
European Market Quality:

A Metric in Need of a Standard



Vision

"If you don't know where you are going, any road will take you there." - Lewis Carroll,
Alice in Wonderland

Buy-side traders and their brokers must feel like the world has turned upside down, that what was once large is small and that nothing is as it seems. The mind-bending changes that have taken place in the European equities markets over the past five years have altered the equity landscape forever. It is an exciting and disorienting time to be an equity trader, and there is much to be done to keep one's head on straight and find the optimal path to best execution.

Complexity in the markets is not going away. If anything, as new rules and regulations are implemented and the economics of investing and trading are altered, innovative minds and technologies will pop up like mad hatters at a tea party, presenting new and uncharted challenges to institutional investors and their broker partners.

New venues, new order types and new market participants will continue to appear across the developed and developing European marketplace. Exchanges and MTFs will partner and establish mutually-beneficial alliances. Brokers will approach the optimal and compliant management of internal and external liquidity with ever greater care and levels of sophistication.

Trading strategies will be increasingly multi-asset class, multi-currency, and multi-strategy. The demand for data will continue to explode, and new security classes and their associated investment strategies will evolve with increasing speed.

For the foreseeable future, change and uncertainty will continue to hold sway across the lit and dark equities venues in Europe. And yet, one certainty stands. Where there are new challenges to the buy-side trader, where there are new complexities and increased rates of change, there will be opportunities for leadership in the development of standards and methodologies that support optimal complex trade decision-making.

Indeed, that decision-making will increasingly shift to front and centre on the buy-side trading desk. And the brokers will help make that happen. Though the brokers compete with one another for order flow, their ultimate success will depend upon their ability to arm their buy-side clients with the information and tools necessary to trade more effectively. They will win market share from their buy-side traders only if they can deliver superior trading results over time. The end-game will always be to match the objectives of any given buy-side order with precisely the correct execution strategy.

No matter how far into the future one may look, no matter how much the marketplace landscape will change, every buy-side trade will reflect the objectives of the underlying investment portfolio. Hence every buy-side trade will have its own unique characteristics, objectives and parameters. Matching those objectives with the right algorithm, the right routing decision tree and yes, the right execution venue will always be the ultimate goal.

The trading venues themselves are not only unique but they too are undergoing constant change. Rules, pricing models and market share shift. Market participants and their trading strategies move around in unpredictable ways, resulting in unique and critical differences in the behaviour of pricing and liquidity on each venue. Spreads, size, consistency in depth and diversity of market participants differ measurably over time. There will be ever-greater demand for metrics and analytics that put these changes into perspective so that they can be managed effectively on the buy-side trading desk. While the brokerage community will develop its proprietary solutions, the marketplaces themselves will increasingly become a source of standardised and actionable information, as well as actionable insight into the characteristics of ever-changing liquidity. After all, the optimal selection of price, size and venue will always mean the difference between managing and reducing transactions costs, and thereby saving precious alpha, or watching positive relative performance disappear down the rabbit hole.

Table of Contents

VISION	2
TABLE OF CONTENTS	4
INTRODUCTION	5
DOWN THE RABBIT HOLE	8
ROUND ROBIN	11
Too Little, Too Late	13
IN THE EYES OF THE BEHOLDER	15
Does It Bounce?	17
The Liquidity Seekers	18
CONCLUSION: WHAT'S A MARKET TO DO?	21
TABB GROUP	23
THE AUTHOR	23

Introduction

It would be nice if today's institutional equity traders could operate with the same level of innocence and naiveté that Alice could as she wandered around Wonderland. It would also be nice if brokers could provide one pill for large trades, one pill for small trades, and a key to unlock the door to the optimal trading solution for any order at any moment in time.

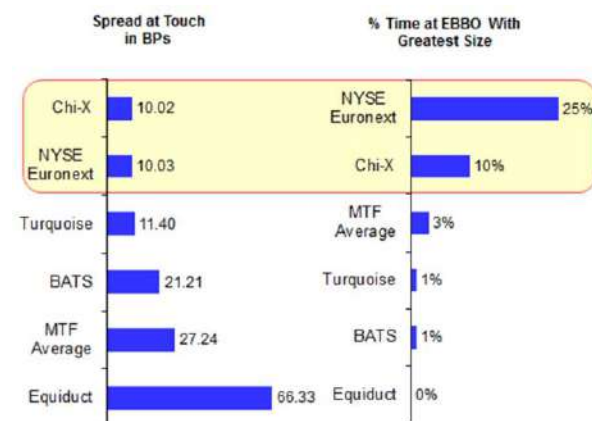
In today's tough equity environment, alpha is a precious commodity. Every buy-side trader worth the price of his seat has to find a way to keep alpha from leaking out of his trades and into someone else's pocket. While there are continued advances in solving the challenges to optimal trade routing for any given order, standardisation in venue analysis remains an issue.

The character of a venue's liquidity may mean the difference between alpha saved and alpha forfeited. Best Execution for any given order is not merely a matter of price, so the question must be asked, "I take that liquidity at what relative cost?" If spreads widen, if liquidity disappears, if prices revert and if a trade in one market removes liquidity instantaneously in another, then the cost of the subsequent trade has been adversely impacted. The measurable differences in these behaviours across markets are a good place to start to determine which liquidity venues offer higher quality results and which ones don't.

Information leakage is expensive. While brokers try to identify and avoid this type of market impact cost when allocating electronic orders in real time, buy-side traders could use more information on their desks about these behaviours across venues over time. Does one market maintain available liquidity at touch when news comes out on a stock, while another reacts aggressively, losing the bulk of its bids and offers? Just how significant are these differences and do they vary by market cap, by sector, by index or by time of day over a period of weeks or months? What is the depth of any given market at the touch and is it consistent or reliable over time?

Venue data for the CAC 40 constituent stocks during November 2011 is a case in point. Spreads at touch are neck-in-neck between Chi-X and NYSE Euronext, on average, for that month at 10 basis points (bps). From a best price perspective, there is little to differentiate the exchange and the MTF over the trading period. However, presence in size at the EBBO tells a different story, and here is where the quality issue arises. This metric is an indication of the percentage of time during the trading session when a marketplace has both the best bid and the best ask as well as the greatest depth on both sides of the quote. NYSE Euronext had the combination of best size and price more than 2.5 times more often than its close competitor Chi-X (see Exhibit 1). This is precisely the kind of data that a trader should have at his fingertips. If he is active in these

Exhibit 1
CAC 40, Spread at Touch in BPs, % Time at EBBO with Greatest Size, November 2011, by Venue



Source: NYSE Euronext, TAG Audit

names, he may be better informed in conversations with his broker about how best to take advantage of this difference across venues both in algorithmic trading as well as in direct routing.

Spread size and spread sensitivity, the relative transience of liquidity, the immediacy of reaction at the touch – these are pain points for buy-side traders and their brokers. And every broker worth its quantitative analysts and its software developers is attempting to tackle these very same issues in a way that offers clients a framework and a methodology for proactively avoiding the pitfalls.

As the markets and their offerings naturally differentiate themselves by their models and the character of liquidity they attract, they will demonstrate fundamentally different behaviours that will have great value for one trade and very little for another. Beyond absolute speed and absolute share of value traded, there could be a series of metrics that any buy-side trader would like to have at his disposal that would enhance the ability to define that precise quality of market that is most critical to his style of trade.

The truth is that the European equities markets today are in a high state of flux and uncertainty. Liquidity is not only dispersing, it is shifting from week to week and day to day across venues, and it's changing behaviour depending upon the rules and participants active in each marketplace. Primary lit markets, MTF competitors and broker crossing networks (BCNs) are vying for order flow from traditional investors and high-frequency trading (HFT) firms alike. Lit markets adjust their pricing and rebate schedules to attract players in the HFT game while, at the same time, they try not to break the model for the end investor clients, the institutions. Dark venues are seeking market share by offering features to interact with proprietary flow and even retail flow, while some require larger share sizes to keep the arbitrage guys out and to cater to institutional orders and natural counterparties.

That leaves the brokers and their institutional clients to their own devices to determine which path to take and when. The challenges are significant. Brokers must connect and receive direct market feeds to drive their routers and algorithms, and build historical tick databases to back-test their trading strategies and analyse transaction results. There is little standardisation to the data they receive, and there are no metrics for venue comparison other than those they can develop in-house. The questions of market share and geographical or technical latency are easily answered, but there has yet to be developed a consistent methodology across the industry that can define and measure the integrity, persistence and quality of each marketplace.

While opinions will differ as to the definition of the term "quality" when it comes to equity markets and order flow, there needs to be a methodology that can support direct comparisons across marketplaces. Market quality can be framed into a series of benchmarks to drive industry discussion and solicit investor input.

There is much talk these days about the need for light to be shined upon the characteristics of exchanges, MTFs, BCNs and all variations of lit and dark liquidity. Institutional investors have a clear fiduciary mandate to capture and protect their investors' alpha, and they need better

information to do so. Comparing one broker's algorithm to another's on different orders under differing market conditions is apples to oranges. Whereas comparing breadth and consistency and liquidity stability and diversity across venues is apples to apples.

This will be the year, 2012, when the battle for order flow will raise the bar on the battle for share of mind through differentiation in market quality. This will be the year when fiduciaries and their brokers become far more proactive in asking for an increased return on their investment. They invest with their order flow. It's time for the marketplace to increase the return on that investment in the form of a framework for analysis and preservation of precious alpha.

Down the Rabbit Hole

Alice's world in Wonderland clearly doesn't operate within the laws of physics. Sizes and distances shift unexpectedly and things aren't always what they seem.

Traders and their brokers feel this way a lot of the time these days, trying to make their way around the European equities markets. On the one hand, the laws of the universe are operating nicely in compliance with Einstein's theory of relativity, as the speed with which orders can be transmitted electronically bump up against the limits of technology, distance and ultimately the speed of light. On the other hand, liquidity shifts, market participants change, and volatility appears and disappears like the grin of the Cheshire cat.

It is possible to measure these speeds and these levels of volatility, as well as things like market share in a name or execution prices relative to decision prices, and to utilise this data as input into the trade decision process. Brokers gather a tremendous quantity of historical price and trade data as well as streaming real-time market data to try to develop a methodology for determining where an order should be executed, in what size and with what degree of urgency.

Buy-side traders and hedge funds have no choice but to rely heavily on their brokers to capture market and trade data, analyse the results, and build better trading strategies that will route and execute orders based upon their primary investment objectives. Traders think they know where they are going, but they are in need of maps and road signs to help them understand which direction is the best direction for a full day's value in an illiquid mid-cap stock. They execute some of their flow electronically and some upstairs with their sales traders and their block traders, and any single order may ultimately be transacted across multiple venues, both lit and dark, with varying results.

Every broker is different in the way it conducts its analysis and in the models it develops to guide trade decision-making. Buy-side traders can measure their trading results relative to their benchmarks across brokers and algorithms, but they don't have a consistent data set that allows them, independent of their brokers, to develop a view about each venue and the character of its liquidity. The data points and metrics used for venue analysis by the sell side don't really provide a workable framework for the trading community at large to determine the quality of one marketplace relative to another. Such a framework, to be useful for both sell side and buy side alike, would be built upon both transparency into methodology and standardisation. The obvious participants in the marketplace that could provide both transparency and standardisation are the trading venues themselves.

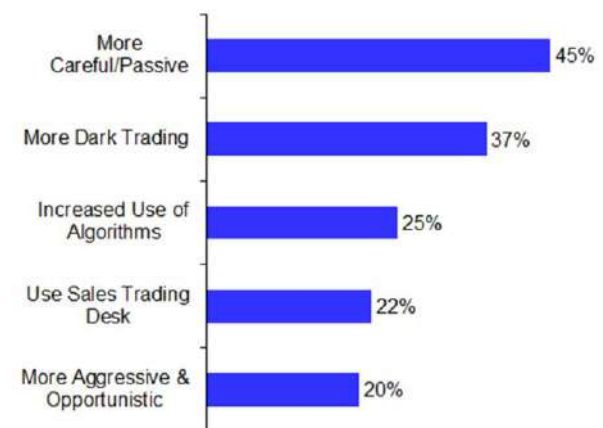
Yet there is little in the way of direct marketplace analysis coming from the venues themselves to guide traders in making the right choice about where to execute a given order. There are clear differences, to be sure, across markets and market participants, but the question remains how to develop a view based upon empirical analysis as to the relative attractiveness of each venue for each individual order.

Until now, there has been an apparent lack of recognition on the part of the European liquidity venues of the value for a consistent set of metrics that describe the quality of their liquidity. Published metrics really haven't gone much beyond market share statistics. Markets may publish notional value traded alongside market share, and they may publish inside spread statistics as BATS does on their website.

So there is a lack of directly comparable data across all venues upon which a security trades that can be used to develop a well-informed view about the level of quality in a market and the degree to which that quality changes over time. As a result, buy-side traders feel an increased need for caution as they interact with individual venues. They are concerned about moving too quickly or aggressively to trade, and they are increasingly concerned about information leakage.

Finding *quality* in liquidity is the biggest issue in the minds of traders today, and venue analysis is the tool they are turning to in order to tackle the issues head-on. While brokers are spending heavily on developing venue analysis models and techniques, buy-side traders say that in the absence of industry standards, they find they must trade with a higher degree of caution and concern, and increasingly turn to dark venues (see Exhibit 2).

Exhibit 2
Given Recent Market Conditions, How Are You Changing the Way You Trade? 2011



Source: TABB Group

Lack of clarity represents opportunity. On the one hand, lack of clarity and transparency present the opportunity for some trading strategies to profit from mispricing and uninformed orders. Buy-side traders are attuned to the presence of high frequency trading (HFT) strategies and recognise them to be one of many elements of the liquidity ecosystem that comprise quality of liquidity. On the other hand, institutional traders need clarity and metrics in order to be well-informed decision makers at any moment in time. Knowing where and how and when to interact with various types of liquidity providers is where the rabbit's feet hit the road for the traditional asset manager and hedge fund.

There are signs that the marketplace is beginning to recognise that this discontent on the part of traders, investors and their brokers alike isn't necessarily a good thing for the markets. Yes, MIFID II will come and the consolidated tape will come, but neither separately nor together will they adequately address the call for some leadership in bringing some transparency into the issue of quality to the markets today.

It's reasonable to think that the exchanges, MTFs and brokers alike would have an interest in developing such a framework in order to help investors achieve Best Execution results. One clear way they can do so is to develop a consistent set of metrics, along with the methodology for deriving those metrics, to be published on a regular basis. In order to establish confidence

in the integrity of the data, and address any concerns about data bias, they should arguably use third-party providers to produce an unbiased analysis by capturing trade data across multiple markets. NYSE Euronext, for example, has recently begun to do just this in partnership with TAG Audit. The exchange is now publishing a monthly series of metrics that address the quality of their own liquidity as well as that of other lit markets across a series of indices. Any market can show you it's on the inside spread on some of its stocks some of the time. What the market wants to see is what percentage of the time a market is on the inside spread at touch, at what size, backed by what kind of depth, and with what degree of consistency or variability.

There is an opportunity for thought leadership and guidance from key participants in the marketplace to deliver real value to real investors that will optimise the implementation of their investment decisions. In fact, the development of the ability to measure market quality across venues is one of the biggest challenges and one of the highest value solutions in the European equity markets today. The marketplace that gets it right will not only make a real contribution to transparency but will likely attract additional liquidity as a result.

Round Robin

The adoption rate for algorithms and crossing networks in European equities has taken off like a little white rabbit in a waistcoat. TABB Group estimates that electronic trading will reach 45% of the average daily value traded (DMA/Algorithms + Crossing Networks) for traditional asset managers in Europe in 2012. That compares with 38% in 2010 (see Exhibit 3) and represents an 8.8% growth rate over the two-year period. Algorithms allow a buy-side trader to set minimum share sizes to protect against toxic flow and to change relative aggressiveness as liquidity patterns change intra-day. SORs are taking in real-time data feeds directly from trading venues and can direct order flow to where there is apparent interest in trading.

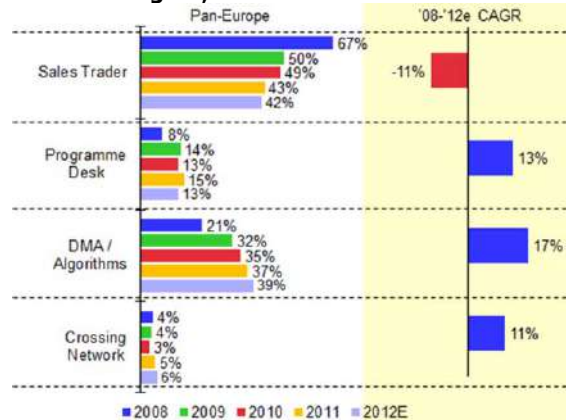
But the process isn't as clean or as effective as it sounds. One broker's first choice of venues is third on the routing table of another's. One broker's analysis of information leakage and market impact conflicts with another broker's measurement of post-trade reversion. All brokers struggle with accurately capturing clean market data and time stamps at comparable latencies across markets. They make differing decisions on order routing logic based upon differential trading fees, pricing structures and clearing costs.

Meanwhile the buy side struggles with understanding the underlying drivers for each broker's proprietary analysis of best price at the right cost when seeking liquidity. Buy-side traders struggle in applying individual brokers' post-trade analytics to actual broker selection, algo selection, venue selection and trade decision making.

When it comes right down to it, complexity and lack of clarity matter deeply. The relative quality of liquidity across markets matters tremendously to the buy-side asset manager and his trading desk. They have a fiduciary responsibility for the retail investor's financial well-being, and in this market of high volatility and higher correlations, every single basis point counts.

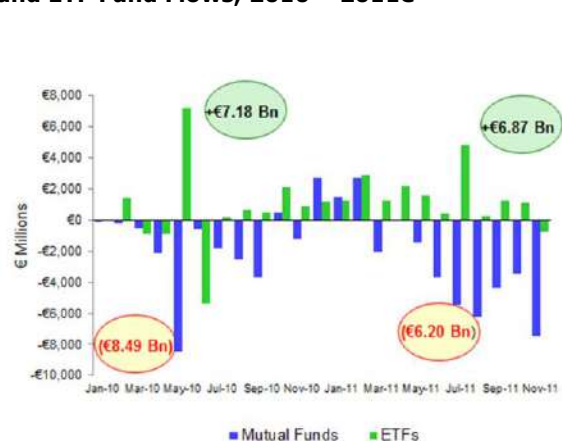
One has to look no farther than to fund flow numbers to get a very clear picture of how

Exhibit 3
Allocation of Order Flow by Channel, Traditional Asset Managers, 2008 – 2012e



Source: TABB Group

Exhibit 4
European Developed Markets Equity Mutual Fund and ETF Fund Flows, 2010 – 2011e



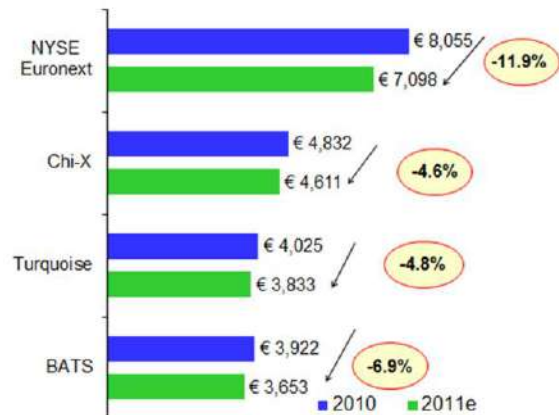
Source: EPFR, TABB Group

every active money manager in Europe is struggling to deliver and preserve alpha. Money has been pouring out of actively managed mutual funds and into indexed products like exchange-traded ETFs. Of the €48 billion in cumulative outflows from European equity mutual funds in 2010 and 2011, a whopping 48% of it was reinvested in European equity ETFs (see Exhibit 4).

Active managers are fighting for their survival to find sources of alpha and to deliver positive relative performance vs. these passive investments. It's a challenge to preserve alpha and reduce market impact costs when liquidity is increasingly fragmented, trade sizes are shifting across markets, and information migrates across spreads and prices in milliseconds.

This lack of predictability in the behaviour of liquidity can have a critical impact on the ability of the institutional order to find natural counterparties in reasonable size. In a small market like the BEL 20 stocks, for example, trade sizes have fallen precipitously across lit venues over the last two years. NYSE Euronext, Chi-X, Turquoise and BATS have all seen declines in their average trade sizes (see Exhibit 5).

Exhibit 5
BEL 20, Average Trade Size by Value Traded, YTD November 2011 v. 2010, by Venue

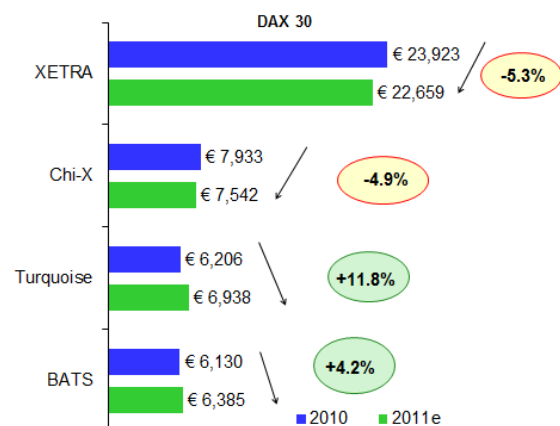
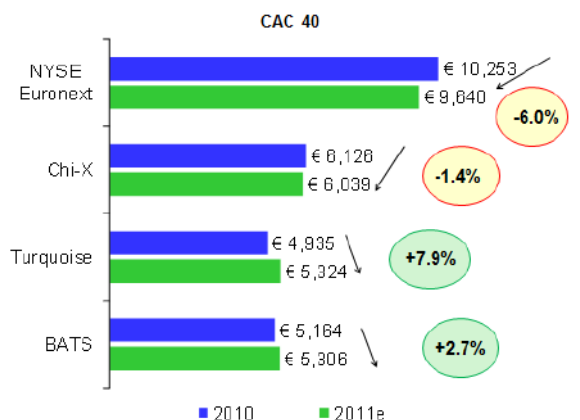


Source: TAG Audit, TABB Group

The CAC 40 and DAX 30 stocks, meanwhile, have seen significant migration of liquidity. Trade sizes are shrinking on the primary market, NYSE Euronext and the most liquid market, XETRA, respectively, but increasing on the Turquoise and BATS MTFs as dealer flow has been increasingly directed to the dealer-owned platforms (see Exhibits 6 and 7).

Exhibits 6 and 7

CAC 40 and DAX 30, Average Trade Size by Value Traded, YTD November 2011 v. 2010, by Venue



Source: TAG Audit, TABB Group

When BATS and Chi-X complete the merger of their platforms in 2012, the impact on market share, trade sizes and spreads across pan-European securities will present yet another series of challenges to brokers and their clients. Historical trade data used by algorithms and SORs will need to be reconstructed, and traders will need some time to determine just how much of the merger will be accretive in terms of volume and liquidity. There will be uncertainty about how to trade on the new marketplace for some time and yet trading must go on.

Buy-side traders are beginning to call upon the exchanges and trading venues to develop a usable set of liquidity metrics. They're interested in a reasonable and sound set of standards, available on a regular basis, to increase their understanding of the characteristics of a given market.

The exchanges and the MTFs themselves are in a position to take the high road. While there is no magic pill here to see all markets clearly for the quality they deliver, the markets have the opportunity to raise the bar on the standardisation of venue transparency. And the sooner the better.

Too Little, Too Late

There are many reasons why the marketplace needs comparative venue data. Waiting for the full implementation of MIFID II is like waiting for Godot.

European market regulation has missed the mark by quite a long shot when it comes to increasing the transparency of reporting by venue. Buy-side traders across the board are unimpressed with the fact that the new requirement for markets to report their quality statistics will only be on an annual basis.

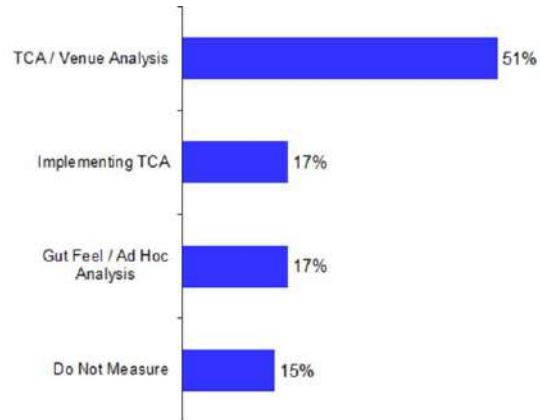
Annual reporting is simply not good enough. The data will be outdated by the time it is available and should be monthly, at a minimum, in order to provide any useful insight to anyone. Buy-side traders in Europe who also trade in the US point to the fact that SEC Rules 605 and 606 on US broker and exchange disclosure of order execution and routing practices haven't gone far enough either. Regulators took a nice step forward by clearly stipulating the required data and metrics to be reported, but traders say that quarterly reporting in the US is probably not much more valuable than annual reporting will be in Europe.

The same might be said about the construct of the proposed consolidated tape in 2014. Firstly, the fact that it may take two more years to implement is widely considered to be unacceptable. Secondly, many cite the fact that there will not be a deep enough level of granularity in the required reporting data to distinguish accessible liquidity from unavailable liquidity. Over-the-counter (OTC) trades, for example, would need to be clearly identified in order for brokers and their clients to accurately build their algorithm and TCA models using only the volume of trade data that represents actual available liquidity.

Meanwhile, traders increasingly rely upon their TCA reports and venue-specific trade analysis to quantify both their performance vs. their benchmarks as well as to understand which venues their brokers are using to execute their orders (see Exhibit 8). However, while TCA can capture venue execution data and incorporate that data into a comparison of trade results vs. a benchmark, it doesn't provide an easy or consistent way to compare the quality of liquidity on one venue directly to another. Brokers will evaluate venue performance across tens of thousands of different client orders to determine optimal routing decisions, but their clients have neither the expanse of data nor the in-house resources and expertise to evaluate venue quality on their own.

The exchanges and MTFs could actually take a page from some broker TCA providers when it comes to promoting the standardisation and transparency in trade data. The Open TCA project is sponsored by brokers and trading technology providers that are driving thought leadership in the standardisation of transactions cost measurement. The group is developing standard terms, definitions and baseline calculations for measuring transactions costs against a range of benchmarks on a post-trade basis. The initiative is laudable in that it provides the means for dialogue in the industry and the development of a consensus around transaction cost measurement methodologies. This is precisely the kind of discussion that the industry needs today about measures of market quality and trends over time. A similar initiative for standardisation in venue analysis by a joint venture or third-party provider would be welcomed by everyone from the retail investor trading ETFs to the macro hedge fund trading five days' worth of volume in a stock.

Exhibit 8
What Tools Do You Use to Measure and Compare Your Dark Executions? 2011



Source: TABB Group

In the Eyes of the Beholder

Perhaps if speed and latency and the impact of HFT are last year's problems, then defining and quantifying market quality is the focus for 2012. While quality will be in the eye of the beholder, it is nonetheless evident that in order to develop a view on quality of liquidity, one must have a consistent methodology at hand. While the challenges to establishing any kind of standard are many – not the least of which being the differing business models and economic objectives of each marketplace – the contribution to the industry and to institutional participants should not be underestimated.

Buy-side traders are asking for more and more data about the character of each marketplace. As there is no "tape" and as there is no consistency across venues in how they report their real-time or their post-trade market data, there is a sense on the part of the buy-side trader that what they don't know might very well hurt them. Without a reasonable set of consistently available metrics provided by the markets and the brokers, buy-side traders feel they're trading blind. Indeed, some are willing to say that they have made decisions about whether or not to trade in a particular market based more upon what they've heard rather than what they empirically know.

Questions that are front-of-mind for a buy-side trader today include the following:

- Which marketplace represents the inside spread at touch the majority of time in this name?
- How reactive or volatile is the spread on one venue relative to others?
- Which venue shows the greatest size at touch the greatest percentage of time?
- How long does size stick around? How fast does size disappear? Or, put another way, how resilient or persistent is that liquidity?
- What does lack of resilience say about the participants in a market? How is that related to price behaviour across venues?
- What is the variability of spreads? Or, put another way, how consistent are they?
- Where does depth reside? How does depth vary across markets in the same name?
- What happens to the price of my stock after my order has left the marketplace?

When asked to define the term "market quality," brokers and buy-side traders alike will say that it depends upon who you are and the objectives of your individual order. The high-speed constituency clearly values extremely low-latency infrastructure as well as pricing models that incent high-volume order flow and liquidity-generating strategies. Setting aside electronic liquidity players, along with stat arb and momentum HFTs for the moment, the definition of market liquidity for institutional investors depends upon their underlying investment objectives which, in turn, drive their trading strategies. Hence market quality for a large-cap value manager and a small-cap growth stock manager are not quite the same.

There are some fundamental characteristics that are important, however, to all institutional investors, regardless of management style. They are the investors with the “real” assets and an investment time horizon measured in time far greater than milliseconds. These buy-side traders will tell you that there is high value in:

- Consistent spreads
- Size at touch
- Presence at touch
- Depth of book, and
- Diversity in counterparties

Beauty, as they say, is in the eye of the beholder. Who you are will determine the objectives of the order and the relative value of different liquidity sources. An aggressive buy-side order in a high-momentum name carries a high degree of urgency. Price takes a back seat to opportunity costs, and a buy-side trader executing an order like this may be very willing to take advantage of HFT flow in order to capture as much liquidity at a moment in time as possible. He will be sensitive, however, to information leakage and will try to avoid venues that cause instantaneous adverse price movements across venues.

For the large-cap value manager, in our simple example, price is more important than opportunity cost, and trading strategies tend to be more patient. Value orders are patient, and patience implies resting orders, limit orders, and orders in larger share sizes than a small-cap fund would typically trade. Quality of liquidity for this large-cap value manager is going to be less a reflection of spread sizes, because these orders don’t tend to cross the spread; they wait for liquidity to come to them. This order will value natural counterparties willing to trade in some size and markets that don’t punish resting orders by catching wind of intent and trading against it.

A passive institutional order will find market quality in a venue that is consistently present at touch (EBBO) and in larger size. Multiple lit venues may offer competitive spreads, but they may do so only for a relatively small percentage of the time, and some will show at the inside quote in consistently smaller sizes.

While the AEX index represents a small aggregate market cap relative to the larger blue chip indexes, the comparison across markets by spread at touch and liquidity at depth is revealing. For the AEX stocks in the month of October 2011, for example, NYSE Euronext and Chi-X are the only two real competitors for market share.

Exhibit 9
AEX 20, Percentage Market Share by Venue, Spread at Touch in BPs, Liquidity +10/-10 BPs, October 2011, by Venue



Source: LiquidMetrics, TABB Group

LiquidMetrics estimates that NYSE Euronext captured 62% of trades on the book while Chi-X as next competitor captured just 25%. The two competitors are close on spreads with an average of 6.6 bps on NYSE Euronext vs. 6.86 bps on Chi-X in October. However, depth at top of book reveals that there is only one market in these names at 10 basis points up or down from the midpoint of the EBBO, and that would be NYSE Euronext with 2.5 times the average liquidity at touch vs. Chi-X (see Exhibit 9).

These metrics underlie the question of *quality* of a market's price discovery process. For a patient institutional investor, or any investor for that matter, there is higher integrity to price discovery that is derived from substantial order size. There have been significant shifts in trade liquidity away from the primary markets in the past two years, as we've seen above. And there are shifts underway across the pan-European MTFs. If these shifts are HFT strategies, maker/taker pricing schedules are the magnet, rendering this liquidity fickle. But the combination of consistent presence and greater size at the inside market draws a picture of more substance and diversity. Of course you need the data in order to see that picture.

Patient traders will be more inclined to avail themselves of lit liquidity when they are interacting with liquidity that sticks around. The percentage of time a venue maintains a presence on the EBBO is an indicator of the quality of the flow on that venue as measured by its diversity. Time combined with size on the top-of-book can provide good insight into the breadth of participants contributing to price discovery. If a marketplace enjoys a diversification of liquidity from retail, institutional, hedge, derivative and HFT participants, both the size and consistency of presence at top-of-book will likely be higher – and more resilient.

Does it Bounce?

"Resiliency," according to the Merriam-Webster dictionary, is defined as "the capability of a strained body to recover its size and shape after deformation..." and "an ability to recover from, or adjust easily to, misfortune or change."

The word is a good one to describe what a buy-side trader looks for when his order hits a trading venue. If a venue lacks diversity in liquidity, it won't have the requisite level of staying power to recover easily from the impact of an order. It may, instead, react with high sensitivity to that order, resulting in immediate adjustment to price and size at the EBBO. If liquidity is too thin or too transient, there is a lack of resilience that translates into the potential for higher market impact and information leakage. The brokers are looking hard at this type of post-trade price reversion. Frequent high-speed price reactions resulting in short-term adverse price moves in response to an institutional order should raise a red flag for certain orders and algorithms.

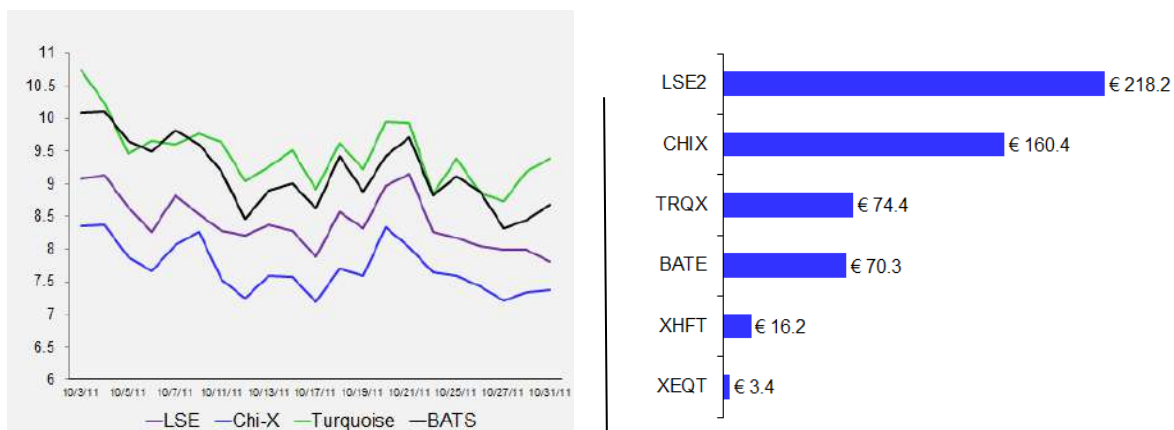
Depth of market is as much an indication of market diversity and quality of flow as size and frequency of presence on the EBBO. A marketplace that can attract a series of price points against which an institutional order can interact to gain greater liquidity is differentiated. This is the beauty of resting liquidity. Simple market share and EBBO spreads, as we have seen, don't tell a complete or a consistent story across multiple markets.

Take a similar example of the battle underway between the London Stock Exchange (LSE) and Chi-X for trading in the FTSE 100 stocks. According to LiquidMetrics' "Battlemap" for the month of October 2011, the LSE captured 51% market share in the FTSE names, with Chi-X coming in second at 31%. That's hardly neck-and-neck. But at touch, Chi-X outpaced the LSE with tighter spreads and was at the EBBO on one side or the other for a greater percentage of the month than the LSE. The average spread at touch on Chi-X was 7.72 bps while on the LSE spreads averaged 8.42 basis points (see Exhibit 10). Chi-X showed best price 7.8% of the time against LSE at 5.56%. Of course the BATS Chi-X merger will alter these specific data points, but the value of the comparative methodology won't change.

It would be natural to ask how the LSE won on market share and yet lost out in time and price on touch. The answer may lie in comparing depth of book. At 10 basis points up or down from the mid-point of the EBBO, LSE maintained 36% greater liquidity on average during October than did Chi-X (see Exhibit 11).

Exhibits 10 and 11

FTSE 100 Spread at Touch by Venue, October 2011, BPs; FTSE 100 Liquidity by Venue, +10/-10BPs, October 2011, €000's



Source: TAG Audit, TABB Group

Buy-side traders are increasingly interested in access to this type of venue analysis from their brokers and from the markets themselves. A roadmap of historical data helps a trader gain a perspective as to how metrics used by the brokers in their real-time routing decisions are related to this issue of quality of order flow, quality of price discovery and the value of resiliency.

The Liquidity Seekers

Some orders are downright aggressive. Take that small-cap growth manager's trades, for example.

These are highly price-sensitive trades. Spreads are important, and so is the relative volatility in spreads intra-day across venues, which, it can be argued, is also an indicator of quality and diversity. The brokers have observed that the volatility in spread prices is far lower on primary markets than on some of the MTFs. If a primary market spread is typically two basis points, they observe, it has a tendency to stay at two basis points regardless of market

direction. MTF spreads may break more frequently. They may widen to three basis points because there is less liquidity at each of the price points. Consider the fact that the exchanges have a diversity of participants, including retail flow and institutional flow, both of which are less reactive, have a lower cancel-to-fill ratio on average, and can dampen both that spread volatility as well as market impact.

Liquidity-seekers don't have time on their side. There is information content and there is potential for adverse price momentum. As liquidity seekers cross that spread, they trigger a series of responses across venues. Electronic market makers adjust their prices, stat arb traders back off of a price, and momentum-hunting algorithms jump ahead to take out the next contra-order. The behaviour of markets will vary depending upon the dominant character of its participants. It is helpful information for a buy-side trader to know that a trade in an illiquid name will blow out the spread on one market faster than on another and will incur both greater information leakage and short-term price reversion. This is a double-dose of appreciation for an institutional order. Data about spread volatility, spread persistency and cancel-to-fill ratios could be easily provided by the venues themselves to help buy-side traders make better decisions.

Any algorithm worth its salt is going to be on the alert for just this sort of short-term reactive behaviour, and brokers are increasingly sophisticated in monitoring venue responses in real time on their SORs. The state of the art today in qualifying the various pools of liquidity is in an exciting stage. Brokers are going beyond simple market share and success rate data, and have long since figured out how to manage variable speeds and latencies across venues in order to instantaneously take out liquidity and avoid tipping off the high-speed electronic liquidity providers. They're doing significant analysis into aggressive vs. passive ratios in lit vs. dark markets. They're looking at reversion and at the results from prioritizing venues with size vs. those without. Clients are asking for help from their brokers to characterize the relative toxicity of one venue vs. the other as measured by market impact costs, information leakage, mean reversion and spread volatilities.

Importantly, a buy-side trader doesn't just trade electronically. In Europe today, he executes 42% of his flow with an upstairs sales trader. In partnership with that trader, he may seek out natural counterparty flow, look for guidance and insight on price behaviour, and maybe ask for a bid to be stopped on price. Armed with some comparative metrics to tell him what behaviour is typical in certain markets and when that behaviour is beginning to change, a buy-side trader working high-touch orders will be in a better position to avoid signaling and reversion as well as increased market impact.

Many asset managers are now able to accept FIX Tag 30 in their order management systems (OMS) and can take in the venue-specific execution data that their brokers are able to provide. The truth is, however, that most money managers don't have the internal resources to make good use of that data in-house. The sheer magnitude of the number of child orders and distinct executions in today's fragmented marketplace make the task of interpreting and actually using this data far beyond the capacity of most buy-side desks.

Thus most buy-side traders rely tremendously on their brokers to capture, analyse, interpret and apply this execution data to improving the transaction results of their trades. They expect that their electronic trading partners will be able to utilise the ability to differentiate across execution venues based upon hundreds of thousands of orders and a myriad of trade parameters.

Nonetheless, buy-side traders will tell you, it is extraordinarily difficult to compare one broker's decision tree to another's. Certainly post-trade TCA results vs. preferred benchmarks will highlight which algorithms offered by which brokers tend to perform best over time. But the question lingers as to how best the marketplace itself can address the need for standardisation to help a buy-side trader determine the true qualitative characteristics of one venue relative to the other. Brokers are increasingly sophisticated in their pre- and post-trade venue analysis, but their clients are still looking for direct access to both independent and consistent metrics across all venues.

Conclusion: What's a Market to Do?

In a regulatory environment that is in a high state of flux, and in a marketplace that is in a high state of opacity, a greater level of standardised information is called for. There is plenty more that the exchanges, the MTFs and even the brokers can do to take the high road on transparency.

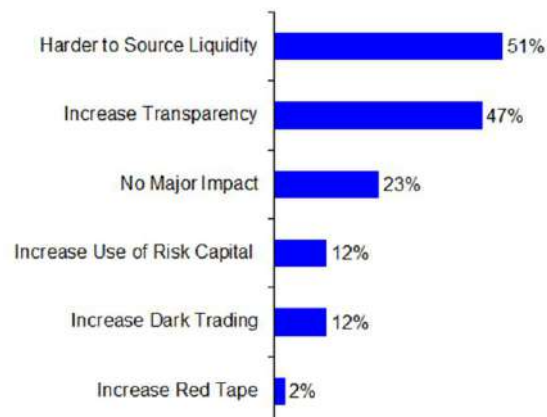
Buy-side traders and their broker partners ask the same questions every day. How long does size stick around? How fast does size disappear? What is the variability of spreads? Which market is consistently top-of-book and which has the greatest size at touch and at depth and throughout the trading day? What is a venue's average order size, trade size, and cancel-to-fill ratio? Which markets react the fastest to a transaction on another venue, and which have a diversity of order flow that allows both their spreads and their size to remain consistent and reliable? How can I be certain that my dark pool mid-point cross is actually the correct mid-point price at the time my order was executed?

There's no little white rabbit scurrying along ahead to lead the way down the correct garden path for our trader Alice. No one believes that the clarifications that will unfold with MiFID II or the post-trade data that comes with an official tape of record will be the be-all-and-end-all of the transparency problem. In fact, buy-side traders have significant concerns about how MiFID II will impact their ability to successfully execute their orders. The number one fear is that the rules will make it just that much harder to source liquidity in a fragmented market (see Exhibit 12). If it's harder to find liquidity, the marketplace is going to have to find ways to develop standards of price and transaction data that will shed light on market quality characteristics.

There are some indications that the marketplace will step up and begin to fill the void. Independent providers TAG Audit and LiquidMetrics, and market venues BATS and NYSE Euronext, are starting to display some welcome thought leadership as they begin regularly producing "quality of liquidity" data across multiple venues in the same sets of securities.

Fiduciary responsibility has come a long way on the buy side over the past two years, say many of the sell-side brokers. Traders are asking more and more questions about how dark pools behave, about the routing logic on SORs, about the nuances of co-location and latency and the advantages that some participants in the marketplace may have. They are beginning to ask about maker/taker rebates and the relative economic incentives for their brokers when they route an order to a particular MTF vs. to an exchange where they incur exchange fees to trade. Sure, a broker may reduce his cost of doing business, but there may be less-than-

Exhibit 12
How Will MiFID II Impact Your Ability to Trade? 2011



Source: TABB Group

optimal consequences when it comes to the transactions costs ultimately incurred by the investor.

The real challenge here is complexity. Toxicity is hard to measure. People don't really know if they're doing well or if they're doing poorly. They are more conscious of the fact that they're operating in an environment where the potential for adverse selection and perceived abuse is greater than it once was. And they can see the various approaches and methodologies taken by their brokers to try to quantify these issues for them. But they also see a complex maze of SORs passing orders around from market to market throughout the trading day. That makes it extremely difficult for the real-money trader to make complex trading decisions in real time with any confidence at all.

Brokers are increasingly granular in their post-trade TCA analysis and are trying to come up with metrics that will differentiate the quality of liquidity and trading results in one venue vs. the other. The fact remains, however, that the industry at large – the marketplaces themselves – have done little to date to come to the aid of the institutional investor. The alpha that can be generated by the portfolio manager's stock selection decision can either be preserved and even enhanced through the trading process or knocked around and chipped away as it wends its way to a completed transaction.

Waiting for the regulators to figure it all out hasn't worked in any market in recent memory, and it won't work across pan-European equities. If the markets themselves don't take the high road and promote standards and metrics to qualify their own trading activity, eventually the regulators will do it for them. As we've seen, there can be all sorts of unintended consequences when practitioners default to the decisions of the regulators. Neither the venues, the brokers nor the institutional traders will be well-served to abdicate on this one. The good news is that, going into 2012, there are signposts of thought leadership popping up here and there as a handful of market centers take the high road on quality of liquidity standards. As for that little furry guy in the waistcoat and the spectacles, follow him without your map and you just might not get there from here.

About

TABB Group

TABB Group is a financial markets research and strategic advisory firm focused exclusively on capital markets. Founded in 2003 and based on the methodology of *first-person knowledge*, TABB Group analyses and quantifies the investing value chain from the fiduciary, investment manager, broker, exchange and custodian. Our goal is to help senior business leaders gain a truer understanding of financial markets issues and trends so they can grow their business. TABB Group members are regularly cited in the press and speak at industry conferences. For more information about TABB Group, go to www.tabbgroup.com.

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Laurie Berke

Laurie Berke joined TABB Group as a Principal in May 2006, bringing more than 20 years of experience in the equity and derivatives trading and technology arena. Laurie's focus is primarily on our equity capital markets consulting and advisory work. Most recently she published "US Broker Consolidation: Cherry Picking Season" and "Execution Consulting: The Next Generation in Sales Trading." In addition, she authored the "US Institutional Equity Trading Report" for three years, as well as "US Institutional Equity Brokerage 2010: Assets, Commission Management and Concentration." She has published "Trading for Alpha: CSAs in US and Europe" as well as "FX Algorithms: Bringing Best Execution to the FX Markets," and "The Optimal Implementation: ETFs, Futures and Swaps." Prior to joining TABB Group, she was a director at ITG Inc., where she spent ten years in global execution product management. She moved to ITG after five years at Merrill Lynch as a senior vice president, portfolio trading and derivatives. From 1985 to 1990, she led the equity sales/trading team for Kidder Peabody's portfolio trading and financial futures division. She began her career in 1979 as an options sales/trader at Paine Webber Inc., where she later launched the stock index arbitrage trading desk in 1983. Laurie earned a BA degree from Bucknell University.



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