



SPECIAL REPORT SERIES: DEFINING HIGH FREQUENCY TRADING

23 June 2014

This Special Report is the sixth in FIA and FIA Europe's series covering specific areas of the European Securities and Markets Authority's ("ESMA") consultation process for the implementation of the recast Markets in Financial Instruments Directive ("MiFID II") and the new Markets in Financial Instruments Regulation ("MiFIR"). This Special Report provides a brief overview of the key proposals relating to high-frequency trading ("HFT") and algorithmic trading, set out in the recently published Consultation Paper¹ and Discussion Paper.² The papers contain draft technical advice measures and proposed Draft Regulatory Technical Standards ("RTS") and Implementing Technical Standards ("ITS").

BACKGROUND: HFT UNDER MiFID II

HFT and algorithmic trading have been the subject of increased global regulatory attention in recent years. As highlighted in the fourth FIA and FIA Europe Special Report entitled "Market Infrastructure under MiFID II", the regulation of HFT and algorithmic trading has been one of the most contentious areas in the MiFID II policy making process to date.

A central aim of MiFID II in this regard is to develop stronger rules around HFT to ensure that firms carrying on HFT follow a set of best practices and are subject to appropriate controls and oversight. As highlighted in Recital 62 of MiFID II, algorithmic trading and HFT can lend themselves to certain forms of abusive behaviour if misused. ESMA's "HFT guidelines" note that different types of manipulative strategies can be implemented using algorithms (such as spoofing, layering and quote stuffing).

Significantly, MiFID II requires that persons dealing on their own account using a "high-frequency algorithmic trading technique" must be authorised and subject to regulatory supervision, like other investment firms falling within the scope of MiFID II. Once authorised, certain ongoing compliance requirements will apply to investment firms engaging in HFT (for instance, an obligation to store in an approved form, and make available to the firm's regulator on request, accurate and time sequenced records of all the firm's placed orders, including cancellations of orders, executed orders and quotations on trading venues).

¹ ESMA Consultation Paper (ESMA/2014/549).

² ESMA Discussion Paper (ESMA/2014/548).

DEFINITIONS: ALGORITHMIC TRADING AND HFT

The concepts of algorithmic trading and HFT are defined in broad terms under MiFID II. Algorithmic trading is defined as:

trading in financial instruments where a computer algorithm automatically determines individual parameters of orders such as whether to initiate the order, the timing, price or quantity of the order or how to manage the order after its submission, with limited or no human intervention, and does not include any system that is only used for the purpose of routing orders to one or more trading venues or for the processing of orders involving no determination of any trading parameters or for the confirmation of orders or the post-trade processing of executed transactions.³

A “high-frequency algorithmic trading technique” is defined as:

an algorithmic trading technique that is characterised by:

- (a) infrastructure intended to minimise network and other types of latencies, including at least one of the following facilities for algorithmic order entry: co-location, proximity hosting or high-speed direct electronic access;
- (b) system-determination of order initiation, generation, routing or execution without human intervention for individual trades or orders; and
- (c) high message intraday rates which constitute orders, quotes or cancellations.⁴

MiFID II mandates ESMA to consider and clarify the definition of HFT, in order to ensure uniform application of the authorisation requirement to investment firms engaging in HFT.

In its Consultation Paper, ESMA considers two approaches to defining HFT, which are detailed below. ESMA notes that HFT is a subset of algorithmic trading.

HFT DEFINITION: OPTION 1

Under this option, the definition of HFT focuses on those aspects of a firm’s infrastructure that are designed to minimise latency and increase the capacity to transfer data to a trading venue. The following three factors would have to be taken into account:

- i. the distance between a firm’s server and the trading venue’s matching engine: ESMA would presume that a firm’s infrastructure would be designed to reduce latency, if the server on which the order messages are initiated, generated, routed, executed, amended or cancelled is “directly proximate” to the trading venue’s matching engine;
- ii. the connection’s bandwidth: ESMA recognizes that trading venues offer higher bandwidths (i.e. the volume of data capable of being transferred through the connection per second) to HFT firms, and notes that on the basis of information available to it, a bandwidth in the range of 10 gigabits (Gbit) per second would be considered among the fastest currently available. ESMA also notes that it is conscious that a high bandwidth is subject to technological change, and that this factor should therefore be covered in a qualitative manner; and

³ MiFID II, Article 4(1)(39) (emphasis added).

⁴ MiFID II, Article 4(1)(40) (emphasis added).

- iii. trading frequency: ESMA suggests that a trading frequency of 2 messages per second over the entire trading day should be considered to be generated by an algorithm. The message volume would need to be determined on a rolling basis per trading day based on the previous 12-month period. On this basis, ESMA considers that an average volume of 75,000 messages or more per trading day should be considered HFT activity. ESMA also notes that the sum of messages would be calculated for each trading day and the moving average of messages should be calculated on a daily basis using the last 250 trading days. However, days where a particular trader did not send messages would be considered a zero message day, if the respective venue was open for trading on that particular day.

ESMA believes that references to “messages” in the third factor above should be interpreted strictly, i.e. each content that requires independent processing should be considered a message. On this basis, each new order or quote, each successful change to an order or quote and each successful deletion or quote should be counted as messages. For instance, two messages should be counted for an unexecuted “immediate or cancel” order, i.e. the order sent for immediate execution and also the cancellation order as the previous order has not been totally fulfilled.

ESMA considers that the main advantage of Option 1 is that the identification of the above parameters is straightforward. However, disadvantages include the parameters being relatively easy to circumvent, the necessity of reviewing on an ongoing basis the consistency of the parameters with market practice and the parameters potentially excluding certain types of HFT (particularly those benefiting from proximity hosting).

HFT DEFINITION: OPTION 2

In considering this option, ESMA recognizes that an important aspect of HFT strategy is the ability to rapidly cancel and replace orders on trading venues (in order to ensure that the strategy is in-line with market conditions). Trading venues would be required to establish the median daily lifetime of all submitted orders that have been modified or cancelled. Firms with a median daily lifetime of modified/cancelled orders that is below the median daily lifetime of modified/cancelled orders for the entire market would be classified as HFT firms.

In establishing the median daily lifetime of modified/cancelled orders of a particular market, ESMA states that only orders made for liquid instruments (in which HFT is more frequent) should be considered.⁵ ESMA has invited the views of market participants on whether the calculation of the median daily lifetimes of orders submitted by each member/participant of a trading venue should include only those orders relating to liquid instruments, or all orders submitted to the trading venue.

ESMA’s preliminary view is that if a firm (or a trading desk of the firm) is classified as engaging in HFT on one venue, the firm should be considered to be an HFT firm for all trading venues in the European Union.

ESMA considers the main advantage of Option 2 to be that it relates to a calculation that trading venues regularly undertake and, therefore, cannot be easily circumvented. Additionally, this method does not need to be revised frequently to keep pace with technological developments.

⁵ ESMA proposes that only orders regarding instruments considered as liquid under Article 2(1)(17) of MiFIR should be considered for these purposes.

ESMA has requested that market participants provide their preference between the two options (and the reasons behind their selections), the advantages/disadvantages associated with each option and possible ways to reduce the impact of any identified disadvantages.

UPCOMING SPECIAL REPORTS

In the coming days, FIA and FIA Europe will issue special reports on the remaining topics addressed in the two papers:

- 1) **Third Country Access** (treatment of third country firms accessing EU customers)
- 2) **Transaction Reporting of Instruments**
- 3) **Transparency Requirements for Instruments**

For more information about these reports contact Will Acworth at FIA (wacworth@fia.org) or Emma Davey at FIA Europe (edavey@fia-europe.org)

Additional MiFID II/MiFIR documents are available [here](#).

Disclaimer: This report was drafted by the London office of [Covington & Burling LLP](#) on behalf of FIA and FIA Europe. The report is part of a series of reports intended to provide factual summaries of MiFID/MiFIR on certain topics of interest to the members of FIA and FIA Europe. The reports are provided for general informational purposes only. They do not constitute legal or regulatory advice and should not be relied upon for this purpose.

Members of FIA and FIA Europe are allowed to distribute this publication within their own organizations so long as the copyright notice and the disclaimer are not removed. As to all other instances, no part of this publication may be forwarded, redistributed, modified or duplicated in any form or by any means without the prior consent of FIA.

Copyright © 2014. All Rights Reserved.