Global Equities

European Equity Trading 2016:
The Liquidity (R)evolution

Rebecca Healey | V14:021 | April 2016 | www.tabbgroup.com

Key Findings

1. Fundamental changes in the makeup of brokerage relationships are underway. Only 25% of participating buy-side firms still use bundled commissions to pay for research in the traditional manner.

2. The full scale and impact of regulatory change is yet to come, with 49% of buy-side participants still opting to wait for greater clarity before they move forward with MiFID II implementation programs.

3. While European equity commissions recovered in 2015, expectations for an increase in commissions in 2016 are low. Only 13% of asset managers with large assets under management (AUM) anticipate the size of their wallet will grow.

4. The European industry continues to consolidate in favor of large asset managers. While 31% of those interviewed fell in the mid-tier category of participants, their assets accounted for less than 2% of overall AUM.

5. Consolidation is also occurring on the sell-side. The average number of core brokers used by the buy-side has declined from 10 to 8.5, but so too has the proportion sent to the core – dropping from an average of 71% in 2013 to 61% in 2015.

6. The fight for wallet share is intensifying within the top five brokers. While overall the top five brokers receive an average of 56% of the total commissions paid, the proportion is heavily skewed to the number one broker. There is now a differential of 19% of commissions between broker one and five, and 12% between the top two.

7. Traditional methods for brokers to add value – such as the provision of block liquidity – are in decline. While 68% of participating asset managers saw an increase in blocks in 2015, 44% do not expect this to continue in 2016.

8. Similarly, the appetite for capital commitment continues to decline, with 46% of participants no longer choosing to access risk pricing. For those who do, the majority only access risk for less than 10% of their flow.

9. As control of liquidity shifts away from traditional bulge brackets, new methods of trade formation are emerging. Agency brokers continue to fight their way up the pack, with two agency brokers in the top three brokers for block trading.

10. It is no longer just sell-side/buy-side: as the European capital markets eco-structure is reformed, 31% of firms are starting to look to venues for liquidity rather than brokers, finally opening the gateway to the new liquidity (r)evolution.

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

Table of Contents

KEY FINDINGS 2

TABLE OF CONTENTS 3

TABLE OF EXHIBITS 4

INTRODUCTION 5

THE TIPPING POINT 7

CUTTING TO THE CORE 10

RETHINKING ACCESS 15

Risky Business 17

Building Blocks 18

DEATH OF THE ALGO? 21

The Burden of Proof 22

BEST IN CLASS 24

Agents of Change 26

Leading Locals 28

REGULATORY OVERLOAD 29

Emerging from the Dark 30

Broker vs Venue 31

METHODOLOGY 32

CONCLUSION 33

ABOUT 34

TABB Group 34

The Author 34

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

Table of Exhibits

Exhibit	Title	Page
Exhibit 1	How Client Commissions were Used to Pay for Research in 2015	7
Exhibit 2	Percentage of Commissions Being Used to Pay for Research in 2015	7
Exhibit 3	What Internal Processes are You Changing as a Result of MiFID II (All Participants)	8
Exhibit 4	What Internal Processes are You Changing as a Result of MiFID II (by Proportion Unbundled)	8
Exhibit 5	Buy-Side Commission Expectations for 2016	9
Exhibit 6	New Methods of Liquidity Offered by Brokers	9
Exhibit 7	Change in Commission Payments 2013 vs 2015 by Notional ADV/Average Core Brokers and Total Brokers	10
Exhibit 8	Average Number of Core European Brokers – 2013 vs 2015	11
Exhibit 9	Distribution of Commissions between 2015's Top-Five Brokers	12
Exhibit 10	Top Five European Brokers in Commissions in 2015, Expressed as a Percentage of Participants within each Wallet Segment (ADV)	13
Exhibit 11	Execution Channel Usage 2013-2016e: YoY Participants Only	15
Exhibit 12	Commission Rates (BPS) by Channel	16
Exhibit 13	Commission Rates (BPS) Bundled and Execution Only (2010-2015)	16
Exhibit 14	Activity via Trading Channel – UK (2013-2016e)	16
Exhibit 15	Activity via Trading Channel – Europe (Excluding UK) (2013-2016e)	16
Exhibit 16	Use of Risk – 2013 vs 2015	17
Exhibit 17	Use of Risk – Correlation with ADV	17
Exhibit 18	Change in Block Activity 2012 vs 2016e	18
Exhibit 19	Block Activity Trends – Percentage of Trading Volume Executed as a Block	18
Exhibit 20	Block Activity Trends – Moving Away from Schedule--Based Trading?	18
Exhibit 21	Coverage Patterns in 2013	19
Exhibit 22	Certainty of Anonymity 2014 vs 2015	19
Exhibit 23	Asset Managers: Change in Algorithm Usage 2014-2016e	21
Exhibit 24	2015 Best in Class Algo Providers (by Frequency of Mention)	22
Exhibit 25	Top Five Brokers 2013 vs 2015 (by Frequency of Mention)	24
Exhibit 26	2015 Best in Class (by Frequency of Mention)	25
Exhibit 27	Best in Class 2015 – Coverage/Agency Blocks/IOIs/Risk	25
Exhibit 28	2015 Best in Class (by Frequency of Mention) for Coverage	26
Exhibit 29	2015 Best in Class (by Frequency of Mention) for Pricing Risk Capital	26
Exhibit 30	2015 Best in Class (by Frequency of Mention) for Execution Consultancy	26
Exhibit 31	2015 Best in Class (by Frequency of Mention) for Research Advisory	26
Exhibit 32	2015's Top Agency Block Providers (by Frequency of Mention)	27
Exhibit 33	Top Regulatory Concerns 2015 vs 2013	29
Exhibit 34	Impact of Future Regulation on Dark and Large in Size Trading	30
Exhibit 35	Participants Segmented by Location	32
Exhibit 36	Participants Segmented by Average Daily Volume and Assets under Management	32

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

Introduction

The continued delay in the implementation of financial regulation frustrates industry participants, but it is not the only challenge facing European equity trading. Wider economic and technical fundamentals continue to push a reluctant industry toward the precipice of wholesale change. The decline in traditional revenue streams is not only leading to greater automation, but is also forcing firms to reassess what business they want to offer, to whom, in which regions and how those services should be provided.

Change is not only occurring on the sell-side. Assets continue to consolidate under mammoth super asset managers, where asset ownership is dominated by a diminishing number of key players. As the environment alters, in true-Darwinian style, the participants of the eco-structure are slowly adapting their habitats and interactions, finally cutting the cord between the traditional relationship of sell-side, buy-side and venue.

Technology will continue to transform the industry's approach to all aspects of capital markets, from fund selection to monitoring of performance. Automation in the industry no longer just means high-speed trading, but robo-advisors, buy-side auto-routing, new issue electronic auto-allocations and now even the potential to settle via blockchain.

Improvements in automation will not only allow the sell-side to reassert competitive offerings, but will also offer respite to a beleaguered active management industry. The beneficiaries of the persistent drive to lower cost models thus far have been passive funds. But as interest rates continue to decline to zero, active funds have a greater chance of outperformance provided robust investment in technology facilitates better monitoring of cost controls and minimizes unnecessary risk.

The recent furor over supposed "closet tracking" will ensure that improved transparency over costs and index weightings will become an essential pre-requisite to meet regulatory concerns. It is not the level of deviation from the index that determines performance but rather the quality of the positions within the fund and the level of activity. The risk arises when volatility increases: fund managers may legitimately want to reduce their exposure to risk by adjusting portfolio positions, reducing small and mid-cap in favor of exposure to large caps, thereby potentially increasing the risk of "closet tracking". In this era of greater accountability, clients, trustees and risk managers may also want to limit activity and potential downside risk during volatile periods. All of which will lead to greater scrutiny and accountability of what investment and trading decisions are taken, when and how.

As buy-side requirements shifts, so do the providers of services. While some on the sell-side have embraced the agency model, not all can survive as traditional providers of liquidity. Others are redesigning business models based on the provision of capital-intensive services and collateral management. The recent loss of FICC (Fixed Income, Currencies and Commodities) revenue stream for the sell-side will ensure that any decline in equity commissions will drive a rapid reinvention of brokerage services in order to succeed and survive.

Post MiFID II, voice and over-the-counter (OTC) trading will still be available – just not for all. As liquidity becomes harder to locate in the dark with the loss of broker crossing networks (BCNs), and trading slows with the rise of block trades, alternative methods to locate and access liquidity will need to be found. The more manual the process, the more expensive the provision of liquidity will become. Technology will assist in new initiatives,

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

ensuring the champions of change will no longer only be the sell-side, but also the underlying venues themselves.

Change will not only impact cash equity markets. New reporting requirements for OTC products and the underlying of derivative transactions will also lead to further transparency requirements, impacting price formation and ultimately the provision of liquidity. The imposition of clearing mandate with additional operational and cost implications will start to impact the choice of products and services. Even the recent rise of the exchange-traded funds market will be impacted as MiFID II regulations are extended from equity to equity-like.

This powerful combination of economic, technical and regulatory shifts continue to move the dial on redefining the European capital markets ecosystem, by influencing who owns liquidity, how it is distributed, who pays and how. As exchanges shift their focus to greater automation and technology, the risk to the sell-side is disintermediation from the buy-side community. Yet change is emerging in incremental steps so small that while individual changes may not be noticed, the accumulation of total change will become the groundswell of a liquidity revolution. Its eventual impact on European market structure will be profound.

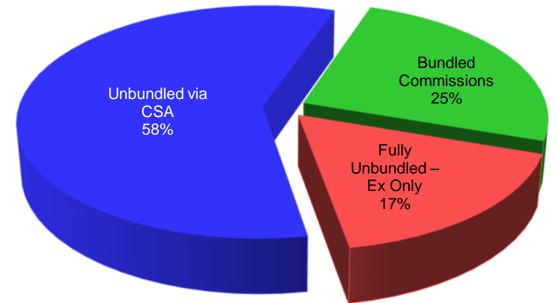
© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

The Tipping Point

The unbundling revolution has been held hostage to impending MiFID II regulation since 2014. Yet despite the absence of regulatory clarity, firms are already starting to change behaviors. In 2015, only 25% of European firms continued to pay for research through use of traditional bundled client commissions, and 17% did not use client commissions to pay for research (see Exhibit 1). While the vast majority of participants remain unbundled via a commission sharing agreement (CSA) framework, how this framework is structured and commissions are allocated is also under review.

"At the point of execution, we only pay execution commission rates. We do not pay for any research whatsoever."
(Large UK Asset Manager)

Exhibit 1
How Client Commissions were Used to Pay for Research in 2015

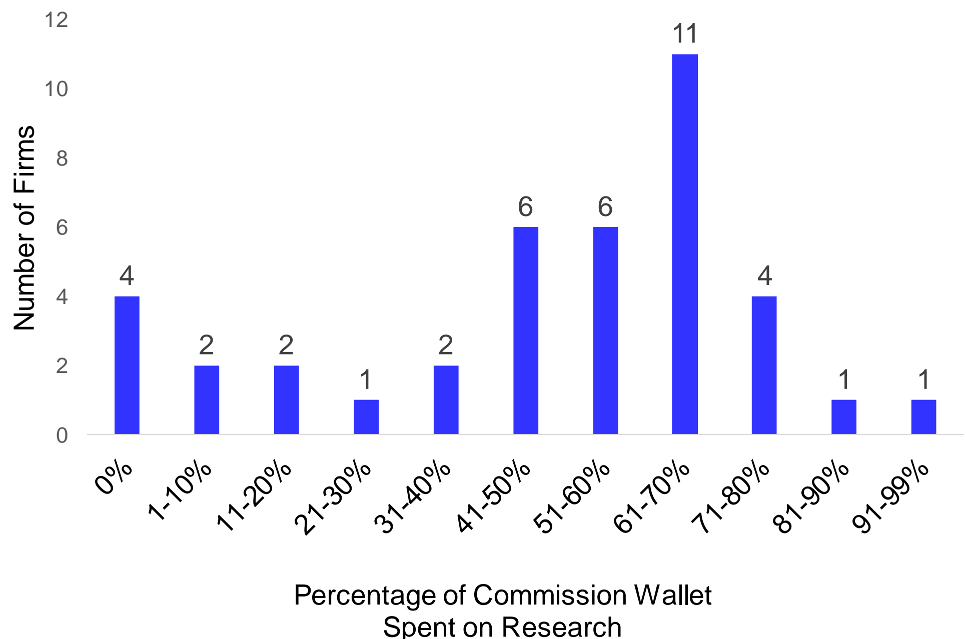


Source: TABB Group

The proportion allocated to research versus execution is declining as firms scrutinize what research they are purchasing and why. While the traditional split of two-thirds research, one-third execution is still dominant, it is slowly being replaced by a myriad of complex percentage structures to meet changing requirements. Some organizations are now directing a higher percentage of commissions to execution above research in an attempt to reduce overall costs (see Exhibit 2).

"We are now paying proportionally more for high-touch access than we are for research from our commission pool."
(Large Global Asset Manager)

Exhibit 2
Percentage of Commissions Being Used to Pay for Research in 2015



Source: TABB Group

"It used to be a 70/30 split, but the proportion going to research is going down each year – next year it will be 55% with execution getting 45%."
(Large European Asset Manager)

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

"We are not at the point of pulling the trigger – intuitively you'd think we'd expand our CSA program significantly but that depends on the final text."
(Large UK Asset Manager)

"We have gone as far as we can. We can't afford to invest until we know whether or not we can use CSAs."
(Medium-sized UK Hedge Fund)

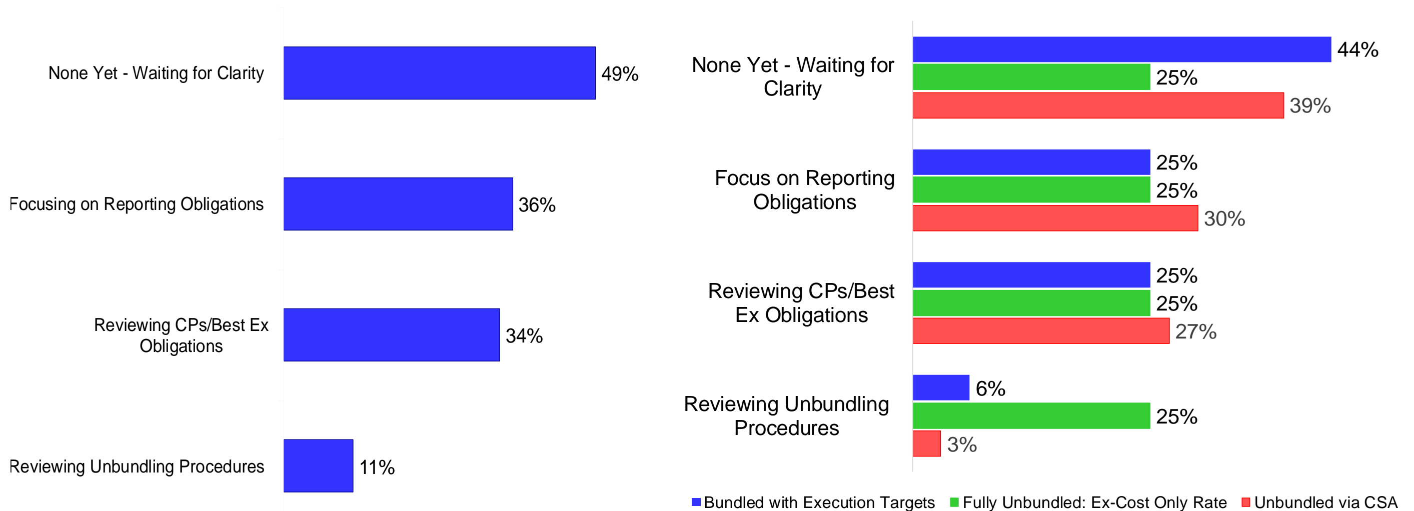
The full impact of unbundling is still in its nascent stage. The recent release of the Delegated Acts by the European Commission indicate that investment firms will need to extensively document how they value and pay for research going forward. Post MiFID II any research payments will needed to be funded either straight from the firms bottom line or, if client commissions are to be used, via a separate research payment account (RPA). The RPA can only be funded by a specific research charge to the client, not linked to the volume and/or value of transactions.

While many market participants anticipated an extension to the current commission sharing agreement (CSA), the level of scrutiny and detailed reporting regulation will require firms to implement an extensive administrative program to manage the RPA framework. For other firms, the level of administrative complexity has already meant abandoning CSAs. Research costs are being either transferred back to end-clients through re-invoicing of services or alternatively paid for straight from the bottom line.

A significant number of firms have remained waiting on the sidelines, intending to complete their payment for research policies and processes only when they know the regulators' final direction of travel (see Exhibit 3). Even those firms that perceive themselves as providing independent execution recognize that there is further change to be made to internal processes (see Exhibit 4).

Exhibits 3 and 4

What Internal Processes are You Changing as a Result of MiFID II (All Participants/by Proportion Unbundled)



Source: TABB Group

"Our top research provider? Anyone who hasn't cut us off."
(Medium sized UK Hedge Fund)

It is this transparency about costs and allocation of resources that is dramatically altering how services are procured, accessed and consumed, as well as who is the recipient of which services. Brokers are already scaling back the value of the research they distribute. As sell-side research teams disentangle research from inducements and commissions, high-value clients may still receive

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

access to research, but smaller funds are starting to see the research tap being shut off.

> "The OMS will say there is no charge, but what happens is they cross charge the broker, and take a percentage of the broker commissions, which the broker then deducts from your commissions paid – so there is a charge, they just haven't been up-front about it."
> (Medium-sized UK Hedge Fund)

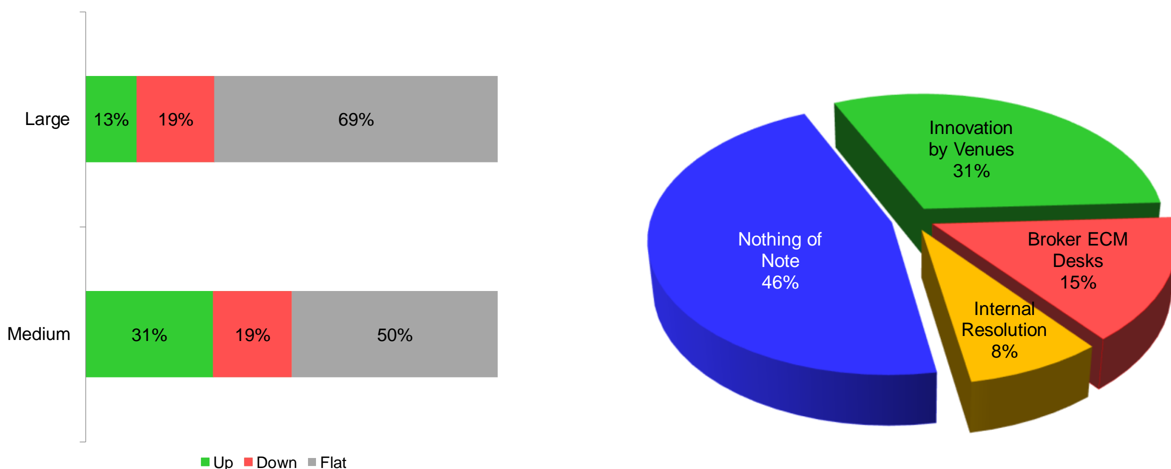
While industry disquiet remains over the consequences of larger asset managers benefiting at the expense of their smaller peers, wider economic changes are altering the equilibrium between the buy-side and sell-side. Revenue reduction for European equity brokers no longer supported by FICC earnings is accelerating scrutiny of who is paying for what and where, to ensure there is no inadvertent cross-subsidization of service offerings.

This reduction in the provision of services is not only based on an economic need to cut costs or focus limited resources on the most profitable clients, but also to avoid any inadvertent provision of free services that may be perceived as an inducement to trade. To resolve this, both buy-side and sell-side firms are restructuring their traditional business models. Some on the buy-side are increasing their use of internal analysis or alternatively choosing to pay for research direct from the bottom line. But it is not only the provision of research that is affected. Even traditional practices such as brokers paying for individual client FIX lines by order management system (OMS) providers are being called into question. All of this is putting the onus on the buy-side to pull costs internally and pay for more services directly to ensure compliance, as well as the pressure to manage their cost base more effectively.

> "Once the research side is sorted, people will turn to execution and wake up to the fact that 5bp does pay for what you get."
> (Large Global Asset Manager)

As buy-side firms scrutinize costs, the subsequent reduction in commissions is creating a virtual circle of diminished sell-side revenue opportunity. As sell-side firms are forced to restrict offerings, the buy-side internalize more, reducing expectations for future revenue. Only 13% of large commission payers anticipate an increase in 2016 (see Exhibit 5). Potential changes to the systematic internalizer (SI) regime, alongside the increase in block trading is shifting who the buy-side go to and why, finally opening the door to new challengers – and not only other brokers. Nearly half of asset managers interviewed see nothing of note emerging from the sell-side: 31% are now looking

Exhibits 5 and 6
Buy-Side Commission Expectations for 2016 / New Methods of Liquidity Offered by Brokers



Source: TABB Group

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

directly to venues for liquidity innovation (see Exhibit 6).

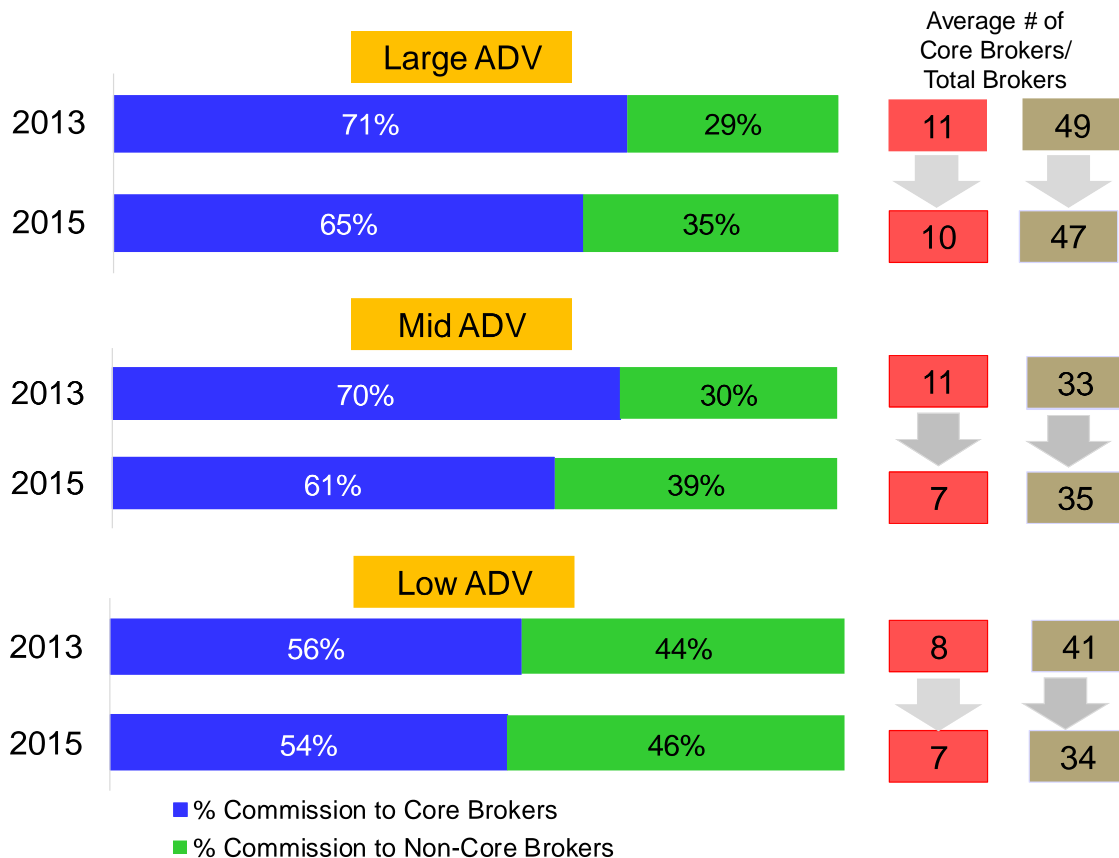
Cutting to the Core

Regulatory limbo may be acting as a brake on the formulation of new commission and execution policies, but underlying economics are also creating an impact. The majority of buy-side firms are continuing to cut the overall number of brokers as they attempt to control commission costs and deliver value for money for underlying funds (see Exhibit 7).

"Our list has gone up from 45 to 60 as we are looking at more local and second tier brokers to provide us with the service we need."
(Medium-sized Continental Asset Manager)

However, this does not necessarily mean an automatic decline in all broker numbers. While all participant types – large, mid and small (average daily volumes) ADV – saw a decline in the average number of core brokers, this was not replicated in the total number of brokers. As regulatory pressure reduces the sell-side's ability to facilitate execution via capital commitment, some on the buy-side are being forced to diversify their access to natural liquidity by increasing the tail. Those with mid-ADV saw an increase in their total numbers of brokers versus those with large and small ADV reducing their number of brokers. Where the average number of core brokers is declining, so too is the proportion the core is receiving, with low-ADV participants now routing just half of their commissions to core brokers.

Exhibit 7
Change in Commission Payments 2013 vs 2015 by Notional ADV/Average Core Brokers and Total Brokers



Source: TABB Group

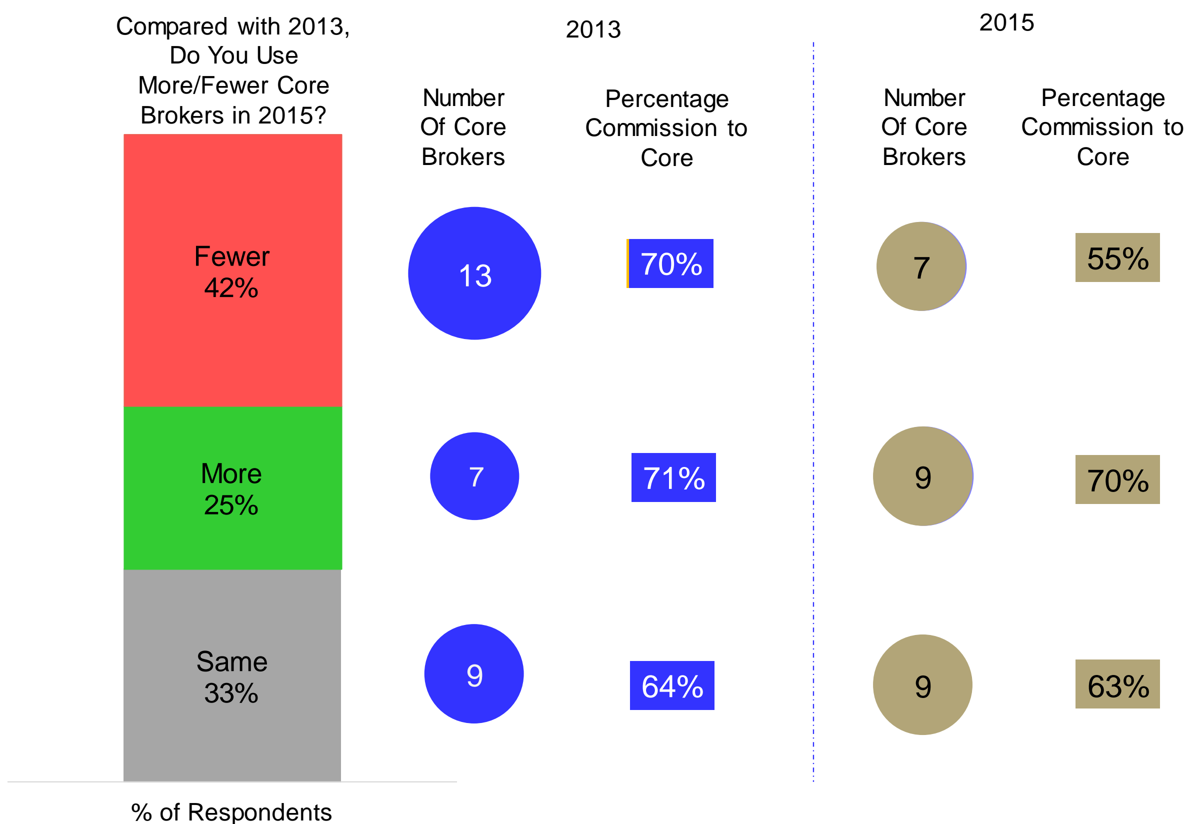
© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

> "For us it's not the overall number of the list that is interesting – it's who is on that list. In Europe 3 out of the Top 5 are now non-bulge"
> (Medium-sized UK Asset Manager)

Ultimately, it will depend on a firm's individual activity, but for European funds where the portfolio is diverse across country and sector, participants are struggling to reduce broker lists further, particularly if they trade a high percentage of small and mid-cap stocks. The loss of access to broker capital, and the potential loss of riskless principal activity and broker dark pools, means the onus is on the individual firm to locate liquidity – hence the rise in the tail of non-core brokers.

Those who have the flow are in the enviable position of having more commission dollars to pay a wider range of brokers should they wish to do so, but even then some are choosing to rationalize global broker lists to ensure greater control over execution.

Exhibit 8
Average Number of Core European Brokers – 2013 vs 2015



Source: TABB Group

While those firms with large ADV will continue to be fought over by the global investment banks, it also leaves a window of opportunity for the growing commission share from other buy-side participants now available to non-core brokers. The extent of the change is evident when reviewing patterns since 2013. Nearly half of the participants are choosing to concentrate their broker list, dropping the size of their core list on average from 13 to 7 brokers and reducing the percentage of core commissions to 55% in order to extend their tail (see Exhibit 8).

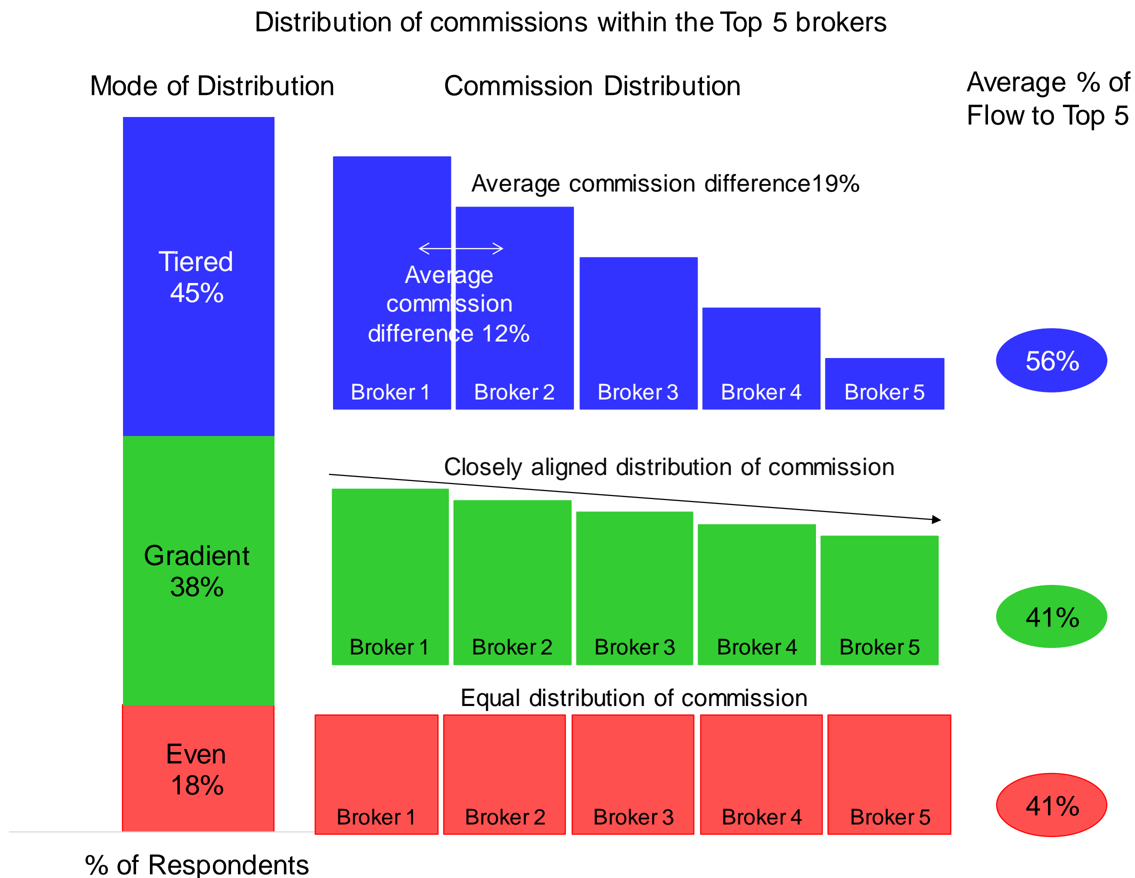
© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

> "We have gone from 30 brokers in 2014 with a core getting 80% down to a core of 2, and of that #1 gets 75%"
> (Medium-sized Nordic Asset Manager)

Within the core brokers, there is also an increasing weighting in commissions moving toward the top brokers. As the need to divide the commission pot between brokers in order to pay for research declines, the dealing desk is free to direct execution commissions where they perceive they are receiving the best execution services. With execution being offered as a stand-alone service, greater scrutiny is required as to what services are being offered and by whom.

When interviewing participants for this year's study, a differential was emerging between those who still needed to divide up the commission pot for research, versus those who were directing commissions for execution only. Now it not only pays to make the core, but increasingly a broker needs to be at the top of that core to see significant revenue. Nearly 50% of buy-side participants are tiering commissions among their top five, with an average commission difference of 12% between the top two brokers (see Exhibit 9).

Exhibit 9
Distribution of Commissions between 2015's Top-Five Brokers



Source: TABB Group

While the core may be concentrating, the makeup of the core is also becoming interesting. Asset managers are shifting away from large global investment banks as capital commitment facilitation declines partly due to diminished balance sheets. But it is not only agency brokers who are

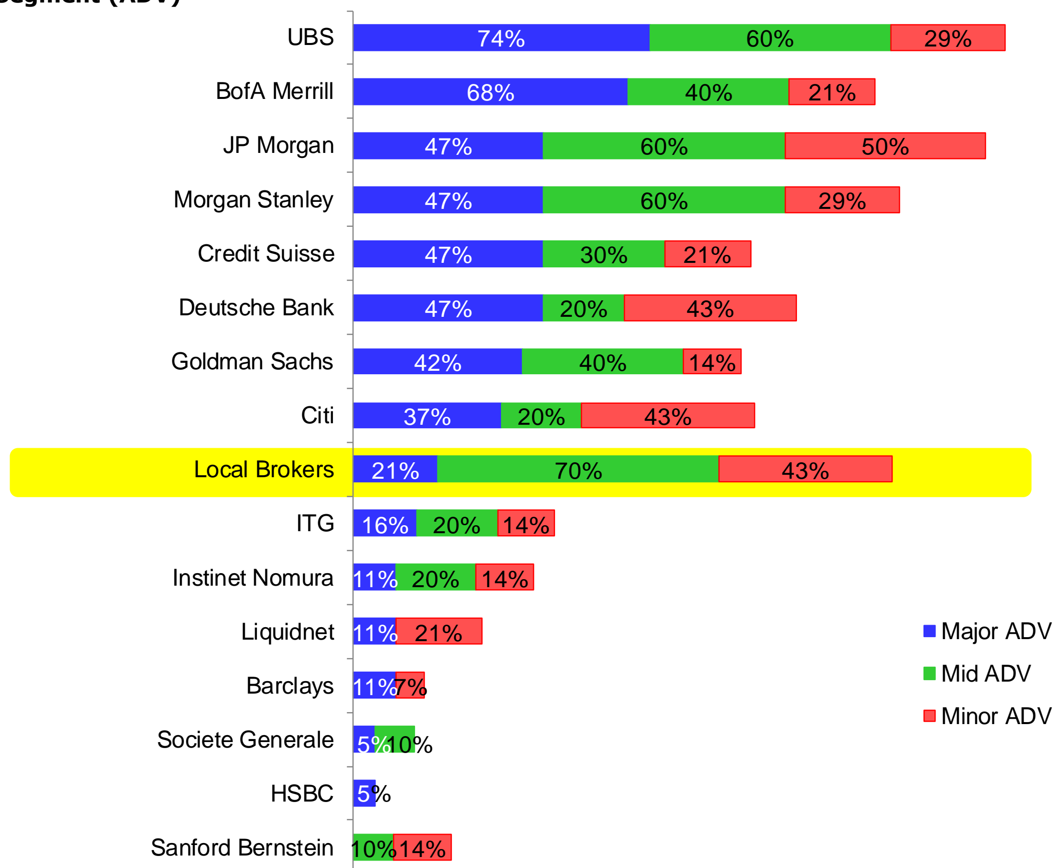
© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

benefiting but also local brokers as the buy-side turn to alternative providers for the liquidity they need.

> "If you'd asked me six months ago who would be top [broker], I wouldn't have picked an agency house, but these guys have very good people in every seat."
> (Large Global Asset Manager)

As firms continue to unbundle research and execution, the rise of the uncomplicated agency model is unsurprising, but participants also commented on the caliber of local brokers and their content as comparable with that seen from traditional bulge bracket brokers. This is not to say that global investment banks are under threat; rather that as they are becoming forced to be more selective about the clients they choose to keep and the services they offer and to whom, the door is opening for agency and local brokers to compete. This is evident from the proportion of mid-ADV participants that are selecting local brokers within their top-five brokers (see Exhibit 10). The question for the sell-side – global, local or agency – is how to ensure they retain the most relevant clients for their business model.

Exhibit 10
Top Five European Brokers in Commissions in 2015, Expressed as a Percentage of Participants within Each Wallet Segment (ADV)



Source: TABB Group

The buy-side participants' views were conflicting as to future patterns; some believed smaller locals were able to capture flow as Portfolio Managers were still targeting execution based on the back of research ideas – a practice that would need to diminish with the introduction of MiFID II, along with the requirement to demonstrate improved

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

"We are seeing better advisory content coming out of the local market. The top five might still be the big names but after that you have all the local guys."
(Medium-sized Global Asset Manager)

evidence of "best execution". Others noted the ability for smaller local houses to have closer links to the local market and as such develop greater partnerships with global brokers to leverage their investment in technology.

One new interesting factor was the changing dynamic between the buy-side and sell-side, with larger asset managers now targeted by larger local brokers to circumvent the global investment houses as new providers of liquidity. The question is whether local brokers will choose to hold onto the order flow, or refocus their efforts on improved advisory content and simply take a check, given that the cost of trading, clearing and settlement in Europe is still significantly higher than in the US.

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

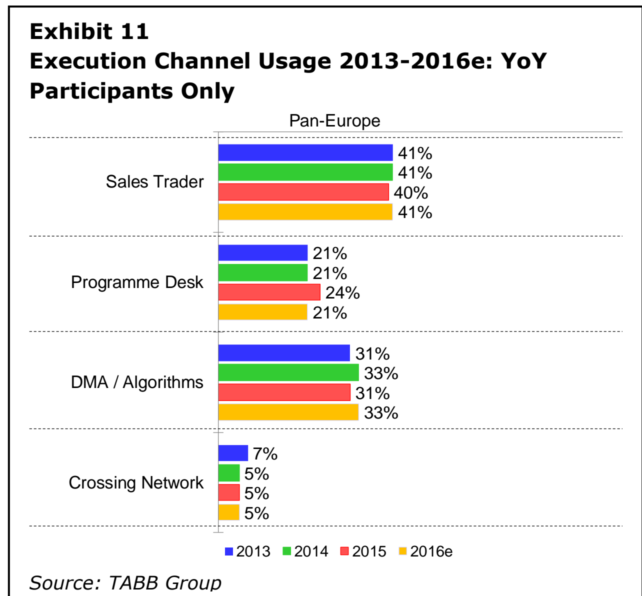
Rethinking Access

"We are very concerned on our ability to access liquidity in the traditional manner – the regulators keep hitting our brokers and we need them."
(Medium-sized Continental Asset Manager)

As the buy-side and sell-side alike focus resources on where they matter most, the concentration of order flow is likely to end up in the hands of a few, creating liquidity challenges for the majority. As such, there has been a steady switch from sales trading to automated trading methods since 2008. However, some are now questioning whether we have reached a low-touch saturation point and anticipate a reversion back to traditional sales trading. Previous estimations of a further shift to automation have not yet played out given the constraints of algorithms in meeting the demand of block activity.

When looking at year-over-year (YoY) participants, the view that trading channel activity is stabilizing is validated to a certain extent (see Exhibit 11). Executing institutional order flow in the current fragmented array of displayed and non-displayed venues, regulated markets and execution venues, BCNs and SIs remains challenging and the willingness to pay a valued sales trader remains staunch.

Exhibit 11
Execution Channel Usage 2013-2016e: YoY Participants Only



Source: TABB Group

"We know we will have to pay more for liquidity and we are already having those discussions."
(Medium-sized Continental Asset Manager)

However, both regulation and economics have yet to play out in their entirety. European capital markets are still only at stage one in the transition of liquidity ownership from sell-side to buy-side, begging the question whether current availability of execution options will be sustainable in the longer term.

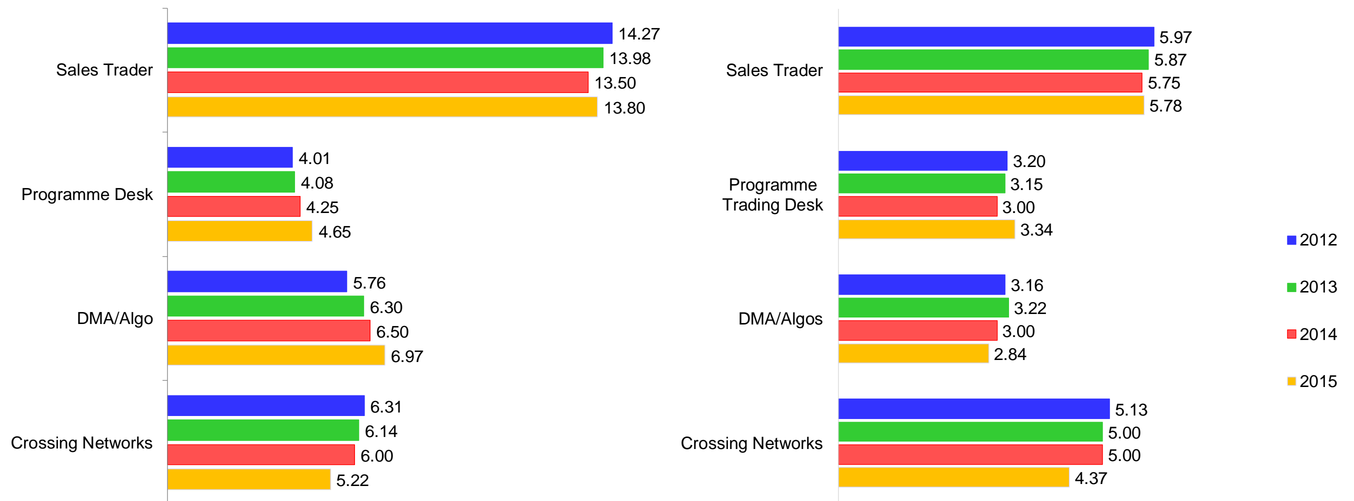
"We cut our bundled high-touch rate as we weren't getting the service – but we also bumped up our electronic rate because we want a better, high-touch service electronically."
(Medium European Asset Manager)

From the buy-side perspective, trading patterns are switching to ensure dealing desks can remain as opportunistic as possible while limiting market impact. Thus, participants may choose to switch back to a sales trader where possible, and where not, are choosing to automate their flow differently. Although algo usage may be commoditized, automated block crossing and other methods of electronically matching flow are increasing.

Capital constraints on balance sheet will continue to constrain market-making activity, even ahead of the MiFID II transparency requirements and the proposed loss of matched principal trading. Hence, the provision of liquidity will become a costlier affair, presumably limited to those on the buy-side who are still willing to access liquidity in this manner and, perhaps more importantly, those who can afford to pay for it.

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

Exhibits 12 and 13
Commission Rates (BPS) by Channel / Bundled and Execution Only (2010-2015)



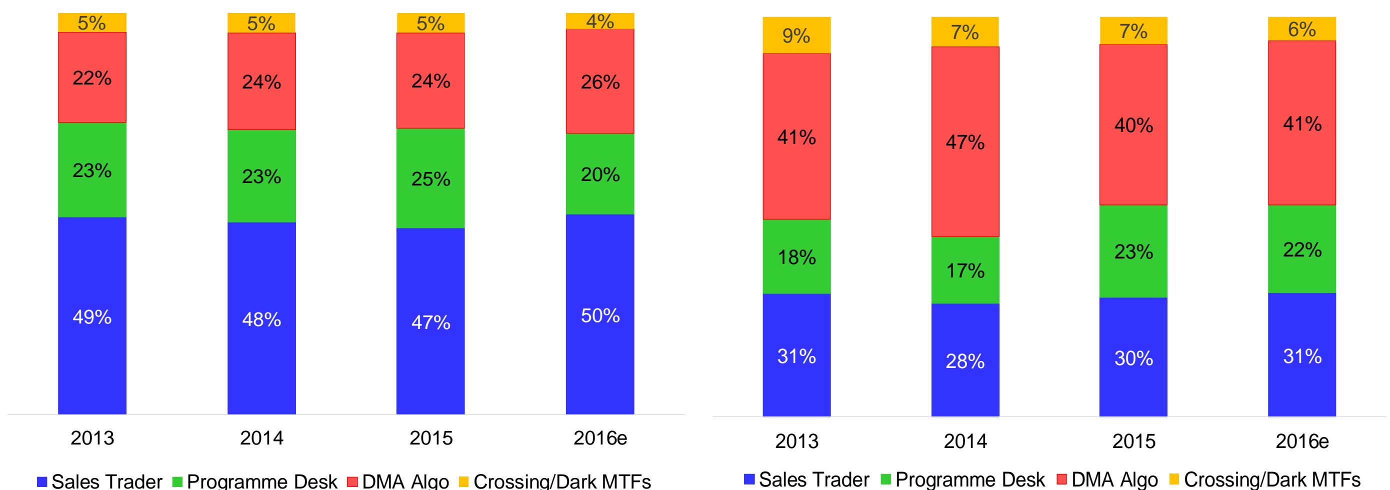
Source: TABB Group

"While we anticipate trading more electronically, overall; liquidity is becoming more expensive and we will have to pay up."
(Medium-sized Continental Asset Manager)

The loss of access to liquidity is already resulting in firms revisiting rates paid for certain execution services. Commission rates have seen an increase for the first time since 2015 for both bundled and execution-only sales trading and program desk service rates. In contrast, the perceived commoditization of algo provision and increased automation of blocks in crossing venues are creating downward pressure for execution-only commissions (see Exhibits 12 and 13).

However, there are also geographical differences to be noted. UK asset managers with portfolios heavily weighted to small and mid-cap names have always relied on sales traders to find blocks of liquidity, but have benefited of late from accessing the soon to be banned BCNs. They anticipate increasing their need to access sales trading services in 2016, whereas those on the Continent anticipate a further decline (see Exhibits 14 and 15).

Exhibits 14 and 15
Activity via Trading Channel – UK versus Europe (Excluding UK) (2013-2016e)



Source: TABB Group

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

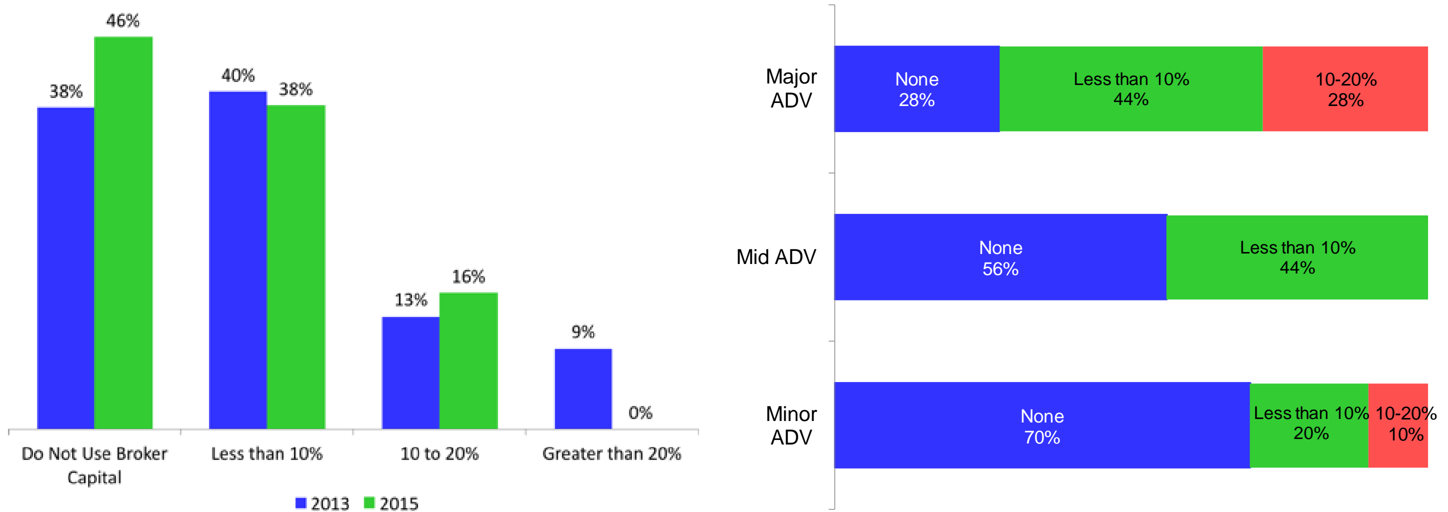
European buy-side participants continue to describe their frustration at the retraction of sales trading services and how increasing regulation is handicapping a broker's ability to survive, forcing them to route more flow electronically, and as such, are choosing to reduce the commission rate they pay. Therefore, while the switch back to sales trading appears to be geographically driven (see Exhibits 14 and 15), the interaction between the buy-side and sell-side across Europe will continue to evolve. As traditional methods of order flow facilitation decline, alternatives will be found.

"For us to trade in block now the broker has to line up the other side."
(Large Global Asset Manager)

Risky Business

The increased cost of liquidity provision via capital commitment continues to lead to a decline in the use of risk as brokers become more selective over who they offer risk prices to, and the buy-side more cautious over the perceived merits of capital commitment. Nearly half of the participants no longer use broker capital (see Exhibit 16). For those who do choose to access capital commitment, there

Exhibits 16 and 17
Use of Risk – 2013 vs 2015 / Correlation with ADV



Source: TABB Group

was a decrease in the proportion of order flow traded via risk. As with previous years, comments were made in relation to the limited size of capital available impacting the appetite to access risk pricing.

The ability to access broker capital would appear to directly correlate with the size of the firm's activity (see Exhibit 17), which means new models for client facilitation of order flow will continue to be required. Shifting block activity more to extensions of indications of interest (IOIs) rather than risk mere partial fills on a capital commitment trade is the first stage; greater automation of block flow is the next.

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

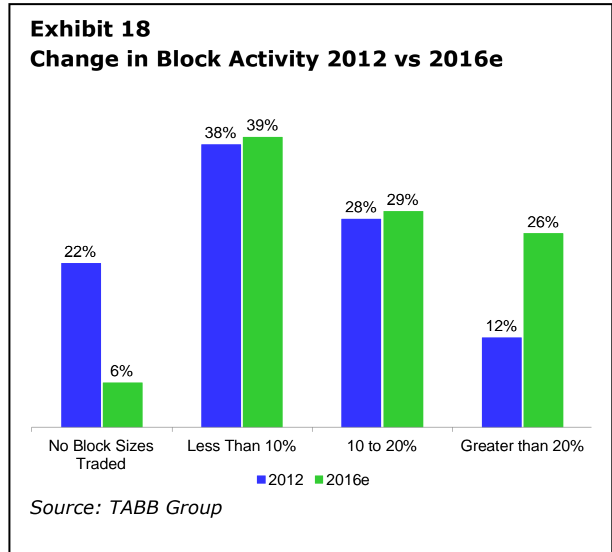
Building Blocks

"I very rarely use a sales trader now unless they can provide demonstrable value – and by that I mean a natural block."

(Medium-sized UK Asset Manager)

The loss of traditional client facilitation together with the regulators attempts to limit dark activity (see TABB research, "*MiFID II Double Volume Cap: Slam Dunk or Air Ball?*") is already creating a change in behaviors when viewing block activity over the last four years. A third of buy side participants anticipate being able to execute more than 20% of their flow as a block in 2016 (see Exhibit 18).

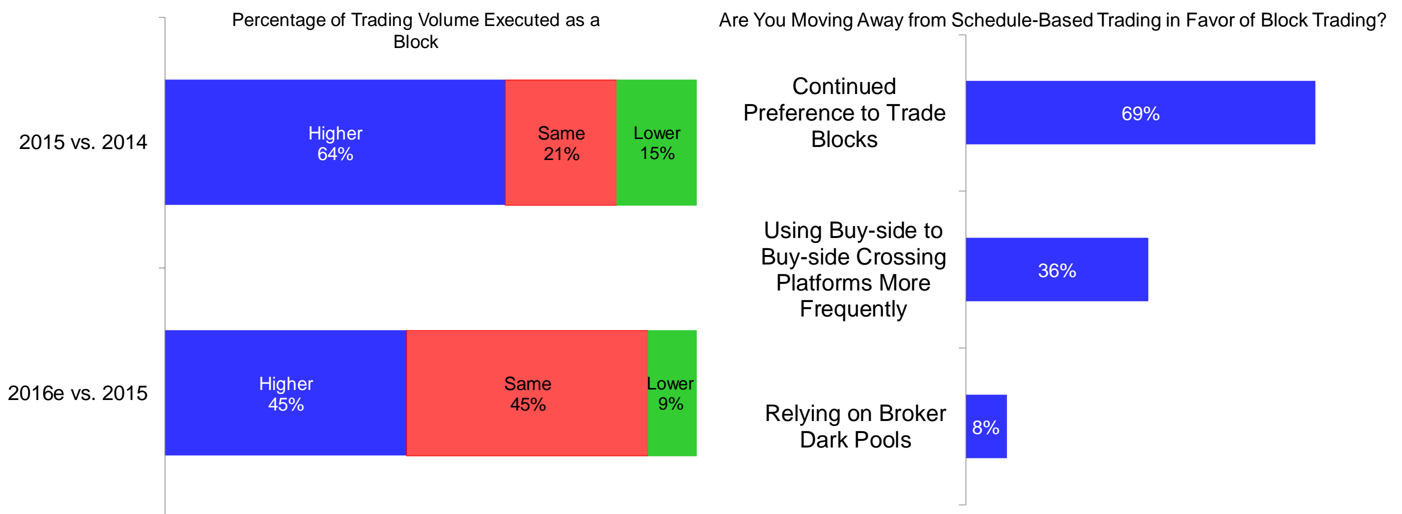
Exhibit 18
Change in Block Activity 2012 vs 2016e



Source: TABB Group

Without widespread use of broker facilitation, the question then becomes how blocks can successfully be concluded as institutional investors look to execute with maximum anonymity and minimum market impact. While the growth in block activity increased significantly in 2015, expectations for growth this year are less optimistic; asset managers anticipate that finding natural flow will become increasingly competitive (see Exhibit 19). Ultimately every buy-side trader will trade in size if the price is right where they can, but increasingly firms are having to look outside of not only capital commitment, but also now BCNs to facilitate block activity (see Exhibit 20). Alternative crossing networks continue to gain widespread traction across Europe, such as Instinet, ITG and Liquidnet, but another area of interest is the growth in conditional order types to instigate the formation of blocks.

Exhibits 19 and 20
Block Activity Trends



Source: TABB Group

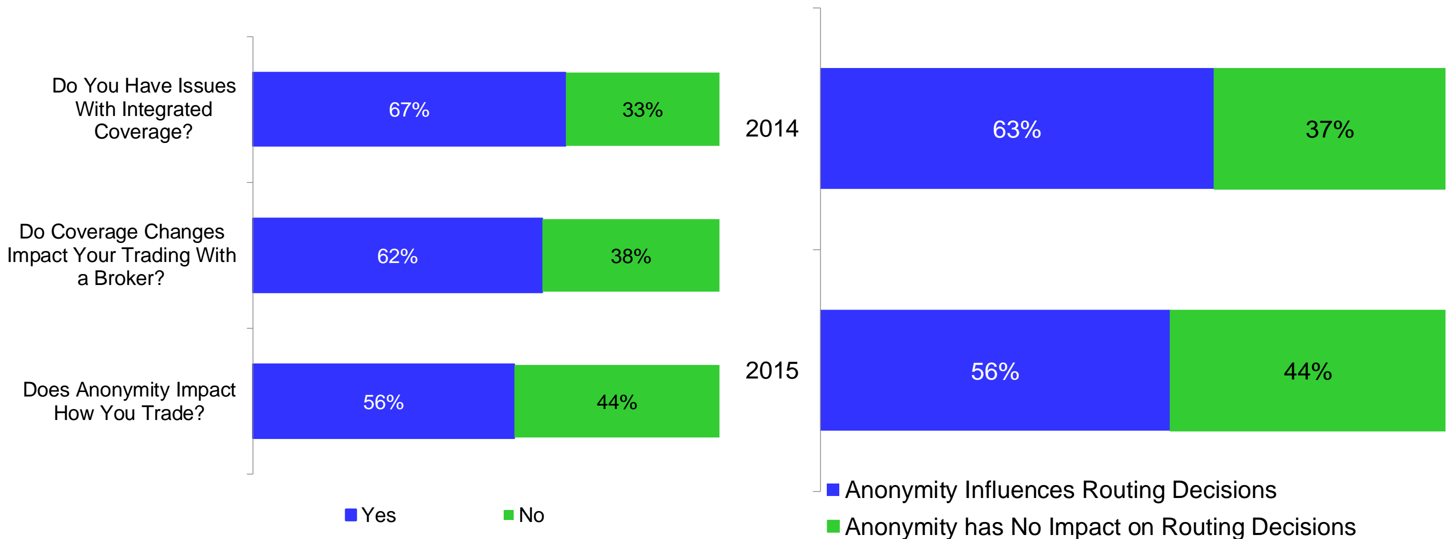
© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

Under MiFIR Article 4(1)(c) dark trading for large-in-scale orders will not be included in the MiFID II double volume cap calculations. However, targeting the right venue to attract or post a block will become increasingly important as trading slows and fewer orders are distributed among a diminishing number of dark venues. No firm wants to spread order activity across every venue, but neither do they want to target one particular venue when liquidity is residing elsewhere. The ability to maximize exposure to liquidity while minimizing opportunity cost will ensure the continued rise of conditional order flow.

"We are hitting 20% on our block business now and I would like it to be higher. We are hoping that some of the new initiatives will mean we can start targeting blocks more effectively."
(Large Global Asset Manager)

Technology is already improving information flows to locate natural liquidity by reutilizing traditional sell-side brokerage skills within new technological frameworks. Rather than picking up the phone to find the other side of the trade, complex algorithms can trawl asset managers' current, past and intended portfolios to find potential opportunities to trade. While much of the information once remained in the hands of the sell-side, this information flow is now shifting to the buy-side, facilitating more buy-side to buy-side negotiation of blocks. Whether post-trade or pre-trade, improving the technology and internal information flow will enable dealing desks to make the right decisions at the right time.

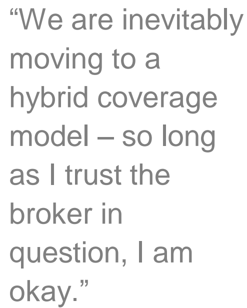
Exhibits 21 and 22
Changes in Coverage / Certainty of Anonymity 2014 vs 2015



Source: TABB Group

The requirement to trade outsized orders is likely to increase given the consolidation of assets under management and regulatory amendments to market structure. As such, there is now a growing willingness to adapt to more hybrid models of execution. While many still have issues with integrated coverage, changes in coverage and anonymity are less of a concern, particularly when related to responses in 2014 (see Exhibits 21 and 22).

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.



"We are inevitably moving to a hybrid coverage model – so long as I trust the broker in question, I am okay."
(Large Global Asset Manager)

Many buy-side firms now accept that integrated coverage blending high-touch and low-touch access points is now their best opportunity to find available liquidity, as well as to ensure greater efficiency in their trading processes. The more the high-touch process is automated, the more that low-touch activity becomes an extension of what the sales trader can achieve. There is also now an additional level of comfort for those who still have concerns regarding anonymity. The ability to flag individual trades where it would be acceptable for a sales trader to interact, means optimizing execution probability as and when it is required without losing the element of trust.

Ultimately, the ability to complete any trade depends on the stock in question, the parameters of the trade and the level of urgency to complete the trade. However, the growing regulatory importance of a firm's ability to demonstrate best execution will ensure firms need to optimize every opportunity, and for this, technological developments in trading will become an increasingly critical component.

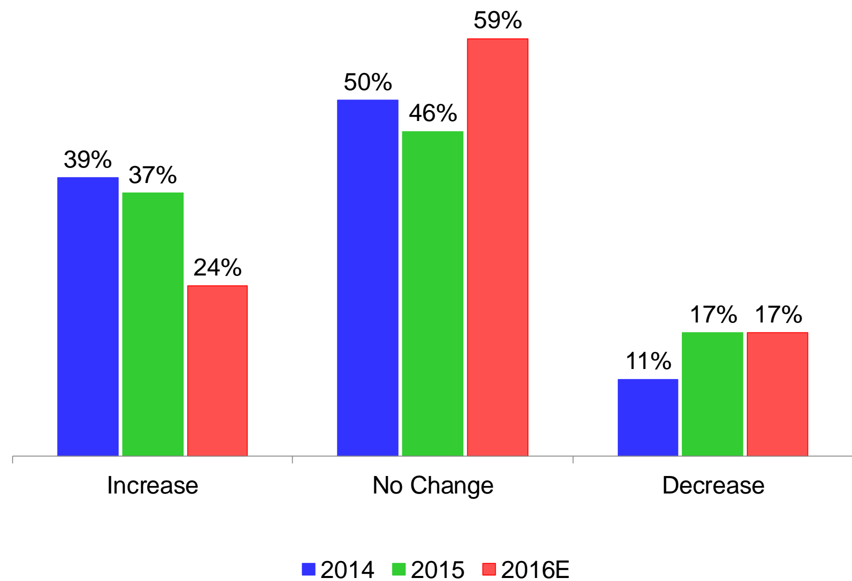
© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

Death of the Algo?

"I think algos will plateau here and if anything we will get more high-touch order flow done."
(Global European Asset Manager)

The automation of trading thus far has focused on speed and algorithms, and there is plenty of evidence to suggest that these initiatives have run their natural course. Yet it would be a mistake to think that automation in trading is in decline, however trusted the sales trading relationship has become. While nearly 60% of participants anticipate no further change in algorithm usage in 2016 (see Exhibit 23), the level of automation itself in trading is by no means in decline.

Exhibit 23
Asset Managers: Change in Algorithm Usage 2014-2016e



Source: TABB Group

"We trade all our flow electronically but now it is a function of trading more passively, infrequently and in size."
(Medium-sized UK Asset Manager)

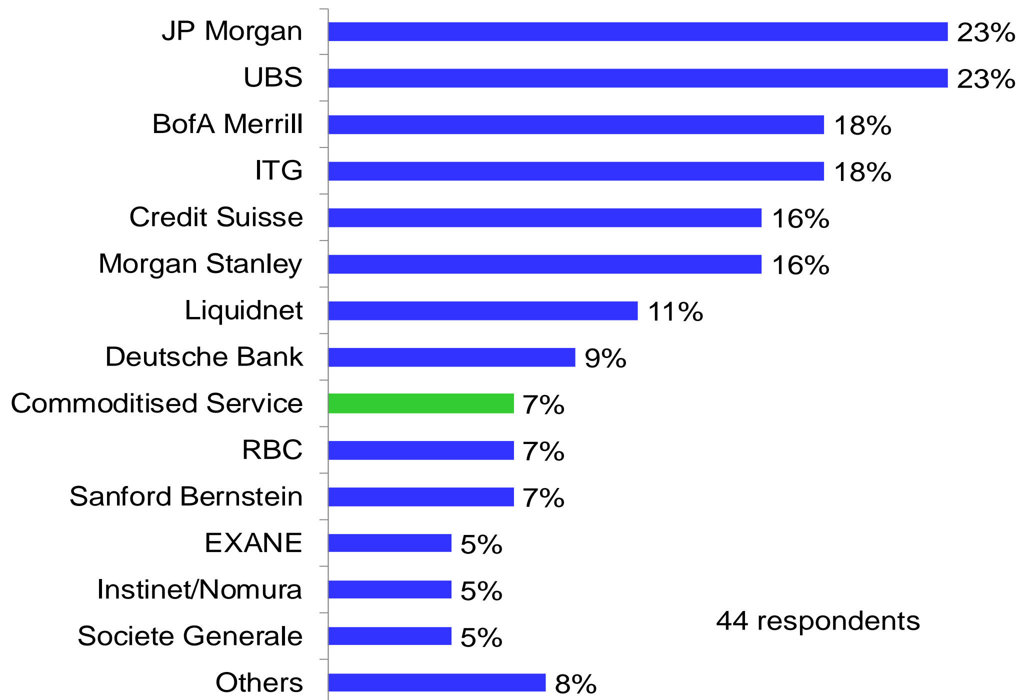
Any change in algorithm usage will depend on those market participants who see automation as a commoditized service that merely slices and dices orders into algorithms, versus those who view it as a sophisticated plethora of options to execute their flow electronically.

"We currently have access to 14 providers and don't use 6 – if we have to have greater transparency over which provider we use we will definitely cut down on the number of providers we have."
(Large Global Asset Manager)

In the immediate term, the regulatory requirement to have greater knowledge over how algorithms work as well as data surrounding the performance of algorithms is likely to lead to significant changes on the low-touch desk. TABB believes there will be a reduction in the number of providers accelerating the current battle between long-standing champions of the low-touch space versus the newcomers benefiting from the lack of legacy technology. The best-in-class algo provider for 2015 is clear evidence of this, with one of the first providers of algorithms in Europe versus a late starter that has made significant inroads in market share (see Exhibit 24). In addition, new providers have joined the list that historically would not have been considered as a serious contender in the provision of algorithmic trading.

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

Exhibit 24
2015 Best in Class Algo Providers (By Frequency of Mention)



Source: TABB Group

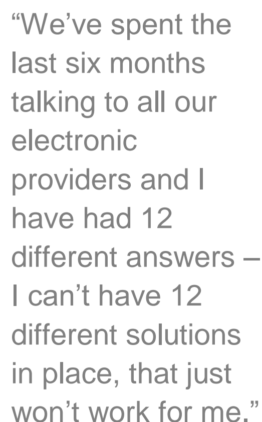
The Burden of Proof

"As our traders are becoming more sophisticated users of algos we are starting to build better intelligence into our algo selection process – then we will be able to have the quantifiable evidence we need as to who is really good in this space."
(Large Global Asset Manager)

However, the electronic world post MiFID II will require different measurements to quantify and qualify successful electronic execution. In the past, buy-side traders have gravitated to trusted algo providers where they have the highest level of comfort. As the buy-side dealing desk becomes unfettered by research, the need for greater evidence in the provision of best execution will lead firms to collate and analyze more data to build intelligence into their algo selection process. As algo strategies are categorized according to different capabilities and outcomes such as aggression levels, improved data intelligence will enable enhanced selection in order to target the relevant venues more effectively.

The buy-side will need to review the algorithmic strategies they target given that the new regulatory obligations are two-fold. Firstly, under RTS 27, the regulatory technical standards proposed by European Securities and Markets Authority, if the buy-side choose to direct orders to a specific venue, they need to design workflow to justify why particular venues were selected. Secondly, under RTS 28 they need to demonstrate they are rigorously assessing the executions received from their top five execution venues (brokers) and this will include the need to understand how brokers are executing their order flow.

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.



(Large Global Asset Manager)

The challenge becomes how the buy-side improves the process without being able to experiment. If participants are factoring likelihood of execution into best execution considerations, then there is a risk associated with flow concentrating on a declining number of venues, potentially even causing gravitation back to primary local exchanges at the expense of new pools of liquidity. The burden of proof must be carefully managed, in order not to limit best execution.

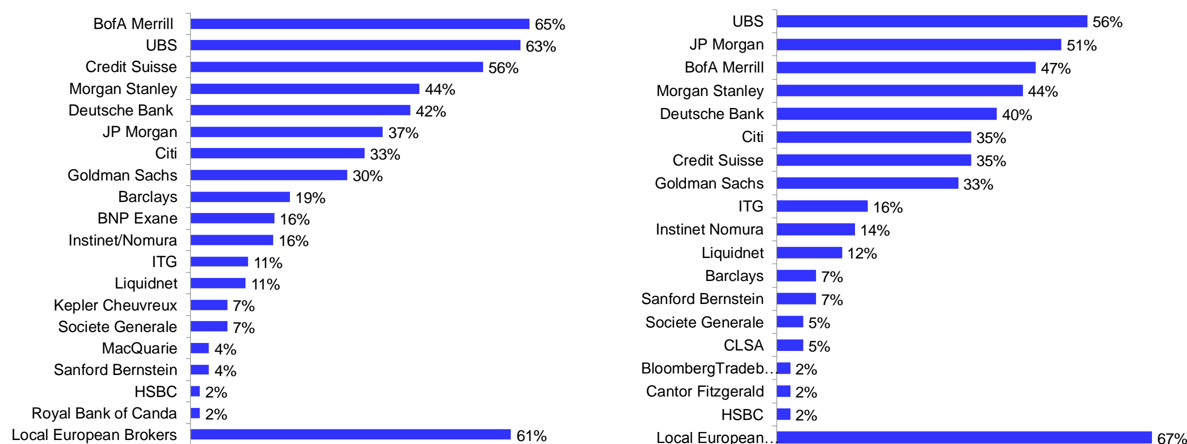
Some are already choosing to focus on the underlying venue rather than understanding individual broker routing practices. As long as they can fulfill the order at the given time according to the given parameters, they perceive their best execution targets are being met. The challenge for the buy-side is how to select this agnostic list of execution venues when the traditional method of selection remains tenuously linked to broker research for many.

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

Best in Class

Similar to 2013, the top eight brokers in 2015 – UBS, JP Morgan, Bank of America Merrill Lynch, Morgan Stanley, Deutsche Bank, Citi, Credit Suisse and Goldman Sachs – were highlighted for creating a firm-wide relationship on multiple levels to ensure clients received maximum value from commissions paid. What is noticeable is the decline of overall commission share among the top three, together with the increase in commissions achieved by local regional specialists (see Exhibit 25).

Exhibit 25
Top Five Brokers 2013 vs 2015 (by Frequency of Mention)



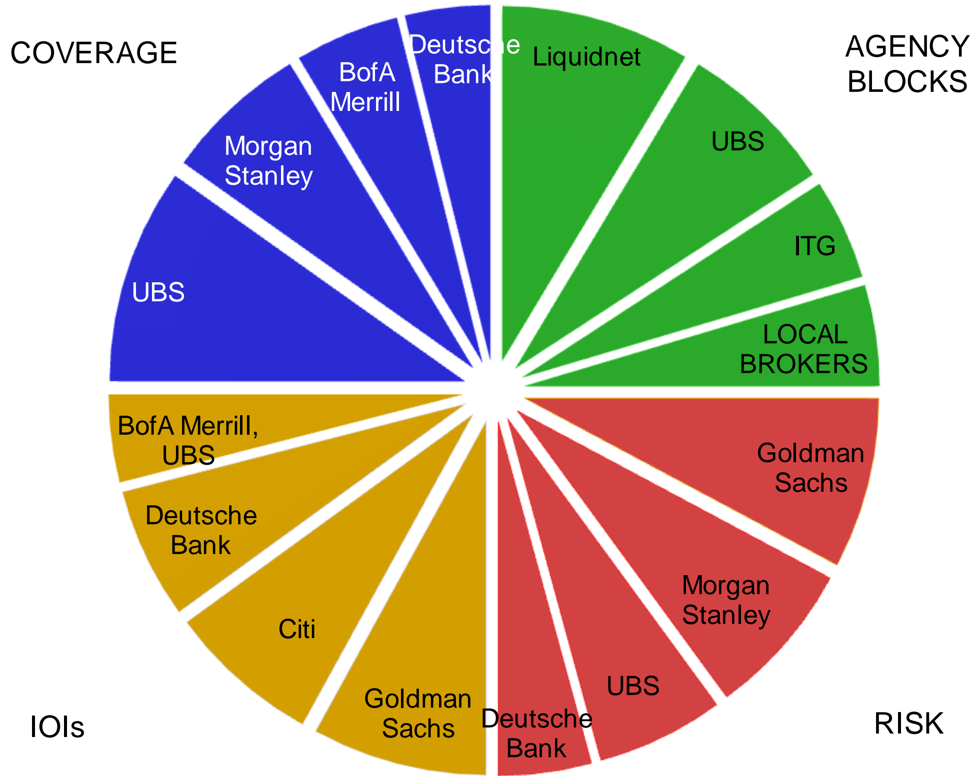
Source: TABB Group

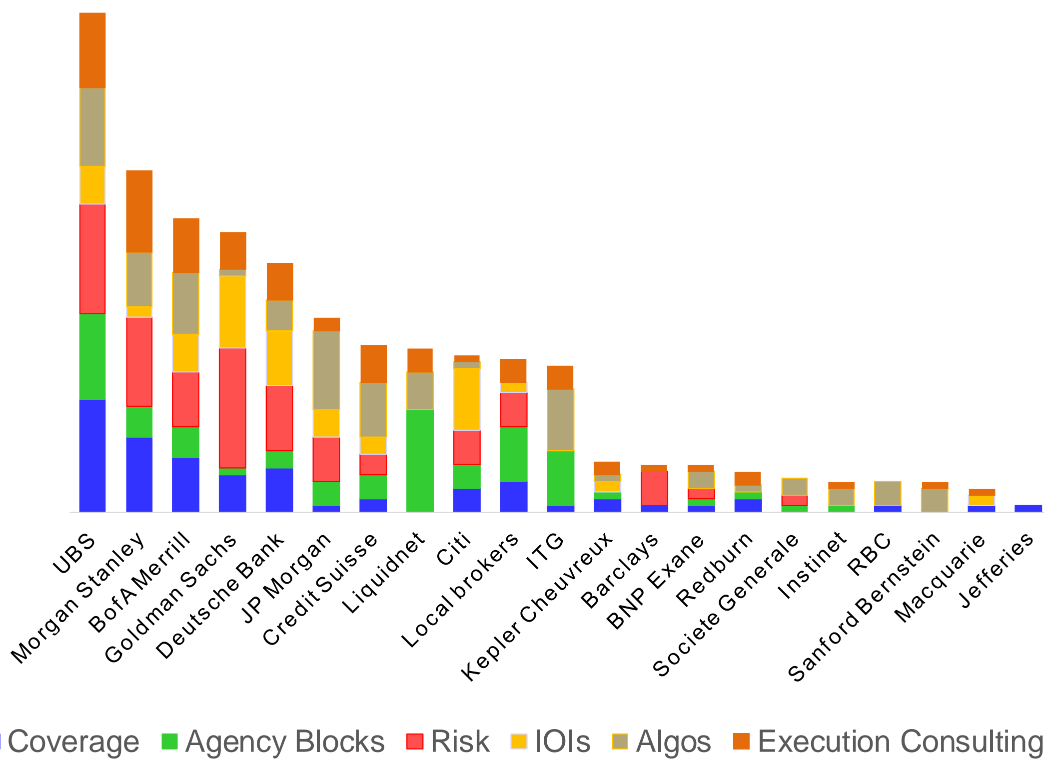
As noted above, US banks have for the first time come close to taking half of Europe's equity trading in a market increasingly dominated by its biggest players. However, the top performing European broker in 2015 was UBS.

UBS excelled on multiple fronts, but they were particularly noted for their overall coverage, provision of blocks and risk. Other bulge brackets were singled out for specialization in particular services, such as Goldman Sachs, Morgan Stanley and Deutsche Bank for pricing of risk capital, and Bank of America Merrill Lynch and Citi for IOIs. Credit Suisse was singled out for the HOLT research service, and JP Morgan in particular was highlighted for its recent developments in electronic trading (see Exhibits 26 to 31).

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

Exhibits 26 and 27
2015 Best in Class (By Frequency of Mention) / Best in Class 2015 – Coverage/Agency Blocks/IOIs/Risk

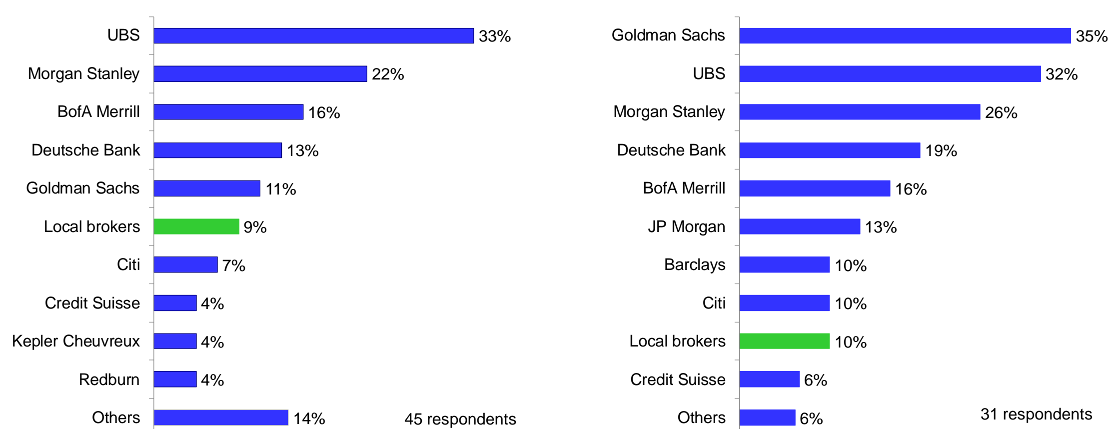




Source: TABB Group

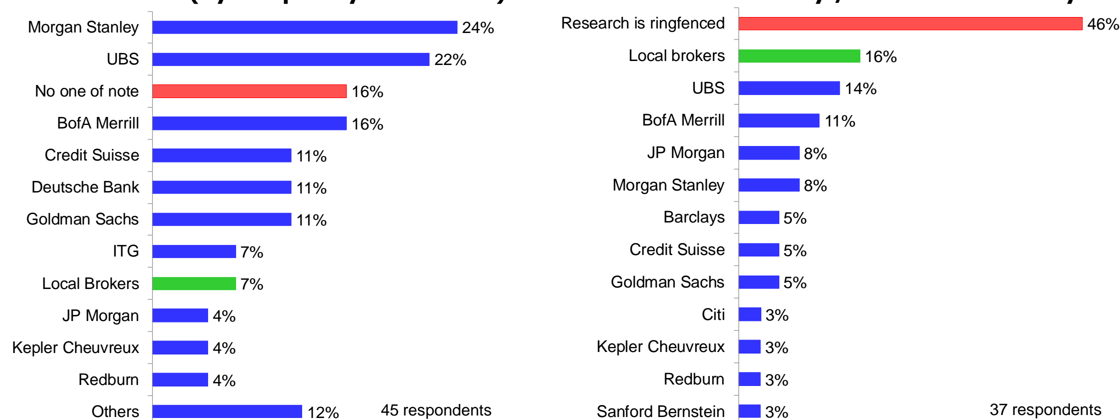
© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

Exhibits 28 and 29
2015 Best in Class (by Frequency of Mention) for Coverage / for Pricing Risk Capital



Source: TABB Group

Exhibits 30 and 31
2015 Best in Class (by Frequency of Mention) for Execution Consultancy / Research Advisory



Source: TABB Group

"If you have orders on 12 different venues, you have to make the parent order conditional or you will be systematically disadvantaged."
(Large Global Asset Manager)

Although the bulge brackets continue to dominate the European equity trading scene, chinks in their armor are appearing. The proportion of commissions heading to the bulge brackets is reducing, but it is in the provision of research where the greatest change on the dealing desk is taking place. Nearly half of the respondents were unable to provide information on the top broker for research coverage, as they are now ring-fenced from the research procurement process (see Exhibit 31).

Agents of Change

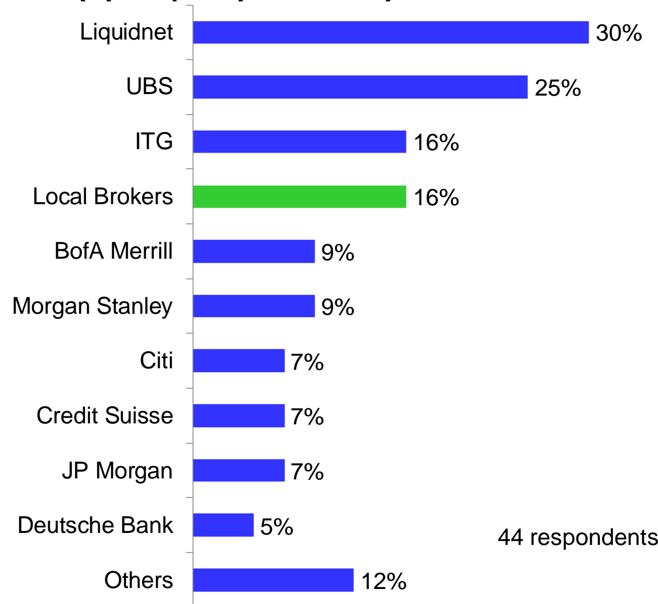
As execution becomes unbundled from the research procurement process and dealing desks are free to select their broker of choice, agency brokers are stepping into the breach. Combined with the trend toward larger order sizes and the increased use of blocks, agency brokers meet the requirement for reduced conflict of interest as well as delivering best execution (see Exhibit 32).

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

"We are getting more matches so it becomes a self-fulfilling prophecy, we float more flow and consequently get more done."
(Large Global Asset Manager)

Rather than picking up the phone, European dealing desks are choosing to access buy-side crossing systems such as Liquidnet, ITG and Instinet, followed by BCNs, before finally interacting with lit activity on the exchange. The difference now is the proportion of market participants across Europe that are following what has been standard practice in the UK for a number of years. As more buy-side dealing desks have greater autonomy over when and how to execute – across a wider spectrum of both countries and fund types – the chance of finding a contra-match increases. More matches improves the incentive to access buy-side crossing systems, creating a self-fulfilling prophecy.

Exhibit 32
2015's Top Agency Block Providers (By Frequency of Mention)



Source: TABB Group

"We are finding that when there is a combined broker on any given execution it results in a superior execution rather than just sticking with one broker."
(Medium-sized UK Asset Manager)

However, agency brokers should not rest on their laurels. Innovation within the matching environment is evolving and when a greater level of manual input is required, firms are starting to gravitate to those who can predominantly offer "on electronic to manual" or "electronic to electronic" matching capabilities. The next stage will be to target liquidity and switch the direction of order flow in response to liquidity in a similar manner to broker smart order routers, only now this will be buy-side automated order routing (AOR) systems to meet best execution obligations.

Nor will block matching remain only with brokers. As demands on the provision of best execution increase, AOR will move mainstream, and asset managers will increasingly point orders to particular execution venues, such as Turquoise or BATS, in order to achieve improved execution performance.

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

Leading Locals

The assumption has been that regional brokers would lose out in the continued concentration squeeze. However, firms noted the improved advisory content coming from local European brokers across the board.

"The top five might still be the big names but after that you have local brokers from Germany, Spain, France, Austria, Belgium – you name it."
(Medium-size US Asset Manager)

The continued hunt for alpha has led some asset managers to return to country specialists for valued coverage, specifically within the small-cap and emerging spaces. But this is dependent on the location, size and underlying investment strategy of the asset manager in question.

"We try to do more block trading in a dark pool or crossing network, but the local brokers have got a stranglehold on that volume – they're not letting it go into dark pools."
(Large Global Asset Manager)

While traditionally, regional brokers would have looked to be paid in flow, the higher cost of clearing and settlement fees in Europe makes traditional broking an expensive service amid declining revenue opportunities – hence some are now opting to take a check. However, others are benefiting from access to global bulge brackets technology to maintain their hold on local market share. This enables them to provide the strong advisory content as well as advanced execution technology, together with the specialist service that remains a strong focus for the buy-side. Thus, the use of regional specialists has continued to increase from 61% in 2013 to 67% in 2015 (see Exhibit 25).

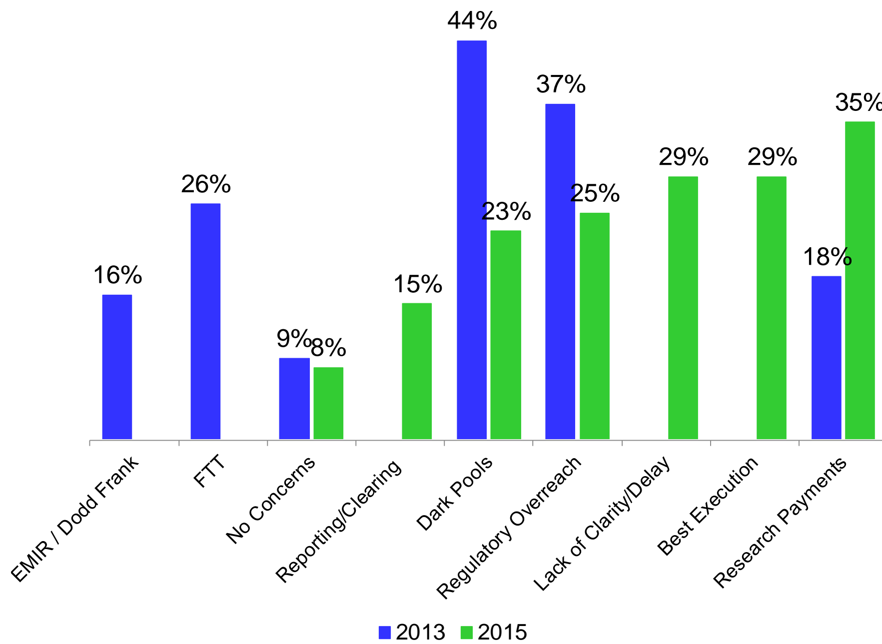
© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

"How do you evidence decisions you have taken for best ex? How do we set budgets and what do we tell clients – we are still in limbo and until we know exactly what's required, we can't move forward."
(Large UK Asset Manager)

Regulatory Overload

While on the surface Europe's greatest issue for equity capital markets is still MiFID II and regulation in general, the focus of concern is shifting. In 2013/14 the main issue was the impact on dark pools from greater transparency. In 2015, this has shifted to broader concerns around implementation of MiFID II, including the lack of clarity around rules, implementation of best execution and how to pay for research (see Exhibit 33).

Exhibit 33
Top Regulatory Concerns 2015 vs 2013



Source: TABB Group

"We're being thrown a curve ball – in a transaction as a seller with an SI we are now responsible for the transaction reporting – that means isolating the trade in question and then reporting this accurately within a minute – that requires massive change to our internal infrastructure and tech."
(Large Global Asset Manager)

From interpretation of regulators' requirements regarding best execution to ensuring standardization of transaction reporting across the industry, it is only by wading through lines of regulatory text that participants are uncovering potential implementation hurdles to overcome. Lack of clarity over the final text is creating difficultly for some firms to justify resource allocation and any necessary investment.

In areas such as trade reporting there are new implications for the buy-side, such as the latest reporting obligations for SIs. Under MiFID II regulation, the seller is obliged to report unless an SI has been used, in which case, the SI must report. Many current versions of order management systems and execution management systems do not support the new requirements and the penalties for non-compliance are severe. Even if firms invest in new systems and technology, this will require duplicate investment in redundant systems to ensure a fail-safe recovery process.

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

Emerging from the Dark

The ability to trade in the dark remains attractive to the buy-side. Whether or not it is merely down to wishful thinking, an air of inevitability remains around the survival of BCN's post MiFID II as revived SIs. The party may be over and no broker wants to be the first to leave and turn the lights off. Yet the buy-side seems certain that this is will not become a major issue. Brokers will find a solution to facilitate the buy-side being able to trade more blocks (see Exhibit 34). The question is how.

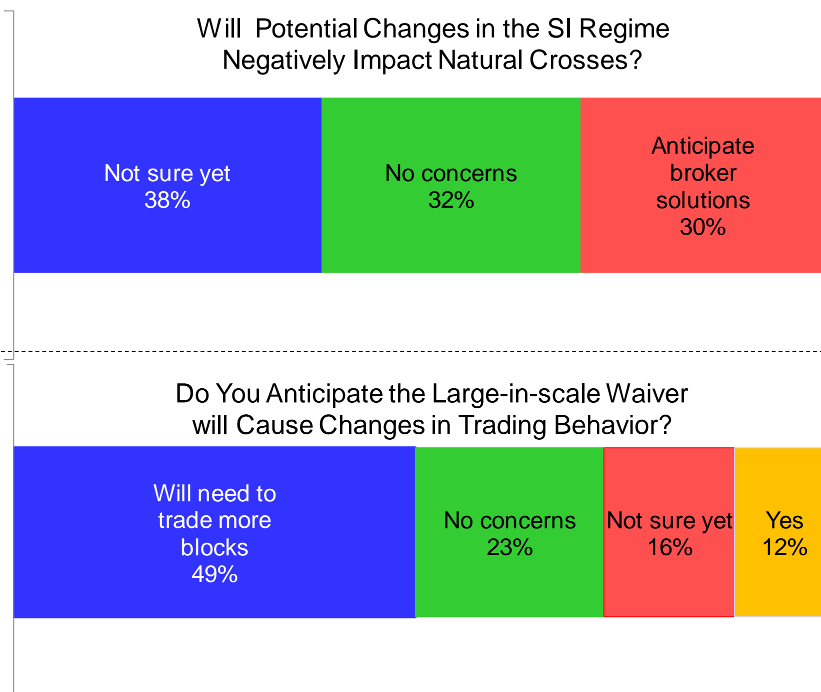
"We are investing in technology to ensure that every time a trader is making a decision, he has every piece of information in front of him that he needs."
(Large Global Asset Manager)

Liquidity may pool, but it still needs to move, and the ability to facilitate trades in the post-MiFID II world is the elephant in the room. If MiFID II regulation prevents brokers from matching riskless principal trades in BCNs going forward, block liquidity risks becoming intransigent and the negotiation of trades potentially harder to achieve.

Switching the BCN to SI would allow the buy-side to trade on a bilateral basis using dealer capital, but the sell-side is looking at ways of reducing the amount of capital commitment they use. If a firm is

"I have real concerns over how we interact with SIs – all the different legal nuances between brokers infrastructure and understanding enough to compare and contrast execution will be a minefield"
(Large Global Asset Manager)

Exhibit 34
Impact of Future Regulation on Dark and Large in Size Trading



Source: TABB Group

designated to be operating as an SI – in that instrument – then pre- and post-trade transparency obligations are required, including extending the quote to all customers, with the negative and expensive consequences of this obligation. Historically, costs have been managed through a hybrid model of riskless principal or matched principal trading, which will not be admissible under MiFID II in its current guise. If the products are too balance sheet intensive this will

"I have no doubt that the brokers will figure this out – they have to, they need the business."
(Large Global Asset Manager)

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

lead to a further rejigging of which brokers are in which markets and for which products, which conversely could add to the expense.

The current system enables the buy-side to combine individual child trades under an overall parent order. However, if the counterparty is required to be a separate legal entity, this may also potentially limit how buy-side counterparties interact with their brokers.

"We are very happy to point to one execution venue and rest there – where there is a combined broker in any execution it results in a superior execution rather than routing to an individual broker."
(Large Global Asset Manager)

If individual child orders are amalgamated from other liquidity sources, there is a risk that they may be conducted on a multilateral trading facility rather than an SI, and therefore should be treated as multilateral all-to-all trading. Brokers would not be eligible to deploy capital, as an SI cannot undertake matched-principal trading on a regular basis nor be part of the firm's business model. Instead, the firm would need to rely on bringing together third-party buying and selling interests in a similar manner to an aggregator model, but be open to all market participants in a multilateral system where trading interests are able to interact freely. Those who think broker dark pools can continue as is may be in for a rude awakening.

Broker vs Venue

In light of this confusion, many participants are looking to the new liquidity venues for potential solutions. From Liquidnet and Aquis, to Turquoise and Plato, as well as the arrival of BIDS Trading in 2016, expectations of success are high. The rising need for committed transfers of sizable liquidity to avoid market impact is leading to new initiatives, whether it be buy-side targeted invitations, restricting high-frequency trading activity by only allowing passive orders to be placed or instigating random auctions. Perhaps even the potential use for blockchain to hone in on who has the liquidity to sell and when - using decentralizing record keeping with complex cryptography to connect those who have genuine business to transact.

"It will be difficult for the buy-side to dis-intermediate their brokers – I don't want other buy-siders calling me direct."
(Medium-sized Continental Asset Manager)

But for now, the broker's role remains secure. While participants may be looking at alternative venues to source liquidity, key brokerage relationships are still considered vital, if not more critical as firms struggle to reassess investment strategies, geographic locations and a range of execution services alongside the increased regulatory demands.

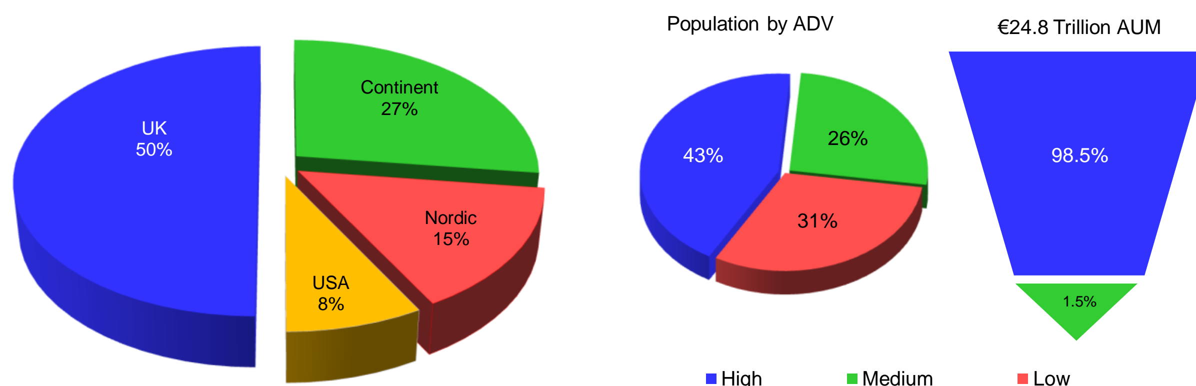
The reality remains that the protracted delay of MiFID II may not deliver the regulatory "big bang" many market participants fear. Nevertheless, the cumulative effect of multiple pieces of regulation in a post-crisis Europe means change in the market ecosystem is unavoidable and opportunity exists for challengers of every description to make their mark on the new liquidity landscape.

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

Methodology

We conducted interviews with 48 equity buy-side head traders during September 2015 to January 2016. These firms manage €24.8 trillion in assets under management (AUM) worldwide.

Exhibits 35 and 36
Participants Segmented by Location / Participants Segmented by Average Daily Volume and Assets under Management



Source: TABB Group

Our participants are primarily located within Europe, but we also include firms located in the United States that trade the European markets directly (see Exhibit 35). This year's report contains responses from 78% of the same firms who participated in 2014.

As in 2014, firms were categorized on the basis of their AUM. Large is defined as firms with assets over €50 billion, medium below €50 billion and above €10 billion, and small below €10 billion for institutional asset managers. This year no institutional firms remained in the small AUM category: 31% fell under the medium category, but amounted to less than 2% of the overall AUM (see Exhibit 36). We also segment our participants by notional ADV to reflect the influence of their flow in the current environment.

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

Conclusion

Economic and regulatory changes continue to take a toll on European investment banks. Exiting of business strategies, declining return on equity, and the retraction of a capital-intensive sell-side is creating a vacuum waiting to be filled; initiating a wider debate over how European equity trading can and should operate.

While much has been made of the potential future dominance of US investment banks in Europe, this depends on banks maintaining pole position. Disruptive new business models, products and services facilitated by technological improvements and driven by underlying economics will continue to challenge incumbent organizations and market norms.

Europe itself still stands on the cusp of dramatic change; the rumbling eurozone crisis is not over. Growing regionalization, the continued rise of extremist parties, and a rapidly unfolding migration crisis continue to inflame the political situation, not least in Britain with a Brexit looking like a real possibility.

Against this backdrop, European asset managers face a daunting surge in complexity and accountability while losing traditional methods of interaction and execution. Greater unbundling, the loss of traditional client facilitation of order flow, as well as forthcoming regulation, such as the closure of BCNs and imposition of SIs, will force a rethink of current methods of accessing liquidity, finally severing the cord between traditional brokerage relationships for many.

As the sell-side retract and become more selective over the clients they choose to keep and the services they offer, the buy-side in turn is forced to reassess the value they derive from individual relationships. Shifting the responsibility of best execution onto the buy-side dramatically alters who and what they require to facilitate trading, and where this can take place.

Yet through the upheaval, firms are emerging with more robust policies, systems and procedures, enabling them to improve access to services from a wider variety of market participants, as well as assess the performance received. As certainty of execution quality is becoming as important a consideration as price and speed, new methods and partners in building liquidity will continue to reshape European equity trading.

As automation increases across the lifecycle of the trade, the introduction of greater technology and analytics will provide deeper external aggregate market knowledge. By identifying anomalies in the market and better understanding the available liquidity and intraday momentum, traders can drive interaction and dialogue to access liquidity while minimizing market impact, creating new channels of liquidity to complement existing models.

However, change is occurring in such incremental steps that at times it appears nothing has shifted. Yet the cumulative effect of multiple pieces of regulation in a post-crisis Europe may be underestimated. From the loss of the traditional sales trading relationship to unbundling to best execution, the powerful combination of economic, technical and regulatory factors will ultimately reshape European markets. Who owns the liquidity and how it is distributed and paid for will redefine the markets ecosystem, and the impact on its participants will be profound.

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

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 businesses. 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.

The Author

Rebecca Healey

Rebecca joined TABB Group in March 2011, bringing more than 15 years' experience in e-trading and financial services. Rebecca has held various sales and trading positions with Bankers Trust, Goldman Sachs, and most recently Credit Suisse, where as Vice President she was instrumental in launching the successful AES product to hedge funds from its inception in 2002 until 2008. Prior to this, she was the first electronic trader at Credit Suisse to be registered for all electronic European cash equity markets and covered sales trading into Asia and then Europe between 1997 and 2000. More recently, Rebecca was based in the Middle East from 2008 to 2010. There she was employed by the British Embassy in Bahrain, where she successfully launched the UK Government's financial services strategy and set up the Bahrain Financial Services Roundtable, which remains a key source of information for the UK Government today, especially in relation to Islamic finance. Rebecca holds a Bachelor of Arts degree in Spanish & Latin American History & Politics from the University of London. At TABB Group, Rebecca has authored *Dark Matters; One Touch, One World: The Future of Investment Banking; FX in Transition: Taking The Quantum Leap; MiFID II and Fixed-Income Price Transparency: Panacea or Problem?; Market Surveillance in Europe: Under Starter's Orders; European Equity Trading 2011/12: Looking for Allies in the Face of Adversity;* and *European Algorithms: The Evolution; and Trading in the Middle East: the Road to Mecca.*

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permission.

www.tabbgroup.com

New York
+ 1.646.722.7800

Westborough, MA
+ 1.508.836.2031

London
+ 44 (0) 203 207 9027

© 2016 TABB Group, LLC. All Rights Reserved. May not be reproduced by any means without expressed permis