Making MiFID II Work

Shape Shifting

Accessing the Dark Post MiFID II
Full Report
December 2017

DISCLAIMER
This document is confidential between you and Liquidnet and should not be disclosed to anyone else without Liquidnet’s prior permission. It is published only for Liquidnet Members, customers, and anyone who has been sent this document directly from Liquidnet.

This document is not investment advice or intended as a recommendation to buy or sell any instrument covered with it. Although the statements within this document are believed to be correct they have not been verified by the author and should not be relied upon when considering the merits of any particular investment. A recipient should consider their own financial situation, investment objectives and seek independent advice, where appropriate, before making any investment.

All presented data may be subject to slight variations.

All data and figures are Liquidnet internal data unless stated otherwise.
This paper is part of Making MiFID II Work—our comprehensive content, learning, and resource programme about MiFID II and its impacts on the buy side, both in Europe and around the world.

For more information about MiFID II, how Liquidnet can help you prepare, or to access more of Rebecca Healey's MiFID II research papers, insight, and workshops, please reach out to your Liquidnet coverage, email mifid2@liquidnet.com, or access the Making MiFID II Work app on My Liquidnet by:

1. Logging into my.liquidnet.com or mifid2.liquidnet.com using your Liquidnet 5, Commission Management, or My Liquidnet username and password.

or

2. Clicking on the “apps” icon from within Liquidnet 5.
Executive Summary

During August 2017, 51 heads of dealing across the UK (52%), Continental Europe (24%) and the US (24%) were interviewed to understand how they plan to access the dark post MiFID II, once broker dark pools are no longer admissible. The challenge for firms is which execution partners to select and where to trade in the new unbundled liquidity landscape.

Some key highlights from the research:

1. **Dark trading is already adjusting ahead of MiFID II**: buy-side-to-buy-side crossing networks are now the most effective dark venue for 65% of participants, versus just 20% for broker dark algos.

2. **Forty-six percent of participants have seen an improvement in the quality of their dark pool executions in the last year** as the proportion of large-in-scale (LIS) as a percentage of dark trading has also increased to 10% of all dark trading.

3. **However, the future landscape remains very unclear**, with 84% of respondents lacking details and confidence in sell-side proposals, and 60% seeing inconsistencies in SI models.

4. Participants remain split as to the future benefit of HFT Market Makers as a prominent constituent of the SI space: 46% view this as a negative market development, versus 37% who view this as positive.

5. **Buy-side concern is reflected in the need to monitor execution performance consistently**: 48% are less concerned with whom they execute provided they retain transparency and control over how executions occur.

6. In this potentially fragmented landscape, 67% of participants see dark aggregation of SI activity as a value-added execution service for brokers to provide versus just 29% who see this as adding unnecessary complexity to the marketplace.

7. **The number of respondents planning to focus on LIS trading increased from 43% of participants in 2016 to 72% in 2017**. However, despite LIS trading rising in the last year from 5% to 10% of overall dark order flow, this percentage will need to increase further to avoid breaching the Double Volume Cap threshold.

8. Liquidnet analysis of adjusted trading volumes relative to the implementation of DVC indicates that as a result of the recent increase in LIS activity, just 51% of stocks were capped out on the twelve-month look back, and 30% of the capped stocks were within just 1% of the 8% threshold.

9. **Understanding where and how to trade in this new complex landscape is now the number one priority for 64% of respondents**. It is not only access to unique liquidity; it is how to access that liquidity in a shifting trading landscape.

10. **Who will be the beneficiary of change may deliver surprises**: 48% of respondents plan to execute small- and mid-cap stocks with regional specialist brokers rather than the super bulge brackets once the Double Volume Cap is introduced.
European dark trading is set for an inevitable overhaul as MiFID II marks the end of the buy side’s ability to use broker internal crossing networks to trade in the dark. Once a strong proponent of the dark pool space, market participants are already adjusting trading behaviours to a future that will be devoid of broker dark pools. In 2016, 29% of respondents considered these networks as their most effective venue to execute in the dark; today, this number has decreased further to 20%. When comparing year-on-year participants only, preference for broker dark pools decreased to just 12%. In comparison, 65% of those interviewed view buy-side crossing networks as their most effective dark venue — an increase of 9% year on year (see Exhibit 1).

It is not just the buy side that is adjusting routing practices. Broker preferencing to dark pools is also declining. For those who report under Rosenblatt, their share of the dark market dropped from 48.2% to 40.9% of overall dark trading in the first half of this year as the sell side itself has to adjust routing practices to plan for the trading landscape post MiFID II (see Exhibit 2).

The greatest challenge ahead for the industry is the switch from broker dark pools to SI given the unbundled market eco-structure post MiFID II. This potential to rewrite the liquidity landscape may inadvertently reverse the recent trend of greater transparency in dark trading. Eighty-four percent of respondents lack details and confidence in sell-side proposals about how SIs will work (see Exhibit 3). Moreover, 60% of respondents say there are inconsistencies in sell-side explanations about how SIs will operate (see Exhibit 4).

---

Exhibit 1: When executing in the dark, what is your most effective venue today?

<table>
<thead>
<tr>
<th>Venue</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buy-side to buy-side</td>
<td>29%</td>
<td>65%</td>
</tr>
<tr>
<td>Broker dark algo</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Agnostic depends on trade</td>
<td>16%</td>
<td>15%</td>
</tr>
<tr>
<td>Aggregator/SOR</td>
<td>12%</td>
<td>15%</td>
</tr>
<tr>
<td>TURQ</td>
<td>12%</td>
<td>15%</td>
</tr>
<tr>
<td>MTF</td>
<td>8%</td>
<td>19%</td>
</tr>
<tr>
<td>DK - insufficient data</td>
<td>6%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Source: Research conducted by Liquidnet

Exhibit 2: Proportion of BCN activity as a percentage of total dark traded

Source: Let There Be Light: Rosenblatt’s Monthly Dark Liquidity Tracker – European Edition

Exhibit 3: How confident are you in understanding sell-side proposals on how SIs will work?

<table>
<thead>
<tr>
<th>Confidence Level</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No conversation yet/need more details</td>
<td>43%</td>
</tr>
<tr>
<td>Not confident</td>
<td>41%</td>
</tr>
<tr>
<td>Pretty/fairly confident</td>
<td>31%</td>
</tr>
<tr>
<td>Not concerned</td>
<td>4%</td>
</tr>
</tbody>
</table>

Source: Research conducted by Liquidnet

---

1 Rosenblatt Securities
The emergence of HFT market makers within the SI regime adds an additional layer of complexity, leaving the industry split as to the benefit for dark trading (see Exhibit 5). Forty-six percent of respondents negatively view the emergence of HFT market makers as a prominent constituent of the SI space, seeing this as a threat to traditional brokers and the quality of execution over the long term, given the inherent conflict of interest within market making. Some also fear that it could reduce the liquidity available on lit markets longer term, due to an SI’s ability to price inside the spread.

Conversely, 37% acknowledged that HFT market makers do now provide a valuable source of liquidity. Several noted that they were probably already interacting with SI liquidity via broker dark pools. However, as there is currently no visibility into that interaction, direct links with Electronic Liquidity Providers via the SI regime would provide greater transparency as to who they are interacting with and when—potentially exposing any real toxic activity. The need to establish which venue provides additive liquidity and which does not has added complexity when considering that venue performance and liquidity flows will continually change.

Impact of the Double Volume Cap

Much has been made of the impact of the 4% and 8% volume caps on how dark trading will evolve post January 2018. Our analysis based on adjusted trading volumes as outlined in ESMA Transparency Q&A indicates that the impact may be less severe than some previous industry predictions. From 3rd January 2018, when the two volume caps come in to effect, ESMA has proposed calculating a backward looking 12-month period to establish how much volume has been traded on each venue and which venues and stocks will be capped out from dark MTFs. As per ESMA’s Q&A, this should exclude large-in-scale (LIS) orders as part of the adjusted volumes for 2017.

Using the MiFID II LIS bands, we looked back over 12 months on a trade-by-trade basis, using trading data from Bloomberg and calculated the total number of executions across the FTSE 100, 250 and STOXX 600 stocks (see Exhibit 6).

Exhibit 4: What levels of consistency are emerging in terms of how SIs will operate?

Source: Research conducted by Liquidnet

Exhibit 5: If HFT market makers become a prominent constituent of the SI space in 2018, do you view this as a positive or negative market structure development?

Source: Research conducted by Liquidnet

“HFT does actually add liquidity; they are just market makers with a different time horizon so they could be beneficial. Some are definitely predatory and here we need our brokers to be tech-savvy and protect us. Ultimately we need to wait and see who adds value and who does not.”

“Negative, it’s taking traditional brokers out of the market for short-term liquidity. It may be great for six months but the quality of execution will slip over time and ultimately the liquidity outcome will decline. 90% of PMs only care if they can get $10mln done.”

“There is HFT now in broker dark pools, we just don’t know where. By being able to do more due diligence on routing practices, we can work out the flow we currently like in broker dark pools to form decisions on SIs for January 2018.”

---

2 Effect of Dark Volume Caps – Much Ado about Nothing?, October 2017
The key findings were

- Across the FTSE 100, FTSE 250 and STOXX 600 just 51% of stocks will be capped out according to our calculations, versus 69% when LIS executions are included in the cap calculations (see Appendix 2).

- We extended the dataset to cover all names executed by Liquidnet in the past 12 months. The findings showed a similar outcome even when looking across additional markets. Of the 2205 universe of names Liquidnet executed, 1043 would be capped—an average of 47%. However, when excluding LIS and OTC activity, this falls to an average of 24%, or just 521 stocks (see Exhibit 6).

- LIS volumes have increased in the last year from 5% to 10% of all dark volumes traded. If the proportion of LIS activity continues to increase, the number of instruments being capped out could fall further. When reducing the look back period to just Q3 2017 when LIS volumes were on average 10% of all dark markets, only 48% of the 729 stocks would be impacted.

- Just over a quarter of the 51% of instruments (26%) are within just 1% of the 8% threshold. When looking at just Q3 2017 data, this increases to 30% requiring little change in trading behaviour to reduce the impact of the DVC still further.

An example would be Land Securities, currently predicted to be capped at 8.65%. This trades on average 299,000 shares a day in the dark below LIS. If the below-LIS average dark volumes fell by 40,000 shares to 259,000 shares a day, just 1.1% of ADV, the instrument would fall below the 8% threshold. When looking at a look-back period of just Q3 2017 with a higher proportion traded LIS, the percentage traded below LIS falls to 7.35%.

However, all this analysis will be dependent on how ESMA finally calculates the denominator. Considerable volume that is not interactable liquidity is printed daily, such as OTC prints, off exchange, prior day and bargain trades. If ESMA decides to include any of these trades, the DVC results could potentially be very different as the denominator would increase, thereby lowering the dark percentage of overall volumes eligible for the DVC.

The proportion of LIS trades could also increase if the order notional was taken into consideration for the denominator, rather than just the executed value as included in this analysis. Currently, it is presumed that this will be up to individual venues to decide when submitting their calculations to ESMA, unless further guidance from the Q&A is received.

Further detailed analysis will be required to understand the true impact of the DVC, but market participants as well as regulators have the ability to impact the outcome. Not all instruments, nor all markets have the same proportion of dark versus lit trading, but if market participants were to adjust trading behaviours, either by trading in bigger blocks or by switching to lit venues or even grey order types, there is a possibility that the DVC threshold triggers can be avoided. On average, if below-LIS dark activity reduced by 21.17%, all 51% of stocks currently predicted to be capped would in fact fall below the 8% threshold.

Exhibit 6: Impact of including/excluding Large-in-Scale adjusted volumes from Double Volume Cap calculations

Source: Research conducted by Liquidnet
The need to adjust to a new liquidity landscape may deliver some further surprises. When reviewing small and mid-cap trading, the buy side’s intention is to trade large-in-scale wherever possible, and almost half of the respondents believe that regional brokers rather than bulge brackets will benefit (see Exhibit 7). Those who have fully unbundled are already seeing the benefit of trading with local, smaller providers. The challenge will be whether regional specialists are still able to hold onto the flow they currently see post January 2018. The risk of being able to remain an axe in a particular stock may well push a firm over the threshold to become an SI, which then would lead to issues in the ability to put up capital to facilitate block trading.

“Market structure expertise—and I don’t mean the experts, everyone has one of those—it’s filtering that information down to the person you speak to on a daily basis. Half of them don’t even know what an SI is.”

“Ultimately, successful execution will not depend on whether the counterparty is regional or bulge, or whether a venue is dark or lit. The order in question, the trading objective and current market conditions will all dictate how, when and where a particular order should be executed. The obligation to deliver on best execution will necessitate greater transparency and control over the execution selection process. As control of execution shifts from sell to buy side, so too will information flows and the ability to successfully navigate a shifting liquidity landscape morphing under new regulatory requirements. Analysis of execution performance will no longer just be a comparison of historic bulge brackets but a comprehensive analytical review of the evolving execution options available—dark, lit or even grey—throughout the lifetime of the order. That requires a new skillset on both the buy and sell sides, and is an area which 64% of buy-side respondents felt was not only critical given the uncertainty ahead, but where certain traditional brokers were falling short (see Exhibit 8).”

“Market structure expertise, not just shopping flow—technology and technical knowledge; we don’t have the internal resources to pull apart how the market will work. We need more advice than ever!”

“We need expertise to adapt to the new market structure—not just to teach me but to service me, to ensure every platform is absolutely capable of operating in the new landscape.”

“Expertise to adapt to the new market structure— 64%  
Unique liquidity— 56%  
Specialist/market knowledge— 24%  
Technology & technical knowledge— 22%  
Access to balance sheet— 18%  
Dark aggregation— 18%  
All of the above— 16%  
Source: Research conducted by Liquidnet”
While the regulators may believe they have fixed the lit markets and market participants should return, in the current competitive asset management landscape, execution performance can provide an all-important “edge.” Any potential alpha in an investment strategy has to be realised before it adds to fund performance. For that reason, firms will continue to seek methods of protection through accessing alternatives to fully lit trading. Whether or not SIs or agency venues benefit, and which constituents operate on which venue using which order type, will become a moot point. Dark trading will not flip back to the lit. It will shiftshape into execution constructs that are more complex and dynamic, requiring alternative skillsets and greater technology to navigate successfully. As we undergo yet another structural shift in liquidity formation, this will impact not only the buy side and sell side but also those who regulate European markets.

To discuss this research, we interviewed 51 global heads of trading from firms, managing $13T assets under management during August 2017. To preserve confidentiality, all quotes are unattributed.

**Accessing Broker Dark post MiFID II**

The sell side’s future ability to trade in the dark on behalf of its clients will require establishing which venues provide the greatest price improvement post January 2018. Successful interaction with SIs as the most likely replacement for the BCNs will require a trade-off between providing greater information to receive tighter pricing and incurring signaling risk and impact cost. Therefore, understanding the venues where signaling risk is acceptable, versus where the risk would be too impactful, requires firms to redirect flow now, as sufficient predictive datasets will need to be built now to help selection processes post MiFID II.

Despite the proposed change in the make-up of dark liquidity, the buy side’s reason for trading in the dark remains firmly tied to the requirement to access liquidity with reduced market impact (see Exhibit 9). There has been an increase in the majority of respondents trading between 25-50% of their order flow in the dark, but there is a higher proportion of participants unsure of the exact volume they trade in the dark (see Exhibit 10). The deeper that firms investigate execution performance, the harder it becomes to establish accurate facts. More respondents this year acknowledged the difficulty in receiving data on the proportion of order flow executed on dark venues via broker algos. This is not only due to insufficient data being sent back by brokers, but can also relate to legacy issues with buy-side technology, transaction cost analysis (TCA) offerings and Order Management Systems (OMS).

“Successful execution depends on the type of order, the strategy, the PM’s objective, the market conditions—and that can all change. The challenge will be to manage that process.”

“Buy-side to buy-side is where we can get the most amount of blocks executed with maximum anonymity and therefore minimum information leakage and market impact. We plan to continue accessing these post-MiFID but it will be interesting to see how liquidity forms and what happens when there is overhang.”

“We still don’t have the correct figures and are having to overhaul our TCA. Our OMS limited the number of MIC codes we could use, so some dark pools are labelled as lit venues—we have to clean up all our reference data before we really know what is going on.”

“Successful execution depends on the type of order, the strategy, the PM’s objective, the market conditions—and that can all change. The challenge will be to manage that process.”

**Exhibit 9: Reasons for accessing the dark 2016 vs. 2017**

<table>
<thead>
<tr>
<th>Reason</th>
<th>2016 (%)</th>
<th>2017 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to Liquidity</td>
<td>65</td>
<td>85</td>
</tr>
<tr>
<td>Reduced Market Impact</td>
<td>55</td>
<td>63</td>
</tr>
<tr>
<td>Blocks</td>
<td>44</td>
<td>55</td>
</tr>
<tr>
<td>Anonymity</td>
<td>35</td>
<td>52</td>
</tr>
<tr>
<td>Performance/spread capture</td>
<td>35</td>
<td>42</td>
</tr>
</tbody>
</table>

**Exhibit 10: Proportion of overall volume traded in the dark**

<table>
<thead>
<tr>
<th>Proportion</th>
<th>2016 (%)</th>
<th>2017 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;50%</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>&gt;25% &lt;50%</td>
<td>30</td>
<td>37</td>
</tr>
<tr>
<td>&gt;10% &lt;25%</td>
<td>41</td>
<td>45</td>
</tr>
<tr>
<td>&lt;10%</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Unable to verify</td>
<td>8</td>
<td>10</td>
</tr>
</tbody>
</table>

Source: Research conducted by Liquidnet
With the increased focus on evidencing best execution, the requirement for deeper knowledge of trading outcomes is likely to continue to support a shift in dark trading patterns towards more transparent offerings. The venues that provide the buy side with greater control over how, where, and when to trade in the dark in turn enhance the level of comfort firms have in accessing dark pools. For year-on-year participants, the perceived quality of dark execution has increased by 14% (see Exhibit 11).

<table>
<thead>
<tr>
<th>Improved</th>
<th>46%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Change</td>
<td>33%</td>
</tr>
<tr>
<td>Unable to Verify</td>
<td>12%</td>
</tr>
<tr>
<td>Declined</td>
<td>2%</td>
</tr>
<tr>
<td>2017</td>
<td>2016</td>
</tr>
</tbody>
</table>

Exhibit 11: Have you noticed any change in quality in dark executions over the past year? (Year on year participants only.)

Source: Research conducted by Liquidnet

Widespread use of AFME questionnaires, use of FIX tags 29, 30 and 851 are now all part of a necessary due diligence quarterly review process firms are undertaking post the recent misconduct issues around dark pool trading. In conducting reviews into how broker dark pools operated, some have also chosen to reduce the number of providers to order to be able to manage the process, but most noted an improvement in broker disclosure of how pools work and behaviour in the pool. As a result, of the increased data and visibility, levels of confidence around operating procedures now reach 72% (see Exhibit 12).

Exhibit 12: How confident are you in understanding how dark pools operate in relation to venue operating procedures?

- 12%: Not confident
- 22%: Reasonably confident
- 50%: Pretty confident
- 16%: Pretty confident

Source: Research conducted by Liquidnet

However, concerns over routing practices remain. Twenty-two percent of participants in 2017 were not confident, with an additional 6% noting their level of comfort was contingent on the venue type they were accessing (see Exhibit 13).

Exhibit 13: How confident are you in understanding how the dark pools you access operate in relation to routing practices?

- 4%: Not concerned
- 6%: Reasonably confident
- 58%: Pretty confident
- 22%: Not confident
- 10%: Depends on venue

Source: Research conducted by Liquidnet

“It depends on the pool: When it’s buy-side to buy-side, I feel comfortable, but not broker dark pools. I just want to know where do they go and how they ladder sources of liquidity. I need to know the breadth and depth of liquidity at a technical level now to feel comfortable.”

“Not necessarily based on the quality but we have been able to get more done, so our experience has improved. Quality is a trade-off between volume and impact. If you want higher fill rates normally it means you have to live with higher reversion. We are looking for that point where we can live with the reversion relative to the volume we are able to execute. It depends on the goal of the order as well as to the sensitivity around the impact.”

“We are getting more LIS done and the fill size remains constant. The aggregator is showing an improvement in the fill rate size. We are getting bigger chunks of stock done.”

“I have a good understanding how the two models I have seen will operate but both are very different. One will be an SOR in the middle, the other will be an SI destination.”

“We are optimistic, most of our counterparts will become SIs and there are new ideas coming to the street every day. Broker X is planning a continuous stream of liquidity to be used by the street on lit markets, basically using their central risk desk.”

“The SI is only going to be as good as the liquidity that resides there. I have a feeling we will be using capital a LOT more often, but we need to see this in action.”
Where firms are not confident, reviews are underway. Some firms are already choosing to invest in more robust TCA processes in order to uncover inconsistencies, such as brokers giving preference to their own pool inappropriately. In some cases, this has required switching TCA providers as the legacy system was inadequate. Complaints ranged from minimal venue data, inability to stream inbound data or identify when brokers were preferencing their own pool and the manner in which they were doing this. Firms are not necessarily trying to second-guess broker routing or scrutinise placement logic, but ensure that the TCA they utilize is able to track that brokers are routing as indicated, and weed out those who repeatedly make poor routing decisions.

As with other recent research9, those who feel the greatest level of comfort in accessing dark pools are those who are utilizing a combination of broker information and independent robust third party TCA analysis with complete and accurate fill data from brokers. The challenge for those without sufficient automated analytical processes is that trading now equates to a high level of fill data that is very time-consuming to trawl through, relative to the value a firm can potentially derive from the information.

In addition, while more detailed audit trails provide the ability for the buy side to make better-informed choices, participants noted that this is still a moving target, requiring continual investment as brokers develop and evolve their product. No dark venue is static; toxicity reports may show leakage and impact that brokers subsequently address and improve.

It is also a constant trade-off between managing execution risk and speed; the most toxic pool is likely the most liquid. Given these variables, it is unsurprising that the more transparent the arrangement, the easier participants are able to understand and monitor effectively. The challenge going forward is recreating current confidence levels in broker dark pools in the new SI regime.

---

**SI — The Unknown Quantity**

Brokers are seen as being elusive over the structure of their models, with confusion over the role of the SI versus Central Risk Desks; however, the sell side claims that with the regulatory environment still so unclear, they have little option. Their view is that until the regulators address the remaining ambiguity, they are unable to deliver certainty on operating procedures.

Some buy-side firms have received a full breakdown from brokers as to how their proposals will operate, and while they understand the proposals, they are not necessarily confident that the sell side will be able to deliver.

The introduction of Article 16 (a) by the European Commission10 on 28 August 2017 in the attempt to close any further debate on the topic appears to have been unsuccessful, with discussions underway at the European Parliament to find further methods of curtailing SI activity beyond its primary function—offer proprietary risk capital.

**Delegated Regulation (EU) 2017/565, Article 16 (a):**

"An investment firm shall not be considered to be dealing on own account for the purposes of Article 4(1)(20) of Directive 2014/65/EU where that investment firm participates in matching arrangements entered into with entities outside its own group with the objective or consequence of carrying out de facto riskless back-to-back transactions in a financial instrument outside a trading venue."

While no firm appears planning to link between SIs—given the regulators’ concerns regarding networks of SIs—a broker can be a client of multiple SIs. Then the concern is that speed may result in SI unintentional interaction. In addition, entering into a sub-tick price war could leave lit exchanges devoid of liquidity, which is likely to lead to further restrictions on SIs by the regulators.

The current furore over SIs is predominantly due to the level of uncertainty. Yet, gradually the industry is coalescing to a level of consistency in model types, which should bed down early in 2018 once the regulatory landscape is clear and market participants have established methods of interaction. The super-bulges are likely to become SIs in all equities, with liquidity provision based around the Central Risk Desk. A second tier will either attempt to match order flow off book on-venue, or will aggregate SI liquidity.

---

9 “Re-evidencing Best Execution” (July 2017), Liquidnet Research
Accessing SIs direct

1. Client requests and receives quotes from numerous SIs and selects trades.

2. Selected SIs execute trades in a principal capacity and report as required market and client-side.

3. Broker acting as Agent accepts order & routes to Algo SOR.

4. Broker Algo SOR selects most appropriate execution method, executes, and reports as required market-side.

5. Broker sends execution to client and reports as required client-side.

Market

"I am very concerned that the central risk books will grow and grow—and become very correlated aka 2007."

Accessing SIs via algos

1. Client sends order via algo

2. Broker acting as Agent accepts order & routes to Algo SOR

3. Broker Algo SOR views all venues

4. Broker Algo SOR selects most appropriate execution method, executes, and reports as required market-side

5. Broker sends execution to client and reports as required client-side

Market

“Broker X is using their SOR to access ELPs, but in that millisecond will that ELP have bought a share from another SI?”
Accessing SIs via an aggregator

1. Client sends order via algo
2. Broker acting as Agent accepts order & routes to aggregator
3. Broker Aggregator or SI Farm views all SI quotes
4. Broker aggregator selects most appropriate execution method, executes, and reports as required market-side
5. Broker sends execution to client and reports as required client-side
6. Market

“We still have a bunch of question marks—which sell sides go to which venues? Do they put Virtu on the top or bottom of their list? It will take us months to get to grips with the new liquidity landscape, and then by the end of Q1 we are going to have to recalibrate routing practices based on what we have learnt?”

Accessing SIs as part of client facilitation of order flow

1. Client sends order to broker
2. Broker acting as Agent accepts order and looks to facilitate
3. Broker Aggregator or SI Farm
4. Broker selects most appropriate execution method, executes, and reports as required market-side
5. Broker sends execution to client and reports as required client-side
6. Market

“When they explain, I am confident in their explanation, but not confident on impact. How they are going to work together, how competitive they are going to be? What liquidity will be available?”
Challenging the Status Quo

Execution performance data will ultimately dictate which SI model delivers additive quality liquidity or not. But when it comes down to trading with ELPs within the SI construct, firms will need sufficient technology to distinguish when it is valuable to interact, versus when they risk interacting with momentum flow traders who could potentially profit from the trade. It can be beneficial to have information leakage at the end of an order, just not at the start. Any interaction will depend on how each ELP SI behaves and what it is able to offer, as well as on the individual trading objective and current market conditions at the time.

This will require the provision of accurate data; time to build up sufficient logic to establish when to access which venue; and continual analysis and re-assessment. Few individual firms are likely to have sufficient order flow to garner the necessary intelligence, hence the growing requirement for an added layer of protection from brokers in the form of aggregating SI liquidity (see Exhibit 15). While the regulatory intention may have been bilateral interaction between an SI and the buy side, it is clear that many firms believe direct interaction will place them at a significant disadvantage for now. As the number of venues increases, the main objective of sourcing liquidity with minimal market impact becomes harder to achieve.

There is also a concern that interaction with SIs may force more activity under SMS to force the SI to complete the trade, rather than risk the SI being able to take a “last look.” Publicly available quotes are only required for orders below SMS and must be made for volumes equal to a minimum of 10% of SMS. If SIs are only required to provide liquidity in larger size at their own discretion, and the SI may select the clients to whom it gives access to its quotes provided it does so in an objective and no-discriminatory manner, then the SI has the ability to view but not necessarily accept the quote above SMS.

Another concern highlighted by respondents is the potential degradation of the reference price. Article 49 of MiFID II requires trading venues to adopt tick size regimes in equities and certain equity-like instruments. The tick size regime must be calibrated to “reflect the liquidity profile of the financial instrument in different markets and the average bid-ask spread, taking into account the desirability of enabling reasonably stable prices without unduly constraining further narrowing of spreads.” However, this requirement does not apply to execution venues, leaving the industry with the fear that trades may leave the lit markets and be directed to systematic internalisers with less transparent pricing methods (see Exhibit 16).

“HFT in SI is a bit like Jeremy Corbyn - everyone hated them but now they keep turning up at conferences, and everyone wants to hear what they have to say. To be honest we have to look at the data and if the performance is good, we should be using them. We have to be open to who provides the best liquidity.”

“Is Virtu at the top of your liquidity stack? Does that matter? We bump into them now on the outside—if they move inside and they are explicitly providing liquidity or does it just create a false negative, allowing a super tech firm to see a slice of the order up to SMS and risks becoming like the FX Last Look market.”

“The thing that scares me the most is that the brokers are going to get the ‘last look’. What happens when they withdraw their quotes? If you have to go to three or four SIs, then that’s your market impact blown. An SI is a quote—not firm; at least in a BCN you had some chance of a firm order.”

“It is illogical for the SI regime not to adhere to a tick regime. If SOR is only focused on price, that’s an advantage for the SI but a disadvantage for me.”

“40% of the market already trades elsewhere. The reference price may or may not be relevant dependent on what you are trading—and what happens when the national exchange goes down, the market doesn’t collapse.”

Exhibit 15: Do you see dark aggregation as a value-added execution service to be provided by brokers, or does this create unnecessary complexity and should be closed down by the regulation?

4% Value added service to be provided by broker
67% Unnecessary complexity and should be closed down
29% Unsure at this stage

Source: Research conducted by Liquidnet

Exhibit 16: Do you share the regulators’ concerns regarding the potential degradation of the reference price owing to SI?

8% Yes
56% No
36% Unsure at this stage

Source: Research conducted by Liquidnet
The counterargument is that SIs will seek to remain relevant by maintaining tight pricing and offering maximum liquidity. Whether the SI regime ultimately delivers or not may be a moot point. The key factor for the buy side in selecting the appropriate counterpart will ultimately be the ability to maintain transparency and control; and to understand how trading models work, to be able to decide whether the interaction is appropriate for the execution or not (see Exhibit 17).

**Exhibit 17: What is your view on counterparty quality in the dark?**

Source: Research conducted by Liquidnet

The Dark OTC Dilemma

The question mark around SI is masking the real challenge for buy-side traders: the ability to continue to achieve their core objective of sourcing maximum liquidity while minimising information leakage and price impact. This can still be achieved through crossing-up natural blocks OTC with a bulge bracket, rather than slicing and dicing parent orders into algorithms controlled through aggression levels and placement strategies. However, MiFID II is agnostic as to the method of execution—all trading, whether automated or voice, must adhere to the regulation.

The issue for voice trading is this: If a sell side broker is an axe in a stock and trading OTC, it could presumably breach the substantial and systematic thresholds that would force it to register as an SI. Once an SI, it is able to undertake matched principal trading on an occasional and non-regular basis only. Any of the following activities would put them in breach of “occasional and non-regular”:

- **a)** The investment firm operates one of more systems or arrangements, *be they automated or not*, intended to match opposite client orders... They should not have systems in place aimed at increasing opportunities for client order matching.

- **b)** Non-risk trading accounts for a recurrent or significant source of revenue.

- **c)** The firm markets, or otherwise promotes, its matched principal trading activities.

Sales traders appears able to advertise flow if they are acting in an agency capacity only. Then they would be able to cross client orders on a venue only. Certain brokers have already outlined their intention to achieve this on the LSE via the Rule 3000 (see Appendix 4)11. Others have indicated they intend to achieve this by using a periodic auction. The alternative is to maximise optimal LIS executions within the new dark framework, thereby avoiding the Double Volume Cap (DVC). The LIS market looks set to grow, with 72% of participants intending to focus on using LIS where possible, compared to 43% of respondents in 2016 (see Exhibit 18).
Beyond LIS

The recent increase in iceberg orders demonstrates industry attempts to find alternative execution methods to continue to limit market impact outside of traditional dark activity. Sixty-five percent of respondents are confident that new order types will be able to replace sub-LIS dark activity on MTFs (see Exhibit 19).

Exhibit 19: Do you believe that new order types can replace current dark activity that will not meet LIS?

Source: Research conducted by Liquidnet

Conditional and continuous auctions would be my preference. In periodic auctions, you just get gamed. I was a proponent of the model but the experience didn’t live up to expectations.”

“I am agnostic as to whether conditional is better than continuous auction but definitely not the periodic auction. Broker preferencing will create problems over time.”

“We are using the conditionals already. We don’t like the hidden orders or the auctions, there is more of a risk of being gamed.”

“More venues are more trustworthy than BCNs—the type of dark trading is changing.”

“We like the conditionals. The continuous auction will make no difference, you will still leave a footprint and periodic auctions will block up liquidity but again still leaves a footprint if you can’t do the full size.”
In finding a substitute for executing in the lit without revealing information, conditional orders are the winners so far (see Exhibit 20). Their widespread usage is reflected in the rapid growth in conditional order volumes from $281m to $891m in 2017 (see Exhibit 21). Participants are able to wait passively for block LIS opportunities to occur, while executing in an algorithm on the lit market, thereby ensuring that trading intentions remain hidden until they are required to “firm-up” their conditional interest. This ability to continue trading while searching for a block is essential: While LIS is increasing, only 56% of orders trade LIS in Turquoise Plato Block Discovery versus 94% in Liquidnet, and on average, these trades are just twice the multiple of LIS. Blocks are improving, but there is still some way to go if firms are to continue to access the volume of dark trades they do today.

The year-on-year highest increase in new order types is in hidden iceberg orders, ironically a very traditional method of order flow. Yet this is unlikely to adjust post MiFID II as the requirement to trade report per fill will release greater information leakage to the market and be more costly to trade.

Exhibit 21: Rise in conditional order flow

The challenge with increased conditional order flow is the risk of race conditions, requiring a need to monitor and police behaviour. Given the forthcoming data to be published by venues on the quality of execution of transactions under RTS 27, including fill rates and data on the likelihood of execution, the impact of greater transparency is not always beneficial, and is indicative of the level of transparency to which trading venues will now be exposed. Users will need to adjust routing logic ahead of simultaneous firm-ups across conditional venues. Execution partners will need to send orders to external conditional venues in sequence to avoid creating the liquidity mirage of FX markets and prevent venues unnecessarily being placed in the penalty box.

Next Steps for the Industry

Regulators believe the recent increase in dark trading requires further oversight to counter the negative impact on price discovery. Multiple factors—including reduced information around the execution process, the size of the order; how long it has rested in the market, whether it has traded at midpoint, and whether it was initiated by a buyer or seller—raise the risk of markets bifurcating into uninformed dark venues versus informed lit venues, and resulting in wider bid/offer spreads and less depth of liquidity.

However, price discovery equates to the legitimate price at which you are able to trade. What is displayed on the screen may not be the price you can trade at, since it depends on the volume available versus the order size. What is different now is that, due to the unbundling of the traditional buy- and sell-side relationship, rather than the broker acting as intermediary, the buy side is in the front-line of fire, and that requires a different skillset and toolbox of technology that few on the buy side currently possess.
So where does this leave the industry? Not all regulatory bodies are opposed to dark trading. The FCA’s own study into dark trading cites that dark trading negatively affects the market between 11% and 17% of market turnover when reviewing 350 of the largest UK stocks across the four main London venues. In its conclusion, the FCA noted that it is important “policy makers take care not to eliminate the market quality benefits of dark trading by arbitrarily imposing uniform dark trading restrictions for all stock sizes.”

The ECB also noted the rise in dark pool usage for other asset classes, and this was verified by the participants in this research. Of those firms trading fixed income, 77% now access dark pools (see Exhibit 22). As MiFID II/MiFIR introduces pre-trade transparency requirements for liquid bonds, some dark pools may expand their business lines to these instruments. Understanding the impact of dark pools on market functioning in equity markets may help anticipate the effect of such structural changes in secondary fixed income markets; the latter have been identified as particularly vulnerable to liquidity shocks.

With dark trading firmly here to stay, the industry’s fixation with the future role of the SI regime has unsurprisingly caused much consternation. However, it is the gap between how regulators and politicians want European markets to operate, and how markets work in practice, which will challenge future dark trading the most.

Bulge bracket brokers are fighting to keep a seat at the execution table. With reasons for selecting execution brokers requiring detailed justification under ESMA’s Investor Protection Q&A, the recent disclosure on just how many firms plan to switch from bundled research payments to paying from the P&L suggest the industry is likely to see further significant change in Europe (see Exhibit 23).

The separation of buy and sell side creates a number of issues as the market moves from the previous bundled environment to a fully unbundled market eco-structure. For the sell side, the loss of bundled commissions will have further negative impact on already declining revenues. Traditional execution methods are far harder to execute in a post MiFID world. Strengthening new execution capabilities to include MTFs lacks appeal given the set up costs and risk of closure for six months given the DVC, let alone the loss of control over who has access to orders and how these are executed under MTF non-discrimination rules.

Automation will shift from algos to the management of risk. Those who can truly understand the cost of trading will demand access to accurate and complete datasets to build multiple SI offerings. Navigating the myriad of liquidity destinations will require SORs to continually investigate multiple options until individual SIs can be eliminated from the selection process. Liquidity risks gravitating to a smaller group of super-bulge brackets who will dominate, creating a two-tier liquidity framework where pay-to-play has never been more likely an outcome. Super-asset managers the super-bulges want to court will be given preferential treatment to win flow, which will then be repackaged and sold on at a less beneficial price point.

---

Those on the sell side who cannot compete in the provision of capital will compete in the execution stakes by seeking to aggregate SI flow. Providing a valuable service to those on the buy side who lack sufficient resources to navigate the new liquidity landscape. Exchanges and MTFs will need to re-invent offerings to compete and attract liquidity back to regulated markets, adding to the complexity in offerings of liquidity formation.

For the buy side, scale will become ever more critical. Whether the ability to demand increasingly scant resources from sell-side providers, paying for research from the bottom line, expansion of compliance departments or costly new trading technology, the asset management industry is under renewed competitive pressure. The ability to deliver enhanced execution performance will be vital to ensure alpha is realized and improvements to fund performance are achieved. Firms will continue to seek new methods to protect trading, dark or grey, before returning to the lit.

As dark trading continues to morph into execution constructs that are more complex and dynamic, tools to monitor those venues will have to alter, as will the skillsets of those who access them. Buy-side firms will continue to move away from relying on brokers. They will use more independent, comprehensive data and comparable analytics to guide and validate their decision-making processes and to understand where true opportunities lie, as well as to monitor for potential toxicity and protect against adverse market conditions. The demand for reliable and accurate data will evolve the role of the execution desk to optimizing investment strategies not only on different venues, but also using different instruments.

If regulators are of the view that the increase in dark volumes requires further oversight to counter the reduced information around the execution process, future market constructs will dwarf dark’s supposed negative impact on price discovery. Debating the proportion of dark and lit trading may soon be a moot point. Future navigation of European markets will be a continual complex challenge, not only for those who trade the markets, but also for those who regulate them.
Appendix 1

ESMA Calculations on the Implementation of the Double Volume Cap (Transparency Q&A)\(^\text{18}\)

DVC applies when the relevant dark trading thresholds have been breached in the previous 12 months.

**Eligible dark trading subject to the caps (see Exhibit 23)**

1. Transactions using the Reference Price waiver
   a. Only at midpoint
   b. Or at the open/close if outside continuous trading
   c. And any reference price has to be the most relevant market.

2. Transactions using the Negotiated Trade Waiver in liquid shares.

3. Any transactions using the LIS waiver will be excluded from DVC calculations.

**Under ESMA Q&A Transparency Calculations for the DVC should be made as follows**

1. Trading venues should base their 2017 report on **adjusted volumes**
   a. All transactions executed in 2017 using RPW should be included in the numerator for DVC **excluding all LIS transactions**
   b. All **liquid** NTW transactions should be included in the numerator for DVC excluding transactions subject to conditions other than the current market price.

2. Any instruments traded under waivers not included under MiFID I but which now fall under MiFID II/MiFIR will be zero at start date. ESMA will then accumulate the volume traded under any waivers on a venue/across all venues on an incremental monthly basis. Therefore, for instruments listed on venues such as AIM will not be subject to the DVC until January 2019, when ESMA has collated 12 months’ worth of data.

On the basis that 2017 volumes will need to be adjusted (to account for just RPW and liquid NTW transactions and excluding transactions executed on the basis of two orders benefitting from the large-in-scale waiver) and any incremental transactions will be accumulated on a month by month basis, it is not a given that the double volume caps will be triggered immediately. Industry calculations in the main have been based on current dark trading patterns—not on adjusted volumes.

**Implementation by ESMA and NCAs**

1. ESMA will publish the percentage of trading in each instrument falling under the DVC on each trading venue and across the EU over the last 12 months within five days after the end of each month.

2. The NCAs then have within a two-day period to suspend the use of waivers on the venue(s) in that financial instrument for a period of 6 months.

3. If the figure reaches either 3.75% on a trading venue or 7.75% on a pan-European basis for a stock, ESMA will publish an additional report within 5 days after the 15th of the month for that stock.

4. CTPs will have to submit to NCAs total volumes of trading in each financial instrument executed on all trading venues with total volumes separately for each trading venues, as well as total volumes executed under the RP waiver and the relevant NT waiver separately for each waiver and for each trading venue.

ESMA Q&A
The double volume cap mechanism [Last update: 03/10/2016]

Question 1 [Last update: 03/10/2016]
What are the necessary adjustments to data on MiFID I waivers (shares traded only on regulated markets/shares traded on regulated markets and MTFs) in respect of the DVC? What is the volume traded under the waivers to be reported in the year before the application of MiFIR?

Answer 1

In particular, Article 5 of MiFIR caps the trading executed under:

i. systems matching orders based on a trading methodology by which the price is determined in accordance with a reference price; and

ii. negotiated transactions in liquid instruments carried out under limb (i) of Article 4(1)(b) of MiFIR.

With regard to the reference price waiver, the requirement under MiFID I—that the reference price must be widely published and regarded as reliable—has been maintained under MiFIR. The only difference is that such elements are codified as an implementing measure under MiFID I (in Article 18(1)(a) of MiFID I implementing regulation), whereas they are part of the Level 1 text of MiFIR.

Furthermore, compared to MiFID I, MiFIR narrows down the set of eligible prices that can be used by those reference price systems in two different ways.
First, any reference price can only be either:

i. the midpoint within the current bid and offer prices of the most relevant market in terms of liquidity or the market where the financial instrument in question was first admitted to trading; or

ii. the opening or closing price of the relevant trading session if the trading occurs outside the continuous trading phase.

Second, any reference price can only be derived from the most relevant market in terms of liquidity or the market of first admission of the financial instrument.

Taking note of those differences ESMA considers that for properly implementing the double volume cap from 3 January 2018 all transactions executed in 2017 in accordance with reference price waivers granted under MiFID I should be included in the numerator for the purposes of the double volume cap calculations as per Article 5 of MiFIR.

With regard to the negotiated transactions waivers, in comparison to MiFID I, negotiated transactions are subject to some restrictions on admissible execution prices depending on the type of the transaction and the trading characteristics of the financial instrument being traded. In particular:

i. Negotiated transactions which are subject to conditions other than the current market price can be executed at any price in accordance with the rules of the trading venue

ii. Negotiated transactions which are subject to the current market price must instead comply with price conditions as specified below:

a. for liquid financial instruments, negotiated transactions must be executed within the spread; negotiated transactions falling under this limb are subject to the double volume cap (DVC) mechanism.

b. for illiquid financial instruments, negotiated transactions can be executed at any price falling within a certain percentage of a suitable reference price, provided both the reference price and the percentage are set in advance by the system operator.

With respect to the negotiated transactions trading venues are required to properly identify, to the extent possible, transactions under the negotiated transaction waiver volume comparable to point (a) above which are the only negotiated transactions covered by the DVC mechanism. Therefore, ESMA considers that all transactions executed under the MiFID I negotiated trade waivers in liquid shares should count towards the double volume cap and should be reported by trading venues for the purpose of the double volume cap calculations. However, the calculation should exclude negotiated transactions in liquid shares subject to conditions other than the current market price executed in accordance with Article 18(b)(ii) of MiFID I implementing regulation.

Transactions executed on the basis of two orders benefiting from the large-in-scale waiver should not count towards the volumes calculated under the reference price and the negotiated trade waiver.

Question 2 [Last update: 03/10/2016]

How would the double volume cap be applied from January 2018 in relation to financial instruments (shares traded only on MTFs, depositary receipts, ETFs, certificates) which currently do not operate under any waiver?

Answer 2

Article 5(4) of MiFIR requires ESMA to publish the total volume of Union trading per financial instrument and the percentage of trading in a financial instrument carried out under the reference price waiver and for negotiated transactions under Article 4(1)(b)(i) in the previous 12 months.

Concerning the total volume of Union trading per financial instrument, ESMA will publish the volume traded on all EU venues over the last 12 months.

Concerning the percentage of trading in a financial instrument carried out under the reference price waiver and the negotiated transactions waiver, two scenarios need to be distinguished:

i. Prior to the date of application of MiFID II/MiFIR: The pre-trade transparency requirements of MiFID I, and therefore also the possibility to benefit from MiFID waivers, apply only to shares admitted to trading on regulated markets. While MiFID II/MiFIR extend the transparency regime to other equity-like instruments and to shares traded only on MTFs, these instruments until the date of application of MiFID II/MiFIR do not have any formally approved waivers. Therefore, the volume traded under MiFID waivers for those instruments not covered by the scope of the MiFID I pre-trade transparency regime (the numerator) will be zero for the monitoring period starting one year before the date of application of MiFID II/MiFIR.
ii. After the date of application of MiFID II/MiFIR: With the application of MiFID II/MiFIR equity and equity-like instruments newly covered by the MiFIR transparency provisions can have formally approved waivers. For the purpose of performing the calculations for determining the percentage of trading in a financial instrument under the relevant waivers, ESMA will accumulate for the volume traded under any waivers on a venue/all EU venues (the numerator) the trading under the reference price and negotiated transactions waivers over the first 12 months. This means that at the end of the first month after the date of the application of MiFID II/MiFIR in 2018, the trading under the waivers will cover a period of one month. At the end of the second month after the date of application of MiFID II/MiFIR, the trading under the waivers will cover a period of two months, and so forth until a 12-month period is covered.

The applicable denominator (volume traded on all EU venues) will be based on the traded volumes of the previous 12 months at each point in time.

ESMA considers that this calculation method reflects the co-legislators’ intention to at all points in time cover the actual volumes traded under MiFID approved waivers in the numerator and compare it to total trading in the denominator over the previous 12 months.
Appendix 2

Liquidnet EQS Calculations on the Impact of Large-in-Scale Trading on the DVC Thresholds

A number of assumptions were made to define how the calculations will be implemented

- ESMA will look back over a rolling 12-month period.
- Any execution traded above LIS will be excluded from the DVC calculations from 3rd January 2018. This may include executions that are currently being published using another waiver this year.
- All OTC trades, off-exchange and certain Bloomberg condition codes were also excluded in the denominator as these were deemed non-interactable liquidity.
- Stocks remain in the same LIS bucket that they were in on the day of calculations. Results may contain some slight fluctuations should a stock move from one band to another (as per Appendix 3).
- For the purposes of this study, stubs were not included in the analysis, as it was not possible to identify which orders were LIS outside of Liquidnet before the first fill. Therefore, we have excluded them from our study for the aim of uniformity.

Calculations were based on a list of all executions for the last 12 months across all the selected stocks using data obtained from Bloomberg. This information contained the execution quantity, executing venue, whether the venue was a lit exchange or a dark exchange and Euro execution value. Combining this information with an internal data source containing large-in-scale MiFID II definitions, we calculated which executions were above large-in-scale and which were below. Once we had this information, we calculated how much volume was traded on each venue, and compared that to how much was traded over the course of 12 months to get a percentage traded per venue. From this, we calculated what percentage the dark volume was for each stock over a 12-month period to ascertain whether a stock would be impacted by the MiFID II dark venue cap. We included all primary exchanges, BATS, CHI-X, Turquoise MTF and Aquis for our lit calculations, as well as all dark MTFs.

The results highlighted the following:

- FTSE 100 and FTSE 250 stocks were largely affected by the 8% cap. 77% of FTSE 100 and 64% of FTSE 250 stocks will be capped out after the first ESMA report according to the findings of this analysis. This rises to 89% of FTSE 100 stocks and 77% of FTSE 250 stocks when large-in-scale executions are included in calculations. Looking at three months, however, the study found that this number fell to 65% of FTSE100 stocks, a reduction of 12% on the whole year.
- 51% of STOXX600 will be capped by the 8% DVC threshold. This figure rises to 70% of stocks capped out if we include LIS executions. Investigating a shorter time period, the study found that 45% of STOXX600 stocks would breach the cap, a 6% reduction versus the whole year.
- Across the FTSE 100, FTSE 250 and STOXX 600 51% of stocks will be capped out according to our calculations. This figure however rises to 69% when large-in-scale executions are included in the cap calculations. There are also a number of stocks that fall just below the 8% cap. 

FTSE 100 Calculations
Eighty-nine of the FTSE 100 stocks breached the 8% cap. However, when we excluded fills above large-in-scale, 24 of the FTSE 100 stocks did not in fact breach the 8% cap. Furthermore, an additional 25 stocks only just breached the cap, falling within 1% of the 8% cap. We did not find any stocks that would be banned for more than a six-month period. Including LIS executions into the calculations then 89% of the stocks would be capped out in MiFID II. Based on the assumption that LIS executions would not be included in the cap calculations, then we believe that just over a quarter of FTSE 100 stocks would be available to trade in the dark below LIS once the DVC comes in to effect in early 2018. Should the trend towards large-in-scale continue on this trajectory, an additional 25 stocks would fall below the 8% volume cap threshold.

FTSE 250 Calculations
Looking at the FTSE 250, we found that 64% of stocks would be capped out from early 2018. It is worth noting that according to our calculation methodology, none of the stocks will be banned from the dark for more than a six-month period. Including LIS executions into the calculations, then a little over 77% of the stocks would be capped out in MiFID II. There are 31 stocks that breach the 8% threshold by less than 1%. Should the trend towards LIS continue it is very possible that these stocks could fall below the 8% threshold once MiFID II comes in to affect.
EURO STOXX 600
We also looked at the broader European market and looked at the Euro STOXX 600. We found that excluding large-in-scale executions from the calculations meant 51% of stocks would be capped out under MiFID II. We found that no stocks in the STOXX 600 had a dark market share of greater than 16%, and as a result, there does not appear to be any risk of any stocks being capped out for more than 6 months. We also found that 30% of stocks currently predicted to breach the 8% volume cap on the STOXX 600 were within less than 1% of the cap. Should the trend to LIS continue it is feasible to see an additional 84 stocks falling below the volume cap.

Individual Markets
It is worth noting that in general there is a big difference country by country in stocks capped out when LIS executions are taken into account. Looking at the UK market, for example, this study found that 60% of stocks surveyed (835 names) would be capped out (see Exhibit 6 on page 6).

4% dark cap
The second cap is the 4% DVC. The 4% cap will come in to effect should a particular dark venue have traded more than 4% of the total executed notional over a rolling 12-month period. This would result in a 6-month ban on the venue which would be disallowed from trading that particular name for a period of 6-months. This may increase should they have traded more than 8% over a 12-month period. We noted that there were no stocks across our studied universe that that breached a 4% cap where an 8% cap was not breached. It looks as though there will not be any stocks initially that will be only capped out on a single venue come January 2018.

Q3 2017
LIS volumes have also increased in the last year from 5% to 10% of all dark volumes traded. If the proportion of LIS activity continues to increase, this could potentially reverse any increase to the 51% of instruments being capped out. This is evident when reducing the look back period to just Q3 2017 when LIS volumes were on average 10% of all dark markets, 48% of the 729 stocks would be impacted. It is worth noting also that 30% of stocks currently predicted to breach the 8% cap are within 1% of the 8% threshold.

- FTSE 100 65 stocks capped out for Q3 2017; 19 of them are within 1% of the 8% cap.
- 162 of the FTSE 250 look still to be above the 8% threshold.
- 45% of the STOXX 600 are above the threshold which is an improvement on the yearly look back also.

Exhibit 24
LAND.LN as one example
Looking back over the year LAND.LN traded 8.65% below large-in-scale, which falls to 7.35% when looking at just the Q3 2017 look-back data.

<table>
<thead>
<tr>
<th>Time Period</th>
<th>RIC</th>
<th>Ticker</th>
<th>Total Shares</th>
<th>Total Shares Per Day</th>
<th>LIT Shares</th>
<th>Dark Shares</th>
<th>PCT Dark Total</th>
<th>PCT Dark below LIS</th>
<th>Shares Dark below LIS</th>
<th>Shares Dark below LIS per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Year</td>
<td>LANDL</td>
<td>LAND LN</td>
<td>872,071,873</td>
<td>3,460,603</td>
<td>790,633,882</td>
<td>81,437,991</td>
<td>9.34%</td>
<td>8.65%</td>
<td>75,445,754</td>
<td>299,388</td>
</tr>
<tr>
<td>3 Months</td>
<td>LANDL</td>
<td>LAND LN</td>
<td>186,483,674</td>
<td>2,868,980</td>
<td>171,175,184</td>
<td>15,308,490</td>
<td>8.21%</td>
<td>7.35%</td>
<td>13,709,801</td>
<td>210,920</td>
</tr>
</tbody>
</table>

Trading in general does seem to be down although that is not exactly unexpected given the months in question. It is also worth noting that the percentage fall in dark trading is less than the percentage fall in dark trading below LIS, which would infer that large-in-scale dark trading is relatively higher.
Appendix 3
Large-In-Scale Thresholds Under MiFID II

Annex II: Orders large-in-scale compared with normal market size, standard market sizes and deferred publications and delays

Table 1: Orders large-in-scale compared with normal market size for shares and depositary receipts

<table>
<thead>
<tr>
<th>Average daily turnover (ADT) in EUR</th>
<th>50,000 ≤ ADT &lt; 100,000</th>
<th>100,000 ≤ ADT &lt; 500,000</th>
<th>500,000 ≤ ADT &lt; 1,000,000</th>
<th>1,000,000 ≤ ADT &lt; 5,000,000</th>
<th>5,000,000 ≤ ADT &lt; 25,000,000</th>
<th>25,000,000 ≤ ADT &lt; 50,000,000</th>
<th>50,000,000 ≤ ADT &lt; 100,000,000</th>
<th>ADT ≥ 100,000,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum size of orders qualifying as large-in-scale compared with normal market size</td>
<td>15,000</td>
<td>30,000</td>
<td>60,000</td>
<td>100,000</td>
<td>200,000</td>
<td>300,000</td>
<td>400,000</td>
<td>500,000</td>
</tr>
</tbody>
</table>
Appendix 4

Description of Rule 3000 (LSE)

OFF ORDER BOOK TRADING RULES

Trades

On Exchange trades [3000]

G P

3000 A trade is on Exchange if one or both of the parties to the trade is a member firm (whether as agent or as principal) and the trade is effected:

3000.1 in a MiFID transparent security (as detailed in parameters) and the member firm and its customer or counterparty agree at or prior to the time of effecting the trade that it shall be subject to the rules of the Exchange;

3000.2 in an AIM security (as detailed in parameters) unless the member firm and its customer or counterparty agree at or prior to the time of effecting the trade that it shall be subject to the rules of an AIM primary market registered organisation or an AIM secondary market registered organisation and reports the trade to it in accordance with that organisation's rules; or

3000.3 in any security admitted to trading on the Exchange's markets not covered by 3000.1 & 3000.2 above (as detailed in parameters) unless the member firm and its customer or counterparty agree at or prior to the time of effecting the trade that it shall be reported to a venue that has equivalent or greater post-trade transparency than the Exchange's regime for that security.
ABOUT THE AUTHOR

REBECCA HEALEY
Head of EMEA Market Structure and Strategy
rhealey@liquidnet.com
+44 207 614 1607

Rebecca is considered to be one of Europe’s leading industry voices on market structure, regulatory reform, and financial services technology. She has authored a plethora of qualitative research reports and commentary covering the impact of market regulation on all asset classes, changing market structure and developments in dark pools, HFT, and surveillance. She joined Liquidnet in July 2016 to use her 18 years’ experience to collaborate and deliver research and insights for both the European equities and fixed income markets. Rebecca is also Co-Chair of the FIX Trading Community’s EMEA Regulatory Subcommittee dedicated to addressing real business and regulatory issues impacting multi-asset trading in global markets. She has held prior roles at TABB Group, Incisus Partners, the British Embassy in Bahrain, Credit Suisse, Goldman Sachs International and Bankers Trust International.

To stay up to date with the latest information and to get more of a deep-dive into the detail, please contact mifid2@liquidnet.com.