AUTORITÉ DES MARCHÉS FINANCIERS

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The AMF's Scientific Advisory Board dedicated a session to market microstructure on Jan 18th 2019

Selma Boussetta (Bordeaux University, winner of the 2018 AMF Young researcher award) presented her ongoing research on the role of pre-opening mechanisms in fragmented markets – a joint study with Laurence Lescourret (ESSEC) and Sophie Moinas (TSE). Moreover, Charles-Albert Lehalle (Capital Fund Management and Imperial College) presented a summary of his recent works on transaction costs and their impact on investors.

The role of pre-opening mechanisms in fragmented markets

Selma Boussetta reminded the audience that continuous trading sessions on Euronext follow a pre-opening phase during which market agents enter their buy and sell orders without them being executed (hence they accumulate in the order book). An equilibrium price (opening auction price) is computed as the price maximizing the trading volume given the order book. Continuous trading starts after this call-auction phase. The mechanism aims at reducing information asymmetries between market agents by signaling the trends observed since the close of the previous day, and therefore updating the opening price. The share of the opening phase in the total amount of transactions in the day fell on Euronext from 10% at the beginning of the 1990s down to less than 2% in 2013, which raised doubts over the usefulness of this mechanism which its direct competitors do not implement.

The authors used a database covering the period from May 2012 to December 2013, and the universe of French stocks included in the SBF 120. The data records the transactions taking place during the continuous trading session, as well as regular snapshots of the order book (every 15 minutes, including during the pre-opening phase). It also comprises information on the “messages” sent to the trading venues (new orders, cancellations, modifications of existing orders, including during the pre-opening phase). Market participants are classified according to their nature (HFT, non-HFT, mixed) and to the kind of account they use (market-making, own account trading, trading on behalf of a client).

In spite of the decrease in the share of the initial call-auction as part of the total daily trading volume, the authors document that the orders posted during the pre-opening phase definitely bear a useful informational content, and still contribute to the price discovery process (although to a lesser extent than in the past): the theoretical prices obtained by confronting supply and demand during this phase are indeed correlated to the price observed at the close that very day. What’s more, they note that non-HFT traders are particularly active during the first half hour of the pre-opening phase, and that 50% of the orders posted during this period are executed during the day. It could thus be possible that non-HFT agents try and use this slot to gain execution priority over HFT traders. Additionally, the different categories of market agents do not stand out as contributing in the same way to the price discovery process: an increased activity of mixed proprietary traders (HFT and traditional brokers) during the pre-opening phase is associated with a better price discovery. Moreover, non-HFT agents and HFT liquidity providers (LPs) mostly contribute to price discovery for CAC 40 constituent stocks, while non-HFT liquidity providers have a significant contribution for smaller caps. Eventually, an accidental glitch on Euronext (inducing a one-hour-delay for the start of the continuous quotation) constituted a natural experiment which enabled the authors to analyze the impact on the two then rival venues, Bats and ChiX, revealing the usefulness of the pre-opening phase not only for Euronext but also for its competitors.

After having expressed their congratulations to Selma Boussetta for both the quality of her work and for having received the AMF Young researcher award, the Scientific Advisory Board members insisted on the relevance of this research to the market regulator and discussed the reasons for the decrease in trading volume at the opening call-auction as well as for the relative importance of the various agent categories on the opening price discovery. They deemed it useful to replicate the analysis with increased frequency data (with a time interval smaller than the current 15 minutes), and to consider the directionality of the flows, which could help better characterize the agents’ behaviors.

Measuring transaction costs and their impact on investors

Summarily, transaction costs emerge on the one hand from liquidity (spread bid-ask) and on the other hand from the price impact generated by large size orders.

In a 2015 study dedicated to estimating transaction costs for large size orders on the European stock markets since 2010 and assessing their impact on the market, Charles-Albert Lehalle shows that these costs depend on multiple factors including the nature of the stock, the investor's objective and the market environment. He also analyses the market impact both in the short run (transitory impact) and in the long run (permanent impact) pointing out notably that the price impact of large size orders disappears in ten days or so.

On the bond markets (using US data), characterized by limited secondary activity, he once again observes two phases: a very large transitory effect and a smaller permanent effect. Yet he identifies a number of features specific to the bond market. On the one hand the market impact is stronger for buy orders than for sell orders, which can be attributed to the « hold-to-maturity » behavior of institutional investors. On the other hand, the bid-ask spread is tighter for large orders than for smaller orders, which stems from the trading characteristics (better conditions for larger quantities).

These analyses are very much used in asset management, both ex-ante and ex-post (to check consistency and, if need be, adapt transaction costs optimization models) with a possible incidence on asset allocation decisions. No matter the type of agent considered (asset managers, brokers …) these analyses are part of the trade optimization process (frequency of orders, size of a trade for a given frequency). The result of the optimization will of course vary across agents depending on their own constraints. This matter is increasingly the focus of a growing academic literature and models are also implemented by trading algorithm designers.

The Scientific Advisory Board members stressed the usefulness of such a detailed analysis of transaction costs for both investors and market regulators. This research builds on a combination of advanced mathematical modeling and empirical work on intra-day data. It aims at improving order execution algorithms. They highlighted that with MiFID2, the issue of transaction costs had become crucial, notably for the transparency obligation of asset managers towards their clients (on top of the questions related to best execution and research financing). The possibility of transaction cost metrics manipulation was raised?

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- The role of pre-opening mechanisms in fragmented markets - Presentation S. Boussetta
- The role of pre-opening mechanisms in fragmented markets - S. Boussetta - Discussion C. Gresse
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