

**FESE Response to CESR Call for Evidence  
Micro-structural issues of the European equity markets**

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**I. High frequency trading (HFT)**

**1. Please describe trading strategies used by high frequency traders and provide examples of how they are implemented.**

Since not long ago, algo trading was developed by the buy side to reduce transactions costs (e.g. VWAP, TWAP, iceberg orders etc). Strategies are modified continuously to reflect the subtle changes in the market as well as to combat the threat of the strategy being reverse-engineered by competitors. There is a very strong pressure to continuously add features or improvements to a particular algorithm, such as client specific modifications and various performance enhancing changes (regarding e.g. benchmark trading performance, cost reduction for the trading firm or a range of other implementations). Algorithmic trading strategies must be able to adapt and trade intelligently, regardless of market conditions, being flexible enough to withstand a vast array of market scenarios. “Neural networks” and “genetic programming” have been used to create these models.

Generally speaking, strategies employed in the high frequency space are strategies that benefit from the speed of execution that low latency allows. Many different strategies are used in the high frequency space. Three of the basic high frequency trading strategies include:

- **Liquidity provision/electronic market making:** An algorithm is designed to act like a market maker by providing a continuous two sided market. Typically, electronic market makers that submit these passive orders do not have a particular bias as to the direction of the security. Their primary aim is to provide liquidity throughout the trading day. Profits per trade are often very small and are generated from capturing on average some of the spread between bid and ask and from liquidity rebates where they are offered. Losses occur when the algorithm has entered into a position prior to an adverse price move.
- **Arbitrage:** The fundamental trading strategies above require extreme latency requirements. As a function of operating in a low latency environment HFTs are perfectly placed to perform arbitrage, in a fragmented market, when price deviations occur in a security.
- **Statistical arbitrage:** An algorithm that decides to buy or sell, typically aggressively, on anticipation based on statistical correlations between securities either in one market or across different markets/venues. This strategy can be active or passive – taking a short run position about the outlook for the stock. Profits are made from correctly anticipating price changes. Losses occur when there is a deviation from the typical correlation, e.g. from not reading price changes correctly and from paying spread and liquidity fees. The signals to buy or sell may come from the stocks, from other assets (e.g. commodities or futures), or from news announcements.

**2. Please provide evidence on the amount of European trading executed by HF traders (including the source(s) of that information). CESR is particularly interested in statistical material on: a) market share of HFT in orders/trades in Q1/2010 (and, if possible compared to 2008 and 2009), b) average trade size in Q1/2010 (and, if possible compared to 2008 and 2009), c) market participants, d) financial instruments traded (including cash vs. derivatives). If possible, please distinguish between HFT on transparent organised trading platforms and on dark pools of liquidity.**

This is difficult to do as there is no widely accepted definition of high frequency trading. In addition, there is no way to determine what volume was created by what type of strategy.

### **3. What are the key drivers of HFT, and (if any) limitations to the growth of HFT?**

HFT are a subset of algorithmic traders, they use sophisticated systems and algorithms to generate trading profits using their own capital. Speed all along the value-chain (i.e. from data reception, internal processing, trade decision making and order sending) is their competitive edge. Being faster than other traders by investing a lot into IT systems, capacity and dedicated highly specialised staff, they are able to generate trading profits.

HFT is the next evolutionary step of market makers. Since Regulated Markets became increasingly electronic and computer technology improved, HFTs can be considered the new market makers. Traditional market makers will struggle in this new environment and probably will not be able to generate enough profits on marginal tick sizes and too slow to hedge their inventory in adverse market conditions. HFTs have taken over much of this activity and through millions of trades are able to make an average profit per trade. A similar case can be made for statistical arbitrage, which has historically been a typical trader activity. HFTs are able to react faster on certain deviations and are thus also in this area gaining a substantial market share of what can be called statistical arbitrage.

It is almost impossible to point out any specific limitation of HFT growth. There is no inherent contradiction in one type of activity “controlling” more than 50% of the market because an HFT, running multiple programs with different aims, might end up trading with itself and still make a profit on both programs on that trade.

### **4. In your view, what is the impact of high frequency trading on the market, particularly in relation to:**

- **market structure (eg. tick sizes);**
- **liquidity, turnover, bid-offer spreads, market depth;**
- **volatility and price formation;**
- **efficiency and orderliness of the market?**

**Please provide evidence supporting your views on the impact of HFT on the market.**

HFT led to a more accurate, more granular and faster pricing of securities. This in turns leads to higher fungibility of securities on a specific venue and between venues, improving liquidity and leading to higher long term market efficiency and increased transaction flow. HFT has added significantly to the increased volumes in the market and played an important role improving market quality (as defined by increased liquidity and tighter spreads).

### **5. What are the key benefits from HFT? Do these benefits exist for all HFT trading strategies?**

The main benefits of strategies employed in the high frequency space are more accurate, more granular and faster pricing of securities. This in turns leads to higher fungibility of securities on a specific venue and between venues, improving liquidity and leading to higher long term market efficiency and increased transaction flow. HFT has added significantly to the increased volumes in the market and played an important role improving market quality (as defined by increased liquidity and tighter spreads). This improvement in market quality has directly benefited all market participants. In today's highly electronic trading environment, HFT firms play the role of liquidity providers. The HFT community represents the evolution of the old market makers and specialists that used to populate the trading floors of the exchanges – they fulfill the same basic role i.e. that of providing liquidity to the market.

**6. Do you consider that HFT poses a risk to markets (e.g. from an operational or systemic perspective)? In your view, are these risks adequately mitigated?**

We do not have evidence of HFT posing specific risks to market efficiency or that certain strategies would increase risks on the market. The only risk is a computer glitch e.g. programs running wild, sending thousands of orders a second to the market. This will likely reduce overall latency and potentially halt the markets temporarily with negative consequences for price discovery.

**7. Overall, do you consider HFT to be beneficial or detrimental to the markets? Please elaborate.**

HFT represents a further natural step in the evolution of markets that allows more accurate, granular and faster pricing of securities. HFT leads to higher fungibility of securities, on a specific venue and between venues, and it can be seen as improving liquidity, leading to higher long term market efficiency and increasing transaction flow.

**8. How do you see HFT developing in Europe?**

As price pressure continues on the whole value chain in Europe, from venues through clearing and settlement, and as fragmentation continues to increase, it is likely that European and US trading structure will become similar.

**9. Do you consider that additional regulation may be desirable in relation to HF trading/ traders? If so, what kind of regulation would be suitable to address which risks?**

We believe that it would not be necessary at this stage to design specific regulation for HFT as it may hinder the development of liquidity as well as have negative impact on innovation. However, the peculiarity of HFT's trading speed may need to impose additional market surveillance requirements. In addition, a fragmented European trading landscape requires one instance which sets standards (e.g., tick sizes) and provides clear rules and guidelines across several jurisdictions.

## **II. Sponsored Access**

**1. What are the benefits of SA arrangements for trading platforms, sponsoring firms, their clients and the wider market?**

Direct Market Access (DMA) refers to electronic facilities that allow buy side firms to more directly access liquidity for financial securities they may wish to trade. Using DMA, the firms still use the infrastructure of brokers but take over more of the control over the way a trade is executed. In that sense sponsoring firms are service providers to their clients. The service they provide consists of a legal and a technical part, which enables the client to trade at different venues, without owning an actual membership. Usually, the kind of service is relevant for trading houses, which are too small that a full exchange membership is feasible. DMA services are not considered to raise regulatory concerns, as the orders are usually received by a broker, credit checked, risk managed, and passed on to the execution venue (automation of the existing process).

Sponsored Access (SA) is a type of DMA, usually used by some HFTs. For SA, the broker needs to represent and guarantee the order – however the order bypasses the broker's trading infrastructure and is only subject to a strong risk control by the broker. The advantage of SA is speed. To achieve this, the order bypasses the broker and goes directly to the execution venue. In comparison to a DMA offering, SA offers additional latency savings because the sponsoring firm does not do pre-trade risk management

anymore. In some circumstances the pre-trade risk management takes place at the exchange level. However, this is not so relevant for the sponsoring client anymore, because the latency to the exchange gate is reduced. If no pre-trade risk management takes place it is considered naked sponsored access. Both versions of sponsored access should be evaluated separately.

**2. What risks does SA pose for the orderly functioning of organised trading platforms? How could these risks be mitigated?**

Sponsored Access itself (where a participant facilitates access for its clients) does not raise regulatory concerns provided that there is pre-trade risk management, the sponsor retains the responsibility of trades and the sponsored access is given in exactly the same terms and conditions as to any other type of access to market participants. Sponsors and trading platforms will however necessarily face higher likelihood of e.g. wrongly entered trades or potential order flooding since there is no real filter between the client and the trading platform.

Naked sponsored access allows non-exchange-members to enter order into a trading system without being checked by an exchange member. Obviously, this might raise some risks for the orderly functioning of markets. However, if pre-trade risk management is available for a sponsored access, the level of safeguards is similar to DMA. Thus, no additional risks should arise.

**3. What risks does SA pose for sponsoring firms? How should these risks be mitigated?**

See above.

**4. Is there a need for additional regulatory requirements for sponsored access, for example:**

- a. limitations on who can be a sponsoring firm;**
- b. restrictions on clients that can use sponsored access;**
- c. additional market monitoring requirements;**
- d. pre-trade filters and controls on submitted orders.**

With regard to SA, liability for, e.g. damages, manipulative trading practices, errors, etc., must be clearly regulated – that is, who is held liable (the sponsoring firm or the client using SA) and who is empowered to take disciplinary actions and/or sanctions against a non-member of an exchange. Regarding the sponsoring firm, it must be ensured that the firm is able to monitor and equipped to bear the risks associated with offering sponsored access to its clients. As naked sponsored access would allow non-members to place orders with an execution venue without pre-trade risk controls by a trading member, we believe that this should not be possible under MiFID.

**III. Co-location**

**1. What are the benefits of co-location services for organised trading platforms, trading participants and clients/investors?**

In today's trading environments, speed matters more than ever. Market participants demand direct and quick access to exchange services. Co-location is generally available on a non-discretionary basis and it is used by those participants (from both the sell- and the buy-side) that wish to reduce their latency by placing the trading engine of a trading member not only virtually but physically close to the exchange back end. As a result, travel time of data is drastically reduced.

**2. Are there any downsides arising from the provision of co-location services? If yes, please describe them.**

Risks of co-location for market efficiency are not apparent. Regulated Markets provide co-location services on a non-discriminatory basis.

**3. What impact do co-location services have on trading platforms, participants, and the wider market?**

It forces increased IT budgets, upgrading understanding of algorithms and smart order routing. Though these are trends already set in motion even before MiFID, thus they would still be there without co-location. Co-location is therefore another driver of the above mentioned trends.

**4. Does the latency benefit for firms using co-location services create any issues for the fairness and efficiency of markets?**

HFT firms can be seen as main driver for lower latency. The benefits for users when trading in sub milliseconds might indeed be questionable, but regulating the issue would be the second-best solution as compared to a market-driven approach (as is generally supported by MiFID). Regulation is justified in cases of market failure in order to prevent market inefficiencies. As we do not see these cases with HFTs, regulation of HFT activities per se seems not to be necessary at this point.

The competitive edge of HFTs is speed. However, all market participants have the possibility for fast trading on the systems of Regulated Markets and MTFs. Co-location is offered to all market participants on a non-discriminatory basis.

**5. In your view, do co-location services create an issue with the MiFID obligations on trading platforms to provide for fair access?**

According to MiFID, Regulated Markets (RM) and Multilateral Trading Facilities (MTF) are required "to establish and maintain transparent rules, based on objective criteria, governing access to its facilities". With regards to the execution system, both RMs and MTFs "are obliged to have transparent and non-discretionary rules and procedures that provide for fair and orderly trading and establish objective criteria for the efficient execution of orders". This means that RMs and MTFs are not allowed to provide 'unfair advantages' to any market participant, including HFTs. As long as co-location is available to all members and not limited to a certain number, co-location does not create any issues that we can identify.

**IV. Fee Structure**

**1. Please describe the key developments in fee structures used by trading platforms in Europe.**

One key development in fee structures used by trading platforms in Europe is the introduction of incentives for the provision of liquidity. Examples are the maker-taker-schemes of various MTFs. Also, LSE has just recently announced the start of a pilot for a "liquidity provider scheme" and "high volume liquidity taker scheme" (as of 3 May, 2010). Furthermore, another key development is an order-based pricing instead of a trade-based pricing. One example is the change of the NYSE Euronext price model in 2009.

In general, pricing tends to become more differentiated. Blue chips typically receive the most attention, thus fees in general are being reduced for more liquid securities where fragmentation pressure is more intense. It also seems to be a typical trend towards giving larger members scale discounts.

## 2. What are the benefits of any fee structures that you are aware of?

- **Maker-Taker-Schemes:** Credits for liquidity provision cause lower spreads.
- **Order-based fees:** Customers / members benefit from an ex ante-predictability; there is no impact of unexpected partial executions on the transaction fees.
- **Volume rebates:** Large (high frequency) trading firms benefit from lower transaction fees and, thus, from incentives.

## 3. Are there any downsides to current fee structures and the maker/taker fee structure in particular? If yes, please describe them.

- **Maker-Taker-Schemes:** Liquidity takers which benefit from higher spreads do have to pay c.p. higher taker fees in order to finance the credits for liquidity provision. As a consequence, the total impact for liquidity providers and liquidity takers of such maker-taker-schemes should be neutral. In practice, however, "smart order routing" might only incorporate the bid/ask prices and not the (taker) fees and in this case a maker-taker-scheme would hide the total execution costs.
- **Volume rebates:**
  - Volume rebates trigger a different treatment of large and small customers / members. Large members use their market power to put pressure on trading venues / venue operators. In the final consequence, providing better terms to large members results in a concentration of order flow resp. trading activities of the large members, and, thus, further increases their market power. This might lead to less transparency (internal matching in large trading member firms, also via "dark pools") and to a decreasing price quality in the whole market in favor of the large order flow concentrators.
  - From the perspective of a large trading member, a volume rebate leads to increasing fees per order or per value in times of decreasing trading volumes. By this, in such times the respective member is stressed twice – reduced trading volumes and higher transaction fees.

## 4. What are the impacts of current fee structures on trading platforms, participants, their trading strategies and the wider market and its efficiency?

Please refer to Questions #2 and #3 above.

## 5. How important is the fee structure of a trading platform in determining whether to connect or not to it for trading. Please elaborate.

A decision to connect to a trading platform will be based on a business case which comprises many aspects. To our knowledge, the most important aspects are quality and structure of order flow, level of competition of trading firms in the resp. market and complexity of interfaces / processes. Post-trade costs are equally important. Fee structures seem to be less important – as long as they do not exceed a certain (subjective / business case-related) threshold with regards to fee levels, intransparency or complexity.

## 6. Do you consider that the fee structures of trading platforms should be made public to all market participants? Please provide a rationale for your answer.

In case fees / fee structures are uniformly valid for all trading members, fee structures and fees should be made public to all existing and potential market participants. This increases transparency in the European trading. In case fees are – in accordance with competitive laws and regulations – individually

agreed with respective customers, fees / fee structures cannot be made public to all market participants. Otherwise, such agreements would not be possible.

## **7. Is there a role for regulators to play in the fee structures? If yes, please describe it.**

A role for a regulator should arise in case of systematic market inefficiencies. Recent market development with increasing competition (with corresponding fragmentation of liquidity) – based on successfully implemented price transparency (code of conduct) – is demonstrating that there is no market inefficiency caused by fee structures. However, a strong recommendation is to carefully observe and analyse increasing fragmentation and market intransparency (e.g. dark pools) causing higher explicit transaction costs (bid prices, ask prices) for investors.

## **V. Tick Size**

### **1. In your view, what has been the impact of smaller tick sizes for equities in Europe on the bid-ask spreads, liquidity, market depth and volatility of these markets? Are there any spill-over effects on derivatives markets?**

We argue that each instrument has an optimal tick size. If tick sizes are too large, a further narrowing of spreads may be constrained by size of the minimum price tick. If tick sizes are too small (too granular), liquidity suffers as the value of time priority is reduced.

The optimal level is mainly determined by the price level of the instrument and by its unique liquidity. In general, the lower the price and the more liquid a stock is, the lower should be its tick size. During 2009, European trading venues started to harmonize tick size regulations for blue chips in Europe. It was agreed that dynamic tick size tables are used to determine a harmonized and optimal tick size. The fact that the tick size decreased in many instruments due to the harmonization, was not necessarily aimed at. It was rather a side product of finding the most suitable tick size. Any non-optimal tick size (regardless if too large or small) has negative effects on market quality and liquidity. There are maybe spill-over effects from tick size adjustments in the cash market into the derivatives markets. However, our customer feedback did not indicate that this is an issue of major concern. Nevertheless, the potential impact should be monitored carefully, on a continuous basis.

### **2. What are the benefits/downsides of smaller tick size regimes for shares in Europe?**

From the perspective of each trading venue, strong incentives exist to undercut others in terms of tick sizes. This is not in the interest of market efficiency or the users and end investors. Excessively granular tick sizes in securities can have a detrimental effect to market depth (i.e. to liquidity). An excessive granularity of tick sizes could lead to significantly increased costs for the many users of each exchange throughout the value chain and have spillover costs for e.g. the derivatives exchanges' clients.

### **3. Is there a need for greater harmonisation of tick size regimes across Europe? Please elaborate.**

The tick size harmonisation work concluded last year<sup>1</sup> reduced the complexities by implementing standardised tables across the markets. However, during the discussions there was no clear consensus on the most appropriate/beneficial outcome and each market had to deal with the specifics within its own products - therefore, a one size fits all approach to a minimum limit may not be appropriate.

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<sup>1</sup> FESE, AFME, Chi-x, BATS Europe, Nasdaq Europe and Turquoise agreed on 30 June 2009 to adopt the same tick size tables for the domestic markets. See <http://www.fese.eu/en/?inc=cat&id=34>

However, a minimum level may be desirable to ensure the market needs of the diverse trading community, such as market makers, are met.

**4. Is there a role for regulators to play in the standardisation of tick size regimes or should this be left to market forces?**

Market forces already addressed the standardization of the tick size regime in a satisfactory way. However, there will always be incentives for new entering venues to compete in terms of trading parameters – e.g., tick sizes. Therefore it might be sensible to address this topic on a supra-national level by a pan-European authority that introduces standards and clear guidelines.

For certain micro-structural issues such as tick sizes and trading hours, where there is a risk that ruinous competition (race to the bottom) might harm market efficiency and/or offers opportunities for regulatory arbitrage, a pan-European authority should be empowered to set regulation in order to avoid unintended developments of the European markets.

**5. Have organised markets developed an appropriate approach to tick sizes?**

Yes.

**6. Should regulators monitor compliance with the self-regulatory initiative of the MTFs and FESE? If this initiative fails, do you see a need for regulators to intervene?**

See answer to Question #4 above.

**7. What principles should determine optimal tick sizes?**

See answer to Question #1 above.

**VI. Indications of Interest (IOIs)**

**1. Please provide further information on how IOIs are currently used in European markets by investment firms, MTFs and RMs?**

IOIs are frequently used to interconnect dark pools and other trading venues in order to seek liquidity. In general, an IOI is a trading indication that contains information about the price, position and quantity. IOIs indicate available liquidity to external liquidity providers, which can react by submitting orders which are subsequently executed under the provisions of the reference price waiver (i.e., midpoint).

Accordingly, the functionality is as follows: A trading member A sends orders to a dark pool. The dark pool is granted a reference price waiver, because it matches at the midpoint of the main market. Subsequently, another trader B (typically an algorithm, 'Dark Algo Machine') receives exclusive information about that order in the form of IOI. IOIs are essentially, pre-trade order book information. If trader B decides to react to an IOI, it may send an order to the dark pool aiming to fill trader A's order. As the execution venue is a dark pool, the public will not see the order of trader A. Trader B will see it because it has entered exclusive and preferential arrangements with the dark pool operator.

**2. Which are the key benefits/downsides of such IOIs? Please provide evidence to support your views.**

The main concern with IOIs is that they are hidden to the general public, but displayed to a privileged circle of participants. I.e. IOIs create private and opaque pools of liquidity in combination with dark



pools with reference price waivers. Dark Algo Machines receive superior pre-trade order book information that are not made available to the general public, because each trading member has to have a separate IOI interface and the data is not made accessible to third party data providers. In addition, Dark Algo Machines have the opportunity and the economic incentive to manipulate the midpoint at the main market before executing the order at the dark pool. Furthermore, they might also use the information for front-running.

Currently, also the SEC is proposing to ban 'actionable IOIs', as these are considered to "attract immediately executable order flow to the trading venue, and, in this sense, they function quite similarly to displayed quotations. As a result, dark pools that distribute actionable IOIs are no longer completely dark on a pre-trade basis. Rather, they are 'lit' to a select group of market participants and dark with respect to the rest of the public. By privately transmitting valuable order information concerning the best prices for NMS stocks to selected market participants, actionable IOIs create the potential for two-tiered access to information, something that has long been a serious concern of the Commission."<sup>2</sup> It appears that some trading venues in Europe utilize the concept, while avoiding the term "IOI". Usually, the services are publicly described under the cover of, e.g., "inter-linking to other venues and/or external liquidity providers".

**3. Do you consider that MiFID should be amended to clarify that actionable IOIs should be subject to pre-trade transparency requirements?**

A level playing field should be ensured to all participants.

**4. Do you see circumstances where it would be appropriate for IOIs to be provided to a selected group of market participants? Please provide evidence/examples to support your views.**

No because this breaks the principle of equal access to market information between participants and would create a two-tier market.

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<sup>2</sup> Securities and Exchange Commission. Regulation of Non-Public Trading Interest. 17 CFR Part 242 (Release No. 34-60997; File No. S7-27-09). 13. November 2009.