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Mr. Werner Bijkerk
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12 August 2011

Re: Response to the Consultation on Regulatory Issues Raised by the Impact of Technological Changes on Market Integrity and Efficiency

Dear Mr. Bijkerk,

UBS would like to thank IOSCO for the opportunity to comment on the consultation on regulatory issues raised by the impact of technological changes on market integrity and efficiency. Please find attached our response to the consultation paper. We acknowledge that our response will be published.

We would be happy to discuss with you, in further detail, any comments you may have. Please do not hesitate to contact Gabriele Holstein on +41 44 234 4486.

Yours sincerely,
UBS AG

Dr. Robert Barnes
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UBS Response to the IOSCO Consultation on Regulatory Issues Raised by the Impact of Technological Changes on Market Integrity and Efficiency

INTRODUCTION

UBS would like to thank IOSCO for the opportunity to comment on the consultation paper on the impact of technological changes on market integrity and efficiency ("the Paper"). Please find below our response to the specific questions set out in the Paper.

Q1: What impact have the technological developments in the markets in recent years had on your own trading? Has it encouraged, discouraged or had no impact on your willingness to participate on the lit markets, and how does this differ between asset classes and/or instruments?

Due to technological developments, markets where electronic venues exist, such as cash equity, futures, and FX, have become predominantly screen based with almost all interaction done via algorithms and smart order routed DMA orders designed to normalise fragmented markets. In order to meet investors' objectives for reducing market impact and manage the risk of opportunity cost, electronic orders are sliced and routed to multiple venues in real time. Technology has therefore assisted in enhancing access to liquidity and reducing transaction costs, in addition to increasing operational efficiency and scale.

We would argue that the pace of technological advancement has been a necessary part of the competitive environment and represents a significant value proposition to clients. Technological developments have not discouraged our willingness to participate in lit markets. It has increased our ability to participate on order books, lit or otherwise. Thus, it has had the effect of bringing more liquidity off of a trader's blotter and into the market,

We understand that IOSCO is particularly looking for insight as to the quality of the short-term liquidity that has become a larger component of market volume in lit markets through the emergence of high frequency trading ("HFT") strategies, and whether long term investors are driven away from trading on lit markets as a result.

In this context we would like to emphasize two key points:

First, it is not the presence of high frequency trading, but rather the risk of market impact and information leakage that discourages certain investors to trade on lit markets. Where markets lack anonymity it challenges those trying to execute block-like orders without suffering significant negative selection. Such risks still apply in markets within which high frequency trading has not yet been established. As such, the investor's preference to trade on dark markets is a question of order size and price sensitivity. Markets are evolving, with order size being a deterrent in any market, lit or dark. Completion rates in either of these markets are key attributes. If an institution finds sufficient liquidity to complete or nearly complete a sizable order, the information leakage associated with that execution and the footprint it leaves will not be viewed as damaging to the position in either market (they are wiling to exchange information in order to achieve the sizable execution).

Second, the rise of dark trading opportunities, whether a dark MTF or Broker Crossing System, should not assumed to be used as a substitute for trading on the lit markets, but rather, dark liquidity is generally used as a complement to lit market order management. It serves the purpose of drawing additional liquidity to the market. Buy-side firms will be more willing to trade orders in markets where they can cross or trade on dark venues due to the reduction in their market impact, albeit these executions may be quite small and detectable by limited market participants. Orders that would have previously remained on the buy side blotter due to the constraining market impact risks are now traded, although again with caution and in smaller increments than perhaps have traditionally been desired. Many participants utilize dark venues on a "pass through" basis en route to the lit markets. Since not all of these orders will cross, fully or partially, there will be an increase in the liquidity that will route onto the lit

market, resulting in an incremental increase of lit book turnover. By offering an alternative in which the market impact is lower, anonymous markets provide a level trading environment that treats all participants fairly. Exchange and/or regulatory frameworks that lack anonymity by obliging the disclosure of broker-identifiers may create the unintended consequence of structurally allowing 'front running' by other market participants. This unfairly disadvantages the order flow that is forced to send a signal in the form of the disclosed broker identifier. With evolving technology and market intelligence, exchanges have managed to control some of the more egregious distribution of "broker identifiers" and manage this information leakage.

Third and lastly, we would like to stress the fact that short-term liquidity did not only appear in the last couple of years with HFTs. While HFTs have devised new latency-based ways to profit by price inefficiencies in smaller time increments and with greater volume, this activity has always existed in the form of market-marking.

Q2: What are your views on the suggestion that proprietary trading firms (including HFT firms) that are not currently subject to registration/authorisation by a regulator should be required to obtain such a registration/authorisation? Are there specific regulatory requirements you believe such firms should face? To what extent do your answers differ if the proprietary trading firm accesses the market as the customer of an intermediary firm through DEA (i.e. under that intermediary's trading rules/codes) rather than as a direct member of the market itself?

Within a local market it is key that all firms are regulated appropriately. It is also important that brokers have significant capital and that this is mandated by the regulator. We would, however, stress our view that HFT firms should not be subject to a different set, or tier, of specific regulatory requirements. All market participants should be held to equal standards with regards to trading conduct. Introducing specific requirements for HFT firms will invariably result in a game of regulatory arbitrage. We believe that a principles-based approach to regulate market-conduct is more fruitful in the long term.

All proprietary trading firms (i.e. a firm dealing as principal and not as agent) that are direct members of a trading venue should be subject to objective registration / authorization requirements of the relevant regulator. A firm that accesses a market via an intermediary's system, however, should not have to separately register with its regulator or obtain formal authorization. Such regulation would be redundant, as it is already the member's requirement and in that intermediary's best interest to conduct due diligence and impose appropriate pre- and post-trade controls.

Q3: What recommendations, if any, would you propose to strengthen the regulatory requirements around pre- and post-trade risk controls? In particular, what measures, if any, do you think regulators should introduce that relate specifically to the use of and risks posed by algorithmic trading and/or HFT?

In our view, risk controls and associated procedures are an integral part of the business. Hence, a layer of risk controls by either the intermediary or venue should be mandated. In particular, naked sponsored access where a possible unauthorised client accesses a market directly with no controls should in our view not be permitted.

Specifically we would advocate a mandatory application of risk controls in the form of minimum standards. SROs and the broker dealer community should establish appropriate safeguards into the trading structures they provide. The self-policing will be beneficial for all participants. The details of any control/policy, however, should be left to the individual counterparty, allowing them to tailor the aforementioned policies and procedures to their needs and use them as a key differentiator from competitors. Where a venue applies pre trade risk controls, we would stress the importance that the same controls are applied to all flow, via sponsored access or otherwise, in order to maintain an equitable trading environment at the venue.

We do not believe that additional measures or separate tiers of regulation are necessary for HFT strategies or algorithmic trading flow. All participants should be

governed by the same rules. Proper monitoring and objective enforcement of these rules is critical to maintaining orderly and efficient markets.

Q4: To what extent do you believe the use of trading control mechanisms such as circuit breakers and limit-up/limit-down systems by trading venues should be mandated? If you believe they should be mandated, should venue operators be permitted to design their own controls or should they be harmonised/coordinated across venues (including between interrelated instruments such as a derivative and its underlying)?

In general, the use of trading control mechanisms could be mandated as long as the detail of implementation is left to the trading venues, which are better positioned to assess the appropriate controls for the microstructure. It is in their own interests to have an efficiently functioning market.

In times of acute stress in the market, circuit breakers have been demonstrated to be adequate measures to halt trading and try and restore some measure of regularity in the market. Ideally, if instruments are traded across several venues, circuit breakers must be harmonised to preclude any arbitrage opportunities.

However, we believe that identifying related derivative instruments to be included within trading control mechanisms such as circuit breakers is a highly complex and difficult task requiring further analysis. We have not seen any data to definitively support the notion that there is sufficient liquidity in derivative products to warrant their inclusion within circuit breakers.

Q5: To what extent do you believe market maker schemes offered by trading venues should be subject to mandatory minimum criteria? Should the criteria be determined by the trading venue alone? To what extent do you agree with the suggestion that the use of stub quotes should be prohibited?

Market makers can be helpful establishing and maintaining an adequate supply of liquidity and in keeping spreads narrow. Given the diversity of market participants in various asset classes and instruments, we believe it should be up to the trading venue to determine adequate criteria. Market maker strategies should not be subject to mandatory minimum criteria, as any such regulation is likely to distort the competition between trading venues for attracting market makers and create inherent inefficiencies.

There are, however, arguments in favour of establishing general guidelines. As outlined in the consultation paper, the role of market making previously exclusively fulfilled by the designated market makers has, to a large extent, been taken up by high frequency trading firms operating market making strategies. In the main, these HFT firms do so outside of any official market making programme and take up this role on a purely commercial basis. This is due to the increased efficiency of the markets that has come about with development of electronic trading and central limit order books.

A worrying trend in our view is for regulated markets acting as the Primary exchange to offer discriminatory pricing schemes where they look to incentivise this discretionary market making proprietary flow by offering fees or rebates that are far better than the tariff schedule for institutional client flow through a broker (the so-called "Maker/Taker" model). This is due to the fact that Institutional client flow executed through brokers is constrained by best execution obligations, which impacts the ability to trade on other venues, while HFT proprietary market making flow has full discretion.

We believe that there should be a guideline that pricing schemes should not be used as a commercial tool to incentivise some participants to the disadvantage or exclusion of others for existing commercially driven behaviour.

Q6: Do you have suggestions for improvements to regulators' surveillance capabilities with respect to the markets and modern trading techniques? Please elaborate. Who should bear the cost of investing in such capabilities and the cost of operating and supervising the markets in order to ensure fairness among market participants? Please elaborate.

We would welcome cooperation between regulators to leverage surveillance capabilities on an international level. Surveillance capabilities could be improved by regulation imposing an obligation on markets to examine access and report to regulators. Spending should furthermore be proportionate to the benefits of the surveillance technology. Costs of investing in such capabilities should be shared by all stakeholders.

Q7: What do you perceive as the major causes of settlement indiscipline and settlement failures? What steps, if any, do you believe regulators should take to address these causes?

In our view, the two major causes are incorrect static data and end client indiscipline. We believe that the existing regime of fines is adequate.

Q8: Have the appropriate steps been taken to limit or manage conflicts of interest that arise where an investment firm simultaneously conducts client-serving activities and proprietary trading or a trading participant is also a shareholder in a venue on which it trades? If you believe conflicts management is inadequate, please explain how this manifests itself and any recommendation you have for how conflicts management could be improved.

We believe that adequate steps based on existing regulation on market abuse have been taken to limit or manage conflicts of interests. Firms trading on venues where they have an interest in the venue's success already have a regulatory responsibility to explain how they manage any consequent conflicts of interest.

Likewise, when a brokerage firm holds a stake in a trading venue (as does UBS), best execution obligations protect clients from potential conflicts. For proprietary flow, it is at the participant's discretion and choice as to where they trade.

Q9: Do you think existing laws and rules on market abuse and disorderly trading cover computer generated orders and are relevant in today's market environment?

We believe that by and large the governing principles on market abuse and disorderly trading are sufficient. However, we feel there should be an in-depth discussion on 'flash orders', i.e. orders which are shown for a very short period of time to a limited number of participants. We also refer to our comments in Q10.

Q10: Are there any strategies employed by HFT firms that raise particular concerns? If so, how would you recommend that regulators address them?

HFT firms practising statistical arbitrage strategies offer a useful service to the market and help to transfer risk efficiently. Market making strategies also offer immediate liquidity, although in small size, meaning that for small orders and retail size orders the costs to execute have come down.

An HFT strategy that raises particular concern occurs on venues that offer rebates for passive flow. The strategy looks to be profitable through identifying when an order is likely to cross the spread, queue jumping by quickly placing an order passively above the current best bid or offer, and trading purely to collect the rebate. These so-called "rebate hunters" offer no valuable service to the market in terms of risk transfer and the liquidity they provide is not complementary or meaningful, as they are looking to get ahead of existing liquidity.

Flash-orders are also a concern because the majority of market participants will not be able to execute on those orders. Hence, while the spread may appear to be tight, it is, in reality, not a realistic representation of the tradable spread.

Q11: Should charges or fees be imposed on messages, cancellations or high order-to-trade ratios? If so, how should the fees or charges be determined and on what basis?

In our view, order-to-trade ratios that are abnormally high should be constrained. However, it should be up to the trading venue to determine the appropriate course of action. We would stress that this does not have to be via the imposition of fees, as trading venues can discuss inappropriate behaviour with their members.

Where trading venues choose to impose charges or fees, a marginal cost for subsequent messages could be applied once a high order–to-trade ratio is reached. This would be a disincentive to manage order to trade ratios above a threshold. Alternatively, a system where all orders were charged a small nominal fee would directly tackle the problem of users joining different flows together to reduce rates. We are aware of certain trading venues already imposing a monetary sanction on market participants via an increase in brokerage fees if the fill ratio (no of trades versus no of orders) is not met. We believe that trading venues should ensure that the pricing mechanism drives efficiency and gives market participants the choice to trade on visible liquidity. It should be noted however that any financial cost introduced should only act as a deterrent and not increase the cost of trading for market participants with order to trade ratios that are deemed normal.

We do not support the imposition of limits on a ratio of orders to transactions.

Q12: Should market operators be required to make their co-location services available on a fair and non-discriminatory basis?

Yes, we believe co-location services should be available on a non-discriminatory basis.

Q13: Should market operators be required to provide testing environments to enable participants in stress test their algorithms? If so, what kind of minimum requirements are reasonable?

We believe that market operators should provide appropriate testing environments for participants to test their algorithms. However, we would argue that it should not be mandated by the regulator as there is already sufficient market pressure for market operators to do so. A trading venue not providing a testing environment is likely to have a short commercial life span.

If regulation is established, it should only be done so on a principles-based approach requiring trading venues to have an adequate testing mechanism that mirrors the production environment as closely as possible, to allow market participants to meet their own operational risk control requirements.

Q14: To what extent do you have other comments related to the risks to market integrity and efficiency raised by the issues in this report?

In general, regulators should consciously avoid measures that constrain the innovation and progress offered by technological development. The freedom to choose a venue and execution method should be maintained. Fair access to services and a diverse market structure catering to all market participants' needs should be encouraged. As discussed in the report, IOSCO recognizes that High Frequency Trading in itself is not damaging to the markets and some strategies are valuable in transferring risk and providing smaller size liquidity. Nefarious high frequency strategies are already covered by existing market abuse regulation.