



Alternative Trading Systems and Market Fragmentation

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Korea is pushing the introduction of alternative trading systems (ATS), although detailed measures have not yet been drafted. The introduction of ATS may end the Korea Exchange's long-standing monopoly on equities trading and bring big changes to related industries.

Low cost, efficient alternative trading venues with diverse services have grown rapidly in North America and Europe since 2007. Currently, ATS account for approximately 30 to 40 percent of equities trading volume in those regions. Asia is no exception. ATS, albeit in their early stage, have already been operating in Japan, Hong Kong, Singapore, and Australia. Chi-X Japan reported monthly trading volume of 515 billion Japanese yen just one year after it began trading operations in July 2010, taking up 2.41 percent of equities trading volume in Japan. As such, Chi-X Japan has successfully positioned itself as the leading alternative trading venue in Japan.

The introduction of ATS will allow investors to choose their market. In other words, they will be able to trade securities on venues other than the incumbent exchange. This raises concerns. Some worry that the introduction of these systems will cause market fragmentation and eventually degrade market quality. They argue that market quality cannot be higher in a fragmented market than a concentrated market.

Their argument is consistent with the exchange industry's traditional theory that exchanges eventually become monopolies. According to the view, an exchange is a natural monopoly for two reasons. First, a natural monopoly occurs due to economies of scale. Costs incurred in the operation of an exchange are mostly fixed. Thus, liquidity gives the exchange a competitive advantage, and cost per transaction declines as the number of transactions increases. Low commissions and fees are the main drivers of market participants' preference for a large stock exchange that offers abundant liquidity. The second reason involves network externalities. When

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liquidity is more abundant, explicit costs, in the form of commissions and fees, and implicit costs, such as spread, decrease. Moreover, ample liquidity makes it easy for traders to find counterparties and increases the probability of successfully executing transactions. Accordingly, liquidity attracts liquidity, creating a virtuous cycle. Such network externalities enable a highly liquid exchange to maintain its competitive advantages. Because of these two factors, exchanges become monopolies. This traditional view explains the numerous mergers and acquisitions in the exchange industry from the 1990s to 2000s. The US and the EU once had concentration rules¹⁾ requiring securities listed on a certain exchange to be traded in that exchange in order to prohibit exchange monopolies and ensure the status of individual exchanges.

So, what explains the current structure of the exchange industry in North America and Europe where established exchanges and various ATS coexist, and where market fragmentation has set in over time? Does this situation deviate from the economic optimum according to the traditional view?

The answer to these questions boils down to the weakening importance of the natural monopoly rationale. First, advances in IT technology significantly reduced market entry and operation costs. Almost all markets use cost-effective electronic trading systems. Even traditional exchanges adopted electronic trading systems to save costs. There are dozens of ATS operating in North America and Europe, and most of them are run by only a handful of staff members. This suggests that entry barriers have been lowered considerably. Technological changes greatly weakened the importance of liquidity and market size in terms of costs. Second, the importance of network externalities decreased substantially. The virtuous cycle of liquidity can become solidified only if leaving a highly liquid market incurs high cost. It may have been true in the past, but now investors can compare and choose multiple markets at any time because of changes in the regulatory environment, under Reg NMS (Regulation National Market System) in the US and MiFID (Markets in Financial Instruments Directive) in the EU, as well as technological development. Reg NMS and MiFID ensure best execution for investors even in a fragmented market structure, and advanced order routing technology allows them to efficiently choose their market. ATS secure liquidity by offering differentiated market structures based on investors' service needs, sophisticated trading schemes and different fee structures for liquidity suppliers

1) Although the US and EU regulations are different when it comes to details, they have similar rules requiring equities listed on a certain exchange that will be traded in that exchange.



and demanders, and attracting high frequency traders with market making strategies. To avoid the high cost of trading, market participants go to markets with lower transaction costs instead of gathering together in one market. This has become the norm, which is to say, the situation has changed. Trading service's efficiency and innovation attract liquidity. That is the key to the success of Chi-X Europe, which gained the largest share of the European markets in just four years after its inception. Also, such change drove established exchanges to actively improve their systems and trading services.

In a nutshell, market monopoly or consolidation offer less benefits than before. On the other hand, the harmful effects of market fragmentation are reduced. Therefore, the fragmented market structure can be sustained. Physical market fragmentation increased competition and produced more innovations. However, markets have been virtually consolidated by regulatory frameworks and sophisticated technology, minimizing the negative impacts of liquidity fragmentation.

In recent studies on the effects of market fragmentation in the US, it was reported that market fragmentation cut transaction costs, increased execution speeds, and improved price efficiency. Furthermore, market fragmentation has a bigger impact on illiquid stocks.²⁾ Similar impacts are found in ETF and options markets. In addition, it is evident that fragmentation (and virtual consolidation) has positive effects on the European markets.³⁾ It is notable that 90% of the transactions executed on Chi-X Japan offered lower spreads than those on the Tokyo Stock Exchange. In the meantime, about 60 percent of transactions executed on Chi-X Europe in its early stage offered lower spreads than those on established exchanges. Compared to Chi-X Europe, Chi-X Japan has large implications in terms of trading cost reduction.

When it comes to formulating concrete measures to introduce ATS, it is important to build frameworks, e.g., the best execution principle or establishment of connectivity between markets, for virtual consolidation and a level playing field to minimize market fragmentation's negative impacts. In addition, it is also important to provide flexibility to ensure that ATS bring about market structure innovation, thereby adding new liquidity to the market. And above all things, it is necessary to have broad discussions about issues including: a) efficient market

2) See "Is market fragmentation harming market quality?", O'hara and Ye, 2009.

3) See "Effects of the competition between multiple trading platforms on market liquidity: evidence from the MiFID experience", Gresse, 2011, and "Do multilateral trading facilities contribute to market quality?", Riordan, Storckenmaier, and Wagener, 2011.



regulation under wider connectivity among multiple markets, product diversification, and accelerating speed of trading; b) fair access to market and market stability amid an increase in high frequency trading, and c) levels of transparency across different markets.

The introduction of ATS to Korea is only the first step. The ultimate goal of adopting ATS is to enhance the capital market's efficiency by reducing trading costs and providing various trading services. Given that, detailed measures for the introduction of alternative trading venues should be developed with market participants' proactive participation. This will eventually help strengthen the financial investment industry's capabilities and boost technological innovations in the financial sector.