Smart Order Routing Logic

Are all SORs created equal?

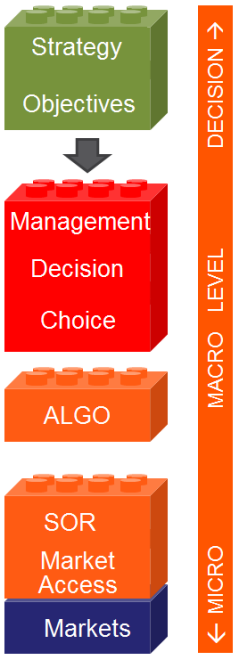
How SORs hunt dark liquidity

Introduction

As the market matures – forced by regulations in the search for standard, fairness and efficiency - it becomes clear that there are a lot of room for improvement at several levels in the execution chain. Any manual interception of the order is questioned. The context for this article is SOR logic and especially the use of dark pools when executing larger institutional block trades. To be able to discuss this subject, we first provide a definition of the terms execution and dark.

Execution

There are three levels, where the decision to buy/sell is the highest and the markets are the lowest:



Decision (Portfolio/Fund - manager)
The strategic decision to move in to or out of a position. Leads to instructions to the macro level – what to buy/sell, how much, etc.

Macro Level (Trader, Algorithm)
The large order is divided into smaller, more manageable parts using for example a certain algorithm reflecting the desired strategy. Each smaller part is then transmitted to the micro level of execution.

Micro Level (SOR, Market access)
The micro level involves how to execute the individual slice of the larger order in the best possible way on all available markets

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Dark (Dark MTF)

Dark pools are “matching engines” that don’t display any pre-trade information of resting orders for anyone and are regulated under MiFID with equal access and rules for everyone. To have a fair price discovery they are matching on the primary exchanges’ mid /bid or ask price. Execution is transparent and easy to benchmark.

Gray pools (OTF or Internal Crossing)

Investors are most likely willing to pay a premium price to complete the order at once with no risk in time or price impact. Some dark pools matches on order price and volume limits only and not on a reference price such as primary mid/bid/ask. These are however not transparent, and harder to benchmark – and you basically need to trust the provider not make money on both commission and spreads. These pools are often referred to as a “gray pool” and may get into problem as regulators show increasing interest in regulating these venues. Fair, equal, and predictable behavior is on top of the agenda today – pushing for more automation and standardization.

How SORs hunt dark liquidity

Dark is used different at micro compared to macro level and it is important to optimize both levels. It is however a common mistake to focus only one a part of the full chain as we will describe later on.

The use of dark pools at Macro Level (Algorithm)

Executing a large block order typically involves dividing it into smaller parts (slices) that are executed over a period of time, for instance by using an algorithm. Only a small portion of the total order (one slice) is active in the lit market - the bulk of the order is “resting” in the algorithm. Here is where dark in its first form enters the scene. On the Macro level, dark is a replacement for what the broker did historically - trying to find a match for the order by using the knowledge of his/her customer base to find a customer with the opposite interest – without causing leakage of interest that pushes the price. The hunt for efficiencies, the trend for standard, effectiveness, transparent and equal treatment of customers (regulations) have led to an automation of this process into the use of electronically operated dark pools. The part of the order that is not in the lit market is typically allowed to sweep a number of these dark pools, carefully selected to avoid unwanted information leakage and with anti-gaming strategies.

The use of dark pools at Micro Level (SOR)

When the algorithm at macro level is executing ‘slices’, considerable smaller than the big chunk at macro level – it may decide to send an aggressive order to the SOR. Here another type of dark is used –the one who tries to save half a spread in a peg-mid dark pool before hitting lit. The spread in Europe is somewhere between 5 and 20 bps, so this equals savings from 2.5 to 10 bps compared to losing the entire spread by being aggressive. We can use mid-price to save spread, but *bid/ask* is also interesting, since there may be a more volume

available at offer price in dark than lit – therefore enabling us to beat *Weighted EBBO* (European best bid and offer when volume is taken into account).

Are all SOR created equal?

As expected they are all different and there are a number of causes:

The creator /owner

Some are created by the buy side for their own usage but more commonly a SOR is provided by the sell side for its customers, internal prop flow or a combination. A SOR could also be provided by an agency broker serving many sell and buy side customer with different needs. There are also technology providers that sell standard products or customization. Depending on the provider, the SOR will have different objectives and functionality.

The SOR maturity

An early-generation SOR will be more blunt and static. Following version will be more dynamic and comprehensive cleverly combining lit and dark volumes as well as preventing gaming attempts. This development never ends, not even with advanced mathematical chaos theories predicting cause and effect.

Degree of specialization

Is execution the key thing that the SOR provider focuses on, or is it just an enabler of another business? At a specialized firm - even top management will be involved in the design and quality and frequently monitor SOR benchmarks.

Scale

More flow and more types of flows will speed up the learning curve for the SOR provider. It will also provide a larger set of data to analyze and optimize to further develop the SOR.

Vertical integration

Does the SOR provider control reference data, gateways to market, market data, network and the full chain up to the SOR level, or do they only focus on the development of the SOR? This is critical to the provider's control and understanding of the whole process.

Business/price model

The result and focus of management, and the entire organization will be widely different if the SOR provider makes money on consulting hours, basis point commission on flow they get for providing research, or ideally if they are paid for the actual benchmarked performance of their execution. Depending on model, focus may gear to lower internal cost, internalizing flow (make money on scale in volumes and possible making money on spreads), or hopefully a transparent good execution well benchmarked. Commission model may create a principal versus agency problem where customer wants best execution at cheapest cost and the provider has to lower cost to get a decent margin. Since cost is easy to measure and quality

is hard, a cost focus is common compromising execution quality. Fully transparent is to pass the actual cost to customer plus a totally visible margin, a plus.

What Benchmark

Selected benchmark has same dramatic impact as business model; at micro level focus is around EBBO, improvement, and Spread Capture. At Macro level Implementation Shortfall, VWAP, and market impact. One extremely important aspect is on what criteria to include or exclude venues in different benchmarks.

Summary

We have explained that all SORs are certainly not created equal and the underlying factors to the differences. It is essential to know who you are trading with, and their intensions with their execution. The important thing is to make a well-informed decision with the least amount of tradeoffs possible. When it comes to dark pools, they are rapidly increasing in numbers as institutions are fighting to keep internalizing flow in the new regulated environment. At the same time, huge orders have a harder and harder time in finding each other. Peg mid/bid/ask is an easy well working mechanism; but opportunity to trade is missed since big investors are likely willing to pay a premium price if more volume can be done at once. No one has however managed to implement this with trust, transparency and efficiency. As pure agency brokers, we are waiting for “the pure and transparent agency large in scale order matching” – that would bring down the cost for execution to a fraction of today.

At Neonet, we strive to deliver a truly transparent and independent execution service with an optimized balance of quality and cost.

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