Market participation, liquidity and price formation in exchanges

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Literature is full of evidence that when liquidity is low in a stock exchange, prices tend to be more inefficient, and traders' impact on prices increases. There is also evidence that trading participant types contribute heterogeneously to price formation, in most cases, with retail and foreign investors being better informed, while domestic institutional investors contributing marginally less to price discovery.

This pattern holds for different liquidity levels, and that lower liquidity is associated with lower price efficiency and higher price impact of trades for all trading participant types. This is a normal phenomenon but key to developing markets and is key in informing the enhanced growth and development pursuance.

As it were, stock markets have two main functions; the first is to provide platform for liquidity creation (and enhancement); the second is to ensure that prices incorporate new, relevant information (in the process of price discovery) and enterprises are as close as possible to the fundamental value of (listed and traded) securities. While the concepts of liquidity, price discovery and price efficiency are distinct, they are in fact closely related: not only has liquidity been found to lead to both better price discovery (Riordan and Storkenmaier, 2012; Frijns et al., 2018) and enhanced price efficiency (Chordia et al., 2008a; Chung and Hrazdil, 2010), but literature also suggests that prices are better reflective when they are more ready to incorporate new information.

It is well-established that different types of market participants (i.e. retail investors, domestic institutions, foreign institutions) contribute differently to trading activity depending on a jurisdiction's historical, cultural and institutional factors (WFE and Oliver Wyman, 2016), i.e. trading participants contribute heterogeneously to liquidity.

Even more importantly, the literature agrees that different types of trading participants possess different levels of information (Chan et al., 2007; Froot and Seasholes, 2001; Gonçalves and Eid, 2017; Grinblatt and Keloharju, 2000; Xu and Wan, 2015) and abilities to interpret market movements (Dvořák, 2005), and therefore contribute heterogeneously to price formation. Thus, the question is: does the contribution of different trading participants to price formation also vary depending on liquidity?

To respond to such a question, a recent study by World Federation of Exchanges (WFE) used the proprietary time-stamped limit order book and trades data from the Stock Exchange of Thailand (SET). SET's choice in addition to other factors, such as specific information on trading participant categories (i.e. retail, domestic institutions and foreign institutions), liquidity - which for the case of SET is spread across stocks of all sizes, and efficient price discovery; but primarily SET is characterised by high levels of transparency, with over 95 percent of the trade passing through the limit order book, few bilateral (block/pre-arranged) deals, and no designated market makers.

In addition, the Thai market has no fragmentation, a relevant feature as fragmented pools of liquidity are a confounding factor in the estimation of both liquidity and price discovery. These factors are aligned across frontier and emerging markets.

According to the study, trade between different investors' categories are characterised by heterogeneous information contents, supporting the assertion that the interaction between market participation, price formation and liquidity defines the speed to which the growth and development of a stock market is determined. At SET, for example, there is evident that the most informative trades are between retail investors (R-to-R), between foreign institutions (F-to-F), and between retail investors and foreign institutions (R-to-F).

There is further evidence that the contribution to price discovery of F-to-F trade is more pronounced for lower levels of liquidity. Trade between domestic institutions (D-to-D) and between retail investors and domestic institutions (R-to-D) is instead the least informative.

According to the study, it is evident that higher illiquidity is associated with larger price impacts for all trading participants. This evidence suggests that retail and foreign

investors contribute proportionally more to price discovery than domestic institutions, which are to larger extent likely to be the buy-and-hold institutions – a similar experience to our market. The evidence that both retail and foreign investors positively contribute to price discovery adds to more value to our own experiences, understanding and lessons to be drawn for our better future.

As it is with SET, it applies also for us that domestic institutions (i.e. pension funds, insurance companies, etc) play a marginal role in the price discovery process. This pattern is consistent across all liquidity levels, though the price impact of trades increases monotonically with illiquidity for all participants' types.

From a theoretical perspective, it is unclear who should possess better information between domestic and foreign investors, as on one hand international investors have to face cultural and language barriers that put domestic investors at an informational advantage, though on the other hand foreign investors are typically more experienced traders/investors than domestic ones. Therefore, determining whether information is largely held by domestic or foreign participants is an empirical question.

Under normal circumstances it is expected that domestic investors should have an overall information advantage, even though there are many cases where some foreign institutions are better informed and performers probably due to their superior experience in multiple jurisdictions.

It is further clear that brokerage firms, who also conduct research and advisory services, have a role in providing better information, as clients of global brokers have higher long-run profits than clients of either local or regional brokerages. In our case however, the role of brokerage firms on research and investment recommendation leaves more to be desired.

Based on the above we conclude that price discovery can largely be attributed to retail investors and to foreign investors in the mid-low liquidity segments. That, trades by domestic institutions are impactful only when foreign institutions take the other side of the trade, consistently with domestic institutions being large buy-and-hold players whose trades are not motivated by speculative reasons.

Under such circumstances, it can be argued that for progressive development of the market we collectively need to create structures, products, infrastructure and institutions that will enable more retail participation, this is ideal for liquidity enhancement, better price discovery and valuations as well as wealth enhancement which is one of the key functions of a stock market.

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