

Why do firms perform transaction cost analysis (TCA)? The focus of traditional TCA is to compute high-level average performance measures such as implementation shortfall (IS) and VWAP. These can then be compared to a loosely defined universe of comparable order flow to give an indication of both the relative and absolute performance of execution.

Traditional TCA attempts to answer a basic question: “How well am I doing”? If the absolute numbers place you in the top 20% relative to your peers this may be sufficient. But what if your ambition is to improve on performance regardless of peers? How can TCA answer the two obvious follow-on questions: “Why is my performance good/bad?” and “What can I do to improve?”

The TCA pyramid

Consider how one might execute a large institutional order. Firstly, the order may be split into daily chunks. An attempt might be made to send out IOIs, use a negotiated block crossing pool or ask a broker for a risk price. Assuming no easy matches, the daily chunks will be split into intraday chunks, often

Are you making the most of your TCA?

Most firms monitor execution cost and performance but, asks Darren Toulson, head of research at LiquidMetrix, what does TCA really tell you?



Darren Toulson

based on pre-trade analysis. These are then usually further split and passed to smart order routers (SORs) that route a mixture of passive and aggressive orders to lit markets, dark multilateral trading facilities (MTFs) and broker crossing networks (BCNs).

The many decisions and strategies employed at each level have consequences on high-level performance. Trading too aggressively may lead to poor spread capture, underperformance versus VWAP and high IS due to price impact. Accessing a 'toxic' dark pool could lead to information leakage and elevated

impact. Resting on a dark pool that allows 'pinging' and encourages high-frequency trading (HFT) may lead to adverse selection and poor spread capture.

Figure 1 depicts a pyramid of TCA-related information. The top shows the traditional IS/VWAP measures obtained using simple parent order details and level one data. As we progress down the pyramid, we have deeper statistics based on fills and level two order book information including spread capture, adverse selection, impact, SOR latency arbitrage, SOR liquidity capture, etc.

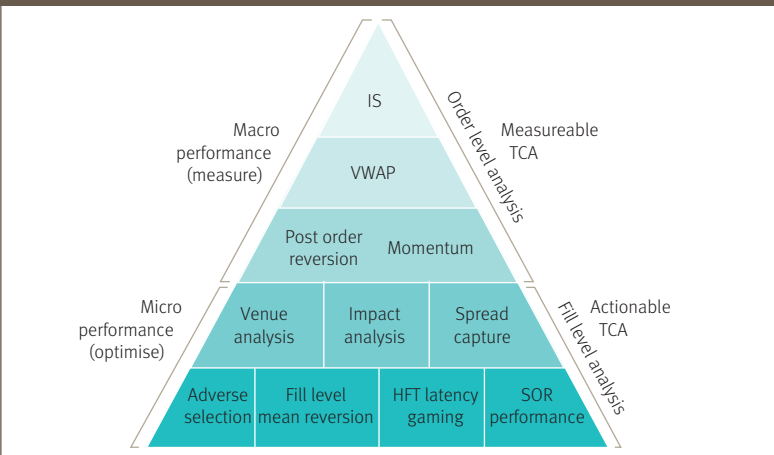
When a high-level report shows poor VWAP performance, the TCA data should show why: perhaps adverse selection while resting on a particular dark pool or a SOR missing liquidity on some venues causing you to go deeper down the book leading to short-term mean reversion.

Actionable TCA

To be truly useful TCA data should be actionable. By attributing the overall TCA performance to different aspects of trading, it's possible to see what works and what doesn't, make changes and improve performance. For a sell-side responsible for trading architectures/SORs/algos this could mean altering trading algorithms or routing rules. For a buy-side, this could involve ensuring brokers are not exposing them to venues that adversely affect their trading performance and understanding which brokers are performing best and why.

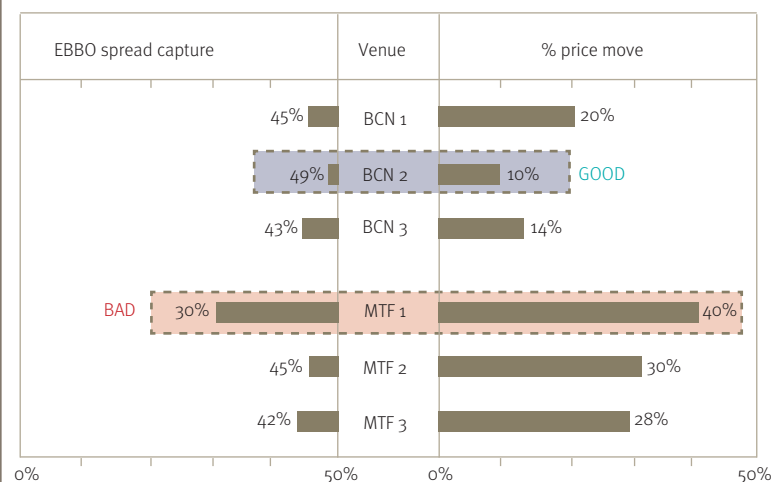
Figure 2 shows a micro-level analysis of resting orders on different dark MTF and BCNs where we have highlighted two key statistics: spread capture versus EBBO and % of time that prices moves 1 second after a trade on different pools. We can quickly identify 'good' pools (spread capture close to 50% EBBO, low % price moves after trade) and bad ones. Additional micro-level statistics can be used to identify other topical buy-side concerns, for example, high frequency gaming of orders.

FIGURE 1: THE TCA PYRAMID



Source: LiquidMetrix

FIGURE 2: MICRO-LEVEL ANALYSIS OF RESTING ORDERS ON DARK POOLS



Source: LiquidMetrix

Buried in FIX logs and full depth market data feeds there is a wealth of data that can move your TCA analysis from a reporting tool to a key

part of optimising your trading strategy. ■

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