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September 19, 2014

VIA EMAIL

British Columbia Securities Commission
Alberta Securities Commission
Financial and Consumer Affairs Authority (Saskatchewan)
Manitoba Securities Commission
Ontario Securities Commission
Autorité des marchés financiers
Financial and Consumer Services Commission (New Brunswick)
Superintendent of Securities, Department of Justice and Public Safety, Prince Edward Island
Nova Scotia Securities Commission
Securities Commission of Newfoundland and Labrador
Superintendent of Securities, Northwest Territories
Superintendent of Securities, Yukon
Superintendent of Securities, Nunavut

The Secretary
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Me Anne-Marie Beaudoin
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Dear Sirs/Mesdames:

Re: CSA Notice and Request For Comment - Proposed Amendments To National Instrument 23-101 *Trading Rules*

TMX Group Limited ("**TMX**" or "**we**") welcomes the opportunity to comment on behalf of its subsidiaries TSX Inc. ("**TSX**"); TSX Venture Exchange Inc. ("**TSXV**"); Alpha Exchange Inc. ("**Alpha**"); and TMX Select Inc. ("**TMX Select**") on the request for comments published by the Canadian Securities Administrators ("CSA") on May 15, 2014 entitled "CSA Notice and Request for Comments – Proposed Amendments to National Instrument 23-101 *Trading Rules*" (the "**Request for Comments**").

We are providing responses to the specific areas and questions for which comment was requested by OSC staff, as well as comments on a number of other matters and issues of particular concern that have been identified in connection with the amendments contemplated in the Request for Comments. For purposes of this letter, all capitalized terms have the same meaning as defined in the Request for Comments, unless otherwise defined in this letter.

We commend the CSA on its ongoing efforts to make Canadian capital markets more fair and efficient, and applaud its attempt to address issues that the CSA believes may be negatively impacting fairness and efficiency. However, we do not agree in all instances that the identified issues need to be addressed, or that the proposed means of addressing those issues are the most appropriate.

TMX generally prefers market driven solutions and outcomes that are naturally achieved through competitive forces, but we also recognize the need for balance through appropriate regulatory oversight. In this instance, we are concerned that the scope of the proposal suggests a shift towards even greater regulatory influence and control over matters that might be best left to the market to resolve (specifically, with respect to trading fees and data fees).

We also question the extent to which many of the issues relating to costs and inefficiencies might be sufficiently addressed through the introduction of a threshold for OPR protection – most notably in relation to participant concerns with data fees. We suggest that consideration be given to implementing the OPR threshold first, and then reassessing the need for further action on fees.

A summary of our views on the proposals relating to OPR, trading fees and data fees are set out below.

OPR threshold

TMX maintains its support, as previously expressed publicly, for the implementation of a threshold for OPR protection. We believe that the proposed OPR threshold will help to provide dealers with additional flexibility to manage costs associated with accessing unprotected markets, while maintaining much of the intended benefits of OPR for investors. In doing so, the OPR threshold appears to strike an appropriate balance between the sometimes conflicting objectives of efficiency vs. fairness and investor protection.

We also think that the OPR threshold will have a positive effect on competition in that it will create greater incentives for new and existing marketplaces to ensure that their offerings create or add value for industry stakeholders and investors.

Finally, we are generally supportive of the specifics relating to how the OPR threshold will be implemented, but have a number of comments and suggestions as outlined in our responses to the specific questions in Appendix A.

Trading fees

We are generally not supportive of the proposed trading fee caps, and have significant concerns with the proposed pilot on the prohibition of rebates.

Trading fee caps

Our general view is that trading fee caps are not necessary when considering that trading fees are subject to sufficient controls as a result of competitive forces, and regulatory oversight in the form of fee review and approval.

Pilot on the prohibition of rebates

We are concerned that the proposed pilot could have significant negative implications for liquidity and marketplace competition that will have follow-on effects for the quality of the Canadian markets. These concerns are even more pronounced if the pilot includes US inter-listed securities where there will continue to be trading rebates available from marketplaces and under payment for order flow arrangements. In our view, the inclusion of inter-listed securities in the pilot, or an outright ban on the payment of rebates for inter-listed securities, would lead to greater incentives for liquidity providers and Canadian dealers to conduct trading in inter-listed securities on US markets, to the detriment of the Canadian markets. It will be difficult to repatriate any volume lost to the US during the course of the pilot, regardless of whether the final outcome is that rebates will be permitted or banned. A degradation of volumes on inter-listed securities in Canada relative to the US will not only affect the quality of execution on Canadian markets, but could also have implications for the attractiveness of Canada's markets as a listing destination. The risks to the broader equity market ecosystem should not be ignored. The rationale for our concerns is outlined in our responses to the questions at Appendix A.

Considering the above-noted risks, we question the extent to which alternatives to banning rebates have been considered and why any such alternatives may have been discarded. In our responses, we have highlighted how the use of existing regulatory levers or even the implementation of the OPR threshold could address some of the same issues while presenting less risk to the Canadian markets. Further, if the CSA has arrived at a view that the payment of rebates is creating the identified issues, then we also question the reasoning for the binary nature of the pilot – i.e., its focus on the banning of rebates as the solution for those issues. If the pilot is to proceed, and notwithstanding our general views on the need for trading fee caps generally, we suggest that the pilot should also examine whether a cap on rebates would produce better outcomes than an outright ban, or at least produce a better balance between any potential benefits and risks.

In our responses, we have also cautioned that proper measurement and interpretation of the results of the pilot will be paramount to ensuring the CSA can formulate a clear and defensible position for policy-making. Otherwise, the end-result of the study might only be wasted industry efforts and resources, and the negative outcomes and costs caused by the unnecessary risk

that will have been imposed on the broader market ecosystem. To that end, we suggest that there will need to be clarity, certainty and *general* industry consensus as to: (1) what issues the pilot is seeking to address; (2) what metrics will best measure the impact in the context of those issues; and (3) how the direction and magnitude of results of applying the metrics should be interpreted. We suggest that, if the proposed pilot is to proceed, an industry committee should be formed to ensure sufficient industry input regarding practical considerations and to foster a sufficient degree of industry consensus around the study construction to assist with industry buy-in as to the study results.

Data fees

As indicated earlier, we commend the CSA on its ongoing efforts to make Canadian capital market more efficient and for applying an appropriate level of regulatory oversight. TMX continuously works with stakeholders domestically and internationally to make Canada a more attractive destination for Canadian and global investors with recent market data examples including:

- Simplifying fee structures for subscribers accessing TMX data and reducing top of book data fees by up to 30% over the last 5 years. As confirmed by the CSA in CSA Staff Consultation Paper 21-401, *Real-Time Market Data Fees*, TMX data is reasonably priced relative to global marketplaces' market data fees.

- Underwriting the TMX Information processor at a financial loss to TMX so as to assist market participants in meeting their regulatory obligations (including best execution and the order protection rule) by providing consolidated real-time access to pre- and post-trade equity market data, available to all Canadian and global investors at a nominal fee.

- Facilitating the distribution of Canadian and foreign market data to local and foreign investors through TMX Atrium.

- Providing direct access to North American financial markets content at no charge to end users through TMXMoney.com.

- Offering TMX Select market data at no cost, in line with global standards where ATS venues do not charge subscribers for their market data.

TMX's view is that prescriptive formulae for market data fees are not necessary for several reasons:

- Marketplace data fees are already regulated by the CSA through a formal approval process. This oversight process provides an appropriate and sufficient control mechanism to prevent "runaway" market data fees. TMX advocates for a principled approach versus a prescriptive approach to regulating market data fees. TMX strongly believes that a prescriptive approach will result in added complexity, cost, and gaming opportunities as well as many unintended consequences such as market participants seeking to gain from a formula based fee model through artificial movement of liquidity which is independent of a marketplace's true value and trading features. The Canadian equity markets cannot afford the distraction caused by gaming data fee metrics. Rather than advancing market structures which incent gaming behaviours, market forces must

focus efforts and limited resources on true capital formation, directing liquidity to the most suitable pools and underpinning the incentive to encourage confident price transparency and discovery based on trading activity.

- Market data fees represent a relatively small portion of the overall cost of acquiring and integrating market data when considering market data vendors, technology and infrastructure costs. A significant portion of market data subscriber fees include a mark-up applied by third party vendors that distribute data. Even if the prescribed approach results in a reduction of fees from marketplaces, market data intermediaries will not be required to pass these savings along to their end users. Regulating market data fees is unlikely to materially alter the overall cost base and could drive total industry costs up due to the complexity of managing a highly regulated environment.

- We believe the "captive consumer" issue for OPR only relates to a small portion of professional subscriptions of market data. Given that OPR applies to marketplaces and dealers that have chosen to assume the obligation, the only captive consumers with respect to market data fees are marketplaces, dealer and vendor routers and a minority of professional subscribers that have influence over the ultimate destination of their order. It is our estimate that less than 5% of professional subscribers would fall in this category. While certain user segments choose to access real-time data as part of their business or trading strategy, there are a variety of options for professional users to avoid this cost, including smart order routers, order management systems, order protection rule, jitney trading, and order types. Market forces have addressed how to ensure best execution and trade through avoidance. We note that there is a fundamental distinction between using real-time market data for routing decisions in order to comply with regulatory rules and using market data for best execution. As described in the Request for Comments, best execution does not require the use of real-time market data. If subscribers choose to consume real-time market data in their pursuit of best execution they cannot be described as a captive market. They have discretion in choosing whether or not to consume and pay for individual marketplace data. If subscribers make a business determination that they require the data, then it simply demonstrates the inherent value of that data.

  It is our understanding that a large portion of professional users, such as Investment Advisors, do not subscribe to real-time market data from all marketplaces and instead utilize real-time data exclusively from the primary listings market. This contradicts the supposition that there is a captive consumer market data issue due to OPR.

- The introduction of protected and unprotected markets via the OPR threshold will help reduce costs. However, there will be an added layer of complexity if done in tandem with the other Proposed Amendments (such as having prescriptive formulae to determine market data fees). For example, will unprotected marketplaces be considered as part of the market data fee setting formula? If so, unprotected markets may have an unfair advantage in the context of the market data fee setting formula as they might benefit from being at the best bid or ask (or better) for a lengthy period of time to the extent that OPR would no longer necessitate accessing those orders.

- The value and quality of the market data is inherently different for each marketplace and its customer segments. As the primary listings market for equities, TMX provides a rich

content set including pre- and post- trade information (which all visible markets provide) as well as corporate and reference information such as symbols, dividends, earnings and bulletins. Attempting to create a methodology that will accurately measure the value of each market's data relative to the other will be extremely complex, costly, and in our view, unnecessary. Marketplaces should establish their own fair value for market data based on competitive forces, customer input, and quantitative analysis in the current regulatory approval process.

- There should be recognition that equity market data provides information for a cross-section of listed instruments spanning corporates, bonds, derivatives and structured products. Within each sub-category there are many independent constituents, each of which requires a mechanism to communicate liquidity and price discovery information. The market data feeds that provide this data contain a collection of individual entities, some of which may be related to each other but many of which are not.

In addition, TMX believes prescriptive market data fee formulae will pose a variety of implementation challenges and unintended negative consequences to Canadian capital market stakeholders, including:

- The inevitable and frequent changes in commercial models that influence the direction of order flow and the resulting incentive to game the system. Directly correlating market data fees and revenues with market share formulae leads to gaming practices by industry participants. There has been considerable industry and academic commentary on this subject[1], which thoroughly examined the impact tape sharing and rebates have on market structure, order sizes, venue relationships and market impact, and concluded that the very nature of applying a formula to tape sharing will impact the way liquidity is directed, the availability of accessible liquidity, and the relationships among venues and market participants. Additionally, a 2012 Tabb Group study[2] indicates that tape rebates lead to "tape shredding", a practice by which large trades are executed in smaller increments in order to receive more data revenue.

- The excessive costs required to implement, monitor and enforce a fair and consistent fee setting methodology. For example in the US equity market, which is the only jurisdiction globally in the world which has market data tape sharing formulae, the administrative cost is well into the tens of millions of dollars per year.

- The significant increase in complexity as the Proposed Approach is implemented. Unless the questions and complexity surrounding the formulae are clearly and explicitly addressed, there will be inconsistencies among marketplaces' interpretation and application of the calculation methodology and its underlying data. We are concerned that this will ultimately lead to a degradation of the existing quality (real and / or perceived) of price transparency and the approach markets take to data fees.

- The high risk of error in the benchmark data, calculations, and formulae which would have a detrimental effect on Canadian marketplaces and market participants.

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[1] Most recently by the US Department of Finance in a 2012 study, *Equity Trading and the Allocation of Market Data Revenue;* Cecilia Caglio, Stewart Mayhew; July 23, 2012; FEDS Working Paper No. 2012-65.
[2] *Real-Time Market Data: Circus of the Absurd*; Tabb Group; January 2012.

- The holistic and comprehensive attributes that drive the value of market data, price transparency, price discovery and liquidity are difficult to isolate and quantify and are likely to be ascribed different values depending on the particular user, thus there is no deterministic metric or measurement criteria that can accurately quantify the value. Instead there is relative value as determined by a particular subscriber that may evolve. We submit that the best model to establish prices in this case is to allow market forces to determine prices.

- The need to achieve alignment of industry stakeholders with differing objectives and perspectives, and the resulting time, cost, effort, and distraction to reach some form of operational model and working consensus.

- The issue of assigning greater value to orders that set a price (as opposed to subsequent orders that are pegged or driven by set price).

- The issue of assigning greater value to orders that lead to executions. The Request for Comments describes some of the complexity with quantifying liquidity and price discovery in Appendix A-2 of the Request for Comments where pre-trade and post-trade metrics are discussed. One shortcoming of the approach is that there is no connection between the pre-trade and post-trade metrics, i.e. there is no consideration of the full life of an order which is necessary in order to assess the true value of liquidity.

- The issue of how and whether to include dark orders within lit venues and trades from dark pools as part of the calculations

- The context of a marketplace's protected vs. unprotected status and the subsequent impact pre-trade orders inside the CBBO have on the prescriptive metrics which make specific reference to the CBB and CBO.

- The issue of a marketplace's contribution to price discovery, as identifying and measuring which venue contributed most to price discovery requires an econometric approach to compare an order generated by a marketplace with the unobservable efficient price of the security[3].

- The need to model arbitrage relationships between securities in order to establish which marketplace produced the price discovery and which marketplace responded to the price discovery. The proposal does not provide any consideration to venues outside the scope of Canadian equities that may nevertheless contribute to the price discovery of Canadian listed equities (inter-listed securities, securities with a dependence on commodities prices, ETFs based on US Indices, etc.).

- The issue of recognizing the size of the Canadian market when making peer comparisons and factoring the costs of production relative to the number of consumers in those markets. It is also important to consider the size of the "product" being measured and in particular the number of listed instruments. As an example, there are

[3] See for example: *One Security, Many Markets: Determining the Contributions to Price Discover;* Hasbrouck, Joel; Journal of Finance; Vol 50; 1995. Available at SSRN: http://ssrn.com/abstract=6564, pp 1175-1199.

more exchange-listed instruments in Canada than in the US but with a smaller consumer base in Canada to acquire the data.

- The prescriptive approach will require constant monitoring to assess its relevance in the context of the ongoing evolution of market structure domestically and abroad.

- The shift in innovation away from market efficiencies and towards marketplace changes that incent the movement of order flow from one venue to another.

TMX does not believe that a set of prescribed formulae to value market data is an appropriate approach in Canada and is concerned it will lead to many unintended consequences and issues that will impact the efficiency and functioning of the market.

Further, we are concerned that the intent of the Proposed Amendments to reduce the overall complexity of OPR is contradicted by materially increasing the regulatory burden of market data fee regulation. Our view is that prescriptive approaches to regulation have been shown to create additional costs and complexity, and are less desirable than principles based regulation.

Our specific comments on the Request for Comments are provided in **Appendix A** of this letter. For ease of reference, where applicable, our comments are organized under the main headings used in the Request for Comments.

Thank you for the opportunity to comment. We would be pleased to discuss any aspect of these matters at your convenience.

Yours truly,

Kevan Cowan
President, TSX Markets and Group Head of Equities, TMX Group Limited

APPENDIX A

RESPONSES TO THE REQUEST FOR COMMENTS

OSC questions from the Request for Comments are repeated here for ease of reference.

Question 1: Please provide your views on the proposed market share threshold metrics, including the types of trades to be included in and excluded from the market share calculations, and the weighting based on volume and value traded. Please describe any alternative approach.

Our response to this question is focused on the following aspects of the proposed market share threshold metrics: (a) the use of trade-centric vs. order-centric metrics; (b) the trades to be included or excluded in the proposed trade-centric model; and (c) the weightings to be applied to the proposed trade-centric model.

(a) Use of trade-centric vs. order-centric metrics

We are supportive of the use of a trade-centric metric over an order-centric metric. While an order-centric metric might better align the measure to what is protected by OPR, it may also be easier for a marketplace to manipulate through incentives for the placement of orders that might have little likelihood of actually trading. A trade-centric metric is less susceptible to similar manipulation when considering that trades should generally result from committed orders – a marketplace would have less ability to manipulate an order-centric metric by incenting 'less-committed' orders if there is a higher likelihood of these actually executing. In addition, an order-centric model will likely be harder to calculate and less transparent as to the results of those calculations.

We submit that if the CSA decides to adopt an order-centric model, it should be focused on simple and objective measures that relate to the intentions of OPR. OPR is intended to protect displayed orders, and is not intended to reward a marketplace for the perceived value of its displayed order book, for example, in terms of its contribution to price discovery.

(b) Trades to be included or excluded

Generally, the types of trades identified as being subject to inclusion or exclusion for the purposes of the calculation of the market share threshold appear to be appropriate. We offer the following additional suggestions:

- The reference to 'special terms orders' appears broad, and could result in the exclusion of special terms orders held in a special terms book that will be released into a marketplace's central limit order book (once the special conditions have been met) for normal interaction within continuous trading sessions. To the extent these orders would be subject to OPR when entered as an active order to the CLOB, or would benefit from OPR when resting passively within the CLOB, any resulting trades should be included. We agree that special terms orders executed in special terms books (e.g., odd-lots) should be excluded.

(c) Weightings to be applied to the proposed trade-centric metrics

We do not have any objection to the proposed equal weighting between volume and value. It appears reasonable.

We would not support the inclusion of 'number of trades' as a third measure given that it would penalize marketplaces that tend to trade in larger size and may also provide incentives to marketplaces to promote and reward smaller trade sizes. We also do not believe that it will provide any additional beneficial counter-balancing effect relative to the included volume and value measures.

Question 2: Is a 5% percent market share threshold appropriate? If not, please indicate why.

While setting the percentage for the threshold may be subjective, we are supportive of it being set at 5% on the basis that the results of the CSA's analysis indicate that a number of visible marketplaces will no longer be protected (including a marketplace owned by TMX), while also likely meeting the 85-90% capture target (subject to our comments in our response to the next question).

Based on these results, we believe that a 5% threshold will provide some meaningful additional flexibility for participants that will help to address some of their concerns, while also preserving much of the benefits of OPR.

Question 3: Will the market share threshold as proposed help to ensure an appropriate degree of continued protection for displayed orders? In that regard, will the target of capturing at least 85-90% of volume and value of adjusted trades contribute to that objective?

We generally agree that an objective of capturing at least of 85%-90% of the volume and value of adjusted trades in the protected markets will help towards ensuring an appropriate degree of continued protection for displayed orders.

Whether a 5% threshold will allow for the target to be reached can only be assessed on an after-the-fact basis. This should be monitored and adjustments made if necessary.

Question 4: Will the market share threshold as proposed affect competition amongst marketplaces, both in relation to the current environment or for potential new entrants? Please explain your view.

In our view the market share threshold will put more pressure on existing below-threshold markets to differentiate themselves in order to preserve or attract order flow, whether by carving out niches or through new and innovative offerings. To the extent this occurs, we would see this as a positive outcome for competition and for the industry.

Regarding whether the threshold might present a barrier to entry, a threshold would not preclude a new entrant from identifying a niche that can be served profitably, despite not gaining 5% market share. We note that certain existing marketplaces have operated for a number of years despite not reaching 5% market share.

Question 5: Is it appropriate for a listing exchange that does not meet the market share threshold to be considered to be a protected market for the securities it lists? If not, why not?

We agree that a listing exchange that would not otherwise be protected based on the market share threshold should be considered a protected market for the securities it lists. Otherwise, it could produce a result where a protected marketplace trading the listed securities of that unprotected exchange could set the regulatory NBBO for the listed securities, despite not having any meaningful amount of market share in those particular securities (as well as thin liquidity and poor prices). This would have negative implications for client orders in connection with many of the rules dependent on NBBO, and particularly those requiring price improvement.

We also think that there is some merit to the option of limiting the securities to be protected for a below-threshold exchange to those securities that are not already cross-listed on another exchange that has met the threshold, subject to certain conditions. We suggest as an alternative that cross-listings that are already listed on another exchange could also become protected for the below-threshold exchange if it has met the threshold for trading in those particular cross-listed securities – this could be applied on a security by security basis or in the aggregate for the cross-listings. This would ensure that a below-threshold exchange does not seek cross-listings on liquid symbols solely to create additional pressure on participants to have to connect to it, despite any real likelihood that there will be liquidity in those cross-listed symbols on the below-threshold exchange. We acknowledge that this will potentially add more complexity for the implementation of the OPR threshold as it will require routers to know which cross-listed symbols are protected for which exchanges, and will require the differentiation of routing strategies on a symbol-by-symbol basis or for a defined group of symbols.

Question 6: If the Proposed Amendments are approved, should an exchange be required to provide unbundled access to trading and market data for securities it lists and securities that it does not list? Please provide details.

A below-threshold exchange should be required to provide unbundled access to trading and market data for the securities it lists vs. those it does not list. Access and data should be made available separately and priced separately so that participants are not burdened with the costs of accessing trading and acquiring data for trading in securities that are not protected on the below-threshold exchange. If the participant wishes to consume and pay for data relating to the unprotected securities trading on the below-threshold exchange, they can choose to do so. We would suggest that requiring a below-threshold exchange to provide unbundled access to trading and market data should not preclude the marketplace from the ability to also offer these on a bundled basis, and at discounted prices.

Question 7: What are your views on the time frames under consideration for the market share calculation and identification of 'protected market' status?

We are supportive of the proposed timeframes. A shorter window for measurement and implementation could impose more costs on industry if it results in more frequent changes to the protected markets list. The proposed measurement period will also ensure that a new marketplace has in fact demonstrated some staying power before being protected.

We also think that allowing approximately 3 months for any changes between the date of publication and implementation of the protected markets list should be reasonable assuming

that monthly cumulative results will be published by IIROC and/or the CSA each month. We would think that by the 10th or 11th month, it would likely be reasonably clear as to what the outcome will be, making the publication of the list shortly after the 12th month more of a formality.

Question 8: What allowances should be made for a new dealer that begins operations during the transitional notice period with respect to accessing a marketplace for OPR purposes that no longer meets the threshold?

Rules should be applied equally for all. To the extent that a dealer might incur additional costs in the scenario captured by the above question, the dealer can weigh these against the opportunity costs of deferring its launch.

We also question what implications this might have for IIROC surveillance if it means accommodating monitoring against a different regulatory NBBO for those rare occasions where the scenario contemplated in the question will arise.

Question 9: Are there any implementation issues associated with the 'protected market' approach?

In our view, the most significant implementation issues associated with the 'protected market' approach will arise from the need to manage multiple NBBOs, and because of the need for dealers to review their best execution policies in the context of unprotected visible markets.

We expect that dealers and vendors will need to make adjustments to data display and routing logic to accommodate multiple NBBOs – comprised of a single NBBO for regulatory purposes and multiple combinations of NBBOs to account for the best bids and offers displayed on multiple unprotected visible markets. Data display and routing logic may need to be more customized to satisfy the demands and needs of both internal users (e.g., trade desks) and clients, and also depending on dealer best execution policies. Adjustments to routing logic and internal order handling (e.g., for client-principal trading) may also be needed to compensate for increased occurrences of locked or crossed markets that may occur between protected quotes and unprotected displayed quotes, and to allow for the identification of the most relevant price for the purposes of OPR routing and UMIR price improvement requirements. Internal dealer compliance monitoring practices may also need to be reviewed and adjusted for multiple NBBO benchmarks, and the implications of this for client order handling and any related dealer price improvement obligations.

As indicated by the information outlined in the notice, the information processor for equities may also need to make adjustments its product offering to support dual (or multiple) NBBO products, which will likely lead to increased industry and consumer costs.

Dealers may also need to review their best execution policies with respect to the newly unprotected visible markets to ensure that routing their client orders to, or placing their client orders on, those unprotected visible markets continues to be appropriate in the context of their best execution obligations. This review could also lead to adjustments in order handling and routing practices.

Question 10: What should the transition period be for the initial implementation of the threshold approach, if and when the Proposed Amendments are adopted, and why?

We think that the transition period should be at least nine months. This will allow sufficient time for participants, marketplaces and vendors to implement any changes necessary to adjust to an environment with protected and unprotected visible markets, and to assess and respond to client needs in such an environment (e.g., different levels of NBBO above the baseline regulatory NBBO). As indicated in response to the preceding question, there may also be implications for dealers in the context of best execution that will need to be managed.

Question 11: Please provide your views on the proposed approach to locked and crossed markets. If you disagree, please describe an alternative approach.

The approach proposed for locked and crossed markets is appropriate in the context of the proposed threshold approach for protected markets.

Question 15: Are changes to the consolidated data products provided by the IP needed if the amendments to OPR are implemented? If so, what changes are needed and how should they be implemented?

In an environment that allows for both protected and unprotected marketplaces disseminating quote data, it will be necessary for subscribers to be able to distinguish protected venues from unprotected ones. While best execution requires an analysis of liquidity available in the overall marketplace (including both protected and unprotected marketplaces) in order to be able to measure the quality of execution obtained, the Proposed Amendments to OPR will require only a subset of the marketplace view. For example, to the extent that some market participants may elect to route orders only to protected markets, they will need to have the ability to distinguish between an NBBO for protected venues vs. an NBBO that includes all venues.

It will be necessary to provide data elements within the IP's consolidated pre- and post- trade feeds to attribute displayed liquidity data as either protected or unprotected.

Question 16: Please provide your views on the proposed trading fee caps as an interim measure. Please describe any proposed alternative.

We are generally not in favour of a trading fee cap. Trading fees are subject to competitive forces from both within and outside of Canada (specifically, US marketplaces). The level of fees charged by marketplaces are also scrutinized and approved by securities regulators. This review and approval process would prevent inappropriate fee increases. The review and approval process also allows for flexibility and discretion to recognize that there may be certain types of services (existing or new) for which a fee in excess of the cap is justified – this flexibility and discretion would not exist under a cap that is formalized through a rule. We also note that there are currently alternative trading fee models available to fee-sensitive active order flow (i.e., inverted maker-taker fees under which a rebate is paid on the active side of the trade). We therefore do not believe that the trading fee cap, as proposed, is necessary.

If some form of cap is to be contemplated for those securities or trading sessions which the Request for Comments identifies as being currently out of scope (for example, where OPR does not have implications for a particular trading session), we would expect to be given a similar opportunity to comment or provide input.

Question 17: What should the transition period be for the proposed trading fee caps, if and when the Proposed Amendments are adopted, and why?

To the extent that a fee change to the continuous trading fees of a TMX marketplace will be necessary to comply with the proposed trading fee cap, then we suggest a minimum transition period of 90 days is necessary. The continuous trading fees on a TMX marketplace often serves as a benchmark for its other trading fees. There are also relationships between the trading fee levels on one TMX equity marketplace vis-à-vis another. Any change to the continuous trading fees of a TMX marketplace, which will include fee changes if imposed as a result of a cap, will therefore trigger a review of our other trading fees, and lead to further adjustments. Time will be needed to allow for this review and for the identification of any other complementary trading fee changes. Our internal fee change review processes also include: impact analysis for our revenues as well as for the costs of our participants; consultation with industry stakeholders; and preparation of the necessary documentation for internal and regulatory approvals. Time must also be allowed for downstream notification. Based on our experience, at least 90 days is needed to accommodate this process.

Question 18: Is action with respect to the payment of rebates necessary? Why or why not?

We are concerned about the implications of prohibiting the payment of rebates by marketplaces. It is not clear to us why a prohibition of rebates is viewed as necessary to address the issues raised in the Request for Comments.

(a) Comments on the specific issues identified in the Request for Comments

Regarding the specific issues raised in the Request for Comments that have been put forward as justification for a need for action to be taken, we have the following comments for consideration.

Implications of proposed OPR threshold on fragmentation and intermediation

If implemented, the proposed OPR threshold will reduce the number of markets to which active orders must be routed for OPR compliance purposes. This will help provide dealers with greater flexibility and choice to manage some of the direct costs associated with fragmented markets, including those relating to accessing trading and data. The proposed OPR threshold may also reduce the opportunities for intermediation – there will be reduced certainty for the strategies of intermediaries posting on unprotected markets given the effect that OPR currently has on active order routing to those markets, and there may be less opportunities for arbitrage between markets. We therefore question whether a prohibition on the payment of rebates is necessary to address fragmentation and intermediation in light of the potential implications and desired outcomes of the proposed OPR threshold.

Segmentation is broader than rebates

In connection with the potential for increased segmentation through the use of rebates, we note that there are other examples of on-market segmentation that exist today (e.g., broker preferencing, dark marketplaces that segment through access restrictions), and more that have been proposed (e.g., the proposed access restrictions and matching priorities proposed by Aequitas). Any more general concerns about segmentation should be more broadly considered

from a policy perspective before concluding that these need to be resolved through restrictions on fee models.

Further, we note that the degree of segmentation that might be effected through fee models is dependent on what would be permitted by the CSA in terms of differentiated pricing intended to achieve segmentation, given fair access constraints. This is already within the control of the CSA through the current fee review and approval processes.

We therefore question whether it is appropriate or necessary to attempt to address potential issues with segmentation through a prohibition on the payment of rebates.

Focus should be on conflict management given the conflicts will persist

We do not question whether the presence of different fee and rebate models and/or levels across marketplaces can create conflicts of interest that may affect dealer routing decisions. However, there are other regulatory tools to address this issue and so we question the need to address conflicts of interest in dealer routing decisions through a ban on rebates. Specifically, if IIROC and the CSA think that there are conflicts that are not being properly managed, and that dealer routing decisions are being influenced by these conflicts to the detriment of their client's execution quality, then a greater focus by dealers on the management of these conflicts can be achieved through enhanced guidance, increased oversight or even enforcement of existing best execution and conflict of interest provisions.

We note that the conflicts arise due to differentiated fee models and levels across marketplaces, and not because of the payment of rebates. A ban on rebates will therefore not eliminate conflicts of interest in routing decisions so long as marketplaces are allowed to charge different fees. One way to eliminate this issue (which we do not support) would be to disallow fee competition by requiring marketplaces to charge the same fees. However, marketplaces will still be motivated to seek priority on dealer order routing tables by providing other incentives that will create similar and less transparent conflicts.

A possible alternative to addressing this issue while still allowing for fee competition would be to require greater transparency to the end-user. This might be achieved in a variety of ways, ranging from increased disclosure to end-clients as is contemplated in the proposed amendments, to a requirement for trading fees and rebates be passed down.

Rebates can also be used to promote necessary intermediation

We appreciate CSA staff's concerns that the payment of rebates might promote unnecessary intermediation by short term liquidity providers in securities where such intermediation is least needed. If this is one of the primary concerns, then we question why the CSA would ban the payment of rebates for all securities, including less liquid securities where the payment of a rebate may be more necessary to promote liquidity provision (i.e., where promoting intermediation is either desirable or necessary).

In addition, we note that any positive or negative effects of the presence of intermediation in its current form will presumably also be the subject of the last phase of the IIROC HFT study. We suggest that if the effects of intermediation in its current form are a significant concern, then the CSA should wait until the results of the IIROC study to determine: (a) if there are issues that need to be addressed; and (b) the best way to address those issues, which may or may not involve actions affecting fees and rebates.

(b) Concerns with the potential implications of a prohibition on rebates

At a higher level, we have concerns with the potential implications of a ban on rebates given that the maker-taker pricing model is ingrained in the trading ecosystem and to unravel it may have broader consequences than intended.

Potential implications in the context of passive liquidity provision

In the context of passive liquidity provision, the trading ecosystem currently provides for liquidity providers to be compensated by marketplaces for stocking a marketplace's shelves with their displayed limit orders. This payment is funded by those who benefit from the goods being provided, and the liquidity provider earns a mark-up on the sale of its goods if it can successfully capture the spread. The payment of a rebate in these circumstances not only serves to attract liquidity providers to the marketplace, but also helps to offset some of the risk assumed by the liquidity provider by making its goods publicly available and accessible.

If rebates are to be prohibited, then the current ecosystem pertaining to passive liquidity provision will be disturbed. There are a number of potential outcomes. One is that marketplaces will seek to compensate liquidity providers in other ways to maintain attractiveness to liquidity providers and to protect volume and market share. This additional compensation will continue to be paid for in some form by those consuming the provided liquidity, and the transfer mechanism will likely be less transparent.

Alternatively, if rebates are prohibited, then liquidity providers may either widen their spreads to compensate for the loss of rebates or leave the market entirely (also resulting in wider spreads). In both cases, the resulting widening of spreads will translate into increased costs for investors' marketable orders via worse execution prices (particularly affecting retail orders). These costs to be borne by investors will need to be weighed against the benefits that might accrue to dealers through reduced active trading fees, and the extent to which those benefits to dealers will somehow trickle down to the investor.

As explained in more detail in Question 19 regarding our concerns with the potential inclusion of inter-listed securities in the pilot study, the potential for wider spreads in Canada relative to the US on inter-listed securities will also make it more attractive and more feasible to route active marketable orders to the US in terms of the execution price received for the client (via narrower spreads). Routing of marketable active orders in inter-listed securities outside of Canada under a pilot may be further incented by the opportunity to earn rebates for those active orders from US marketplaces offering inverted maker-taker models or under payment for order flow arrangements with US wholesalers.

All of this points to less liquidity and increased implicit trading costs in Canada, which could have follow-on effects for the attractiveness of our markets to new foreign entrants like foreign investment funds and pension funds, and ultimately could affect the attractiveness of our markets for new issuers as well.

Potential implications on marketplace competition

We are also concerned with the potential implications on competition among marketplaces in Canada, and with the US in terms of inter-listed securities.

In Canada, visible markets are subject to a number of rules and regulatory principles that have implications for their ability to innovate or create more tailored products or offerings to service client demand. To an extent, the rules currently promote a certain degree of homogeneity across visible markets. Fees have been one area, however, where marketplaces have been able to differentiate themselves from each other and have been used by marketplaces as a means to serve client needs (e.g., through the offering of inverted maker-taker pricing which is intended to service cost-sensitive active order flow). If the payment of rebates is banned, then we expect that continuous trading fees among marketplaces will be compressed and there will be reduced opportunities for competitive differentiation based on fees. This may contribute to even more homogeneity among visible markets, and may lead to a questioning of the value of allowing multiple markets if they are restricted in terms of how they can compete. We note that it is also not clear how any resulting compressed fee schedules will affect dealers' net trading costs, as the impact will be dependent on a dealer's active/passive ratio and any potential changes in the total net fee charged by marketplaces on a per trade basis.

Regarding the implications for competition with the US in terms of inter-listed securities, to contemplate a ban on the payment of rebates by marketplaces in Canada when US exchanges will not be subject to a similar ban will affect the ability of Canadian marketplaces to compete with US exchanges for market share of trading in inter-listed securities, negatively affecting liquidity and leading to wider spreads. Similar concerns arise in the context of the implications of a ban on rebates for Canadian marketplaces' ability to compete with any favourable economics of payment for order flow arrangements offered by US wholesalers. For more of our views on the risks of these outcomes in terms of interlisted securities, see our response to Question 19.

Question 19: What are your views on a pilot study for the prohibition of the payment of rebates? What issues might arise with the implementation of a pilot study and what steps could be taken to minimize these issues?

Our view is that if the CSA is contemplating the prohibition of the payment of rebates, it would be better to conduct a pilot study on a limited set of securities to assess the effects, rather than to impose an outright ban across all securities (including inter-listed securities) given the significance of such an action.

On the assumption that the CSA plans to proceed with the pilot study, our primary comments are centered on (a) the measurement and interpretation of results; and (b) the inclusion of interlisted securities.

(a) <u>Measurement and interpretation of results</u>

In our view, the biggest risk associated with the pilot study is that its results will be not be sufficiently conclusive as to either the positive or negative effects, or will be subject to significant challenge and interpretation that will make it difficult for the CSA to formulate a clear opinion as to the implications for policy making. In such circumstances, the end result would be the waste of industry efforts and resources, as well as the potential weakening of the Canadian capital markets (especially if inter-listed securities were included, and any lost volume could not be recaptured or repatriated).

The specifics relating to the construction of the pilot study, including what securities are to be included, the metrics to inform results, study duration, etc., are therefore important for ensuring

reliable results to inform subsequent regulation. The most important of these, in our view, are the metrics to be used to assess positive and negative results. We suggest that the first step should be identifying what metrics are appropriate, and how results will be interpreted in terms of their direction and magnitude. This should be done in consultation with industry to minimize the potential for disagreement post-completion of the study regarding the metrics or how the results should be interpreted.

We also suggest that the metrics should be designed with the objective of measuring the degree to which the issues identified by the CSA are addressed by the banning of rebates. Ideally, the metrics should be designed to measure the impact on intermediation, the effect on the management of dealer conflicts of interest, the degree of fragmentation and segmentation, etc., although some of these may be difficult to directly measure. We note that standard market quality metrics might not be enough.

Choosing the scope, timing and duration of the study is also important. It would be ideal to minimize the scope and duration of the study in order to minimize the impact and risks to industry, issuers and investors. However, this must be balanced against the need for the scope and duration to be broad enough and long enough to ensure that trading behaviours will adapt and that the observed results will reflect those changed behaviours. We also suggest that the CSA should seek to avoid overlap with known events that could have significant implications for trading behavior and market structure (e.g., the OPR threshold or the launch of Aequitas). Otherwise, the results of the study may become clouded by these other events. See our response to Question 21 below for more of our views on this.

To help address some of the above-noted concerns, we suggest that an industry committee be formed with representation from a range of industry participants who can provide input to the chosen academic(s) regarding the various practical considerations and implications that could affect outcomes, and to help to ensure industry buy-in. We also suggest that the plan for the study be published for comment, together with the views of the industry committee, to facilitate the potential for broader industry participation and buy-in.

(b) Inclusion of inter-listed securities

In our view the potential inclusion of inter-listed securities in the pilot presents significant risk to Canadian market share in these securities, and therefore to the general health of the Canadian capital markets. Our view is premised on the following considerations:

- We expect based on the information in the Request for Comments that the ratio of inter-listed securities to be included will be one-third to one-half of all inter-listed securities, similar to the ratio contemplated for all securities.

- Rebates will continue to be available to liquidity providers posting bids and offers on US exchanges, making it less attractive for these same liquidity providers to post passively here on interlisted symbols.

- There is no similar anti-avoidance or other regulatory obligation with respect to passive orders that would create some sort of regulatory pressure to keep theses passive orders here.

- Spreads may widen on inter-listed securities in Canada relative to the US because of the potential effect on liquidity provision here.

- Spreads may also widen on inter-listed securities in Canada relative to the FX-adjusted rates for those same securities in the US because fees and rebates are factored into the prices at which liquidity providers are willing to make markets, and any differential will therefore not be arbitraged away.

- Narrower spreads in the US relative to Canada will make it more attractive and more feasible to route active marketable orders to the US in terms of the execution price received for the client and because of payment for order flow arrangements between Canadian dealers and US wholesalers that are not permitted between Canadian dealers, or that will not be permitted to be replicated through the payment of active rebates under the proposed pilot.

As a result of the foregoing, we suggest that inter-listed securities should only be included in the pilot if done so in conjunction with a pilot conducted jointly with the SEC, so as to ensure a level playing field between jurisdictions.

(c) Other issues and considerations

Pilot focus on the prohibition of rebates

If the CSA has arrived at a view that the payment of rebates is creating the identified issues, then we question the reasoning for the binary nature of the pilot – i.e., its focus on the banning of rebates as the solution to those issues. If the pilot is to proceed, and notwithstanding our general views on the need for trading fee caps generally, we suggest that the pilot should also study the effect of imposing a lower cap on active fees or, similarly, a cap on the level of rebates to be permitted. This would allow for an assessment of whether more positive results (or perhaps less negative results) can be achieved through a cap rather than an outright ban. Even if the study shows more positive (or again less negative) results with an outright ban, the differential between those results and the results seen with a lower cap might be so marginal that they would be more than offset by qualitative factors. For example, if the marginal differential in terms of the benefits of reduced fees more than offset by the qualitative value of competitive fee differentiation.

Ability to halt study

Assuming the pilot is to be conducted based on the indicated scope and in a non-phased manner, then we suggest that there should be intra-study monitoring of market quality to ensure there is the ability to quickly halt the pilot if the monitoring shows a clear and immediate indication of a damaging effect to the Canadian capital markets. However, there will still be a lag between a halt of the pilot and reversion to the pre-pilot environment when considering timing for downstream fee change notification and changes that might be needed to re-factor the pre-pilot fee changes back into routing and liquidity provision strategies.

To better manage the risk of irreversible damage, an alternative approach might be to conduct the study in phases, starting with those securities or types of securities where there is the least risk of negative outcomes, and extending it to add securities of increasing risk with each phase. This would allow the opportunity to halt the pilot in the event that the results of any particular phase provides evidence of negative outcomes making it reasonable to halt proceeding to the next phase to prevent additional market damage.

Issuer involvement given potential implications for liquidity for their listed securities

Consideration should also be given as to whether issuers should have the ability to decline participation in the pilot with respect to their listed securities. To the extent that the pilot study could have a material effect on the liquidity of an included security, then it would seem appropriate to consider whether an issuer should be given an opportunity to choose whether its listed securities be included, taking into consideration the best interests of the company and its shareholders. We note that issuers are often not the target audience for, and rarely respond to, regulatory requests for comments relating to trading and market structure. Consequently, we suggest that the CSA, at a minimum, consult directly with issuers to bring the pilot to their attention and understand their concerns and views.

Other possible means of studying the issues

Emphasis could also be placed on identifying opportunities to study the impact of the payment of rebates based on recent developments, where possible. Doing so could help to reduce the need for a pilot, or help to reduce the pilot's scope. For example, the fee changes made by TSX and TSXV in November 2013 whereby maker-taker pricing for securities priced under $1 was abandoned in favour of symmetrical pricing might provide valuable insights into the potential effects of a wider ban on rebates.

Question 20: Should all types or categories of securities be included in the pilot study (including interlisted securities)? Why or why not?

As described in Question 19, we think that including inter-listed securities in the pilot presents significant risk. With the exception of interlisted securities, we do not see any reason to exclude any particular type or category of security on which rebates are currently being paid by any marketplace. Trading behaviours might differ by type or category of security, and so the outcomes or degree of impact of a ban on rebates might also differ and should also be studied.

Question 21: When should the pilot study begin? Is it appropriate to wait a period of time after the implementation of any change to OPR or could the pilot start before or concurrent with the implementation of the OPR amendments (with a possible overlap between the implementation period for the OPR amendments and the pilot study period)? Why or why not?

We suggest that the OPR threshold be implemented first, and that a period of time be allowed post-implementation for the market to adjust before the commencement of any pilot study. This should help to ensure clearer results. Otherwise, there is a higher potential for non-acceptance of the results, and for questions to arise as to the extent to which the results were influenced or affected by the implementation of the OPR threshold.

Even if the study and associated metrics could be designed to control for the effect of the implementation of the OPR threshold, the CSA should be cognizant of the impact on industry and the market of imposing too much change at one time (or within a short period of time). Changes will be required at marketplaces, vendors and dealers to move to an environment with protected and unprotected visible markets (e.g., data view construction, routing decisions, connectivity decisions, etc.). There will likely be further adjustments once dealers become more comfortable with the implications of the OPR threshold on their best execution obligations in the context of accessing unprotected visible markets. Additional changes and associated testing to accommodate the commencement of a maker-taker pilot at the same time as, or within a short

time period from, the implementation of the OPR threshold will present additional costs and risks for industry participants, and systemic risk for the broader market.

The timing for the launch of Aequitas (assuming it will be approved) should also be taken into consideration. It too has the potential to have a significant impact on the market structure and could cloud the results of a study. It will also impose further burden and risk for the industry if the timing of the pilot is to be in close proximity to either or both of the OPR threshold and Aequitas launch.

Consequently, we suggest waiting at least six months from the implementation of the OPR threshold to commence the maker-taker pilot, and ideally up to one year.

Question 22: What is an appropriate duration for the pilot study and why?

The study period needs to be long enough to ensure that participants and liquidity providers adapt to a changed environment in order to provide true results, and to support a reasonably conclusive study. Studies of too short a duration could show anomalous results which might later change under a study of a longer duration as participants learn and adjust to the changed environment.

The duration of the pilot will also be impacted by its construction. For example, if the CSA does not define the pricing model(s) and/or price levels for the included symbols, then there will need to be time allowed for marketplaces to introduce new price models / levels, and then to make adjustments to these towards reaching a competitive norm.

Question 23: If rebates were to be prohibited, would it be appropriate to continue to allow rebates to be paid to market makers and, if so, under what circumstances?

We agree that it would be appropriate to continue to allow some form of rebates to be paid to market makers to compensate them for carrying out their market making obligations. The placement of a limit on the payment of trading rebates to market makers as suggested in the Request for Comments may only promote other compensation schemes, some of which might be less transparent or more problematic. Examples might include increased usage of lump-sum payments or unreasonable priority privileges.

Question 24: Will the implementation of a methodology for reviewing data fees adequately address the issues associated with data fees, or should other alternatives be considered? Please provide details regarding any alternative approach.

Marketplace data fees are already regulated by the CSA through a formal review and approval process. The current approach provides appropriate and sufficient oversight to ensure there aren't "runaway" market data fees. TMX advocates a principles based versus a prescriptive formula based approach and strongly believes that the latter will result in added complexity, cost and many unintended consequences including market participants seeking to gain from a formula based fee model through artificial movement of liquidity which is independent of a marketplace's true value and trading features. A principles based approach will also have the advantage of allowing the incorporation of future unforeseen issues to be incorporated to the regulation of market data fees which would be more difficult under a formulaic approach.

It is our view that the implementation of a methodology for reviewing data fees does not address the issues associated with data fees. We believe the value of data is relative to the end user and is not an absolute quantity. This makes it very difficult to accurately measure the overall value of market data. The primary value from market data derives from information regarding liquidity and price discovery. Neither liquidity nor price discovery are concepts that have well-established, quantitative definitions with the result that various stakeholders will measure liquidity and price discovery differently and will have different value judgments.

For example, how should the market value price discovery for less liquid stocks (smaller companies contribute largely to Canada's economic growth and we should encourage and place value on this)? What about the breadth and depth of coverage overall for the universe of Canadian securities vs. having liquidity and prices only in a sub-set of liquid securities (should measuring quantitative metrics for a small set of market data constituents unilaterally drive value)? To what degree do marketplace features such as orderly market opens using registered traders to oversee opening price quality, market on close, must be filled orders and liquidity priority, and index benchmarking influence value? Does the number of orders, volume or duration at the best bid/offer matter most or conversely, does the velocity of interaction and fills at the best bid/offer mean that the activity warrants more value. And how should the market value (or discount) free-riding price discovery such as marketplace price pegging which uses others' committed prices in other marketplaces.

An alternative approach regarding market data fees is to allow competitive forces to determine the price of market data. Transparency of fees will allow participants to make their own relative value assessment of market data fees based on their business needs. The approach should increase the competitive forces by minimizing further regulatory intervention in the setting of market data fees.

Question 25: Do you have concerns with respect to market data fees charged to non-professional data subscribers that securities regulatory authorities need to address? If so, how should the concerns be addressed?

TMX believes fees charged to non-professional subscribers should reflect the demand for the data as perceived by the value attributed by the subscriber. We prefer market forces determine those fees rather than any additional regulatory intervention.

The benchmark and most widely consumed Canadian equity real-time market data for non-professional investors is Toronto Stock Exchange Level 1 data and TSX Venture Level 1 data. The non-professional subscriber fees imposed for these are $0.01 per real-time quote update up to a maximum of $6 per month per listed market. Given the option to consume market data on a per quote basis, the vast majority of consumers pay well below the $6 per month maximum fee, with approximately 75% below $1 per month. Additionally, the vast majority of fees are paid by the bank owned dealers and involve a non-professional participant executing a trade (which generates on average $10 per trade in commissions to the broker). In short the costs associated with market data fees are a relatively small fraction of the revenue generated from the provision of trade execution services to non-professional consumers. Non-professional consumers also have access to 15 minute delayed market data with no exchange market data fees. Free services such as TMXmoney.com and other web portals further facilitate cost efficient non-professional access to decision support content.

TMX non-professional subscriber fees compare favorably to a number of marketplaces internationally particularly in Europe and Asia where a number of major marketplace fees range from greater than $6 per month (adjusted for $CAD) to over $20 per month (adjusted to $CAD). It is also important note that while non-professional Level 1 fee caps for US markets are lower than TMX, the market size for an exchange to recoup its cost base is substantially larger (i.e. greater than 10X) for US markets relative to the Canadian markets.

Question 26: Is modifying OPR by introducing a threshold, and at the same time dealing with trading fees and data fees, an appropriate approach to address the issues raised? If not, please describe your alternative approach in detail.

Question 27: What is the expected impact of the Proposed Approach on you, your organization or your clients? If applicable to you, how would the Proposed Approach impact your costs?

Question 28: Is the Proposed Approach an effective way, relative to the other approaches described, to support a competitive market environment that encourages innovation by marketplaces? Please explain your view.

We are responding to questions 26 through 28 together.

The implementation of the OPR threshold could have positive implications for dealer costs. There may be some savings from accessing trading and data of unprotected markets, and costs of accessing non-protected markets might also be reduced if those marketplaces choose to lower their membership, connectivity, data and other fees to make themselves more attractive. These various positive impacts should help to address some of the cost issues being faced by dealers, and could reduce the need for further action on trading fees or data fees.

Further, the OPR threshold could assist with addressing some of the issues identified in the Request for Comments as being associated with the payment of rebates. For example, the OPR threshold could help to reduce some of the negative effects associated with marketplace fragmentation. Any reduction in fragmentation facilitated by the OPR threshold should also help to reduce the extent of arbitrage opportunities, causing a decrease in intermediation from current levels.

As indicated earlier, the OPR amendments could also have positive implications for competition and innovation which also in turn may help increase the likelihood that dealer issues (including those that relate to trading or data costs) are mitigated through commercial rather than regulatory solutions.

In contrast, there are potential negative implications of a ban on trading fee rebates for liquidity provision and marketplace competition as outlined in our responses above.

Consequently, we are of the view that the OPR threshold should be implemented first, followed by a reassessment by the CSA of the issues and a reconsideration of the need for further regulatory intervention. There is also the potential that new issues could arise that might necessitate some form of regulatory attention, whether as a result of the implementation of the OPR threshold or in connection with other significant events such as the launch of Aequitas (if approved). Introducing all of the proposed changes simultaneously will make it difficult to assess the impacts of each of the various changes.

In terms of impact, we have highlighted the potential implications of the OPR threshold and pilot study in our earlier responses. A specific comment regarding the impact of the data fee proposal is that it would dramatically increase the recurring costs and complexity for TMX as we would calculate the formulae ourselves to verify the reasonableness of the CSA's calculation and its implications for TMX data fee revenue. To compute the formulae will require significant investment in technology and data. The expected total cost increase would be in the range of millions annually.

We believe that the prescriptive measures proposed will impede innovation. Protectionism and competition are antithetic. We support allowing marketplaces to compete based on market forces. This view is supported by the observation that the CSA is contemplating/proposing a reduced scope of OPR to address the captive consumer issue created through regulatory measures.

'Best execution only' as an alternative

The Request for Comments discussion under the heading "Alternative Approaches Considered" indicates that one option considered was a complete repeal of the OPR regime with full reliance on best execution obligations only.

In our view, moving to a best execution regime would represent a much more significant shift away from the status quo relative to what is being proposed via the OPR threshold, further eroding the intended benefits of OPR. It is important to recall that OPR, and the best price obligations under UMIR that preceded OPR, have historically provided assurances to retail investors that their active orders will be executed at the best displayed prices. Our understanding is that the order flow of retail investors continues to represent a significant proportion of volume traded. Consideration should be given to the degree to which moving towards a best execution only regime will be sufficient from the perspective of a retail investor, particularly considering that retail investors tend to have less knowledge of the implications of best execution obligations on their orders and less ability to assess the quality of execution obtained for their orders, thus limiting their ability to hold dealers accountable.

In addition, a shift to a best execution only regime will have similar implementation implications as identified in response to Question 9. However, these implications should be expected to be more pronounced as one moves further along the spectrum away from an OPR regime towards a best execution regime. For example, the number of permutations of possible NBBO views that will have to be managed, and the potential complexity that this will have for client order handling, will increase as you move closer to a best execution only regime.

Moving to a best execution regime will also necessitate a more in-depth review of UMIR, and in particular, of those requirements that are premised on the existence of a single protected NBBO (e.g., price improvement requirements for dark orders or in connection with order exposure requirements). Additional guidance on best execution will also need to be developed to help dealers with assessing their own compliance. There may also be increased enforceability issues given the more subjective nature of best execution, relative to the more objective nature of OPR – if greater enforceability issues could arise in a best execution only regime, this could in turn lead to investor confidence issues.

Finally, we note that the OPR threshold as proposed should allow dealers some additional flexibility to apply best execution as the sole guiding principle for client order handling in the

context of unprotected visible markets, particularly for institutional order flow where factors other than immediacy and price might be more important for informing best execution.

Question 29: Considering the Proposed Approach, is it necessary to take additional steps to regulate membership and connectivity fees charged by marketplaces? If so, why, and if not, why not?

Regardless of whether the Proposed Approach is implemented, we do not think any additional steps need to be taken to regulate membership and connectivity fees. These fees are already subject to review and approval by securities regulators. In addition, neither OPR nor any other regulatory requirement necessitates that a dealer becomes a member of all marketplaces or connects directly to any marketplace. These are choices that are made by a dealer and governed by a dealer's business model. We believe there is sufficient choice available to dealers to manage these costs and accommodate their different business needs and demands. For example, jitney arrangements can help to manage membership and connectivity costs, and there is a wide range of choices to facilitate indirect connectivity.

Question 30: Considering the Proposed Approach, is it necessary to take additional steps at this time to address issues relating to marketplace liability? If so, why, and if not, why not?

We submit that the existing regulatory framework is sufficiently robust and that no additional steps are needed to be taken at this time to address marketplace liability. We also question whether this is a regulatory issue and agree that it is appropriate to rely on the changes being made to OPR to address concerns raised by dealers. Canada's system of marketplace regulation is very strong and provides ample support to meet the mandate of the regulators and marketplaces and support the integrity of the Canadian capital markets.

Under the Canadian approach to market regulation, NI 21-101 applies to all marketplaces. It provides a rigorous regime of rules and oversight of marketplaces requiring transparency with many pre-approvals, systems requirements and system reviews and testing. Over and above the regulatory requirements, marketplaces have compelling business incentives to avoid and manage issues as they arise in an appropriate manner. Marketplaces operate in a global competitive environment and are highly motivated to minimize risk. The regulatory risk of non-compliance, the business and reputational risk of losing the confidence of existing customers, new prospects, and other stakeholders, leads marketplaces to consider very seriously the time, staff and resources needed for the development and maintenance of systems. It must also be recognized that changes in liability will have a significant and indeterminate impact. Regulating marketplace liability may, among other things, stifle innovation, fundamentally alter market structure and risk profiles, increase overall market cost and act as a barrier to entry for new entrants.

Question 31: Taking into consideration how these pre-trade metrics will be used within the various ranking models, are these reasonable proxies for assessing a marketplace's contribution to price and size discovery? Are there other metrics we should consider? Please provide details.

There are two key types of pre-trade metrics that should be considered when assessing the value of pre-trade market data. These are liquidity metrics and price discovery metrics. The liquidity metrics would quantify the availability of actionable passive orders that could be

converted into traded volume. The price discovery metrics would quantify the market price dynamics and capture the efficiency with which the market prices are able to capture the available information regarding the fair market value of the security. Consideration should also be given regarding the marginal contribution to price discovery of subsequent orders: an order that establishes a new price point is more valuable than an order that adds to a price that already has a substantially number of displayed orders.

Pre-trade metrics to assess the contribution to liquidity should include time, size, price and depth. Additionally, other metrics to measure the contribution to pre-trade price discovery should be included which consider the establishment of new best prices, whether pegging orders are being used and whether pre-trade liquidity results in traded volume. The metrics should also consider whether an order that is filled quickly should be treated differently than an order that is cancelled quickly, i.e. if the reason for removal of an order book is an execution then the order provided post-trade liquidity which is valuable while an order that is cancelled without any execution is less valuable.

Metrics to measure the contribution of efficiency of the price discovery process should also be included. These metrics would determine the contribution of each marketplace to the overall efficiency of the price discovery process as measured using statistical techniques.[4]

There should also be separate consideration of pre-trade contributions to price discovery from continuous auction trading and facilities such as the opening and closing call auctions, including the Must Be Filled (MBF) facility.

The metrics should be aggregated on a security weighted basis. This will recognize that each security is distinct (although there may be some relations between certain securities). The metrics should first compute the contribution of each marketplace to a security's liquidity and price description and then aggregate on a normalized (equal weighted) basis. Pre-trade metric 4 which uses weightings based on value traded will skew the metric to securities that have a high value of traded volume which will not recognize the important contribution to liquidity and price discovery of less-liquid securities. Pre-trade metric 2 is problematic since it does not consider the overall contribution to pre-trade price discovery and may only consider a small fraction depending on the time that the spread is narrowest (note that there should be additional restrictions to address locked and crossed markets, whether the metric considers both protected and unprotected marketplaces, whether the metric is measured only during continuous trading hours when all venues are operating). A further consideration when aggregating across securities is to separately consider groups of securities based on their listing market. The reason is that some marketplaces traded only subsets of securities based on where the securities are listed. For example, the TSX and TSXV only trade securities that are listed on their respective markets, while other marketplaces traded both TSX and TSXV securities.

In our view the set of metrics described above would need to be combined within a larger multi-dimensional fair value liquidity model that considered and weighted the various liquidity and price discovery metrics. Constructing a fair value model would be a much more complicated procedure than looking at a combination of single-dimensional metrics. Such a model may take into account non-linearities such as the diminishing value of orders that add to existing levels in

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[4] *One Security, Many Markets: Determining the Contributions to Price Discover;* Hasbrouck, Joel; Journal of Finance, Vol 50, 1995. Available at SSRN: http://ssrn.com/abstract=6564, pp 1175-1199.

an order book or the benefit of an additional trade (a 100 share/$100 execution in a security that has traded 1,000,000 shares/$1,000,000 is likely less valuable than a same-sized order that is the first trade of the day).

Another concern with using pre-trade metrics is that prescriptive metrics that have economic consequences are open to gaming which can lead to an erosion of the quality of liquidity and price discovery as reported through real-time pre-trade market data.

In our view, a better approach is to allow market forces based on demand determine fees for market data.

Question 32: Are the pre-trade metrics described appropriate for a marketplace that predominantly trades less liquid securities? Please indicate and describe what pre-trade metrics would be appropriate to use for such a marketplace

Care should be taken when considering and aggregating across securities with varying liquidity and price discovery characteristics. A value assessment must be made regarding pre-trade metrics for securities that have very different characteristics. Providing passive orders for illiquid securities provides a disproportionate contribution to both liquidity and price discovery and therefore a passive order for an illiquid security is more valuable than a similar passive order for a highly liquid security. A marginal analysis of pre-trade orders that contribute to real-time market data should be incorporated into the assessment of value. This issue highlights a further complexity of determining the relative value of market data since various participants will have different views of value depending on the securities of interest. Given the diversity of market data consumers, it is not feasible to determine a set of formulaic metrics that will capture the true value of market data.

In order to assess the value of a marketplace's contribution to illiquid securities, the security weighting factors should be constructed in a manner to provide an appropriate credit based on pre-trade liquidity metrics. For example, it may be appropriate to scale security-level pre-trade metrics by dividing the total number of quotes from a marketplace by the total number of quotes across all markets, or it may be appropriate to use the logarithm of the number of quotes as a scaling factor.

Question 33: Taking into consideration how these post-trade metrics will be used within the various ranking models, are these reasonable proxies for marketplace liquidity? Are there other metrics we should consider? Please provide details.

The post-trade metrics provided are focused on liquidity. The usage of these metrics within ranking formulae should take into consideration the varying liquidity characteristics across the instruments being measured, e.g.: volatility, spread, average/median daily dollar volume, whether the instrument is a listed derivative such as an ETF, etc.

As discussed in question 32, a further consideration when aggregating across securities is to separately consider groups of securities based on their listing market.

Any aggregation across instruments should recognize that instruments trade at per unit prices with the units set arbitrarily (via the stock's outstanding shares) so that measuring share volume will bias results when aggregating across instruments with different unit prices and also across the same instrument that has a change in its price through time, whether from a corporate

action such as a split or consolidation or from price appreciation/depreciation due to market valuations. This can bias metrics for venues that trade a high proportion of highly liquid securities as compared with venues that trade a high proportion of less liquid securities. For these reasons, the post-trade metrics (like the pre-trade metrics) should first consider the contribution of liquidity and price discovery at the marketplace level and then aggregate across securities on a normalized basis (i.e. security weighted). By first considering the contribution to each security at the venue level, the problem of combining share volume for listed instruments that have very different unit prices can be avoided.

Care should be taken to avoid post-trade metrics from being dominated by certain instruments. For example if one venue trades a large percentage of an instrument type, but there is a bias against that instrument type due to the nature of the metric. This can occur when a large cap stock trades a large dollar value equally across venues as compared with a small cap stock, but a specific venue contributes significantly to the small cap. In this example the venue that provides a significant portion of post-trade liquidity in the small cap stock may not receive attribution for its contribution to liquidity after aggregation occurs including the large cap stock. The metric may bias to large cap stocks with high dollar value traded.

Another issue that warrants consideration is that using the square root of dollar volume (in post-trade metric 4) for each trade would bias toward small executions. There is a general consensus that larger trade sizes contribute more meaningfully to liquidity and "size discovery". There is legitimate concern that large crosses may impact post-trade metrics but it would be preferable to modify the metric to explicitly exclude crosses than to bias toward small trades which would encourage tape shredding in order to game the metric. It also raises the issue discussed earlier in the pre-trade questions above that there should be segmentation within the metrics based on whether the volume was executed in a continuous auction market, call (including open, close, MBF) or via crosses.

Further, the post-trade metrics appear to be targeted at measuring liquidity (which may not be the same as volume but which use volume as a proxy for liquidity) rather than price discovery. The Request for Comments states that the goal of the Proposed Approach is to enhance both price discovery and liquidity so there should be some metric(s) that target price discovery in addition to those that target liquidity. These metrics could, for example, be based on testing for randomness of price changes and the contribution from each venue to these price changes.[5]

Question 34: Taking into consideration how these post-trade metrics will be used within the various ranking models, are these reasonable proxies for marketplace liquidity? Are there other metrics we should consider? Please provide details.

We believe it is important to segment the post-trade data based on whether the trades resulted from crosses, continuous auction, opening/closing/MBF call, odd-lot orders, etc. when computing any post-trade metrics.

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[5] See for example: (i) *One Security, Many Markets: Determining the Contributions to Price Discover;* Hasbrouck, Joel; Journal of Finance; Vol 50; 1995. Available at SSRN: http://ssrn.com/abstract=6564, pp 1175-1199, or (ii) *Measuring the Information Content of Stock Trades;* Hasbrouck Joel; Journal of Finance, Vol 46, 1991, pp. 179–207.

It is also relevant to consider security-specific attributes, such as liquidity of each security, similar to the approach described above for pre-trade metrics.

In addition, the relative contribution to liquidity by venue for each security should be considered in isolation. The process of aggregating across securities needs to be considered carefully. For example, if post-trade metrics such as percent of each marketplace's volume are aggregated across all securities, then the metric will be dominated by highly liquid securities which will bias the result. Instead, the distribution across individual securities should be used in order to recognize that each security has unique trading characteristics.

The goal should be to measure the contribution from each venue at the security level and then comparing across securities after weighting the securities to account for their idiosyncratic properties including whether they are a corporate, listed derivative, etc. As an example, there is likely very little price discovery and liquidity provided by a specific venue's quotes on an ETF that tracks a liquid index while there may be a substantial contribution to price discovery and liquidity provided by a venue that is the only venue to provide visible order data for an illiquid security.

Question 35: Are the ranking models described appropriate for ranking a marketplaces' contribution to price discovery and liquidity? Are there other ranking methods we should consider? Please provide details.

We are concerned that the ranking models described are not appropriate to rank marketplaces' contribution to price discovery. We describe the issues surrounding the metrics and the need for capturing the value from both pre- and post- trade at the instrument level. The ranking models over-simplify the calculation of relative value because they do not appropriately aggregate across securities, they do not include price discovery efficiency metrics, they do not incorporate full depth of book, and they do not segregate the type of market (call, continuous, cross, dark). It is also unclear what the intra-day time period over which the metrics are calculated is. There is no discussion regarding inter-day aggregation or how to consider situations where the market is locked and/or crossed. For example, if a marketplace experiences technical difficulties, then will the computation of the CBBO remove that particular marketplace or group of marketplaces from the calculations?

SIP value uses a pre-trade metric which provides more weight to stocks that trade high dollar value resulting in biasing against illiquid securities and the markets that provide price discovery for those stocks. SIP value also favours venues that execute small average trade sizes which biases against marketplaces that provide size discovery. Overall, the first ranking model is biased toward highly liquid securities executing in small average trade sizes. Both price and size discovery are biased against by the SIP value ranking model. There is also an open question of whether the metric includes both protected and unprotected visible venues.

The second ranking model uses a different pre-trade component that does consider the quoted dollar value which is an improvement in terms of measuring liquidity but will bias highly liquid stocks and the venues that trade them. The price discovery associated with venues that provide a market for illiquid securities is not recognized. Additionally, only the top of book liquidity is recognized and not the liquidity deeper in the book, so that a small order at a better price may result in a large amount of liquidity at a lower level being unrecognized.

The third ranking model does not include depth of book, does not segregate the market type (call, continuous, etc.), does not appropriately weight at the security level (liquidity

characteristics, derivatives such as ETFs versus corporate etc.). The third model also does not emphasize the contribution to price discovery and more heavily favours liquidity as proxied by volume.

We have significant concerns with the difficulties that arise in assigning a quantitative value for the contribution to liquidity and price discovery from each marketplace. We therefore support a market driven approach as opposed to imposing regulatory formulae that are subject to gaming. Some key difficulties with the ranking model approach include:

- Approach for aggregating at the security level and assigning relative weightings for securities based on liquidity and recognizing that each security has unique trading characteristics.

- The need to recognize the type of trading mechanism that both pre-and post-trade metrics use, i.e. continuous auction, Opening Call, Closing Call, Crosses, Must Be Filled, and odd-lot, etc. and include consideration of the fee structure associated with these facilities, for example paying for market share by rebating crosses.

- The difficulty of measuring the efficiency of the price discovery mechanism which requires statistical tests to measure the deviation from random price changes at the security level and the contribution from specific marketplaces to the efficiency of price discovery.

- Determining whether pegging orders have been used and which venue set the new price as well as considering if an execution resulted from an order that established a new price versus an order that was generated as a pegged order subsequent to another venue establishing a new price.

- It is unclear whether the formulae will apply to non-protected venues and if so, how an unprotected venue with a pre-trade order inside the CBBO will impact the pre-trade metrics.

- Determining the relative value of specific users of market data with respect to price discovery, liquidity and securities of interest.

If a ranking methodology must be employed, then it should take into account the individual characteristics of each security, and employ a multi-dimensional security-specific model rather than specific metrics that are aggregated. A distributional analysis should be employed rather than a combination of simple metrics. In addition, we assume the metrics will be specific to listing exchange in order to recognize that some venues traded only a subset of securities while other trade all (i.e. TSX-only, TSXV-only or all depending on the venue).

We also note, there should be consideration at the security level based on the relative (as opposed to absolute) marketplaces' contribution to liquidity and price discovery in order to allow for the fact that listed equities represent distinct assets (i.e. the corporates) and aggregating

across these assets can diminish the value provided by an individual marketplace at the security level (for example when weighting by dollar value, large cap highly liquid securities are given much more credit than small cap illiquid securities). This bias is similar to the complaint often leveled at HFTs that they only trade in highly liquid securities where the contribution to liquidity is "not needed". The corollary to this is that liquidity provision in less liquid securities must be valuable and this value should be reflected in metrics designed to capture the value of market data provided at the venue level, i.e. the way that individual securities are aggregated is a very important consideration (including typical liquidity, volatility, spread and whether the security is a corporate or listed derivative or other type of related security).

Question 36: If you had to choose one of the three ranking methods described, which method would you chose and why?

We would not advocate for any of the three ranking methods given the inherent flaws described above.

Question 37: Please provide your views on the reasonableness of the two approaches for establishing an appropriate reference amount for data fees to be used in applying the data fee review methodology?

We do not believe that either approach is appropriate. The international approach does not contemplate the impact of differences such as the size of the subscriber base, regulatory framework, and costs of producing market data that would render the comparison between Canada and its international counterparts inaccurate. As an example, the US is a much larger market than Canada and supports many more subscribers which allow lower relative fees in order to cover costs of production.

The challenges associated with identifying an appropriate reference amount further highlight the impediments in using prescriptive market data formulae. In addition to the gaps outlined by the CSA in the Request for Comment with respect to each approach, the prescriptive method as a whole, including the underlying reference amount for data, will require an ongoing review to continuously assess its relevance in an environment that is evolving at very rapid pace both domestically and in various jurisdictions. External factors, such as changes in message rates, the introduction of new marketplace venues, new order types or trading products, changes to regulation, and others, will invariably impact the cost for producing data, as well as the inherent value it provides market participants.

Question 38: What other options should we consider for identifying an appropriate reference amount? Please provide details.

We believe the reference amount should consider various factors that measure the full value of the data, including the number of securities listed, whether data is produced via continuous auction, opening/closing call, Must Be Filled, and/or crosses, as well as the quality and accuracy of market data such as timeliness, up-time of the feeds, etc. We also note that the ongoing impact of unprotected venues on the reference data should be considered. We believe it will be extremely difficult to create, monitor and sustain a reference amount that continues to be appropriate and relevant as the Canadian and international environments evolve.

Question 39: How frequently should any selected reference amount for data fees be reviewed for their continued usefulness?

In order to maintain its relevance, we believe the reference amount should reflect any changes to the Canadian market structure, and to the extent that an international reference is used, any changes to jurisdictions outside of Canada should be assessed as well. This again highlights the challenges and impracticality associated with a prescriptive approach to regulating market data fees.

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