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TRANSACTION QUALITY ANALYSIS SET TO REPLACE TCA

The Sunset on TCA is Nigh; The Dawn of TQA is Here

Transaction Quality Analysis Set to Replace TCA

Beginning in the early 2000s, when the algorithms and software capable of performing transaction cost analysis (TCA) on a semi-automated basis first became prevalent, the definition of the function was always: a method of determining the effectiveness of a set of transactions performed by a counterparty – the key word within that definition being **'*effectiveness*'.**

TCA – whether applied in either pre-trade or post-trade activities – became widely used as a means of assessing, on an ex-post facto basis, the veracity of the claims made by buyside and sellside markets participants during the course of trade price negotiation, price work-up and market execution activities.

Accuracy, however, is a poor measure of quality. Saying one will do a thing and then not being able to do said thing due to conditions beyond one's control is, effectively, the equivalent of a shoulder shrug.

Specifically, the flaw inherent in TCA's application to trade performance assessment is that the market and trade data applied to pre- or post-trade activities is typically proxied using the market participant's own recent intake and output of relevant variables to a model based fundamentally on assumptions. Thus, that data, and the models based upon it, are inherently stale from the get-go.

In 2020, GreySpark Partners believes that the informal rules regarding the use of TCA to prove best execution on equities and non-equities asset classes alike have changed. **Specifically, buyside firms must undertake the following activities now and on an on-going basis in the future to ensure that they are providing their clients or end-investors with a high-quality level of pre- or post-trade best execution analysis:**

1. **Data Normalisation** – Of both internally-held and externally-sourced markets, pricing and trade / transaction data to ensure a consistent level of comparability, classification and treatment of all applicable ISINs or CUSIPs; and
2. **Data Analysis** – Specifically, the development and deployment of methodologies that both compliment and extend the effectiveness of traditional time-weighted average price (TWAP) or volume-weighted average price (VWAP) approaches to TCA.

Once the labour-intensive nature of those two exercises is overcome, then firms or institutions will reap benefits over time that extend beyond short-term upticks in trading revenue or client satisfaction. **Specifically, beneficiaries will realise gains in the form of:**

- **Opportunities Capitalisation** – That is, the in-house, specialised capability to create a warehouse of readily-available trade opportunities that extends beyond the immediate opportunity to capitalise on short-term changes in available liquidity levels or general volatility; and
- **Capabilities Optimisation** – That is, the ability to coherently and consistently express the desk or the firm's in-built expertise to transact effectively in specific instrument or product classes that is germane to the historical expertise of the traders and the clients that they represent.

In these regards, when applied on either a pre-trade or a post-trade basis, traditional TCA as a measurement of effectiveness is no longer fit-for-purpose in the predominantly algo-traded, fragmented liquidity reality of wholesale capital and debt markets.

In its place, a new measure of so-called **transaction quality analysis (TQA)** founded upon the ability of firms and institutions to collectivise their understanding of the ***quality***, rather than the *effectiveness*, of **what will occur, why it will occur and how to act accordingly** within the context of pre-trade or real-time activities must arise.

Asset Managers, Fixed Income Trading & the Insufficiency of Transaction Cost Analysis

From a sellside or non-bank brokerage perspective, the objective underlying the performance of TCA for an asset management firm client is two-fold:

1. **Slippage Measurement** – Assess the extent to which the price recorded for an asset, contract or security differed during the pre-trade phase of the transaction vs. the price recorded either at the point of execution (aka near real-time TCA) or on a post-trade basis, either immediately or within a commonly understood acceptable time period.
2. **The Study of How & Why Trades were Arranged by Brokers** – Often via brokerage venues or exchanges and at prices deemed optimal (low prices for purchases, high prices for sales) in an effort to understand how the processes underlying the undertaken execution decision-making could be improved or optimised.

In those regards, the methodology underlying the generation of TCA is most commonly and clearly understood in the most liquid, cash-centric corners of the marketplace, specifically in:

- **Cash Equities:**
- **On a Pre-trade Basis** – Investment banks or non-bank brokers model the likely impact that portfolio trades will have on the available liquidity in the marketplace when they are placed onto the exchange, and then they track the impact in real-time or in as close-to-real time as possible when the execution decisions are taken.
- **On a Post-trade Basis** – Sellside liquidity providers record the average price received for the portfolio trades executed and compare it to a benchmark comprised of the pricing for a similar set of trades executed at roughly the same time.
- **In Both Regards** – The TCA provided is vanilla because there is little or no substantive difference between one set of on-exchange equities transactions and another. The challenge therein lies in liquidity fragmentation and the ability of the TCA provider to aggregate the pricing achieved and benchmarks measured across *n* number of venues.

> **"Traditional TCA as a measurement of effectiveness is no longer fit-for-purpose in the predominantly algo-traded, fragmented liquidity reality of wholesale capital and debt markets."**

- **Cash FX:**
  - **In dealer-to-client (D2C) electronic RFQ flow FX markets** – The challenge for sellside TCA providers is fundamentally the same as in cash equities:
    - **Request quotes from *n* number of banks** – Typically three-to-five;
    - Record the quotes; and
    - Take the best quote and compare it against the necessary benchmark or set of benchmarks.
  - **For RFS** – The process is more complex because of the need to record a wider range of streamed quotes rather than just simply one quote per liquidity provider at point of execution.

However, **in fixed income markets** – specifically, in bonds trading – the TCA effectiveness challenge for sellside broker-dealers and their asset management firm clients is **infinitely magnified:**

- **For RFQ (one bank / one brokerage execution venue) & RFS Trading** – The process is akin to flow FX; however
- The bonds market for both liquid governments issuances / rates and on-the-run investment grade corporate credit is rarely ever one buyside firm vs. one bank on one D2C venue anymore.

As such, GreySpark believes that the ability of asset management firms to individually answer two questions over the next five-to-10 years will ultimately drive the uptake of either fixed income-specific TQA services provided by sellside broker-dealers or non-bank brokers or vendor-provided toolkits:

1. **VWAP** – Is this form of predominantly composite analysis currently provided by D2C venues sufficient for regulatory compliance purposes?; and
2. **Internal Data Management, Structuring & Warehousing** – To what extent are asset managers willing to take ownership over the normalisation and standardisation of the wealth of historic bonds and swaps market, pricing and transactions data stored within desk- / fund- / portfolio-specific operational siloes to then move to a state in which they can consistently leverage competitive advantage on a trade-by-trade basis? **For example:** in the assessment of historically hidden 'trade fees' associated with every OTC or RFQ bonds trade.

In seeking to answer those two questions, asset managers must be realistic in assessing that the fixed income TCA services offered to them by broker-run venues, by D2C venues, by exchanges and – to a degree – by bank broker-dealers amounts to little more than window dressing.

The importance of this conclusion is exemplified in the corporate credit market's illiquid, off-the-run investment grade or high-yield corners wherein asset managers are historically obliged to only trade with bank broker-dealer counterparties on a brokerage venue on a 'trade fees-included' basis. **Typically, those trade fees include:**

- the price paid by the bank to access the market data needed to perform pre-trade analysis;
- the bank's IP associated with finding the other side of the trade, which can sometimes take weeks or months;
- **Spread Calculation, especially for an Illiquid Instrument** – This often amounts to an additional 20bps-25bps for off-the-run credit; for liquid investment grade or US Treasuries, it typically comes out to 4bps-8bps;
- **Connectivity** – For example, the prevalence of ION gateways;
- **Market Data Terminals** – For example, four bank traders using Bloomberg terminals at USD 21k per annum, which is only a minimum of 50% of the total cost for the buyside counterparty; and
- **Other Infrastructure Costs** – For example, straight-through processing or central clearing.

Fixed Income Transaction Quality Analysis: What the Buyside Needs

Fundamentally, the application of TQA measurements by asset managers to fixed income trading is centred around the ability of firms to know – and not guess – what the market impact of either a book of axed trades or a collection of block-size bonds and swaps orders would be on the entirety of a firm's available liquidity on:

- a liquidity provider-by-liquidity provider basis; and
- across the entirety of all the available execution pathways and venues.

The development of this 360-degree view of market impact is important because, in the post-financial crisis era, the historic, capital-intensive broker-dealer model became economically unviable at scale.

In 2020, the vast majority of bond trades facilitated by broker-dealers are undertaken on an agency or riskless principal basis in which the execution service provider works to find countervailing interest among its stable of clients, minimising the risk held on a bank balance sheet by executing both legs of the trade back-to-back, as near as possible to simultaneously.

Although a select number of a bank's most-valued clients may still be offered access to trades done on a principal basis, the vast majority of buyside client trades with their sellside execution franchise providers are now subject to disruption due to time and size mismatch between buying and selling interests for the bank.

To counteract this new, more challenging liquidity sourcing landscape, buyside bond trading desks expanded the range of their sellside and brokerage venue contact points in order to cast an increasingly wide net in their search for liquidity. These increasing efforts frequently remain labour-intensive – and therefore costly – at a time when all capital markets participants are generally facing margin compression and increasing competitive pressure.

The challenge for buyside bond trading desks therefore lies in enhancing their efficacy in identifying liquidity and trading at the best price available within a broader, albeit more fragmented liquidity landscape and, most importantly, being able to evidence the decision.

> "in fixed income markets ... the TCA effectiveness challenge for sellside broker-dealers and their asset management firm clients is infinitely magnified ..."

The enhancement of buyside bond trading liquidity identification efficacy generally takes two different and mutually symbiotic forms:

1. **On the One Hand** – Broadening liquidity access channels to bring the liquidity needs and trading interests of other non-broker-dealers into view – known as client-to-client (C2C) or all-to-all (A2A) trading – may provide buyside trading desks with more opportunities to trade than using a sellside intermediary.
2. **On the Other Hand** – With the arrival of new bonds trading technologies, buyside bond trading desks can use historical data captured and retained in-house as part of the trading process to better direct liquidity sourcing and trade execution decisions and resources, and thereby improve outcomes.

In the context of buyside firm application of TCA in response to the alteration of historic bonds and swaps trading processes and workflows, GreySpark frequently observes different levels of understanding and interpretation of the meaning of fixed income TCA for portfolio managers in terms of risk management and associated analytics and in terms of the execution desk.

Specifically:

- In 2020, across the buyside as a whole, there is no standard definition for fixed income TCA;
- With TCA services for exchange-traded instruments, the trade blotter and post-trade data provide an obvious work-around to manual assessments of the efficacy of liquidity identification; but,
- In the corporate bond market, a lack of price transparency, and understanding of what constitutes an indicative price vs. a firm price often causes confusion.

Asset managers, especially, are observed as only commonly understanding fixed income TCA as a means of proving that the best price was achieved at point of trade.

In contrast, sellside broker-dealers typically leverage other metrics garnered from other dealers across their own bonds and swaps transactions such as pre-transaction cost estimates and fail rates of delivery.

Meanwhile, the leading D2C and matched-principal CLOBs provide some form of automated post-trade TCA in order to retain clients that would otherwise move their trades to the venue or provider that can facilitate the analysis for them.

And when the depth and strength – or not – of the various vendor-provided solutions in the marketplace are assessed in comparison to the depth and strength of the existing range of venue-provided post-trade tools, then a simple conclusion can be drawn out:

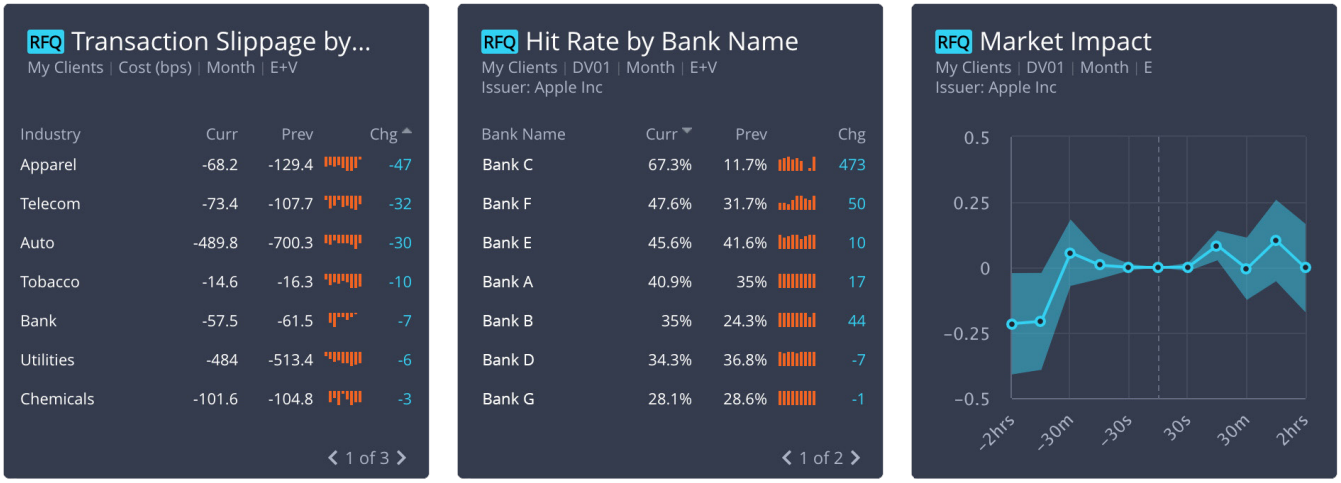
- buyside firms currently only need or want fixed income TCA tools as a means of advertising to their clients that they understand the complexity of the compliance-led mandates currently at hand; and that
- firms are willing to provide their end-investor clients with a meaningful-ish set of reports and analytics designed to showcase that awareness.

In this regard, what the buyside needs currently is a meaningful-up-to-a-point level of TCA service; essentially, a marketing tool.

Beyond that, only the savviest buyside firms with the most to lose from not corralling the wealth of pre- and post-trade bonds data at their disposal currently recognise the value of pre-trade analytics or post-trade reporting informed by TQA capabilities. This reality underscores the argument that traditional TCA is no longer good enough as a simple hygiene factor for client or regulatory reporting – if the largest and most technologically-savvy asset managers in the marketplace are already applying TQA principles to their utilisation of TCA, then the smallest players should be both capable and willing to do so as well.

The Benefits of a Transaction Quality Analysis Smart Data Solution

Figure 1: Transaction Quality Analytics Can be Used to Enhance Order Execution Outcomes
Source: Mosaic Smart Data



The opportunity at-hand for the savviest asset management firms to transition away from the window dressing of TCA and toward TQA is immense.

However, in order to do so, firms must accept that the transition is a data play, not a venues play, and that smart data companies are the only ones aptly suited to aggregate all of the data that will be available in the future, organise it and then apply liquidity measures to it on a bespoke-or-not basis that can substantively prove TCA.

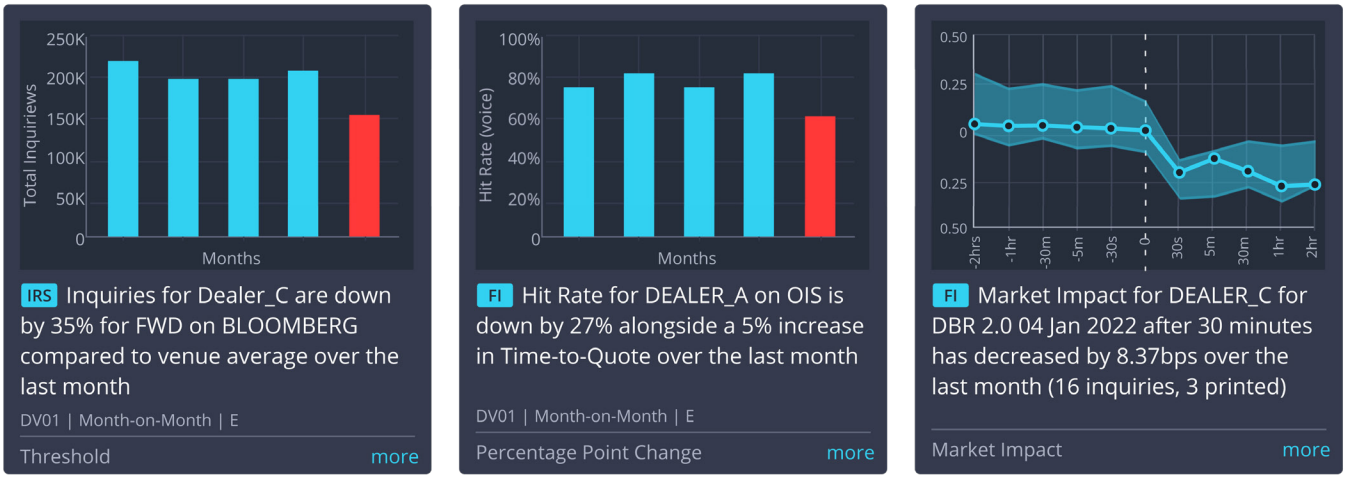
Specifically, buyside bond trading desks can use their historical data to more effectively evaluate the history of pricing on offer from their broker-dealer counterparties or from other non-bank counterparties met on brokerage venues or trading platforms to better direct their flows and achieve superior execution outcomes (see **Figure 1**).

Figure 1 shows the TQA benefits that can be realised quickly by asset managers once the ecosystem of data points drawn from bonds brokerage and execution venues, historical in-house order / trade and transaction records, and client / counterparty interactions is normalised. Once normalised, the relevant data points can then be processed into analytics tools that incentivise buyside bond trading desks to undertake qualitative pre-trade or at-trade evaluations of their decision-making on an order-by-order basis.

Such qualitative evaluation based on quantitative historical data allows buyside bond trading desks to move beyond anecdotal evidence and traders' gut instinct in seeking out and evaluating liquidity to, instead, score liquidity in a consistent manner over time.

This liquidity scoring consolidates various qualities of the liquidity on offer into one or more easily interpreted indicators. Where elements of the bond trading execution decision-making are automated, liquidity scores can feed directly into software engines to improve trader guidance.

Figure 2: Creating Fixed Income Counterparty Liquidity Scoring is an Essential Element of Transaction Quality Analysis
Source: Mosaic Smart Data



Where liquidity scores support human decision-making, they help traders make better-informed and quicker trading decisions, knowing these are backed by data – providing traders with justification and evidence for their decisions in pursuing best execution in alignment with their company's stated best execution policy (see **Figure 2**).

For example, **Figure 2** shows how TQA tools can be used by asset manager bonds traders to consolidate bank broker-dealer IOI or RFQ response rates or to allow for objective assessments of the consistency and effectiveness of bank counterparties when executing orders on behalf of the firm in the external marketplace. Automatically finding and surfacing the most important insights and biggest changes in behaviour drives efficiency changes across the trading desk.

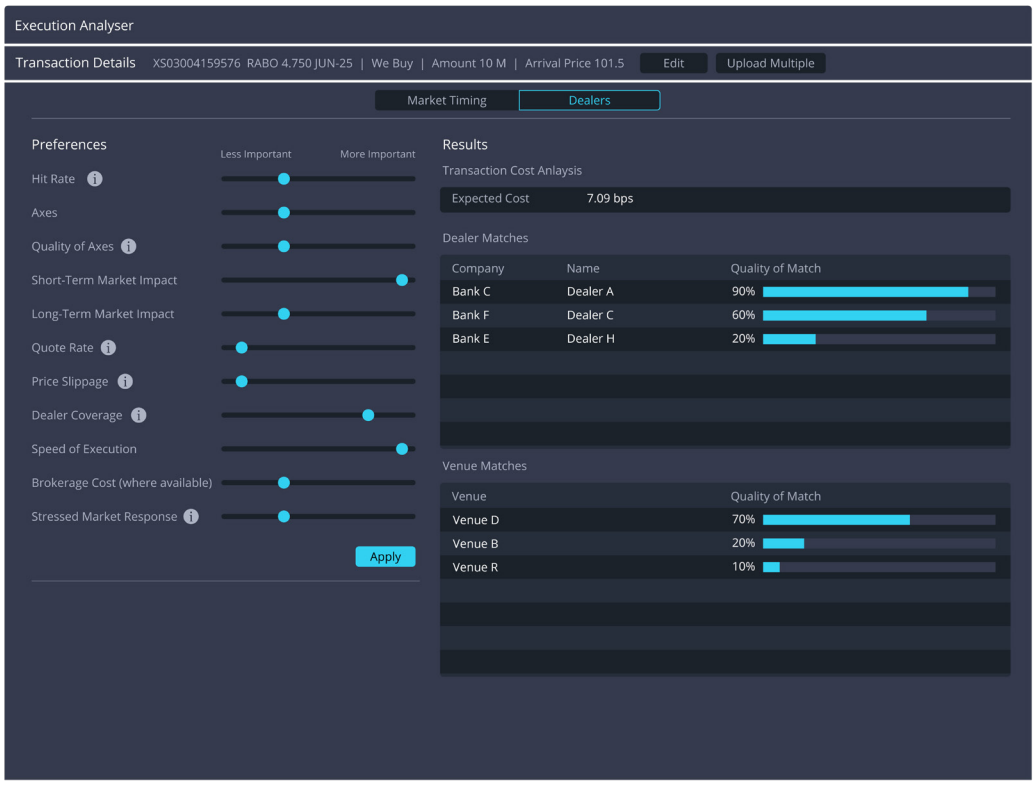
The specific form the liquidity scoring and grading indicators take can be numeric, symbolic, colour-coded or take any other form of physiological stimuli – this is less important than ensuring their accessibility and seamless integration with the trader's execution decision-making workflow (see **Figure 3**).

Specifically, **Figure 3** shows how a fixed income transactions execution analyser can assist with the automation of many of the standardised, pre-trade functions that buyside traders perform when seeking to execute basket or portfolio trades by agnostically assessing the performance of previous transactions versus an array of counterparties. In doing so, TQA is created by the ability of traders to reset the prioritisation of new order attributes in near-real time based on brokerage venue-specific or broader, observable liquidity conditions.

In order to ensure that such liquidity scores are reliable, buyside bond liquidity scoring engines must incorporate the following four categories of information, at a minimum:

1. **Quality of Pricing** – Composed not only of the displayed price as compared to other displayed prices, but also whether the pricing is firm or indicative and the risk of information leakage where the trade is a child order or part of a multi-order trading strategy;
2. **Quality of Counterparty** – Incorporating credit and settlement risk as well as the likelihood that the counterparty makes use of last look pricing on issuances or instruments in question for a particular trade to withdraw or change the displayed price. Also, the ability to assess a counterparty's ability to provide liquidity in stressed market conditions.

Figure 3: Integrating Transaction Quality Analytics into Fixed Income Trader Execution Workflows
Source: Mosaic Smart Data



3. **Freshness / Staleness of Pricing** – Assessing the likelihood that the displayed pricing may no longer be valid due to its longevity in the market and market behaviour and movements that have occurred since the displayed price was published; and
4. **Width of the Bid / Ask Spread Across the Market** – Taken not only from a single execution venue or a small subset of venues, but computed from the broadest set of venues possible, taking in the market in totality.

When these types of metrics are integrated into buyside fixed income trader's order management and pricing processes and workflows, then a trading franchise or the asset management firm as a whole can begin to realise the most important benefit created by TQA-centric thinking:

- **Independence** – Once implemented, these types of mechanisms facilitate the production of pre- or post-trade reporting that emphasises the 'quality' of transaction execution decision-making over simply the effectiveness of ordered trades. This new-found reality provides asset managers with a high degree of independence from the staleness factors commonly associated with broker-provided post-trade reports, thus freeing firms from the awkwardness that comes from – effectively – the grading of their own homework in front of end-investor clients.

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Mosaic Smart Data is transforming the financial industry, empowering market participants with analytics tools to find and retain a competitive edge. In an increasingly data-driven world, we provide finance professionals with the ability to quickly harness available information to drive the right business decisions.

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