiss Corporate Governance Directive provides that companies which have SWX-listed shares but which do not have their registered office in Switzerland, the Directive is not applicable only if the company's shares are also listed in its home country on an exchange recognised by the SWX.

[42] In the U.S., alternative trading systems are considered as exchanges, which are provided an exemption from registration, subject to specific conditions. ATS must be registered a broker-dealer with FINRA and SEC. In addition, as it gains market share, the SEC may require it to register as an exchange.

developments, other parts of the OECD area saw the rise of such trading networks much later – or not at all. In Europe, where stock exchanges which had introduced electronic order books and trading systems already in the 1990s, the interest in ECN-like trading platforms was at the time limited. In other OECD countries such as Japan or Australia, the rise of electronic trading platforms has been either limited to non-existent.

65. Though ECNs have not taken off with the same speed in Europe, the adoption of the Markets for Financial Services Directive (MiFID) in November 2007 has spurred the development of Multilateral Trading Facilities (MTFs) all over the continent. By ending "concentration rules" and encouraging competition between traditional exchanges and off exchange platforms, the Directive has prompted rapid development of MTF platforms, which similarly to ECNs in the United States also aim at minimising trading costs for broker dealers. Indeed, since the adoption of the Directive, Europe has seen a rapid establishment of MTFs, including Chi-X, Turquoise, Equiduct, and others.

66. With much slimmer staffing[43] and lower operating costs, MTFs and ECNs are at a natural competitive advantage vis-à-vis exchanges, though the latter have also been reducing costs.[44] An additional advantage is a faster trade execution, which has attracted in particular algorithmic traders to the new venues. Traditional exchanges have been induced to adjust their pricing structure and in some cases offer similar services. The United States currently leads in terms of the number of off-exchange trading venues which are estimated to exceed 70 (if dark pools are included). Estimates suggest that ECNs now handle up to half of trading of NASDAQ market listed stocks (Fleckner, 2006). In Europe, MTFs have also scored a few early successes. In just the first year since its launch Chi-X, the first European MTF, is reported to have achieved a 13% share of trading FTSE 100 companies.

[43] For instance, Chi-X has just over 20 staff, as opposed to LSE whose employees number 1200.

[44] The reduction of fees by stock exchanges have been wide ranging including listing and trading fees, but also other sorts of fees such as those levied on vendors. For instance, as of January 2009, the Warsaw Stock Exchange has reduced its monthly fee charged to vendors for retail customer access to real time data by almost 40%.

Box 1. Typology of Alternative Trading Venues

Alternative Trading System (ATS). An ATS can be defined as an "entity which, without being regulated as an exchange, operates an automated system that brings together buying and selling interests – in the system and according to the rules set by the system's operator – in a way that forms, or results in, an irrevocable contract" (Committee of European Securities Regulators). ATS include a variety of platforms, including bulletin boards, crossing systems as well as quote-driven, order-driven or hit-and-take execution systems. Within this paper, the term ATS is used as an umbrella description of all off-exchange trading venues, with the exception of systematic internalisors.

Multilateral Trading Facility (MTF). The term MTF became widely used following the introduction of the MiFID Directive. In broad terms, an MTF refers to a system that brings together multiple parties (e.g. retail investors or other investment firms) that are interested in buying and selling financial instruments. MTFs can be crossing networks or matching engines, which in accordance with MiFID regulations can be operated by either the operator of a regulated market or an investment firm. A license by a financial market authority is necessary for the operation of all MTFs in Europe. Examples of MTF platforms include Chi-X and Turquoise.

Electronic Communication Network (ECN). The term ECN, coined by the US Securities and Exchange Commission in 1998, refers to order-driven systems where the buy and sell orders of investors meet directly in an order book, either in a call auction or in continuous trading. In order to conduct trades on ECNs, subscribers (institutional investors, broker-dealers, and market-makers) place trades directly with an ECN. Individual investors must have an account with a broker-dealer subscriber in order to place trades on an ECN. Examples of major ECNs include Archipelago and Brut.

Dark Pool (DP). Dark pools are closed crossing networks which isolate orders from the broad trading and provide participants with liquidity not displayed on open order books. As a result, trades executed via dark pools are anonymous (both in terms of price and identity of participants), which is a useful feature for institutional investors who often wish to conduct large trades without revealing themselves to the open market. It is important to differentiate between different types of dark pools. As a matter of a fundamental distinction, some display quotes as part of their business model while others do not. Trade execution can take place either automatically or through a negotiation and may occur either throughout the day or at scheduled intervals. In terms of ownership, dark pools may be independently operated (e.g. Instinet), owned by broker-dealers (e.g. BNP Paribas) or a consortium of broker dealers (BIDS), or even the exchanges themselves (NASDAQ OMX).

6.2 The emergence of "dark pools"

67. In parallel to the rise of the comparatively more transparent MTFs and ECNs, investment banks have participated in the launch of the so-called "dark pools" of liquidity. While broker dealers have for a long time internalised orders in order to avoid having to pass through exchanges, the development of coordinated dark pools represents a step further in this direction. The rise of dark pools has been indeed impressive – recent estimates suggest that daily turnover in the dark pools worldwide has reached 500 million shares and speculate that this number will increase to 1.35 billion by 2010 (Tabb Group, 2006). The number of players in this market is constantly increasing, giving rise to new operators such as "dark pool aggregators" offering linkages between dark pools in order to improve the liquidity of such venues.

68. The rise of dark equity pools is attributed to demand by institutional investors for anonymity, low trading fees, and fast execution of large orders. A dark pool fulfils all of these demands by providing a venue where large orders can be settled with minimum impact on market price and at a low cost. It enables institutional investors to process large trades through these types of trading venues, instead of processing them through regulated exchanges, where the execution is likely to be lengthier given that traders would need to split them in smaller blocks.[45] With regard to pricing, institutional investors have in fact been for a long time seeking new means to cut execution costs, through algorithmic trading and cutting orders in parts. As a result, traditional exchanges have recently been developing the means to employ algorithmic trading which slices large blocks of shares into smaller lots and makes only a small portion of the total

[45] As a result, the average trade size in the U.S. equity markets is now estimated at less than 300 shares.

order ("tip of the iceberg") visible to the market.[46] Despite these measures, dark pool pricing remains more attractive than that of exchanges'.

69. Beyond adapting the technical and price aspects of their services, the ability of exchanges to constrain the growth of the relatively unregulated dark pools has been limited.[47] Exchanges are perhaps at an even greater disadvantage as they compete with dark pools than other alternative trading platforms due to the fact that dark pools are typically (even) less regulated than other platforms. Instead of competing with dark pools, a number of exchanges have decided to move into the industry, fearing that their non-participation would not stymie this new industry but will further cut into their revenue stream. NYSE Euronext and NASDAQ OMX have bought two of the biggest start-ups in the industry, the LSE is in final stages of establishing Baikal, at the same time as Smartpool planned by NYSE Euronext jointly with HSBC, BNP Paribas and J.P Morgan has in February 2009 received FSA approval. A number of exchanges that have not yet bought into or established their own dark pools are reportedly considering doing so.

6.3 The impact of the emergence of new platforms on stock exchanges

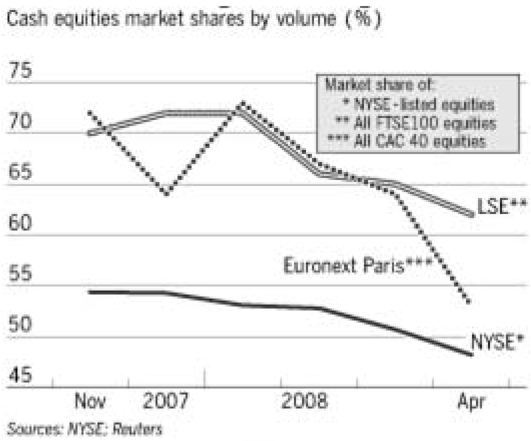
70. The emergence of a variety of off-exchange platforms has certainly had an impact on the trading and business model of exchanges. The loss of trading market share, experienced by selected exchanges, particularly in North America and Europe (refer to Figure 1), are certainly of concern to them. While the success of MTFs in Europe and ECNs North America may be exaggerated, their recent performance suggests that there is a demand for their services.

71. That being said, the changes in the competitive landscape should not be exaggerated. First, the spread of ATS has not occurred at the same speed globally – as mentioned, they have so far been rather more successful in North America and Europe than elsewhere. Secondly, although numerous dark pools and other ATS platforms have been recently launched, a number of them have experienced significant problems during their launch. Turquoise, for example, had to endure a two year delay in its launch. Furthermore, industry experts claim that figures relative to the performance of ATS may be embellished, given the lack of standardised means of reporting trades, possible double counting or, conversely, underreporting by broker-dealers.

[46] The LSE is the last to have introduced algorithmic trading in the first half of 2008.

[47] Naturally, dark pools are subject to certain, though less stringent regulations. For instance, in the U.S., ATSs, including dark pools, are regulated as broker-dealers through both the SEC and FINRA.

Figure 1. Loss of Market Share by Selected Exchanges



Source: FT, Incumbent Exchanges in Trouble, 2008.

Note: To the extent that these markets have a significant number of dual listed companies, migration of trading away from these venues does not necessarily imply loss of a market share to off-exchange platforms.

72. Perhaps the most important argument against "doomsday scenarios" for stock exchanges is the fact that the market share gains of ECNs and MTFs took place amid a strong growth in trading volumes. The growth of new venues could reflect this fact rather than a hollowing of exchanges' traditional role. This assertion is supported by market developments during the almost full-day breakdown of threading on LSE on 8 September 2008. Though trading of LSE listed securities continued on several alternative platforms, the turnover on that day was not perceptibly higher than trading on these platforms on other days. Hence, without prejudice to whether a further rise of MTF platforms may erode the role of LSE and other European exchanges, this does not seem to have occurred so far.

6.4 Implications for corporate governance

73. The impact of the rise of ATS platforms on corporate governance is not *a priori* clear. On the one hand, since off-exchange trading is often less transparent and not regulated as rigorously as on-exchange trading, there could be repercussions for price discovery and other aspects of the markets for corporate control addressed by the OECD Principles. On the other hand, insofar as listed companies have to comply with listing and disclosure rules of exchanges, and position themselves vis-à-vis their corporate governance codes, the role of exchanges in promoting generally high standards of corporate governance does not appear imperilled. The one obvious exception to this statement is, of course, companies that are publicly traded subject to securities legislation but which choose to forego listing on an exchange. The second exception is companies listed in unregulated market places (e.g. Pink Sheets[48] in the United States), that are also not listed on any exchange.

[48] Pink Sheets is an interdealer system that provides quotations for securities which are not listed on regulated exchanges and are publicly traded, though only through broker-dealers and market markers. Pink OTC Markets Inc. is not registered with the SEC and it is not a FINRA-regulated broker-dealer. For additional details on the operation and regulation of the Pink Sheets market, refer to http://www.sec.gov/answers/pink.htm.

74. Furthermore, the implications of ATSs on corporate governance need to be examined on a case by case basis – by the type of platform and the regulation applicable to it in a given jurisdiction. To take an obvious example, the MTFs are much more regulated and transparent than dark pools. Indeed, the consequences for market transparency and integrity arising from the emergence of new competitors to stock exchanges are perhaps the most severe in the case of dark pools. Some have voiced the concern that dark pools have effectively created a system where large investors can move stock anonymously, while retail investors are left in the dark.[49]

6.4.1 Impact on price discovery and the markets for corporate control

75. As mentioned in the introductory section, a key corporate governance question is whether the timely disclosure of substantial acquisitions of shares as well as the communications of plans and financing of the transactions to shareholders suffer from the migration of trading volume from the regulated exchanges to ATSs. In principle, price discovery of listed companies may be negatively affected by the fragmentation of trading to alternative trading platforms, especially in instances where there is no direct feedback loop between the ATS and a security's primary listing market. Insofar as market fragmentation results in situations where trades on some platforms are not visible (or not immediately visible) to participants of over platforms, arbitrage between platforms may exist and the price discovery function may be affected. In addition, trading on ATSs may be delinked from exchange markets (such as in after hours trading), therefore decreasing the transparency of such trading activity[50] (Barclay and Hendershott, 2003). Finally, there is, of course, the more serious risk that ATSs may in some cases not execute and supervise trading with the same rigor as licensed exchanges.[51]

76. A fragmentation of trading involving ATSs need not necessarily impact negatively on the price discovery provided by stock exchanges. In the United States, the SEC has imposed rules which require that the best quotes offered by dealers to ECNs to be included in the national best bid and offer (NBBO) montage, and ECNs trading NYSE-listed securities also have to report back to NYSE. Some empirical research even suggests that ECNs can contribute to quote quality (Huang, 2002). In Europe, the concerns that trading fragmentation might lead to reduced liquidity and transparency are more difficult to dismiss.[52] However, given that there is no single trade reporting facility, the concerns about post-trade price transparency cannot be dismissed as baseless. Nonetheless, a market based approach could address this issue. The establishment by Thompson Reuters in January 2009 of an independent tape meant to consolidate prices across exchanges and other trade facilities might constitute a first step in this direction.

77. Moreover, the impact of ATS on price discovery varies not only by national regulatory framework, but also by specific features of a security (whether the security is dually listed, etc.) and the platform used to trade it. Indeed, it may be of interest to investigate the regulatory framework surrounding various types of ATSs venues and their relationship with on-exchange price formation. This is a highly technical area, requiring an understanding not only of the regulatory framework surrounding the operation

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[49] Erik Sirri, the Director of the Division of Trading and Markets at the SEC was quoted as recently saying that the unfair access to dark pools “would raise serious concerns about two-tiered markets that disadvantage particular classes of market participants.”

[50] This risk is minimised if the ATS in question is set up by the parent exchange itself - an argument naturally employed by exchanges.

[51] Refer to the 2005 case when NASD fined Instinet, one of the largest American ECNs, for rule violations relating to publication of inaccurate reports on order execution quality, backing away from the firm's posted quotes, failure to report orders, improper "last sale" or trade reporting, supervision and other areas (http://www.finra.org/PressRoom/NewsReleases/2005NewsReleases/P015199).

[52] Trades conducted on European MTFs must be reported to regulators (on a T+1 basis).

of various ATS platforms, but also of the clearing and settlement systems, trade execution rules and infrastructure.

78. Finally, occasional concerns have been voiced about the role of ATSs in case of block trading of listed securities. Considering that the very objective of some ATS is to preserve the anonymity of trades such concerns cannot be dismissed out of hand. For instance, concerns may be raised in instances where, for example, a hedge fund looks for less transparent ways to sell a large position, by preferring to route it to a dark pool, instead of an official market. In the extreme case, it can even be suggested that trade fragmentation may in some instances augment the risk of insider trading, the monitoring of which has been an important function traditionally performed by stock exchanges, as discussed earlier in the paper.

6.4.2 Impact of ATS on the regulatory function of exchanges

79. While exchanges have for some time voiced concerns regarding the growth of ATSs, from their perspective the key issue is probably the loss of trading revenue. Indeed, as exchanges' trading revenue is negatively affected by the proliferation of ATSs, their regulatory resources may become less sufficient" l relative to their regulatory responsibilities. There may be a risk that further migration of trading to off-exchange platforms may render exchanges unable to dedicate appropriate resources to regulation and enforcement. A second concern of stock exchanges is essentially that ATSs free-ride on the regulatory and supervisory functions performed by them without bearing the associated costs.

80. If the regulatory function of stock exchanges is indeed under threat, the ability of ATSs to ensure standards of governance among listed companies does not seem sufficient to fill the emerging void. A key distinction between ATSs and stock exchange regulation is that transactions via the former are based on private law contracts, not on stock exchange regulation. Furthermore, ATSs have no delegated authority to enforce companies or securities law, and have no power to de-list companies or adopt any other punitive measures against issuers. Off-exchange markets have neither the admission standards nor a market supervisory authority to enforce governance or other standards. Since they are not charged with any regulatory responsibilities, there is no incentive for them to refrain from trading companies with inadequate governance structures, as long as they are listed. What some ATSs can and have done however, is enforce sanctions not on issuers, but on market participants.[53] Effectively, this kicks the "regulatory ball" back into the court of exchanges, at least for the moment.

81. An ongoing process of converting some ATSs to public exchanges may highlight further issues in relation to their ability to establish and enforce appropriate stock exchange rules and governance codes. BATS Trading, one of the largest multilateral trading platforms in the United States, has received the necessary approval from the SEC in August 2008 to transition to an exchange. Other ECN platforms operating in the United States (e.g. Direct Edge) are expected to follow suit. The transition of ATSs to stock exchanges will imply a transformation in their regulatory function vis-à-vis the companies they trade, possibly putting under a spotlight the deficiencies of the previous model.

82. In principle, the fragmentation of trading may force regulators to consider their options, including introducing a more direct regulation of listed companies (and therefore reducing the self regulatory role of exchanges), increasing the regulation of ATSs - or even exploring ways of conferring an element of regulatory authority (their own or that of SROs) to the ATSs. Finally, responding to exchanges' grievance regarding free riding of their regulatory function by ATS, options may exist whereby regulators request that that ATS shoulder the financial burden currently absorbed by the exchanges. Though such regulatory

[53] This statement is subject to the caveat that if an ATS is owned and operated by a broker dealer or a consortium of broker dealers, it obviously has no incentive to deny the said party(ies) from participating in trading.

responses are theoretically possible, to date, trading fragmentation has not been so extreme as to result in the implementation of such options by capital market supervisors.

83. Even the exchanges themselves do not presently strongly advocate adopting one of the abovementioned options. This observation was validated during interviews with representatives of a small number of stock exchanges in OECD countries conducted by the Secretariat. In particular, it was noted that concerns about the regulatory impact of loss of trade revenues (e.g. through free riding) and market transparency appear to be greater in market places where the advent of ATSs is relatively recent. American exchanges appear to have been more acutely concerned about this 6-7 years ago; fears have since subsided.[54] Overall, understanding of the impact of trade fragmentation (in particular through less transparent platforms such as dark pools) is still at an early stage, and further exploration of this question may be useful.

[54] The somewhat subsided concerns regarding transparency of off-exchange venues in the United States can be explained by the fact that American ECNs operate as quoting venues and the migration of trading from quoting to non-quoting venues has not been witnessed so far. Instead, the migration of trading has been from one type of quoted venue (exchange) to another type of quoted venue (ECN) and from one type of dark pool to another (Sirri, 2008).

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