

**THE MiFID: COMPETITION IN A NEW EUROPEAN EQUITY
MARKET REGULATORY STRUCTURE**

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Abstract

In 2004, the European Council and Parliament adopted a new directive on markets in financial instruments (the “MiFID”). The implementation of the directive in EU member states is still ongoing. We provide a framework for understanding some of the main features of this new regulatory structure. We summarize the economics of fragmentation and internalisation – issues that have been at the forefront of discussion throughout the MiFID consultation, approval and implementation process. We also provide lessons from the US regulatory experience, with a special focus on US trade reporting rules. We highlight relevant features of the largest European equity markets, describe the main features of the MiFID and provide recommendations on its implementation.

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1 Introduction

On 21 April 2004 the European Parliament and Council adopted the new Directive on Markets in Financial Instruments¹ (the “MiFID”), which repeals the 1993 Investment Services Directive (ISD). The MiFID provides high-level principles designed to foster a fair, competitive, transparent, efficient and integrated European financial market. It aims to create a regulatory environment capable of insuring investor protection while still being flexible enough to allow for the introduction of new markets and services.

An important aspect of this new directive is the repeal of the so-called “concentration rule” (Art. 14(3)) of the 1993 ISD. This rule had allowed national authorities to stipulate that retail investor orders be executed only on a “regulated market”. In the absence of a concentration rule, trades may be executed away from the main market centre on alternative trading systems or by investment firms. This has caused a heated debate among stakeholders and policy makers about issues related to market fragmentation and internalization. Many of the actual issues involved have become clouded in a vapour of self-interested rhetoric. This paper provides a solid academic foundation to the current discussion, by summarizing past research; describing the current state of the major European markets; and drawing parallels to the US regulatory experience.

We begin by defining the terms involved. **Fragmentation** occurs if there is no mechanism to ensure (i) interaction between orders submitted for the same security on multiple venues; and (ii) interaction between orders and the best quotes posted on multiple venues. Order flow fragmentation is often the consequence of competition from innovative market structures but also the result of preferencing arrangements and in-house matching practices. **Internalisation** of order flow is a specific type of preferencing and refers to the situation in which broker-dealers execute retail client orders in-house against their own positions or against another client order.

There are potential problems linked with the internalisation of order flow. Specifically, internalisation inhibits aggressive quoting and diverts away orders from the primary market. This may affect the quality of price discovery and lead to higher spreads. It also produces a conflict of interest between the broker/dealer’s own profit maximizing goals and the broker/dealer’s obligation to provide the best price to the client.

As financial markets become more fragmented, these issues are becoming more and more important. To illustrate, consider an investor in the UK. This investor can trade domestic equities either on SETS (the electronic order book of the London Stock Exchange (LSE)), on the over-the-counter market through dealers, on virt-x (the pan-European blue chip electronic exchange) or on an international exchange. An institutional investor can also trade through investor-to-investor mechanisms such as

¹ Directive 2004/39/EC of the European Parliament and of the Council on Markets in Financial Instruments, *Official Journal of the European Union*, L 145, Vol. 47, 30 April 2004.

POSIT, E-Crossnet, and Liquidnet. As well, a retail investor using a retail broker is likely to trade through a Retail Service Provider (RSP), rather than directly with the “central” market. Hence, the once clear distinction between the services offered by exchanges and those offered by broker/dealers is becoming blurred.

The challenge is to create a regulatory environment that is not too prescriptive and is flexible enough to adapt rapidly to change and to encourage innovation, while at the same time provides an appropriate level of investor protection and minimises systemic risk. The ultimate goal is to set conditions which will facilitate the development of a competitive, integrated and efficient European financial market – a market where traders can trade and settle securities of other European countries just as easily as domestic ones and where issuers can more easily raise capital in a *European* rather than *domestic* market.

This paper examines the extent to which MiFID accomplishes this goal. We examine the MiFID’s provisions for the protection of investors and for the identification and removal of conflicts of interest rules. We also examine the MiFID’s provisions on best execution, order handling and trade reporting rules as well as provisions on pre-trade and post-trade transparency. These provisions are designed to create a level playing field where alternative market structures and trading systems can compete for trade execution with no detrimental effect on market quality.

The remainder of the paper is organized as follows. **Section 2** begins by providing an economic definition of internalisation, and explores the effects of fragmentation and internalisation on market quality. It then offers a summary of theoretical and empirical findings regarding market fragmentation with particular attention to preferencing and internalisation. It also introduces market quality concepts, such as best execution, price discovery, market efficiency, liquidity, and transaction costs. **Section 3** provides a brief survey of recent developments in US markets and regulations.

Section 4 examines the rules and trading environment of each of the major European financial markets. We consider the extent to which European financial markets are fragmented and how internalisation practices differ across major European financial centres. This is a major contribution, since surprisingly little is known about actual off-exchange execution practices in Europe. Next, in the context of our previous analysis, **Section 5** outlines the main features of the MiFID and offers some recommendations for its implementation. **Section 6** concludes.

2 Internalisation and Fragmentation

2.1 Definition of Internalisation

There is not universal agreement among practitioners and academics about the precise definition of internalisation. Often the term ‘internalisation’ is used in a broad sense to indicate the practice of order matching carried out by investment firms, also called *in-house matching*. Such a definition includes two types of trades:

- (a) Direct executions by broker/dealers of clients’ orders for their own account. For example, in the UK, this includes retail trades executed by RSPs *in a principal capacity* (e.g. retail orders submitted by Merrill Lynch customers to the RSP operated by Merrill Lynch) as well as institutional orders executed by broker/dealers against own positions.²
- (b) Agency crosses in which customer orders are matched against each other. This includes crosses of customer orders on proprietary order books and matches of (institutional) client orders at a reference price on crossing networks.

For the most part, we focus on a narrower definition of internalisation. We refer to **internalisation** as:

The situation where a bank or a broker executes *retail* client orders *in-house*, that is either by acting as a principal and executing them against its own positions or by sending them to an affiliated market maker.

Typically, internalised retail orders must be executed at prices no worse than the current official quotes.

2.2 Formal Framework

Markets have a natural tendency to consolidate because they require a critical mass of liquidity (Pagano (1989a)). At the same time, new markets continue to emerge more rapidly and frequently, often threatening the position of the dominant market. Inevitably, there is tension between those in favour of consolidation of order flow on a single market and those demanding competition.

A market is fragmented when the same security trades on multiple trading venues.³ Market fragmentation results from different market mechanisms competing to provide low-cost and tailored services to different traders. This beneficial effect of fragmentation is offset by the impact on market quality. If quotes and orders are not given the opportunity to interact, market fragmentation can have a negative effect on

² Note that although these trades are executed off SETS, they are still classified as *on market* trades being executed by LSE broker-dealers.

³ For a discussion of market fragmentation in the US context, see Stoll (2001).

the production of price information and, consequently, on market and price efficiency. Also, fragmentation can reduce the speed and likelihood of limit order execution. In most circumstances, competition amongst traders to obtain the best price is best achieved in consolidated markets.

Prices and markets are efficient when prices are highly informative. Prices are close to “efficient” values when all buy and sell orders can interact to ‘discover’ the ‘true’ price. In efficient markets, prices make only small and transitory deviations from these values. Short-term deviations between transaction prices and true prices may arise because of frictions reflecting order-handling costs or, more generally, illiquidity, information asymmetries and strategic behaviour of market participants. Market efficiency corresponds to lower volatility and greater economies of scale, probability of order execution and market depth (Hamilton (1979)).

Special attention has been given to those cases in which market fragmentation is caused by preferencing and internalisation. These cases have raised a debate about their overall effect on market welfare and hence on the potential need for regulatory intervention.

Market fragmentation is often associated with **preferencing** practices. Order preferencing is the routing of order flow by a broker to a preferred market maker. Preferred orders are not exposed to the whole market but executed by dealers at the prevailing best bid and offer quotes (often from the primary market).⁴ Hence, order routing is based more on special relations between brokers and dealers than on prices and market conditions. Brokers route order flow to dealers because they receive a service, data, a payment for small retail orders or a liquidity fee for limit orders. Traders, in turn, may benefit from lower commissions if brokers engage in price competition to attract order flow.

Internalisation is a form of preferencing. If a large fraction of the order flow is internalised, dealers have little incentive to compete by narrowing the spread because this would reduce overall dealer rents (i.e. supernormal profit) and would not attract the order flow already allocated to other dealers, i.e. internalisation may reduce the level of competition. Although externalities give order flow a natural tendency to consolidate, multiple and fragmented markets might persist in equilibrium.

With internalisation, while current market prices are used as a reference, investment firms are executing their clients’ orders away from the market. These orders are neither able to interact with other pools of liquidity (and possibly receive improved execution) nor participate directly in the price discovery process. As a result, opponents of internalisation believe that it leads to a lower degree of pre-trade

⁴ In the context of NYSE-listed stocks, the best bid and ask quotes are normally, but *not always* found on the primary market. Bessembinder (2003) finds that, on average, the NYSE posts the most competitive quotes. But, he also finds that off-NYSE quotes also provide non-trivial displayed liquidity, as they almost always (95.4% of the time) match at least one side of the NYSE quotes, and establish one side of the best quotes without NYSE participation about 11% of the time. Similar results are found by Blume and Goldstein (1997).

transparency and has a negative impact on the price discovery process. It may amplify potential principal-agent problems (especially when brokers trade for their own account as dealers) in which the interests of brokers conflict with those of their clients. This conflict is particularly important with internalised *retail* trades, since retail traders have limited market knowledge and limited means of auditing their broker's performance. Also, when internalising market orders (and at best orders), investment firms violate time priority by front-running limit orders standing on the central order book in the supply of liquidity. Finally, the internalisation of limit orders may increase short-term price volatility, and make prices less resilient. That is, prices may more easily, and for a longer time, diverge from the 'true' price.

Proponents of internalisation of order flow believe that, just like payment for order flow, internalisation may create positive competition for traditional market centres. Banks internalise the order flow to avoid the costs of executing orders on the order book (exchange and, in some cases, clearing and settlement fees) and to earn bid-ask spreads. If a bank rebates a portion of these savings to its (favourite) clients, they may provide a better overall total cost. Furthermore, the internalisation of market orders may decrease short-term price volatility.

Order crossing is another form of preferencing arrangement. It refers to the situation when brokers arrange internal matches of their clients' orders. Crossing systems are often used to reduce market impact of large orders by allowing institutional orders to be matched at pre-specified times and traded anonymously off-market, typically at the reference market's mid-quote. Crossing facilities address the needs of a certain type of trader, who is ready to sacrifice immediacy and execution guarantees so as to obtain anonymous execution, price improvement and lower trading costs. However, this practice gives rise to several concerns. First, orders are not exposed to the whole market. This may create information asymmetries and affect the price discovery process. Second, because orders are matched at reference prices (derivative pricing), brokers free ride on the price discovery of other markets. Third, if the execution of the cross is not transparent, brokers may favour some clients over other clients.

There are several regulatory remedies to confront these problems:

(1) Best execution rules for brokers can be established.⁵

(2) Concentration Rules: The regulator could prohibit preferencing and internalisation by enforcing order flow concentration on the primary market. This may be possible in a local market but may be difficult to enforce in a global market.⁶

(3) Mandate Market Linkage: The regulator could try to foster order flow competition by imposing some form of market linkage.⁷

⁵ For a survey of the issues concerning the definition of best execution rules see Macey and O'Hara (1997).

⁶ At one time, for some European countries, such a rigid approach meant (at least temporarily) losing market share to the London SEAQ-I market.

Best execution is a consumer protection measure. The problem addressed by the best execution obligations is the information asymmetry that exists between customers and firms in relation to the prices at which execution can occur. Customers do not have the same degree of access to price information as have firms. Often best execution requirements are too narrowly focused on the price dimension only and ignore other dimensions, such as execution speed. For instance, ideal best execution requirements may require firms to consider also client order characteristics and market conditions. Defining best execution precisely is not a simple task. In fact, best execution means different things to different people: in simple terms, market order traders demand fast execution and expect to obtain the current best price available whereas limit order traders generally expect to obtain fast execution only once the limit price is reached. At a higher level, to provide execution quality, brokers have to employ costly resources: time, effort, skill and systems. Harris (2002) comments that in “a competitive brokerage market, brokers provide superior execution as long as traders can measure such quality and are willing to pay for it”.

US experience shows that regulators can allow preferencing and internalisation if at the same time appropriate best execution and pre- and post-trade **transparency** requirements are introduced. Transparency refers to the disclosure of quote and trade related information. The benefits of transparency are two-fold. First, transparency means greater availability of information and so faster price discovery and enhanced market efficiency. Second, transparency helps customers monitor brokers. Consequently, brokers will compete and deplete their rents to attract order flow. Higher levels of transparency, however, may introduce other costs, such as greater difficulty executing large transactions and less incentive to post limit orders.

2.3 Past Research

A special study by the US Securities and Exchange Commission (SEC, 1963) was the first to discuss the contrasting effects of fragmentation on market quality, namely the trade-off between competition and market efficiency. The SEC wanted to know whether market quality would be improved by imposing consolidation or by fostering competition and, hence, tolerating the resulting fragmentation.

2.3.1 Theoretical Predictions

Alternative market structures and the effects of market fragmentation are often analysed with reference to the auction literature.⁸ Academics have shown that, under certain conditions, the differences in spreads produced by alternative market

⁷ In the US, this led to the creation of the Intermarket Trading System (ITS) and the National Market System (NMS) with consolidated trade and quotation systems. Some commentators, however, argue that this system has impeded competition and the adoption of new technology (Blume (2002)).

⁸ For surveys of theoretical approaches to the fragmentation issue see O'Hara (1995), Madhavan (1995, 2000), Biais et al. (2002) and Lee (2002).

structures should fade away. Despite this, the behaviour of trade prices and therefore the orderliness of the trading process may be intrinsically dependent on the structure of the market (Biais (1993)). Theoretical studies of the competition between markets have produced opposite predictions. For instance, Biais et al. (2000) point out the benefits of competition among liquidity suppliers in reducing spread, increasing depth and volume and eroding market makers' rents. In contrast, Foucault and Parlour (2004) fail to find a clearly dominant market structure that provides greater overall welfare than a monopolistic liquidity supplier. When competing markets have liquidity costs differentials and/or brokers use preferencing practices, alternative market structures can become dominant markets or multiple market equilibria can emerge (Foucault and Parlour (2004) and Battalio and Holden (2001)).

Fragmentation. Pagano (1989a, 1989b), Chowdhry and Nanda (1991), Mendelson (1987), and Admati and Pfleiderer (1991) predict that, because of order flow externalities, trading has a natural tendency to concentrate on the market that is already the largest. As a consequence, all else equal, consolidated markets have greater order flow and lower spreads (Arnold et al. (1999) and Jain (2001)). If traders or orders are not homogeneous, however, they will seek alternative systems that better satisfy their needs.

When there is no mandatory disclosure of information, strategic liquidity suppliers may find it optimal to provide liquidity on market structures alternative to the primary market, leading to fragmentation (Harris (1995) and Madhavan (1995)). Fragmentation can also occur if dealers decide to attract orders with certain characteristics (cream skimming). For example, Easley et al. (1996) find that regional dealers attract order flow with lower information content than NYSE executed orders. Harris (1995, 2002) and Battalio and Holden (2001) argue that fragmentation may cause poor price formation and higher transaction costs. This will occur if limited transparency and market access impede arbitrage across alternative markets and hamper competition for order flow among.

Preferencing. Dutta and Madhavan (1997) and Kandel and Marx (1999) provide models which argue that preferencing reduces the incentives for liquidity suppliers to aggressively compete by cutting prices. As preferencing increases, markets show higher average bid-ask spreads, lower average execution quality and greater dealer profits. Chakravarty and Sarkar (2001) develop a model for a quote-driven market with multiple liquidity suppliers and informed traders. The presence of internalising dealers reduces market depth and price informativeness. Parlour and Seppi (2001) study the competition between alternative market structures (a pure limit order system versus a hybrid specialist/limit order system) in the presence of preferencing practices. Their model produces the following results: (i) different preferencing arrangements may lead to multiple equilibria; (ii) greater competition between exchanges, hence greater market fragmentation, does not have a clear effect on aggregate liquidity; and (iii) the establishment of a best price benchmark by the regulator may negatively affect exchange competition.

2.3.2 Experimental Results and Empirical Findings

With the provocative papers by Christie and Schultz (1994) and Christie et al. (1994) attention is drawn to the effects of institutional practices on execution quality. Shapiro (1995) notes that increasing volumes of trading in NYSE-listed stocks have gradually moved away from the NYSE. Some orders have moved to other market centres such as the regional exchanges and NASDAQ, some have been matched in-house by brokers, and some have been executed through the so-called “fourth-market” (which includes those trades not facilitated by a broker but crossed by a system such as POSIT).

It is relatively easy to construct ‘hypothetical’ numerical examples that demonstrate that certain investors would benefit or be hurt through the process of internalisation. These simplistic examples, however, implicitly make an “all else equal” assumption which fails to fully account for changes in market participant behaviour in response to different market structures. A true measure of who wins and who loses in this process must come through a careful empirical examination of markets that have different policies with regard to internalisation.

Researchers have employed a range of alternative indicators to evaluate the effects of fragmentation on market quality. Some of these include:

1. **Liquidity, bid-ask spreads and trading costs.** “Liquidity is the ability to trade large size quickly, at low cost, when you want to trade” (Harris (2002)). Spread is only one of the dimensions of liquidity. Transaction costs include all costs linked with trading, including explicit costs (commissions, fees and taxes), implicit costs (bid/ask spreads and price impacts) and missed trade opportunity costs.
2. **Price and return volatility.** Hamilton (1979) considers the effects of fragmentation on market volatility in addition to spread. He finds that the positive effects of competition tend, albeit just marginally, to prevail over the negative effects of fragmentation. Hence, multi-market trading lowers trading costs in the form of narrower spreads and lower price volatility.
3. **Information share. Price discovery** refers to the process through which new (public and private) information gets impounded into prices. It is relatively “expensive” for a market to provide a price discovery mechanism. In contrast, once a price has been determined and disseminated, it is relatively “cheap” to provide order matching or crossing services that simply pair off buyers and sellers at that price. When the same security trades on multiple markets, it is useful to measure the information share of each market, that is, how the trading on each individual market contributes to the price discovery process. Hasbrouck (1995) and Harris et al. (1995) provide alternative methods for computing the information share of individual markets.

We now summarise the significant research on fragmentation of markets.

A) Causes of market fragmentation.

Fragmentation is often caused by traders searching for mechanisms that better satisfy their needs. For instance, Fong, Madhavan and Swan (2001) analyze data from the Australian Stock Exchange and find that the magnitude of trading on ECNs and other off-market trading venues in Australia is driven by institutional trading interest (trading volume, indexation) and liquidity (bid-ask spreads, market depth). Conrad, Johnson and Wahal (2003) examine trading strategies and execution costs of institutional traders in the presence of ATs. They find clustering in the characteristics of orders sent to different systems – for example, small trades of NYSE stocks are often sent to crossing networks. Thus, different systems satisfy different trader needs.

B) Experimental and empirical studies that do not find negative effects of greater fragmentation and competition on market quality and price efficiency.

Hasbrouck (1995) studies the thirty stocks in the Dow Jones Index. He shows that although most of the price discovery takes place on the NYSE, a small, but significant, amount of price discovery also occurs on the regional exchanges. Similar results are obtained by Dridi et al. (2000) for a group of stocks which traded on both NASDAQ and Easdaq.⁹

Battalio et al. (1997) study how the practice of preferencing order flow to regional exchanges affects the quoted and effective spread of the US national market. Their results indicate that fragmentation does not reduce market quality of the primary market.¹⁰ Actually, spreads on the NYSE declined after a substantial part of order flow was diverted away toward regional exchanges. Battalio et al. (2002) study whether orders routed to regional exchanges might have enjoyed an even higher fill rate if they had been routed to the NYSE. They conclude that the routing decision is unlikely to have a significant impact on retail limit orders.

Huang (2002) shows that greater pre-trade transparency provided by ECNs' open order books contributes to improving quote quality. The increased level of competition resulting from the introduction of ECN trading has significantly contributed to improving the efficiency of the price discovery process on NASDAQ. Boehmer and Boehmer (2002) consider the launch of ETFs trading on the NYSE in direct competition with the American Stock Exchange, the dominant market for this type of security. The NYSE has managed to attract a significant market share of ETFs traded volume and this has led to a significant decline in quoted, effective and realized spread and a substantial increase in quoted depth across all market centres.

Blume and Goldstein (1997) find that non-NYSE markets obtain a substantial proportion of their total trading volume when both sides of their quotes are inferior to the best displayed bid or offer. They argue, however, that there is still scope for quote competition, since they find that when a market posts the very best bid or offer across

⁹ Easdaq later become NASDAQ Europe, which later shut down operations in 2003. Recently, Capricorn Venture Partners has announced plans to re-introduce the Easdaq exchange.

¹⁰ A similar conclusion on the beneficial effect of competition is reached by Battalio (1997), Fong et al. (2001), Conrad et al. (2003), Amihud et al. (2002), and Mayhew (2002).

all markets, that market does receive increased order flow. In support of this finding, Bessembinder (2003) finds that there is substantial quote-based competition for order flow. He finds that quotation strategies are shown to vary systematically with market conditions, and order routing is found to respond systematically to quote placement. This is inconsistent with order location being driven solely by preferencing agreements. He concludes that "improved disclosure of trading costs would likely stimulate increased competition and improve the efficiency of order routing, without the need for extensive new regulation." Re-visiting this analysis in the context of decimalization, Goldstein et al. (2005) find that the tick size reduction to one penny has increased the ability of the regional markets to compete with the NYSE.

C) Studies showing negative effects of fragmentation.

Davis and Lightfoot (1998) compare bid-ask spreads and return variances for two groups of NYSE stocks that trade under different competition regimes. Their results show that the introduction of greater competition does not lead to a significant reduction, but rather more often to an increase in bid-ask spreads. Also, the two groups of stocks have similar variances of returns.

Conrad et al. (2001) analyse a proprietary dataset of institutional equity trades which identified trades preferenced to soft-dollar brokers. They find that, controlling for differences in order characteristics, preferenced orders generally pay higher implicit costs. Peterson and Sirri (2003) find that the effective spreads of market orders trading on preferencing regional exchanges tend to be lower than the effective spreads of market orders trading on nonpreferencing regional exchanges. They also find that limit orders have a greater probability of executing on preferencing regional exchanges than on nonpreferencing regional exchanges. Lee (1993) finds that the NYSE generally provides better effective spreads and points out how price execution of comparable orders differs systematically by location.

Chung et al. (2004) find dealer quote aggressiveness is negatively related to the proportion of internalized volume during both the pre- and post-decimalization periods. Chung et al. (2005) show that although internalisation does not reduce the impact of price aggressiveness on dealer market share, it mitigates the impact of size aggressiveness. They interpret this result as suggesting that although internalization may not affect the dealer's incentive to post aggressive prices, it may reduce the incentive to post large depths.

For a sample of LSE stocks, Hansch et al. (1999) find that preferenced trades pay higher spreads whilst internalised trades pay lower spreads. Also, about 62% of trades for the constituent stocks of the FTSE-100 index during August 1994 are internalised (i.e. the market maker and the broker belong to the same firm). The average trade size for internalised trades is about £280,000, which suggests that a large proportion of these trades is from institutional investors who prefer to deal directly with the market makers. Moreover, the extent of preferencing and internalisation has no significant cross-sectional relationship with a stock's average inside and effective spreads.

Cai and Dufour (2002) study trading on and off the electronic limit order book on the London Stock Exchange. They find that in the UK the main price discovery mechanism is the SETS order book even though most of the retail business is executed off-SETS through RSPs (internalised business). Moreover, very few of the trades executed on SETS are matches of investors' orders, and dealers participate in most SETS trades. They conclude that the quality of the UK market could be improved by fostering greater direct access for private and institutional traders to order book liquidity.

3 US Regulatory Experience

Debate in the US has focused on the apparent choice between the consolidation and fragmentation of trading venues. The following quote from the introduction of the recently adopted SEC Regulation NMS summarizes this choice:

The NMS [...] incorporates two distinct types of competition - competition among individual markets and competition among individual orders - that together contribute to efficient markets. Vigorous competition among markets promotes more efficient and innovative trading services, while integrated competition among orders promotes more efficient pricing of individual stocks for all types of orders, large and small. Together, they produce markets that offer the greatest benefits for investors and listed companies.

Accordingly, the Commission's primary challenge in facilitating the establishment of an NMS has been to maintain an appropriate balance between these two vital forms of competition. It particularly has sought to avoid the extremes of: (1) isolated markets that trade an NMS stock without regard to trading in other markets and thereby fragment the competition among buyers and sellers in that stock; and (2) a totally centralized system that loses the benefits of vigorous competition and innovation among individual markets. Achieving this objective and striking the proper balance clearly can be a difficult task. [p. 12-13, SEC (2005)]

In establishing its careful balance, the SEC believes that the key principles to uphold are: access, best execution, and transparency. We briefly comment on some of the main regulatory developments here. It is worth noting upfront that many SEC rules have explicitly distinguished between the NYSE and NASDAQ markets - explaining, in part, why these markets developed so differently over time.

In response to the 1994 investigation into whether NASDAQ market makers had implicitly colluded by avoiding odd-eighth quotes, the SEC introduced the so-called display rule:

SEC Rule 11Ac1-4 – the “Display Rule” requires the display of customer limit orders priced better than a specialist/market-maker’s quote or that add to the size associated with such quote.

In combination with the display rule, best execution in US markets is aided by the so-called quote rule:

SEC Rule 11Ac1-1 – the “Quote Rule” requires a market maker to publish quotations for any listed security when it is responsible for more than one percent of the aggregate trading volume for that security and to make publicly available any superior quotes posted privately through certain ECNs.

In other words, these rules first require market participants to give the market data they generate to the exchanges and then require them to buy that information back from the exchanges in consolidated form if they distribute any quotation information to investors.

In a 1997 report, the SEC studied how the practice of preferencing affects the quality of markets (see SEC (1997)). The study indicates that some form of preferencing practice has always existed on all of the US exchanges since the Securities Exchange Act of 1934. The SEC concluded that, if appropriate protections were in place to prevent principal-agent types of conflicts of interest, preferencing can stimulate competition for order flow.

In particular, in 1996, before providing permanent approval of the Chicago Stock Exchange (CSX) preferencing program, the SEC had analysed thoroughly the potential effects of preferencing on the execution of customer orders, competition among markets and CSX market quality. The results of the investigation showed that market makers have incentives to provide fast execution to marketable (aggressively priced) limit orders and also that market orders are provided the opportunity for price improvement. Furthermore, the SEC has verified that preferencing has had no significant detrimental effect on quotes, depth and liquidity.

In the 2001 Report of the Advisory Committee on Market Information (commonly referred to as the Seligman commission report), the majority recommended a model under which multiple consolidators could compete to collect and resell market data from the exchanges.¹¹ Under this proposed ‘multiple consolidator’ model, the exchanges would retain exclusive control over access to, and fees for, market data and would face no competitive pressure to provide data on a more efficient and useful basis at more affordable rates. Exchanges would have the rights over data, but must be willing to distribute transaction prices and inside quotes at low cost. Notably, the committee recommended a further, much more detailed study that has yet to be commissioned. The ‘multiple consolidator’ model has not been implemented.

¹¹ A minority of the committee members did not believe that the economic benefits of implementing a new model outweigh the technological and economic risks of the new competing consolidator model.

In addition to real-time trade data publication, the SEC has introduced rules that require market centers to distribute data on order execution:

SEC Rule 11Ac1-5 - Disclosure of Order Execution Information: market centres are required to prepare and make available to the public monthly reports in electronic form that categorize their order executions and include statistical measures of execution quality.

In effect, this rule requires all market centres to post statistics (commonly referred to as “Dash 5 Statistics”) on the execution of orders according to order size. A closely related SEC rule is:

SEC Rule 11Ac1-6 - Disclosure of Order Routing Information: a broker-dealer that routes orders on behalf of customers is required to prepare quarterly reports that disclose the identity of the venues to which it routed orders for execution. The reports must disclose the nature of the broker-dealer’s relationship with those venues, including the existence of any internalisation or payment for order flow arrangements. Finally, broker-dealers are required to disclose, on customer request, where they routed a customer’s individual orders for execution.

When these rules were introduced, the goal was to provide a standardised set of statistics that allowed market participants to compare broker performances and alternative execution venues. In practice, two vendors, Transaction Auditing Group and Market Systems, Inc., have been contracted by a large number of market centres to provide Rule 11Ac1-5 and Rule 11Ac1-6 reports. In part, because of the complexity and quantity of data involved, these reports often contain errors and are not normally subject to an independent audit.

The implementation of these rules has exposed vast differences in the reporting and interpretation of trade data. Boehmer (2005) and Boehmer, Jennings and Wei (2005) explain some of these differences. Despite these data quality issues, Boehmer, Jennings and Wei (2005) obtain evidence which suggests that the reports are informative to broker-dealers. They find that routing decisions depend significantly on execution quality and that market centers reporting low execution costs and fast fills subsequently receive more order flow. Thus, mandating public disclosure of order execution information can lead to greater market center competition.

The US experience also highlights potential conflicts that can arise from poorly applied best execution guidelines. It is common practice for brokerages to send orders to the best bid / offer currently posted – normally taken to be the national best bid and offer (NBBO). The best price, however, is complicated by the possibility of trade rebates and access fees. Early on, Island ECN (now Inet ATS, Inc.) began to provide rebates to limit orders that added to the system’s liquidity. While this was initially designed to be a marketing tool, many ECNs began offering rebates to customers that submitted aggressive limit orders to their systems, thereby ensuring that they had the NBBO. At the same time, however, the ECNs charged high access fees for using their systems.

Thus, even though customer orders were being routed to the system that appeared to have the best bid/offer, they effectively were receiving a worse price after including access fees.

In response to this, NASDAQ's new SuperMontage system¹² allows market participants to request that their order be handled by price/time priority *with access fee consideration*.¹³ This made several ECNs concerned – so much so that SuperMontage had to go through nine stages of amendments to satisfy these concerns. The effect of these amendments was to ensure that niches remained in which the ECNs could operate – this highlights that the details of securities regulation clearly matter. Small rule changes can have large, and possibly unintended, consequences. In the context of the European debate, it is highly relevant that SuperMontage still allows for preferencing of order flow and automatically internalises order flow from the same member firm if it is at or within the current bid-ask spread.

The large number of execution options for NASDAQ-listed securities might suggest that the US market is highly fragmented. In practice, however, an adequate combination of order handling and transparency requirements and private sector commercial solutions produces consolidated quotes and provides order routing mechanisms that search for the best prices across numerous pools of liquidity. This allows investors to have a menu of choice – for instance, some market participants on the NYSE want exposure to the floor auction whereas others want immediate trade execution. To facilitate these different needs, the NYSE introduced “NYSE Direct+” which provides automatic execution of limit orders up to 1,099 shares against the published bid or offer. In return for automatic execution, customers give up the possibility for price improvement by the trading floor. Thus, orders sent via Direct+ and orders sent to the trading floor have little or no effective interaction, even though it is the *same* exchange! In the opinion of the NYSE, this multi-platform structure is optimal – it is not an interim stage towards the implementation of a fully electronic CLOB model.

The prevailing view in the US is that there are benefits from the segmentation of the market. There is no reason why different traders should not face different prices and/or receive payment for order flow. In fact, one reason that retail commissions in the US are lower (often as low as \$8) than institutional commissions is because nobody is willing to pay for institutional (possibly information-based) order flow.

To make this fragmented system work, the ownership of trade records is key. After a trade occurs, the Consolidated Tape Association (CTA) sells the trade report to various

¹² SuperMontage is designed to provide fully integrated order display and execution systems that will ensure better links between the Nasdaq dealer market and ECNs.

¹³ SuperMontage gives market participants three options as to how their orders will interact with the quotes/orders in Nasdaq: (i) Price/Time; (ii) Price/Size; (iii) Price/Time with Access Fee Consideration. Price/Time with access fee considerations would cause a fee-charging ECN to be hit after all other market participants that do not charge a fee. Also, if an ECN charges a fee but flags their bid/offer as providing price improvement (their price plus the fee is equal to or better than the price in their bid/offer), they will be hit in strict Price/Time priority.

market data providers such as Reuters and Bloomberg. The revenues from the CTA are divided among market centres according to how many trades occur at the market centre. This formula became complicated when Island started reporting Island NMS trades that do not involve NASDAQ's SelectNet to the National (former Cincinnati) Stock Exchange in February 2002. By reporting these internal Island trades to the NSE, Island was able to eliminate certain NASDAQ ACT and NASD-R related fees.

Since then, the SEC has adopted Regulation NMS, which in part, introduces amendments to the 'Market Data Rules' that "update the requirements for consolidating, distributing, and displaying market information, as well as amendments to the joint industry plans for disseminating market information that modify the formulas for allocating plan revenues and broaden participation in plan governance."¹⁴ The new rules will allocate market data revenue based more closely on the market centre's contribution to the best displayed quotation, thereby removing an excessive focus on the number of trades executed, regardless of trade size.

A wealth of insights regarding the internalization of order flow in the US can be found within the SEC documents relating to the rescission of NYSE Rule 390.¹⁵ This rule had operated to preclude, among other matters, NYSE member firms from internalising their agency order flow by trading as dealer or principal against it. Its rescission allows NYSE members to act as over-the-counter market makers or dealers in all NYSE-listed securities. Prior to its rescission, some market observers believed that a significant amount of order flow previously routed to the NYSE may be subsequently divided among a number of different dealers in the over-the-counter market, where there may be a reduced opportunity for order interaction. In practice, the repeal of Rule 390 has had little effect on NYSE market share.

In 2002 the NYSE introduced OpenBook. This new service allows traders off the floor to observe the aggregated size available at all bid and offer prices in the specialist's book. These prices are updated every 5 seconds (and soon will be available in real-time). A recent study of the NYSE OpenBook data shows that increased pre-trade transparency can lead to improved market quality in terms of increased displayed liquidity and lower impact of trades on prices (Boehmer, Saar, and Yu (2005)).

The reputation of the US securities industry has been hard hit by recent corporate governance scandals. Despite the apparent imperfections of the US system, we believe that following the ongoing debate about exchange competition in the US, and gaining empirical evidence from it, is a vital input into successful European regulation.

¹⁴ p. 2, SEC (2005).

¹⁵ www.sec.gov/rules/sro/ny99480.htm

4 European Landscape

The adoption of the ISD in 1993 started the process for the development of a more integrated European financial market. More recently, the adoption of a common currency and the emergence of an equity culture across Europe have generated greater interest in cross-border trading (McAndrews and Stefanadis (2002)). These developments, in turn, have created the conditions for greater consolidation within the European financial markets. In the past few years, we have witnessed several consolidation initiatives. Whilst some of these attempts failed at the early stages, others led to the creation of multi-market stock exchanges¹⁶ and to the adoption of more homogeneous trading structures.

One such initiative was the European Market Model - an ambitious 1998 plan by the European Equity Alliance for the creation of a new pan-European market for blue-chips stocks. In September 1999, this model was effectively dropped and replaced by an agreement by the eight stock exchanges which form the alliance (Amsterdam, Brussels, Frankfurt, London, Madrid, Milan, Paris and Zurich) to adopt common key market model principles with the goal of laying the foundations for an efficient, integrated, electronic cross border market for European blue chips.

Consolidation of trading in European securities could deliver greater economies of scale both within the exchanges and in broker/dealer offices through the adoption of common and efficient trading platforms, which could translate into lower trading costs. McAndrews and Stefanadis (2002) believe that although various impediments to consolidation persist (e.g. clearing and settlement inefficiencies, regulatory disparities, differences in listing requirements, etc.), these are mainly regulatory and financial and could be overcome faster than the technological impediments that slowed down the consolidation process for US exchanges over the last century (see Arnold et al. (1999)).

Until now, European equity trading has had a domestic focus. This is changing as assets are increasingly managed on a sector basis, through the growth of index related products, pan-European and sector index products, futures, and exchange-traded funds. It has also been influenced by the growth in new trading strategies such as arbitrage and portfolio strategies, by the introduction of the Euro, and through the emergence of large blue-chip European companies that operate in multiple jurisdictions (e.g. Nokia and Vodafone plc).

The potential value of a true pan-European market in blue chip stocks has become increasingly apparent, as investors have shifted from diversification across stocks within one European country to diversification across market sectors, regardless of country. However, such a market need not be in the form of a single dominant exchange. Instead, competition between exchanges can be promoted while

¹⁶ For an updated list, please refer to the Federation of European Securities Exchanges website at: http://www.fese.be/statistics/exchange_landscape/index.htm

encouraging the development of one (or more) pan-European cross-border clearing and settlement system(s) in order to reduce cross-border clearing and settlement costs to be no higher than domestic.

The development of financial markets in Spain, Italy, and France has been heavily influenced by the concentration rule. The concentration provision in the 1993 ISD (Art. 14) was an attempt to prevent nationals of a country which implemented the provision from transacting in domestic securities away from a regulated market. The concentration principle is based on the argument that a market in a security can only be fair if all transactions in it are undertaken on a single marketplace where every order can interact with every other order. Proponents of this view argue that a concentrated market ensures price and time priority. Thus all investors, whether large or small, transacting at the same time are ensured a fair deal in that they can transact at the same price. However, all of these markets allow for exceptions to the concentration rule. Large and special orders do not have to satisfy the time priority rule and often do not have to interact with orders on the central market. Hence, none of these markets is entirely concentrated with strict time and price priority.

Competition for trading services through multiple trading venues and internalisation of order flow by investment firms characterises trading in Germany and the UK. The difference in market structure between countries with a 'central market' mentality and those with a 'competitive market' mentality (though virtually all markets now exhibit features of both) is that in the former there is normally a higher proportion of retail business while in the latter (as in London) a higher proportion of wholesale business.

Traditional exchanges must adapt to meet evolving investor needs in the face of greater integration of European markets. For example, shortcomings in existing market mechanisms will soon become apparent as money management in Europe becomes more institutionalised and fund transaction sizes increase.

Traditional exchanges have already tried to diversify their services by introducing market segments tailored to the needs of particular types of traders: systems designed for crossing large institutional orders were recently introduced by the LSE and the Borsa Italiana. The introduction of after-hours trading segments, such as those found on the Borsa Italiana, the Deutsche Börse, and the Stockholmsbörsen, were designed to encourage retail direct trading. However, it is much more likely that the needs of different classes of investor would be better met by allowing, or even encouraging, competition in offering a more diverse range of market mechanisms which do not require dealers or regulated markets as intermediaries. Several of such mechanisms are already available in the UK: for example crossing networks run by ITG Europe¹⁷ and E-crossnet and investors-to-investors trading services such as Liquidnet.

We now provide specific details about the trading environment in the major European financial markets.

¹⁷ See Gresse (2005) for a detailed empirical analysis of ITG Europe's crossing network.

Germany

Deutsche-Börse AG operates the Frankfurt Exchange (FWB), the largest of the eight German stock exchanges.¹⁸ Most of the shares traded on FWB can be traded on the Deutsche-Börse's electronic trading platform, known as Xetra. In 2004, Xetra had an 80% market share by turnover value of domestic equities, the FWB had a 15% share, and the remaining 5% was traded on other German exchanges (source: Deutsche-Börse, Factbook 2004).

On 3 September 2002, the Deutsche-Börse introduced Xetra Best, which allows a bank's private clients to trade directly over Xetra via the bank's internal systems.¹⁹ Xetra Best is designed to offer private investors benefits such as the possibility of immediate and full execution at a price better than those he/she could have obtained in the open Xetra order book for the same transaction at the same point in time. Xetra Best is designed to allow investors to preference a specific market maker and for the possibility of self-preferencing. The motivation behind the introduction of Xetra Best was to provide an attractive and cheaper alternative to firms that were considering developing their own in-house trading and matching systems.

There is no publishing obligation for off-exchange trades. Thus, the percentage of trades executed off-exchange is not known. Some private estimates suggest about 30-40% of trades (more by volume). Although these trades are not published, they are reported to BAFin, the Federal Financial Supervisory Authority of Germany, in order to uncover breaches of insider trading prohibition or ad hoc disclosure requirements. The majority of block trading occurs off-market. The next largest portion of block trading is executed using the exchange's floor trading facility. The remainder of block trading occurs on Xetra's crossing facility – but this does not attract much order flow.

In addition to the Frankfurt exchange, there are seven regional exchanges in Germany: Berlin, Bremen, Dusseldorf, Hamburg, Hannover, Munchen, and Stuttgart. These exchanges operate in a competitive relationship with the Frankfurt exchange. It is important to emphasize that there is no German equivalent of the US National Market System (NMS) linking the regional exchanges to Frankfurt. The German Securities Trading Act does not require firms to send their customer orders to the exchange with the best price – the order simply needs to be sent to a recognized exchange.

The regional exchanges have strong political backing from regional governments. Traditionally, they have had strong relationships with locally oriented banks. The regional exchanges, however, no longer specialize solely in listing local companies. They are redefining themselves and beginning to compete with Frankfurt directly on the basis of trading technology – offering extended trading hours, special guaranteed trading conditions and alternative electronic trading systems. For example, the Dusseldorf Stock Exchange has 40% ownership stake in Quotrix AG, which operates

¹⁸ Theissen (2003) provides a description of the German equity markets.

¹⁹ Grammig and Theissen (2005) describe how the Xetra Best system allows banks and brokers to internalize retail customer orders.

Quotrix, a quote-driven exchange trading system for private investors, and TradeLink, an ECN for over-the-counter securities trading.

Euronext (France, Belgium, The Netherlands, Portugal)

Euronext was formed in March 2000 through the merger of the Paris Bourse, the Amsterdam Exchange and the Brussels Stock Exchange. In October 2001, Euronext outbid the LSE for the London International Financial Futures and Options Exchange (LIFFE). In 2002, the Lisbon Stock Exchange also joined Euronext and an alliance was formed with the Warsaw Stock Exchange. All of the Euronext operations for cash securities now have a fully integrated trading and clearing processes, thereby allowing them to act effectively as a single market.

Euronext markets share a common order-driven electronic trading system. Whilst there is a common set of rules for all Euronext markets, local differences still remain regarding listing requirements and enforcement procedures. Euronext uses Euroclear as its preferred settlement agent and collaborates closely with Clearnet and Euroclear to implement straight through processing on a cross-border basis. Trade reports are sent to the national securities regulator in France and the Netherlands and are sent to the market in Belgium. While block trade reporting to the exchange in Belgium must be immediate it is possible to ask for delayed disclosure.

French concentration rules require crosses involving a French-based counterparty to be undertaken on the exchange at prices between the current bid and offer spread. In addition, crosses can be executed at the touch (thereby by-passing normal time priority) if there is insufficient size to execute the trade on the book.²⁰

Italy

The Italian concentration rule requires that trades are executed on regulated markets (Borsa Italiana and TLX are currently the only two regulated equity markets), except when broker/dealers obtain explicit authorization from the trader and are able to provide price improvement. In general, the concentration rule does not apply to: (a) foreign investors; (b) government bonds; (c) block trades; (d) odd lots; and (e) after-hours trading.

Authorised intermediaries satisfy best execution requirements when they carry out trades at the best possible conditions with reference to time, size and type of transaction. Best conditions refer to the total cost of trading, which includes not only transaction price but also any other explicit and/or implicit execution cost born by the trader. During official trading hours, best execution requirements are automatically

²⁰ While having the benefit of ensuring best execution, this rule has effectively prevented crossing networks such as POSIT or E-Crossnet from executing trades involving French counterparties. Because these crossing networks do not have a direct link to the central limit order book, they cannot guarantee that prices will not move between the time the trade is executed on their system and when they attempt to report it to the exchange. If they executed a trade involving French counterparties, they would be responsible for absorbing any difference in price.

satisfied for all trades executed on regulated markets; for all other times, best execution requirements are automatically satisfied for all trades executed on either regulated markets and/or Sistemi di Scambi Organizzati (SSOs) – recognised ATSS. Soft-commissions are allowed, but the intermediaries' code of conduct requires the terms of such arrangements to be clearly stated in the contract with the client (ASSOSIM (1998)). About 98% of trades and 95% of traded value are executed on market at the Borsa Italiana.²¹ Block trades accounts for most of the remainder, with off-market trading accounting for less than one percent.

All trades in instruments admitted to trading on a regulated market have to be reported to the regulated market within 15 minutes of execution and published within one hour. Trades executed after-hours must be reported to a regulated market before 9am of the following trading day. A stricter transparency regime applies to those SSOs that allow retail trading (admit trades with value lower than €150,000). These SSOs must publish the rules that govern the price discovery process. During trading hours, pre-trade transparency requires posting of best bid and ask prices and their respective sizes, whilst, post-trade transparency requires publication of time, price and quantity for the most recent transaction. At least once a month, SSOs with retail trading must publish trading summaries specifying monthly traded volume, maximum, minimum and weighted average prices for each traded instrument. SSOs that allow dealers to trade for their own account must report separately average buy and sell prices.²²

Even if Italy is a country where order flow has been traditionally consolidated on the main exchange market forces are gradually pushing in the direction of multiple venues or segments for different investors. In this sense, order flow is becoming more fragmented not only in space but also in time.

The online trading platform TLX was launched in January 2000 as the first Italian ECN to exploit the non-applicability of the concentration rule to after-hours trading. TLX was recognised as a regulated market by Consob in 2003. It makes markets in domestic equities and thereby competes directly with the Borsa Italiana. By offering market-making services TLX, aims to increase liquidity, provide more flexible trading hours and offer a greater range of products. TLX is a hybrid market where dealers and limit orders interact in the price discovery process and characterised by real-time pre- and post-trade transparency.

Spain

In contrast to the trend in the US, and to a lesser extent in the UK, the trading of financial instruments in Spain has become increasingly consolidated in fewer, more closely linked trading venues and the associated order flow concentrated on the central limit order book.

²¹ Figures obtained through private communication with Borsa Italiana.

²² See Consob (1998a, b, c) and Decreto Legislativo, 24 February 1998, n.58; Sabatini and Tarola (2002).

The consolidation and integration of Spanish financial markets was promoted by the laying of the legal groundwork in 2001 to allow the formation of a holding company which would acquire, directly or indirectly, the entire capital of some or all the entities running the secondary markets as well as the Spanish securities registration, clearing and settlement systems. This goal was advanced on 15 February 2002 with the creation of the Bolsas y Mercados Espanoles (Sociedad Holding de Mercados y Sistemas Financieros S.A.). In 2003, this new company has integrated the Spanish equities (Bolsa de Madrid, Bolsa de Barcelona, Bolsa de Bilbao, and Bolsa de Valencia), derivatives (MEFF) and fixed income markets (the electronic trading platform for Spanish government debt, Senaf, and the private fixed-income market, AIAF) and the securities registration, clearing and settlement systems (Iberclear).

Regarding equities, almost all trading occurs on the central electronic trading platform (SIBE), which facilitates direct, real time communication among the four Spanish stock exchanges, allowing for a single price and order book per share. By law, during official trading hours, trading activity must be concentrated on the regulated market. Orders can be placed outside the central book where special regimes apply (i.e. in the case of large orders, off-exchange and extraordinary transactions).²³

Some foreign market participants complain that it is difficult to enter the Spanish financial markets. The Spanish exchanges require members to have a “technical and physical presence” in Spain. In general, having a subsidiary or a branch operating in Spain could satisfy this membership requirement. The MiFID addresses these concerns by giving investment firms an effective single passport, which allows them to operate throughout the EU on the basis of the authorisation by the authority of their home member state.

United Kingdom

Best execution rules in the UK are mainly focused on achieving the best price for the customer and clearly identify a specific price benchmark as a minimum execution standard. Changes to best execution practices for transactions have been proposed in a recent FSA consultation paper (FSA (2002)). The FSA recognises that best execution is more than the achievement of ‘the best price’ and the execution decision should take account of other factors, such as order type, size, settlement arrangements and timing, together with any other conditions set by the customer. Although setting the price of a specific market as the benchmark simplifies the enforcement of best execution rules it also reduces the incentive for firms to actively seek price improvement for their customers across alternative trading venues. Essentially, this recognizes that best execution may be available on other venues, such as virt-x, E-Crossnet, or POSIT.

While the FSA accepts that the quality of execution that a firm can achieve depends in part on its access to execution venues, the FSA does not believe that there is a case for prescribing mandatory minimum market access arrangements. The FSA also

²³ Details of the SIBE block-trading regime can be found in Davies, Dufour, Scott-Quinn (2003).

recognizes that overall trading costs (explicit and implicit) play a role in determining the net result for the customer.

The competitive environment for the provision of trading services in the UK is exemplified by the development of cross border trading services (e.g. virt-x and the Dutch Trading segment of LSE) and in-house trading and internalisation of order flow by investment banks.

Cross-border trading. For many years, the UK market has dominated European institutional trading. More recently innovative services have been introduced to promote European cross border trading. The virt-x exchange, now fully owned by the Swiss Stock Exchange, operates an electronic limit order book for trading in European blue-chip stocks. Some traders have been attracted by the “virtual” single-settlement system formed by virt-x with Crest, Euroclear and SegalInterSettle (SIS), which allows virt-x to offer close to domestic settlement rates. In May 2004 the LSE launched the Dutch Trading Service, which enables LSE members to trade in the most liquid Dutch securities via the SETS order book. Hence, the LSE has entered in direct competition with Euronext.

Internalisation. When the LSE introduced the electronic order book SETS, it feared that the new trading system would not be able to handle large numbers of small retail orders. Thus, it promoted the internalisation of retail order flow by RSPs. RSPs offer an execution service for small- to medium-size trades aimed primarily, but not exclusively, at the private client broking market. RSPs provide a firm two-sided quote—typically held for 30 to 60 seconds. Some advocates of the RSP model emphasize that the investor’s time “option” to execute at the quote constitutes a service that is not available on a standard electronic limit order book. This service can be priced (in theory) using a variant of the Black-Scholes option pricing formula.

Services offered by RSPs provide both the advantage of immediacy and single executions at prices equal to or better than published SETS prices. They also provide a degree of flexibility over the settlement period to allow private clients still holding certificated stocks to deliver their paper for settlement. For settlement periods longer than five days, RSPs normally charge an additional fee. With the exception of the international market, RSPs do not have any specific status on the LSE. Like other market makers providing quotes for SETS stocks, RSPs are not obligated to quote in all market conditions.

There is a post-trade transparency obligation: each *individual* order that is traded with the RSP is reported to the exchange. Typically, RSPs manage incoming orders as follows: First, they attempt to match the order with other orders that are “simultaneously” received by the RSP (this is very rare). Next, if the RSP is sufficiently large, they may pass the order imbalance onto their parent company’s proprietary trading book. Finally, if the imbalance grows sufficiently large, they will trade against the SETS limit order book.

When SETS was originally introduced, the LSE discouraged retail trades by establishing a size threshold on SETS. But now there is no size limit and all orders with standard settlement conditions can be placed on the central limit order book. Most retail investors, however, are still either unwilling or unable to participate directly on the order book. There appear to be four main reasons why retail investors do not trade directly on SETS:

- 1) Heuristic evidence suggests that RSPs offer retail brokers, and their clients, better prices than SETS for as much as 90% of all trades.²⁴ This is possible, in part, because of a finer price grid on RSPs than on SETS. SETS ticks are only 2 decimal places, in defined increments (e.g. 0.50 pence for stocks valued between 500p and 999p). RSP trades are usually in 3 decimal places and are in non-SETS increments (e.g. a price of, say, 513.117p, or even of 513.10p, is not currently possible on SETS).²⁵
- 2) Historical inertia and preferencing arrangements: brokers always traded directly with dealers (and often do not present all the available execution options to the trader);
- 3) A large proportion of retail traders, often holding paper-based stock certificates, still require non-standard settlement;
- 4) Market orders are more common than limit orders. To some extent, the lack of limit orders may be caused by a lack of knowledge among UK retail investors about the available order types and the fact that all orders are entered as market orders by brokers into the RSP's automatic execution system.

Many of the major RSPs are partially (or fully) owned by a large retail brokerage. Thus, these brokerages have the incentive to send their customer orders to their own RSP. Brokerages that are not directly tied to an RSP are often enticed to give one RSP preferential treatment through "soft money" incentives (e.g. free terminals). Despite these practices, there have been several recent initiatives driven by different categories of market participants (the LSE, investment firms and data vendors) to consolidate quotes from multiple RSPs. As a consequence, many retail brokers have now begun polling more than one RSP for prices (although not necessarily *all* available RSPs). Polling multiple RSPs, promotes competition among market makers and improves the price discovery process – it enhances the degree of pre-trade transparency.

²⁴ For instance, Barclays Stockbrokers, a large retail broker, reports that in January 2005 their "Price Improver" service improved 90% of deals over the SETS price, saving clients £890,000 or £7.17 per deal. This service scans multiple RSPs for the best price.

²⁵ Notably, in December 2004, the LSE was forced to shelve a plan narrow tick sizes for a trial group of stocks, in the face of fierce opposition from brokers (especially RSPs) who feared they would lose some of their lucrative retail business to the central limit order book. Details of the LSE proposal and 'customer' response are available here: <http://www.londonstockexchange.com/en-gb/products/membershiptrading/tradingservices/domtrading.htm>

5 The MiFID

The adoption of the 1993 ISD was a significant early attempt to create a legislative framework for a fully harmonised European market.²⁶ The ISD provides “high level” principles for national securities regulations. The goal is the “mutual recognition” of regulations across the EU. The ISD focuses on equity markets in the first instance. It creates the concept of a single “passport” for investment firms, allowing them to be authorised and supervised by domestic authorities but still provide specified investment services in other EU states. It is modelled after the passport given to banks in the Second Banking Directive.

Soon after the introduction of ISD, it was clear that revisions were needed. Technological innovation has blurred the strict distinction between “regulated markets” and “investment firms”. This process has accelerated with the development of alternative trading systems (ATs) and ECNs. New regulations have to be flexible enough to accommodate and foster future innovations in trading.

In 1998, the Cardiff European Council explicitly recognised the necessity for a revision of the ISD in order to create the infrastructure necessary for a stronger and more integrated European financial market. The Cardiff European Council set two deadlines, the year 2003 for an integrated European security market and the year 2005 for a fully integrated European capital market. The European Commission adopted a “Financial Services Action Plan” (FSAP), in May 1999. The FSAP consists of 42 measures aimed at creating an appropriate legislative apparatus, building sound supervisory structures and consolidating retail and wholesale markets.

Because the implementation of the FSAP measures had been greatly delayed by burdensome bureaucratic processes, the European Council for Economic and Financial Affairs (commonly known as ECOFIN) commissioned Professor Lamfalussy and the ‘Committee of Wise Men’ to assess the situation and make recommendations to speed up the implementation process. Professor Lamfalussy recommended the adoption of a four level approach; the EU legislator should establish high-level principles and leave implementation details to the European Commission, assisted by two newly formed committees – the European Securities Committee (ESC) and the Committee of European Securities Regulators (CESR).

These committees soon began the process of revising the ISD, which later became renamed the MiFID. Herbst (2003) and Knight (2003) examine features of this revision process in the context of the FSAP. Table 1 provides the current timeline of the MiFID approval process. Transposition refers to the process by which each EU member state brings into force the laws, regulations, and administrative processes necessary to comply with the directive.

²⁶ Ferrarini (2002) and Levin (2003) provide a good overview of some of the legal aspects of the original ISD and subsequent European securities markets regulations.

Table 1. Timeline of ISD revision and MiFID approval

November 2000	The commission urges ISD updating
July – October 2001	First round of consultation on ISD revisions
March – May 2002	Second round of consultation on ISD revisions
July 2002	CESR reaches agreement on new European guidelines for the implementation of legislation on ATs within their respective jurisdictions.
September 2002	Private revised draft Directive distributed between national regulators for discussion.
November 2002	Revised draft publicly distributed to European Parliament and to European Council.
June 2003	European Parliament votes on amendments.
July 2003	First reading by European Parliament.
October 2003	Political agreement reached by European Council.
March 2004	European Parliament approves the Directive on Markets in Financial Instruments.
30 April 2004	Entry into force of MiFID.
2004-2005	ESC negotiation about “Level 2” MiFID details, with advice provided by CESR.
2005	FSAP Target Deadline.
30 April 2006	Original deadline for MiFID transposition in the Member States
30 April 2007	New extended deadline for MiFID transposition in the Member States

The new MiFID

The MiFID contains a set of high-level principles that govern the authorization and operation of alternative providers of trading services in financial instruments. The goal is to allow regulated markets to compete for order flow and liquidity with other regulated markets and with trading systems provided by alternative market centres and by investment firms without jeopardising the orderly and efficient operation of the European securities market system, or the interests of issuers and investors.

The MiFID identifies three categories of trading services to which it attributes a decreasing level of regulatory requirements: 1) regulated markets, 2) multilateral trading facilities (MTFs), and 3) systematic internalisers. Regulated markets and MTFs

are defined as “multilateral systems which bring together multiple third-party buying and selling interests in financial instruments in accordance with non-discretionary rules.”²⁷ These systems may have similar trading functionalities and differ only in the fact that regulated markets have to be authorised by the competent authority. Systematic internalisers are defined as investment firms “which, on an organised, frequent and systematic basis, deal on own account by executing client orders outside a regulated market or an MTF.”²⁸

The new regulatory principles of the MiFID apply not only to equity trading but also to trading in many other financial instruments such as fixed-income and derivatives securities. The European legislator recognises that trading in various financial instruments is becoming progressively similar and understands the importance of fostering competition and integration across markets for all financial instruments.

We identify three main themes of the new regulatory structure: investor protection, market access, and transparency.

1) Investor protection

The MiFID is particularly concerned with the protection of investors in potentially fragmented markets. It mandates the adoption by investment firms of adequate procedures for conducting their business as well as procedures for identifying and removing conflicts of interests (Art. 13, 18 and 19). This ensures that investors have adequate information about a firm’s execution practices. The MiFID also includes provisions on best execution, order handling and trade reporting rules (Art. 21, 22 and 25) which ensure that 1) firms act in the best interest of the clients when executing their orders, 2) orders are executed promptly and sequentially, 3) there is no front-running of client’s orders, and 4) trades reports are standardised and sufficiently detailed so that execution performances across different trading systems can be measured and compared.

2) Market Access

Consistent with the previous ISD, the MiFID establishes a EU passport for investment firms. Precisely, investment firms authorised by a member state may provide services in any other member state (Art. 31). Member states have to ensure that investment firms authorised from other member states have access to regulated markets in their territory directly by setting up branches in the host state, by remote membership, or by having remote access (Art. 33). Also, investment firms have the right of access to central counterparty, clearing and settlement systems in other member states (Art. 34).

3) Transparency

²⁷ Art. 4(14) and Art. 4(15), MiFID.

²⁸ Art. 4(7), MiFID.

The MiFID attempts to create a level playing field where alternative market structures and trading systems can compete for trade execution with no detrimental effect on market quality (e.g. liquidity and price discovery). Hence, MiFID includes provisions on pre-trade (Art. 27, 29 and 44) and post-trade (Art. 28, 30 and 45) transparency. Note, however, that although the MiFID applies in general to trading in financial instruments, pre-trade transparency obligations apply only to trading in shares.

Comments and Recommendations

The MiFID has some clear implications. Obviously, the traditionally concentrated European markets, such as in Spain, Italy and France, will be exposed to greater order flow competition. And, the markets in Germany and the UK will need to adapt to allow for greater transparency.

These developments need to be carefully monitored. For instance, greater transparency may lead to increased preferencing and price matching practices, and thereby lead to less limit order submissions and hence *lower* liquidity and *less* price competition. Research on pre-trade transparency and disclosure has produced these *mixed* predictions and findings:

On one hand, increased pre-trade transparency seems to decrease market liquidity because limit order traders are less willing to submit orders in transparent markets. Porter and Weaver (1998) supply empirical evidence from a natural experiment on the Toronto Stock Exchange and Madhavan, Porter and Weaver (2001) provide a theoretical explanation.

On the other hand, greater transparency seems to lead to greater price efficiency. Baruch (2005) employs a stylised model of a specialist's single-price auction to study the welfare implications of making the limit-order book visible prior to market open. His model predicts that with an open order book the price impact of market orders is lower and prices reveal more information. In this model greater transparency leads to greater price efficiency. Boehmer et al. (2004) finds evidence consistent with Baruch's model. They study the effects of the introduction of the NYSE's OpenBook, which allows traders off the NYSE floor to observe, in real-time, depth in the book at each price level for all securities.

Since there is no conclusive evidence on the effects of the new transparency rules, it is important to monitor and assess the effects of the new European transparency regime on market quality in order to implement procedures for timely introduction of any necessary adjustments.

The new order handling rules of MiFID impose strict price and time priority when executing orders within a specific trading venue. However, exchanges should carefully determine tick sizes that are sufficiently large; otherwise, intermediaries would easily gain trading priority by marginally improving the price and hence deter limit order traders from providing liquidity. Secondary priority rules become significant only if tick sizes are sufficiently large (Harris (2002)).

Investors are interested in net prices – that is, prices adjusted for commissions and fees. In order to ensure that adequate, reliable and comparable information is reported on executed trades, so that investors are able to monitor the performance of providers of trading services, it is desirable to require separate specification of trade price from commissions and venues' access fees. With such detailed data, consolidators of quote and trade information can provide fee adjusted comparisons (see the example of Nasdaq's Supermontage which offers traders the choice of ranking quotes with or without commissions). Generally, retail investors can easily monitor commissions but cannot easily assess the execution of their orders. The separate specification of fees and prices promotes fair competition for order flow. As mentioned in Section 2, the existence of preferencing arrangements does not have a detrimental effect on price competition and market quality if there is competition for retail order flow. When intermediaries compete for order flow, they lower commissions to attract retail orders and therefore rebate payments for order flow to their customers.

Furthermore, we believe trade reports, to be most useful, should identify the sign (buy or sell) of the trade. Without this vital information, practitioners and academics have to rely on approximation methods, possibly leading to inaccurate estimates of transaction costs. The sign of the trade corresponds to the position taken by the trade initiator, namely by the trader who demands liquidity. The trade initiator is clearly identifiable in pure dealership markets as the investor. In other markets the liquidity demander usually corresponds to the trade counterparty that submits the last order.

Finally, we believe that a common regulatory structure, greater integration, greater transparency, and the production of accurate, accessible, comparable data will foster much needed in-depth research on European markets.

6 Conclusion

The financial landscape has changed dramatically since the adoption of the original ISD in 1993. Political developments, technological innovations, changes in trading practices and increases in the sophistication of investors have made a revision of the ISD necessary to lay the foundations for a better integrated, more competitive and efficient European financial market.

The main theme in the development of the MiFID has been finding a balance between the occasionally conflicting goals of encouraging market competition and enhancing market quality. Under ISD countries could opt for 'concentration' in their equity market, whereas MiFID removes this option and explicitly allows 'internalisation' subject to best execution obligations and disclosure requirements.

Much of the debate that animated the consultation stage of the ISD revision process originated from a lack of focus on the core issues under discussion. To aid this process, in this paper we have carefully defined terms such as internalisation, fragmentation,

and preferencing. We believe it is important to focus on the internalisation of **retail** trades because these are most susceptible to conflicts of interest between traders and intermediaries.

We then summarized previous empirical and theoretical research about the effect of fragmentation on market quality. This research shows that a careful balance must be struck between the gains in trade technology innovation resulting from competition and the costs of lower price efficiency caused by fragmentation.

Despite much discussion on the issue of internalisation within Europe, there has been little research on its extent in each member state. To fill this void, this paper surveyed the off-exchange execution practices for the five largest European equity markets. We note that while it is well-known that internalisation (or in-house execution of retail trades) occurs frequently in the UK and Germany, it is not often recognized that off-exchange executions commonly occur in virtually all member states. Our research also highlights that markets are becoming increasingly segmented. For example, new investor-to-investor trading systems such as Liquidnet are only available to buy-side institutional investors, Borsa Italiana has an after-hours segment only available to retail investors, and most crossing networks are only accessible to large traders.

Previous research has largely focused on US markets. Unlike European markets, US markets are governed by a common set of regulations, are characterised by better-educated retail investors, and have greater information linkage. Clearly, these differences demand differences in their regulatory frameworks. Nevertheless, lessons can be learned from how US markets have dealt with issues of market fragmentation. We have highlighted some of the successes and potential pitfalls of the US regulatory experience that regulators must strive to avoid (such as overly rigid rules).

Finally, we examine the new EU regulatory environment created by the MiFID. While much still needs to be done, the MiFID has made tremendous strides towards fostering greater competition and allowing internalisation in European financial markets. It ensures investors have: (i) access to alternative execution venues trading the same security; (ii) adequate information about a firm's execution practices and adequate post-trade information to measure execution performance; and (iii) assurances that their orders will be processed sequentially and provided best possible execution. As well, firms must make an order visible and accessible to the market if they cannot immediately execute the order. And, efficient price discovery will be promoted by the required dissemination of trade prices.

While all of these 'level 1' principles are well-intentioned, the real test is whether regulators can successfully implement the 'level 2' details. Regulators must remain *forward-looking*: the current revision process has taken almost a decade to complete. World financial markets continue to evolve in often unpredictable ways – the real danger is that the MiFID will be out-of-date before it is finished. Going forward, much more formal, sponsored research is needed on European financial markets. Positive steps must be taken to reduce the almost prohibitive cost of cross-border trade and thereby truly integrate European financial markets.

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