

# Can you hide in the dark?

Darren Toulson, head of research, LiquidMetrix explains why MTF dark pools are playing an increasing role in European algorithmic execution strategies.

In recent years the job of effectively executing large orders and minimising impact costs has become ever more complex. Lit markets have fragmented, trade sizes decreased and a perception has grown that market impacts are being exacerbated by the strategies of heavily 'quant' HFT participants.

In an ideal world, from the buy-side's point of view, their larger orders would be matched with other buy-sides in natural crosses via an agency matching mechanism. This minimises information leakage and so decreases the possibility of being 'gamed' by other market participants. In reality, creating venues that can achieve this type of match 'immediately' has proven difficult, and is usually arrived at through a negotiation process. So if a natural block match can't be found quickly, larger

buy-side orders are usually sliced, scheduled and then fed in chunks to smart order routers that will hunt for liquidity while attempting to mask the true size of the order.

Until very recently, the algorithms used to optimise trading schedules were based on the assumption that the sliced orders would be sent aggressively to lit markets and would impact the market price in a predictable way. Picking the best trading schedule becomes a job of balancing the market impact of trading too fast in lit markets versus the market risk of waiting too long.

One of the side effects of MiFID, apart from lit market fragmentation, has been the formation of a number of new 'MTF' mid-point matching dark pools. These MTF pools are open to both larger resting orders and smaller aggressive 'IOC'

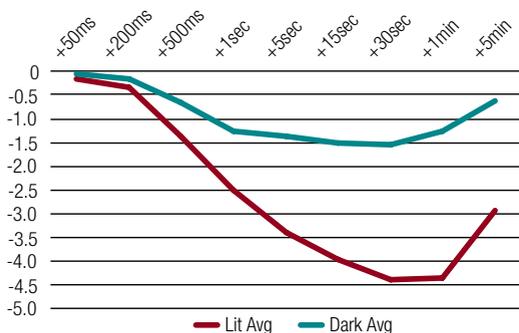


Figure 1: Adverse price movement in BPS (resting orders)

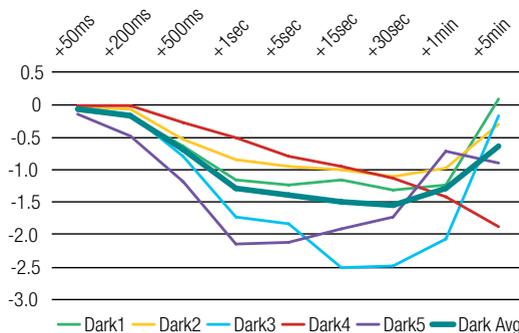


Figure 2: Adverse Price Movement for different dark pools

**“MTF dark pools appear to offer an opportunity to trade with less market impact (or rest passively with less adverse selection) than lit venues. For this reason, they should be part of any optimal execution strategy seeking to lower impact cost. “**



(immediate or cancel order) flow and are therefore a potential additional source of liquidity.

How might the presence of these MTF dark pools affect the choice of optimal execution strategy? In theory, due to the mid-point matching nature of the dark pools and the fact they are pre-trade opaque, orders sent to – and trades executed in – dark pools should cause less (or even no) market impact compared to orders sent to lit venues. So, any part of a trading schedule that can be executed on a dark rather than lit venue would seem to be ‘cost free’ in the sense that the volume traded in the dark won’t contribute to market impact. Some researchers [e.g. Schöneborn, Kratz] have recently updated the ‘standard’ pre-trade cost / scheduling models to include the possibility of executing on dark pools.

However, this is all based on the assumption that trading on a dark pool really does have less market impact than trading on lit. It seems intuitive, but is it actually true? And are all dark pools the same?

We present a result here that tries to broadly answer that question based on analysing price movements following executions of a similar size on lit and dark venues where we know the side of the aggressor.

Figure 1 shows the adverse price movement against resting orders (measured using EBBO mid-

price moves) following an execution on different lit and dark venues. Price impact for the aggressor is the inverse, of course.

Looking at the results it’s clear that EBBO price movements in the direction of the aggressor following a trade on dark venue are considerably smaller than on lit. There is evidence of mean reversion in both types of venues, though reversion for the dark trades is greater leaving a much smaller lasting price impact. The impact characteristics of different dark pools varies considerably (see Figure 2).

MTF dark pools appear to offer an opportunity to trade with less market impact (or rest passively with less adverse selection) than lit venues. For this reason, they should be part of any optimal execution strategy seeking to lower impact cost. However, impact in dark pools is not zero and different pools appear to offer quite different behaviours. As always, it’s vital that any use of these pools is based on an analysis of what actually happens when trades are sent to them as opposed to what theoretically should be the case. Also, of course, executions on a dark pool aren’t guaranteed so any modelling of their use must take into account the probability of execution.

So whilst you can’t hide completely in the dark you can at least lower your profile. ■