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TRADING VENUE LIQUIDITY

IT'S QUALITY, NOT QUANTITY, THAT MATTERS

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CHANGING THE GAME

The concept of "liquidity quality" is now a tangible and quantifiable concept set to change our understanding of trading venues and the relative value of their liquidity pools.

Given the considerable progress in data handling and advanced analytics, we believe the concept of liquidity quality is now quantifiable on a near real-time basis.
The availability of liquidity quality information will impact all segments of the market, including participants, trading venues, and regulators. These impacts will include the migration of volumes between venues, greater transparency regarding the impact of particular trading behaviours, and enhancement of market surveillance. Regulators will welcome the increased transparency and integrity this brings to trading venues, but will need to define goals, set standards, and collaborate with participants and third parties.

In this paper we explore the concept of liquidity quality, its advancement, and its imminent realisation. In addition, we put forward principles that can be used to define and calculate liquidity quality and liquidity profiles. Finally we examine the implications for market participants and regulators.

FROM QUANTITY TO QUALITY

In the past, executed volumes were regarded as the main measure of the success of a trading venue. This view eventually gave way to the belief that liquidity volume or order book depth was more important, as this offered an indication of a participant's ability to trade.

Recently, it has become ever more apparent that trading venues are complex, diverse, and highly interconnected environments. Their liquidity pools can change rapidly as participants respond to one another and to market conditions.

A simple example would be the way a liquidity pool changes in response to a stressed market event. Although the liquidity pool may look deep, the stressed conditions may cause market makers to move away from the top of the book and widen spreads, or even post stub quotes. Other participants might withdraw at the same time, causing liquidity to dry up quickly. This behaviour was seen as a contributing factor in the 2014 "flash crash" in US Treasuries. Market participants consider a more robust liquidity pool to be of higher quality.

We are now entering a period where liquidity quality is viewed as critical, with participants and regulators questioning the quality of liquidity pools, and how orders interact with one another in these pools.

The evidence for this development is now substantial:

- Regulators have increased their focus on High-Frequency Trading (HFT) and algorithmic trading, best execution, and trading venue surveillance. This greater emphasis can be discerned, for example, in MiFID II and Regulation ATS
- Venue operators have bolstered efforts to reassure regulators and participants of the health and security of their trading venues, and ensure all participants have fair access to liquidity
- We have seen the emergence of bespoke trading venues (such as IEX in the United States, and Aequitas Neo in Canada) designed either to incentivise or restrict differing types of liquidity
- There have been a number of high-profile reports and greater scrutiny in the media focusing on the quality of some order flows and their impact on other participants
- Fintech firms have moved to support firms in this space with more sophisticated analytics and monitoring tools

MEASURING LIQUIDITY QUALITY

There is no formal definition of liquidity quality, and the market still relies on simple metrics such as order-fill ratios or order book depth to gauge liquidity quality. This approach is no longer fit for purpose given the nature of markets, which employ maker-taker models, order rebate systems, and an often bewildering array of different order types. All of these market innovations render simple metrics ineffective at describing the quality of liquidity. What is needed is a set of metrics which collectively describe the profile of liquidity on a venue or from a particular participant, and ideally reflect the relative value of each order compared to the status of the order book at that time.

We believe that a few simple criteria can help to provide a pragmatic and helpful definition, which can then be used to analyse markets.

At the highest level we define liquidity quality as liquidity that adds value to other market participants. To reach a quantitative measure of liquidity quality, we consider individual orders, the most granular measure of liquidity. An order carries value if it meets any one of these three criteria (see Exhibit 1):

1. It facilitates a trade at an earlier time than it otherwise would have occurred
2. It facilitates a trade at a better price
3. It provides information to the market, such as intent to transact, and aids price discovery

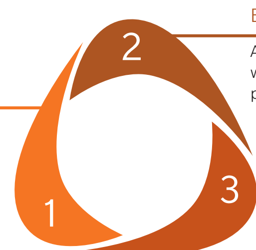
The use of these criteria can produce a number of quantitative metrics (e.g. make-take ratio, delta to the top of the book, correlation of orders to other participants, order flow variance in stressed conditions). If these are to prove insightful to the market a number of these metrics will need to be used to assess the liquidity profile. In addition consideration of the trade size or executed volume will need to be included, although this aspect can be considered additive to the criteria above.

Exhibit 1: Three criteria of liquidity quality

FACILITATES EARLIER TRADING

An order placed on a market enables a trade to take place earlier than it otherwise would have

Without the order the trade may not have been able to take place at all



ENABLES A TRADE AT A BETTER PRICE

Although a trade would have taken place, any order which enables that trade to take place at a better price is valuable

PROVIDES INFORMATION TO THE MARKET

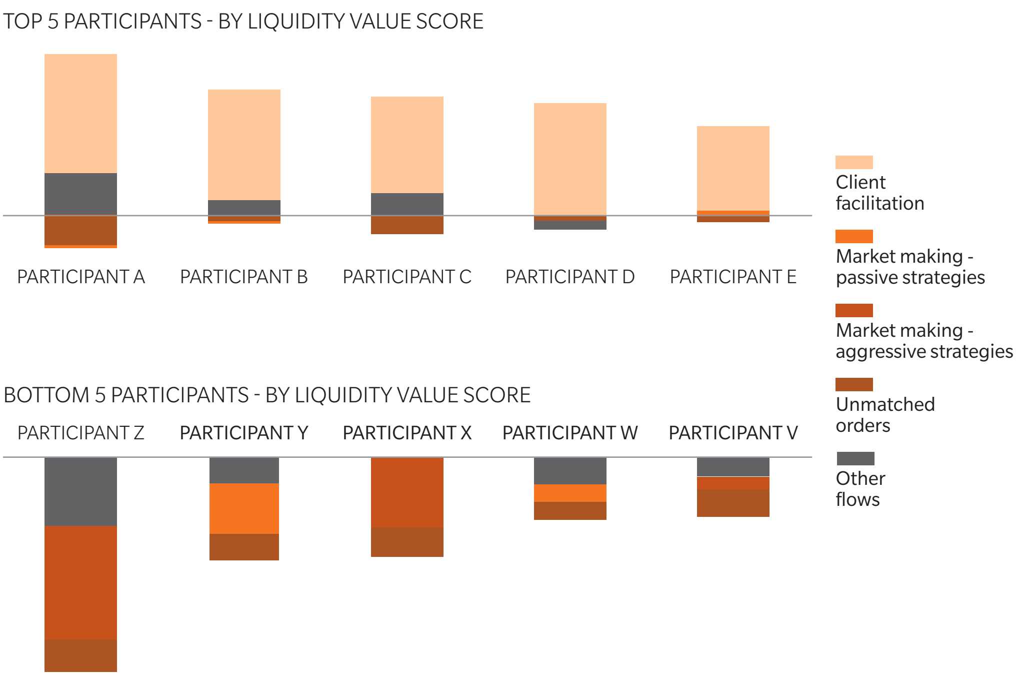
Venues provide both an arena to transact and an information source

Orders imply intent and thus carry information about market sentiment which itself is valuable

Market participants and regulators will need to understand some important concepts about liquidity quality:

- Liquidity quality can be calculated irrespective of who provided that liquidity. Segmentation of market participants need not be based on stereotypes and shortcuts; instead it should be based on the characteristics of the liquidity they provide to the market
- Liquidity quality metrics can be used to evaluate individual trades, participants, venues and markets. As such, the value each participant brings to that trading venue can be categorised and compared, and individual venues can be compared to one another. An illustrative example of liquidity quality being used to quantify the relative value of trading participants order flow can be seen in Exhibit 2
- Volume of liquidity provided is not the sole measure of quality. Participants who provide many orders may not be the largest contributors of liquidity quality
- Profiling liquidity can be accomplished today in close to real time. This is achieved using data and analytics which are readily available. However, this process will be a challenge for many firms who may need third-party assistance in handling such large data sets

Exhibit 2: Illustrative example – using liquidity quality to quantify relative trading participant value



IMPLICATIONS OF LIQUIDITY QUALITY

Determining and understanding liquidity quality presents opportunities and challenges for market participants, and we expect the impacts to be widely felt over the next few years.

1 TRADING VENUES will need to reconfigure their business proposition around liquidity quality and liquidity profiling, without alienating buy-side or sell-side firms. To do this, venues will first need to develop the analytical capabilities to make use of the concept of liquidity quality. Secondly, they will need to find a way to market this new proposition to their clients, and engage with regulators on the topic. Those venues that succeed in doing so will find ways to change their business to better serve clients, enhance business economics and increase liquidity quality still further. This will result in new fee schedules/pricing mechanisms, revised market-making and incentive schemes, and even a remodelled market microstructure

2 SELL-SIDE FIRMS are in an interesting position as they are both intermediaries who handle orders and also owners of infrastructure platforms such as Systematic Internalisers (SIs) and dark pools, where the concepts of liquidity quality apply in the same way as they do to any trading venue. Although many firms already review order facilitation when selecting brokers there will be an increasing demand to review greater and more detailed information regarding orders and liquidity. Sell-side firms will face pressure from clients to improve their handling of orders, avoid pools with poor liquidity quality, and provide greater transparency on how orders are broken down and disseminated in the market

3 BUY-SIDE FIRMS will become keen consumers of data on liquidity quality, helping them to better understand how the market processes their orders. These firms should push their intermediaries to improve the processing and handling of their orders. Firms will become increasingly selective regarding order handling to best optimise and monitor their own decision making apparatus on a near real-time basis. Consequently, buy-side firms could benefit from a reduction in the real cost to trade, and the market should see volumes migrate to the best pools of liquidity

4 TRADING FIRMS will be able to gauge the impact of their strategies on other market participants more accurately. This development, in combination with greater regulatory scrutiny and/or incentivisation by venues, may force trading firms to adapt their trading strategies

5 REGULATORS will use liquidity quality metrics to help markets increase transparency and improve investor confidence in markets, both of which have been central themes of recent regulatory drives. As a result we expect this to sharpen regulators understanding of the complex markets they oversee, and will enable them to move away from the current stereotyping of market segments

These changes will not arise overnight, but are already underway, with both trading venues and buy-side firms investing given the potential benefits for their business models.

However, regulators should ensure they are active in the debate and development of these ideas given the insight into venues that liquidity quality can provide.

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