

Trading with the help of 'guerrillas' and 'snipers'

Managers are increasingly using a variety of algorithms to aid trading strategies or detect others' algorithmic trading, says Paul Temperton, CFA*

The techniques used by fund managers when dealing in equities will be the focus of greater attention as three new developments come together. The first is the implementation, from 1st November, of MiFID, with its new pre- and post-trade transparency requirements for equity markets.

Second, traditional models of fund manager access to the market – for example, via a broker's sales trader – are increasingly being supplemented by Direct Market Access (DMA) systems. A typical DMA system involves the fund manager's broker providing him with the required electronic trading tools for him to route his trades directly to the market.

Third, with this facility in place, "enhanced" DMA strategies and algorithmic trading techniques are becoming more feasible. Perhaps the most notable feature of these techniques is their diversity, meaning that they can appeal to a wide range of fund managers with different styles and requirements.

Perhaps the most common form of enhanced DMA strategy is to slice orders into smaller sizes. This can be with the intention of hiding, or partially hiding, a large order from other market participants, a technique sometimes called "iceberging". The maximum amount of shares to be bought at any one time and during a certain sub-period will be specified by the fund manager. Clearly, for a fund managers aiming to build a stake in a particular company and wanting to disguise the extent of his accumulation, such a technique is useful.

Slicing orders into smaller sizes can also be done with the intention of minimizing market impact. "Guerrilla", an algorithm

developed by Credit Suisse, for example, attempts to determine in real time which publicly displayed (that is those on an exchange or trading platform) bids or offers can be hit or taken without a high likelihood of causing jumps or a displacement in the stock's trading patterns. The technique is useful for fund managers wanting to avoid moving prices against themselves.

"Participating" strategies can be used to ensure that a certain proportion of the trading volume in a particular stock is captured. A fixed percentage – or a range – of the trading volume in a stock can be specified by the fund manager. The algorithm then assures that the required proportion of trading volume is achieved. Such strategies may appeal to "momentum-based" investors and fund managers who placing an emphasis on trends in volume as an indicator that often corroborate price trends.

Fund managers following indexed or enhanced index strategies will also find a use for algorithm trading. "Benchmark" algorithms, for example, can be used to achieve a specific benchmark, such as the volume weighted average price over a certain time period. For such investors, the shorter latency (that is, the lag between placing an order and it being implemented) of algorithmic trades compared with those using more traditional methods will help avoid any slippage between the price movements of an index and the constituent components.

One step up from these systems is "smart order routing". With such algorithms, liquidity from many different sources is aggregated and orders are sent out to the destination offering the best price or liquidity.

These pools of liquidity will typically not be shown on conventional trading platforms – those provided by the stock exchanges or crossing networks – and are therefore commonly referred to as "dark pools of liquidity". Indeed, algorithms have been developed (for example Credit Suisse's "Sniper") to detect such hidden sources of liquidity.

Many of the algorithms used in the market have been developed by investment banks and are supplied to their fund manager clients. This raises the risk of users of algorithms "gaming" the system.

For example, an algorithm may trigger a buy order on a certain percentage upward movement in a share price. But if such systems become widely used, then triggering such an algorithm can be a useful way of generating a better market price into which to sell.

Not surprisingly, "sniffers" – another form of algorithm – can be used to detect the presence of algorithmic trading and the algorithms they are using. Bespoke algorithms are being developed to overcome that problem.

Bespoke algorithms would be more difficult to "sniff out" and although they would add to the current diverse range of algorithmic trading tools, expected gains would have to be weighed alongside significant development costs.

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