ONLINE APPENDIX TO
"THE IMPACT OF MIFID II / MIFIR ON EUROPEAN MARKET STRUCTURE – A SURVEY AMONG MARKET EXPERTS"

Impact of MiFID II / MiFIR on European Market Structure

In a first open-ended question, the experts were asked what impact of MiFID II / MiFIR - besides the introduction of OTFs - they expect on non-equities trading (e.g., due to the trading and clearing obligation for derivatives). 39 participants answered this question. **Exhibit A. 1** contains all individual answers provided by the experts.

Responses	
1	Complexity of trading role increases; importance of trading desk within investment process; Management of data will become key in the process of sourcing liquidity.
2	Decline in volume initially. Increase once the contours of the regulations are known, probably 2019 and beyond.
3	Generally more transparency.
4	We expect an increase in trading on regulated markets.
5	Due to different reporting obligations, markets will become more and more traded on platforms as this allows to streamline all processes.
6	Additional public data sources publishing pricing data.
7	Data management becomes a big challenge in terms of regulatory reporting.
8	A significant proportion of EU trading would take place outside of EU's jurisdiction.
9	Re derivatives: not much, since most are not standardized. However, really difficult to foresee, how the markets will adapt e.g., Clearing Obligation let prices drop and maybe participants will favor standardized contracts over customized ones when Price difference is high.
10	1. Higher transparency of trading compared to previous OTC environment which led to a highly intransparent trading context. 2. Pressure on trading spreads given higher transparency, i.e. higher level of available information. 3. Increasing cost base given e.g. complex reporting obligations.
11	The issue of TOTV and the problematic/costly/grey ISIN generation issue (i.e. high cost of ANNA DSB service) will affect the market of OTC derivatives especially for smaller bank participants.
12	SIs will in my view be used more than OTFs. For fixed income post-trade transparency, the divergent implementation between member states (between 2 days and 4 weeks) will probably render much of MiFID II intentions meaningless.
13	Increasing uncertainty on client side, but better prices for the buyside.
14	Increased transparency levels, mostly in post trade.
15	Futurization, i.e., increasing number of innovative exchange-traded derivative (ETD) products to mimic current OTC derivatives products.
16	Only slightly increased volumes for RMs and MTFs.

17	(Temporary / first 3-6 months) spread widening due to extended pre-trade price transparency requirements.
18	Number of products will decline.
19	Shift to SIs.
20	Position limits, and licensing requirements for non-financial firms within the EU as well as new 3rd country regulation bear the risk that members will leave the market and trade bilateral or OTC.
21	Clearing obligation: no impact (Emir!); trading obligation: very limited. But: SI regime pushes smaller market counterparties strongly to use trading venues // change execution model to a fee-model from the current own account model. Generally further reduction in product offering on the derivatives offer.
22	Much more OTC Clearing and concentration of Clearing in Central Clearing houses which has a positive impact on market stability.
23	Increasing transparency and market flexibility.
24	Even more concentration of IRD underlying trading obligation on Bloomberg Trading Facility. Institutional clients have to be onboarded on Bloomberg or other MTF, but most clients do not want onboarding on several MTF. Only a part of IRDs are relevant for trading obligation (only those with full annual term!) no change for other IRD, FX and Credit derivatives. Brokers in derivatives are setting up their own OTFs. Medium volume trades in bonds from institutionals/banks will be more on MTF. Large Investment Banks will concentrate on trades with clients in bonds with volumes above SSTI and LIS, to avoid immediate pre- and post-trade transparency, which would deteriorate their ability to cover/sell positions from client trading. Secondary bond market will become less liquid from MiFID.
25	More costs.
26	As MiFID and EMIR are directly connected there should be a shift on Trading venues and increase in Clearing (although the phasing in of the Clearing Obligation still takes some years).
27	Emergence of SI - Networks as new dark pools.
28	Reduced volume to start with and then a gradual adaptation of the markets h2 2018 onwards.
29	Most banks trading bonds will become SIs - not much flow will be directed to RMs, MTFs or OTFs.
30	Simplification of products. Impact depends on specific kind of non-equity instruments (each will have different impact). As for unsecuritized derivatives, most will be dealt with by TV and SI. For others, market will distinguish between liquid and non-liquid instruments.
31	• Increased transparency due to transparency regimes and reporting requirements • Further fragmentation due to open-access provisions pursuant to MiFIR Arts 35/ 36 • Higher prices for end-users due to fragmentation and less financial stability • Overall reduced competitiveness for the EU if compared to other leading global jurisdictions • Clearing Obligation forms part of EMIR, needs to be fully implemented, category 3 still not phased in and category 4 phasing in before category 3. Does not make sense and EU lacks behind other leading global jurisdictions. Overall, Clearing Obligation should exist for all liquid markets/ products on the non-equities front to ensure appropriate risk management • However, at least for the foreseeable future, a certain pick-up of volumes due to trading Obligation. Note: devil is in the Details - e.g. US equivalence decision currently negotiated may result in US ATS Systems being deemed equivalent to EU regulated market. Could have severe negative implications for EU venues

	• Final note: Impact of MiFID II/ MiFIR on non-equities trading also dependent on other linked regulatory developments (e.g. capital requirements discussions)
32	Trading volume will move to SIs.
33	Consolidation and more transparency.
34	Relocation of trading volumes to Asia due to reporting requirements and divulgation of trader and end beneficiary identities. This requirement appears incompatible with the legal norms prevailing in several Asian jurisdictions. Approximately 25% of bond market liquidity is feared to move to Asia, notably HK or Singapore.
35	Less transparency due to increased fragmentation (ironically...), and more Electronic trading.
36	• More transparency (pre- and post-trade and towards the competent authorities) • For derivatives more trading to happen on trading venues due to the clearing and trading Obligation, but this will take some time and will be a slow Adoption process)
37	Fungible derivatives traded on multiple trading venues in parallel.
38	1. Transparency regime (trade reporting). 2. Trading obligation for derivatives.
39	Increased reliance on SIs and the use of analogue OTC instruments.

***Exhibit A. 1**: Individual answers of the participants regarding their expectations for the impact of MiFID II / MiFIR on non-equities trading (besides the introduction of OTFs).*

In addition to their answers whether they expect a change in equity trading in dark pools due to the introduction of the double volume caps, the experts were asked in another open-ended question to provide reasons regarding their expected changes in dark pool trading volumes. 43 experts provide reasons for their expectations. The individual answers are shown in **Exhibit A. 2**.

	Expected Change	**Responses**
1	No change	Systematic internalisers and U.S. dark pools may win trades from regulated markets/MTFs. There are also 2 other solutions to avoid dark pool caps: periodic auctions and LIS trades. Thus, "dark volumes" may grow in many ways, but dark pools (by MiFID definition) might have the same amount of market share.
2	No change	A lot of brokers will provide alternative crossing possibilities (BATS Periodic auction and Large in Scale crossing networks).
3	No change	I expect that some current BCN system operators will switch to large-in-scale transactions only and continue to offer trading, perhaps enticing more buy-side custom. However, I also expect investment firms opting into the systematic internaliser (SI) regime to draw at least some equities trading away from today's 'dark pools'. The net effect of these developments will be, in my opinion, little overall change in proportion of equities trading on BCNs.
4	No change	Increasing and decreasing effects will balance out.
5	No change	Dark pools will over time disappear completely. In the short run they will try to keep up with the existing business.
6	No change	Those using dark pools in Europe will adapt their behaviour to avoid transparency of their trades.
7	No change	I do not think that there will be no change; it is that it is equally likely that it may increase or decrease, dependent on the instrument in question and the cumulative impact of MiFID II/R and the market perception thereof.
8	Decrease	More trading in SI's and continuous auctions (considered as lit).

9	Decrease	Volume caps will impact most of the liquid shares, and I think it's unlikely that trading would return to dark pools after the 6 months ban.
10	Decrease	RM and MTF DP will decrease as some are likely to hit the 4% threshold. A large part of what is on crossing networks will most probably go to SIs.
11	Decrease	Dark pool volumes will flow to Large in Scale trading in Regulated Markets.
12	Decrease	Caps will kick in immediately, thus matching in waiver dark pools will be instantly ceased. Only a Portion of their flow will move to other (i.e. LIS) dark pools. The 50% from above is a rough guess (gut feeling, no data crunched); it reflects my expectation that >80% of EU RPW Dark Pool volume will instantly be migrated to both lit and dark venues, with the assumed overall 50% decrease in dark trading.
13	Decrease	Higher transparency of trading requirements - introduction of volume caps.
14	Decrease	The risk of a suspension of trading of the respective venue should weigh on Dark MTFs.
15	Decrease	Partial exclusion of venues from execution channels.
16	Decrease	We estimate that the cap will prohibit dark pool trading under these two waivers for approx. 50% of the blue chips. Dark pool trading of other equities (which are not directly impacted by the cap) will also decrease to a certain extent. Overall, the respective negative impact on dark pool trading under the two waivers will be (only) partially compensated by increased trading under the large-in-scale waiver.
17	Decrease	Many dark MTFs will face immediate restrictions and much of this flow will migrate to new types of venues: periodic auctions, SIs. Dark MTFs that focus on blocks will gain some market share.
18	Decrease	Move to SI.
19	Decrease	Alternatives such as periodic auctions.
20	Decrease	General uncertainty around viability, potential impact of running into caps, aim to be "safely" compliant.
21	Decrease	This may be considered as a disadvantage.
22	Decrease	After an adaption period, dark pool volumes will likely stabilize just below the caps.
23	Decrease	Reference Price Waiver is important facilitator of large volume trading. If the waiver falls practically away trading will have to move to smaller trades and more complicated and long execution times for block trades.
24	Decrease	Significant number of capped securities and the moved to trade elsewhere such as periodic auctions.
25	Decrease	I would expect CAP to be triggered resulting on dark pool to get light.
26	Decrease	Flow will seek other opportunities, like OTC structures and decrease the number of large orders.
27	Decrease	We expect increased volume in >LIS dark venues as competition increases for these orders along with greater knowledge of LIS limits under the new regime. However, we expect the accompanying decrease in small (LIS orders so that the net effect will be a decrease of overall dark volume.
28	Decrease	Reasoning does not mean that there will be less "dark trading" in the equities sphere. Quite the opposite. Reduction of dark pool trading will come to the benefit of increased activities in the context of other platforms/ venues. Sys-

		temic internaliser regime is a key word here, might result in a serious loop-hole and hence channel more trading off regulated markets. Overall share for dark pools will decrease, but overall share of non-RM venues will continue to increase. The rule-set has been designed in a too complex way and there are too many but and ifs to circumvent the actual political intend of MiFID II/ MiFIR.
29	Decrease	Dark Pools will move to LIS trades and it is likely that existing smaller trades will move to SI's.
30	Decrease	The cap of the RPW and NTW will limit dark trading volumes. But regulated dark pools will also make use of the large in scale waiver. Therefore, a larger volume on regulated dark pools is likely to happen.
31	Decrease	Dark pool trading has been encouraged by a loose transparency regime in Mi-FID I. The limits imposed by MiFID II are expected to restrict this trading.
32	Decrease	I think volumes will shift to other execution facilities which might also be de-scribed as Dark Pools (e.g. Systematic Internalisers).
33	Increase	The increase will come from trading activity that is not included in the nu-merator of the DVC.
34	Increase	The venues will self-discipline by declutching their trading engine when reaching the 4% cap on an instrument but the 8% cap should be triggered in 2018 on various instruments. That should lead to a change in behaviour in 2019.
35	Increase	I expect the increase in dark pool market shares over the last few years to continue until it hits the 4 or 8 percent caps as they remain an effective mech-anism to manage order exposure. Also, a lot of BCN trading is likely to be-come classified as dark pool.
36	Increase	A large portion of currently invisible OTC/BCN volume will presumably shift first to dark up to the regulatory limit and then to LIS execution facili-ties that are also dark but do not fall under the ban thresholds.
37	Increase	Not everyone will be a winner. Venues with good quality liquidity, low cost and good fill rates will attract liquidity.
38	Increase	Block trades without dark pools would be per se price influencing due to en-hanced pre-trade transparency.
39	Increase	I expect many of the "dark trading" to take place under the SI concept.
40	Increase	Expect the volume cap to be reached since dark trading volumes increased steadily in the last years.
41	Increase	There are still loopholes in the Regulation. Transparency is not appreciated by every market participant.
42	Increase	As long as there is the possibility to trade on non-lit venues, the volume will go up. It will only come back to lit-venues, if there is a complete ban on trad-ing in non-lit venues.
43	Increase	Regulatory arbitrage.

Exhibit A. 2*: Individual answers of the participants regarding the reasons for their expectations for changes in dark pool trading volume due to the double volume caps.*

Brexit

In the last open-ended question of the survey, participants were asked to describe their expectations on what effects the Brexit will have on European market structure. 40 participants answered this question. **Exhibit A. 3** provides their individual answers.

	Responses
1	More fragmentation, more sales and trading hubs on the continent.
2	In the short run there will be more trading on RMs until MTFs, SIs, and OTC desks are established in other financial centers the EU. Overall trading volume will decline during the transition.
3	Some UK flow moving to the continent. Some UK flow moving to the US as US firms based in London try to operate more directly from the US. London keeping a significant part of its business initially and progressively decreasing.
4	Depends on the deal.
5	• Trading volumes flow from UK to EU markets • OTFs and SIs cross-border migration to EU
6	None as Brexit will not happen.
7	Further fragmentation, more trading migrating to third country venues.
8	It is certainly of game changing nature. The outcome of the current ESMA initiative to force SIs to get aligned to the standard tick size regime is of paramount importance. In the first half of 2018 we'll observe closely how many SIs are active, how many are really relevant in terms of market share and how good their pricing data are (in term of latency in particular). We need to gather empirical evidence once MiFID/MiFIR has entered into force.
9	Whichever flavor of Brexit prevails, the UK will lose its current influence in moderating or improving development of future EU legislation. It will be in the position of Switzerland, a rule taker rather than a rule maker. Key issue are the role of ESMA vis-a-vis the UK - MiFID II etc. and the future of Euro-denominated clearing.
10	No effect due to expected smooth Brexit transition period (trade Agreements / everything goes on 'as is') with quasi passporting rights for UK firms.
11	Some EU issuers may migrate their listings to outside of MAR obligations. And a significant of EU trading volume would take place outside of EU's jurisdiction.
12	More Lit Markets volume migration.
13	Depends highly on the final outcome. Hard Brexit: more continental model will be adapted over time strengthening trading venues. Soft Brexit: Dilution of trading venues will continue.
14	Balance sheet will get transferred to EU based countries. Headcounts will move as well but with minimal effect as of March 19. Competences and Supervisory duty will move as a first step too.
15	Limited. I expect UK legislation to continue to provide access to UK-based trading venues for persons established or located in EU Member States.
16	Large-scale sell-side consolidation; large sell-side firms and market infrastructures with dual setup.
17	It's not possible to answer this question at the moment given the current status of the Brexit negotiations.
18	Too early to say!

19	Unclear.
20	None.
21	Amount of (direct) market participant will decrease, other will become either (indirect) customers other might seek for easier regulation, UK after Brexit, Singapore?
22	Close to 0.
23	Lit Market will gain market share, OTC will lose market share. Overall more transparency and more liquidity in Lit Markets.
24	Even if I think in the end we will have a soft Brexit, some of the London-based makes business will go to the markets of continental Europe. My estimate is at least 10% will shift.
25	Assumption hard Brexit: Split of IRD market for LCH-cleared and EU-cleared transactions. LCH-cleared IRD market will have better prices and will be more liquid. At the moment the largest part of cleared EUR-IRD and Repos is with counterparts outside Euroland. Alignment of both markets will come only, if London based investment firms will move to Euroland and clear in Euroland, which would have the result, that they cannot realize the netting effects, they have today. Relocation of LCH-cleared derivatives is not realistic.
26	Depending on the outcome of the negotiations and the future setup the new market structure will vary. As the majority of trade flow is coming through UK via passporting today, the outcome might vary between an overall liquidity decrease for European markets to something similar to today.
27	More trading on the continent, especially if transactions in London are taxed by the EU.
28	Reduction on liquidity on all EU/UK exchanges until x-border provisions are standardized and a lack of innovation whilst the mechanics of Brexit are resolved.
29	If UK will comply with EU regulations market structure will not be affected in terms of lit market, SI, OTC share in trading. MTF and SI trading will move to entities registered in Continental Europe. If UK will not comply with EU rules it can have detrimental effect on lit liquidity and trading can move more to UK.
30	The question is probably impossible to answer within the context of this study. However, a few observations shall be made: 1) the Brexit will mean that the EU27 will have to take the Capital Markets Union Project more serious (as daily equity trading figures excluding the UK will probably be in the range of 15-12bln€ only...) 2) There will be MiFID III... and a lot of adaptations across interrelated files 3) EU27 will start building up own financial centers 4) European financial markets regulation will not be dominated by London anymore 5) London's importance in the global financial context will decrease Finally: It is always important to contextualize "market structure". It means nothing to have the nicest one at home if it does not compete on a Level playing field with other jurisdictions. EU has never understood how to really deal with financial markets. MiFID I effects are now 10 years later visible: biggest equity trading platform in Europe is CBOE, i.e. Chicago... if MiFID II will have similar implications on the non-equities front and certain market data and risk management activities, the EU is on a good way to fire sell and off-shore all of its financial markets (e.g. no other jurisdiction has open Access Regime a la MiFIR Arts 35/36). Therefore, it is of critical importance that the EU starts to have an active industry policy for financial services, and financial markets infrastructure in particular, that actually pursues a red line. This is also underlined by numerous equivalence decisions by the Commission that have actually resulted in artificial competitive advantages of non-EU entities. Deutsche Börse

	Group for example was a global leader for years, and is now lacking behind the US and Asia. This is primarily due to a) regulatory framework and b) prohibited market consolidation. There is always a trade-off between concentration/ efficiency and competition, but in Europe we certainly got it wrong.
31	Almost no impact on trading venues. Huge impact on clearing venues.
32	Troubles! It will not be easy at all to replace London as Financial Centre.
33	London will lose its position as the world's premier capital market location as many jobs will gradually migrate to Frankfurt, Paris and other European cities, creating a more fragmented Capital market milieu to the detriment of European capital markets as a whole. Europe as a region will weaken its position relative to Asia and America.
34	Recalculation of all MiFID II thresholds. Significant reduction in liquidity and trading volumes. Much depends on what new trading arrangements will look like and how the EU deals with other third countries that provide platforms for raising additional capital.
35	More flow to the continent.
36	• More relevance of third country trading venues • Less usage of negotiated trade waivers (but more large in scale) • More consolidation
37	Too early to comment at this stage.
38	It will depend on the kind of Brexit (soft-hard). In principle, it will foster the rising of two or three European financial centers (Paris? Frankfurt? Stockholm? Madrid?). None of which will be able to replace London. Multiple cross-venues collaboration agreements can be expected. No mergers expected in the short term. OTC trading contained.
39	In the immediate future, little change. Mid-long-term changes would be dependent on the political/regulatory initiatives undertaken to adapt to new market situations.
40	Obviously the biggest MTFs (in Equity trading) will be based in a third country in the future. Therefore MiFID/R calculations and thresholds have to be adapted to consider that the biggest block of equity trading is outside the EEA. Competition between trading venues and trading facilities will increase even more. I don't expect that the future market access (UK to EU and vice versa) will become an issue.

Exhibit A. 3*: Individual expectations of survey participants regarding the effects of Brexit on European market structure.*