

EURO STOXX® 50 tick size reduction: improving price discovery and the implicit spread

As markets evolve, so too must their constituent parts and tick sizes are no exception. Setting the right tick size in any contract is a balancing act between enabling liquidity at each price point and risking creating artificially wide spreads in which the bid and the ask cannot be narrowed. Set the tick size to large and end users will face artificially high execution costs, set it too low and liquidity at each price point will dissipate.

On June 21, Eurex reduced the tick size in its flagship EURO STOXX® 50 (FESX) futures contract. This followed a similar move in the EURO STOXX® Banks (FESB) contract in December. The decision to reduce the tick size followed an extensive consultation with end users, says Megan Morgan, global head of equity and index sales at Eurex.

“As an exchange, our responsibility is to provide deep pools of liquidity and transparent price discovery. On one side, the wider the tick, the deeper the size of the BBO to provide stable pricing that is executable in one trade. On the other hand, the wider the tick the more costly and less precise the execution becomes for end users,” she says.

Eurex consulted around 100 buy-side customers globally and the majority agreed that the tick size on the EURO STOXX® Futures tick was too wide and that there was a positive economic trade-off between liquidity on the touch and the ability to execute more precisely and reduce overall transaction costs.

Statistical support

Tick size reductions for futures contracts are generally considered by an exchange when a contract becomes “tick-constrained”, meaning that its usual bid/ask spread rests at the limits of its minimum price increment, or tick size.

A 2019 report by trading house XTX Markets found that many major contracts are tick-constrained more than 99% of the time and that the EURO STOXX® 50 was the outlier in terms of being tick-constrained 99.9% of the time, which reduces to 99.7% of the time when the market is closed.

The EURO STOXX® 50 was, therefore the prime candidate for a tick size reduction. Evidence from previous reductions pointed to positive benefits for the market. A study by the Federal Reserve Bank of New York analysing the impact of tick size reductions in U.S. Treasury futures markets found that the big-ask spread narrows significantly even for larger trades when the tick size is reduced and that there was also an increase in trading activity in the contracts.

In addition, while the study found that market depth was lower at the inside tier and decreased across the whole book, the cumulative depth at the previous tick size is comparable or higher than the pre-change inside depth. The study also found that the smaller tick enabled prices to move more frequently and incorporate smaller information changes, which it said improves price efficiency.

Research and technology provider Quantitative Brokers (QB), a Deutsche Boerse Group company following the 2020 acquisition of the technology and research provider, conducted a study to measure the impact of the tick size reduction on the EURO STOXX® Banks Future (FESB) and to therefore predict the impact on the main EURO STOXX® 50 (FESX).

The study found that the reduction in tick size of the FESB decreased its quote size, trade size and variance while increasing the liquidity of FESB outright. Based on the analysis of the FESB, QB predicts that for the FESX, the top-of-the-book quote size will diminish by around 75% and the trade size will reduce by 50% as a result of the tick size reduction.

The study also employed an analysis of the “implicit spread”, a metric used to quantify the tick sizes and define the optimal tick size of large tick assets - contracts that are almost always tick-constrained.

QB found that the current implicit spread of the FESX future is around 0.2 of its minimum price increment. The implicit spread after the tick size reduction is forecast to increase to around 0.4. “The tick size reduction is in the right direction,” the report concludes.

“The purpose of a tick size is to allow traders to find the price efficiently and the tick size becomes more optimal as the implicit spread approaches 1,” says Shankar Narayanan, head of research at QB. “Our research shows how the reduction of the tick size improved the implicit spread by a square root of 2, which we expect to be similar for FESX.”

Addressing the concerns

Any changes to tick sizes do not come without concerns from some corners of the market. Most notably when it comes to tick sizes reductions, some market makers are negatively impacted by the fact that they are making less money by crossing a smaller bid/ask spread should spreads narrow following the tick size reduction.

However, Eurex’s Morgan says that the tick size reduction should create opportunities for more proprietary trading firms that it negatively impacts: “The biggest impact for market makers is that a constrained tick size puts emphasis on speed for market making strategies. However, going forward market makers will be able to compete on price rather than speed.”

There is a supporting conclusion to this argument in QB’s study, which finds that the decrease in tick size can be beneficial to proprietary trading firms that might be more willing to cross the bid-ask spread after the tick size reduction than before.

Ultimately reductions in tick sizes for tick constrained contracts creates a more efficient market in which prices can move more precisely in response to new information. This reduces execution costs for the buy-side and allows market makers to price more keenly against their peers.