



OBSERVATOIRE DE L'ÉPARGNE EUROPÉENNE

## Organizing Markets for Investors

### COMPETITION, FRAGMENTATION AND ALGORITHMS

Research on market microstructure became abundant with the introduction of competition between markets resulting from both regulatory changes (MiFID in Europe) and technical changes. The OEE has focused its attention on the consequences of changes to the organization of markets and the overall economic efficiency of markets.

### ISSUES AT STAKE

The impact of High Frequency Trading (HFT) on markets and investors is highly controversial. Specialized intermediaries and investment banks have made massive investments in technology for implementing this practice, inaccessible to other market participants. Market organizers are driven in a technology race to provide quick access to the market. Processing of orders is increasingly rapid and exchanges offer "share" IT resources near central computers, giving users immediate access to them. Some investors are seeking to enter the race through direct market access. Supervisors of markets are, in turn, obliged to invest in sophisticated tools to detect fraudulent operations.

### OEE Partners



**Sophie Moinas**  
(Toulouse School of Economics)



**Thierry Foucault**  
(HEC Paris)

#### Definitions: Algorithmic Trading and High Frequency Trading

**Algorithmic trading** consists of using computer programs for investment and trading strategies. This practice is not new. What is new is High Frequency Trading, which consists of the placing of a continuous and massive flow of orders at a very high frequency by professional market participants trading for their own account.

**High Frequency Trading** reacts extremely rapidly (100-200 microseconds for some operators) to market events, and keeps positions open for only a very brief period of time. Many high frequency traders are market makers or arbitrageurs.

The organization of equity markets has been dramatically transformed in the last fifteen years by a new regulatory framework characterized by the opening up of competition between exchanges and the monumental arrival of automated trading that cohabits with traditional investors on electronic trading systems.

The OEE asked two researchers specializing in market microstructure to highlight the impact of such changes on investors.

**Sophie Moinas**, from Toulouse School of Economics, studied the impact of market fragmentation resulting from competitive trading venues. In principle, an order-driven market centralizing all orders is more liquid than competing trading platforms. Competition between markets can be justified by the presence of several types of investors or services. Competition between trading venues may lower explicit transaction costs (fees paid to companies managing infrastructures) and it may stimulate innovation.

But competition can have a positive impact only if market transparency and best execution rules are efficiently implemented, which was most probably not the case of the first version of MIFID

(Market and Financial Instruments Directive).

**Thierry Foucault**, professor at HEC Paris, presented the results of the few empirical studies that exist on high frequency trading.

A study by Hendershott et al (2011) on shares listed on the New York Stock Exchange shows that High Frequency Trading may have a positive impact on the liquidity of larger quoted shares, but no significant impact on the smaller ones.

Moreover, if implicit costs decreased due to improved liquidity, the impact on the explicit costs of trading (trading fees etc.) will need to be studied in the future. Indeed, algorithmic trading has reduced the average size of transactions and, for a given size of an order from an institutional investor, the number of transactions, and, thus, the costs of execution, are higher.

A study by Hendershott and Riordan (2011) on 120 shares listed on the NASDAQ in the United States shows that the acceleration of "price discovery" due to the presence of high frequency traders is 10 seconds, an acceleration which is probably not very useful for investors.

## Lessons for regulators

Questions about the impact of High Frequency Trading on market integrity have been raised since the "Flash Crash" of 6 May 2010 in the NYSE, during which algorithmic orders caused a collapse of the market in a few seconds. In France, a specific tax on High Frequency Trading was established and in Germany the stock exchange introduced specific billing for high frequency orders and trades.

## Lessons for investors

Investors are no longer equal to proprietary traders.

## OEE Briefing papers

**Sophie Moinas**,  
"The markets in financial instruments directive: A first assessment", 2009

**Thierry Foucault**,  
"Algorithmic Trading Issues, Evidence, and Implications for Investors", 2011

## Relevant Studies

**Terrence Hendershott & Ryan Riordan**, "Algorithmic Trading and Information, working paper", University of Berkley, 2009

**Terrence Hendershott, Charles M. Jones & Albert J. Menkeveld**, "Does Algorithmic Trading Improve Liquidity?", *The Journal of Finance* 66, 1-33, 2011