

APPENDIX D

Summary of Responses to CSA Staff Questions regarding costs of a full depth-of-book vs. a top-of-book order protection obligation

Note that a list of commenters has not been provided with this summary due to the sensitive commercial information that has been requested in some of the questions below.

Marketplaces

We received responses to the questions below from four marketplaces.

Question

Response Summary

1. How do you intend to implement your policies and procedures in order to comply with the proposed trade-through protection rule? How would a full depth-of-book trade-through obligation impact this strategy? How would a top-of-book trade-through obligation impact this strategy?

Strategies that were identified included: (i) using a smart order routing service that was based on a full-depth obligation, (ii) using a reject and re-price strategy that utilizes the Canadian best bid/best offer (CBBO), and (iii) accepting only orders or methodologies (e.g. directed-action orders) that will not violate the requirements. The first two methods would not be impacted by implementing either a top-of-book or full depth-of-book obligation.

One marketplace stated that full depth-of-book would require a marketplace to obtain and store full depth-of-book data from all marketplaces for all securities, which would have substantial cost impact.

2. Does your marketplace currently offer routing capabilities to participants? If so, is the router intended to provide smart order routing services or to simply avoid trade-throughs? If the routing is intended to provide a smart order routing solution, how many price levels does the router evaluate when making routing decisions?

Most of the responding marketplaces do offer routing capabilities to its participants. The router in most cases is designed to simply avoid trade-throughs. One smart order router that is intended to provide smart order routing services consolidates the entire depth-of-book.

3. Please provide any estimates of the incremental latency associated with the router evaluating more than the best bid or offer when making routing decisions, including the measurement points.

The majority of the respondents indicated that there is no additional latency associated with the router evaluating more than the best bid or offer when making routing decisions. One marketplace indicated that there would be an increase in processing time depending on the number of levels considered.

4. If the router complies with the current depth-of-book best price requirements would there be any costs or cost savings associated with moving to a top-of-book standard (i.e. hardware or operating costs)? Would such a change result in changes to the router (i.e. software re-development)?

The majority of responding marketplaces stated that they would not incur additional costs to implement a top-of-book standard.

One marketplace indicated that substantial investment by developers of order routing and execution management technology and market making software systems used by electronic liquidity providers would be required if moving to a top-of-book standard.

5. If your marketplace does not currently have routing technology or if the router only evaluates top-of-book information, please provide estimates of the incremental costs associated with developing and implementing a full depth-of-book router relative to a top-of-book only router.

One respondent noted that a compliance solution that only requires use of the CBBO would comply equally with a top-of-book or full depth-of-book obligation.

6. If you intend to use an ISO/IEB (inter-sweep market order/immediate execute and/or book order) order, how do you intend to comply with a full depth of book trade-through requirement? How would this change if a top-of-book trade-through obligation were imposed instead?

Most marketplaces indicated that they are in the process of determining their approach to ISO/IEB orders.

Dealer/Market Participants

We received responses to the questions below from eight dealer/market participants.

Question

1. If you intend to use an ISO/IEB marker, how would you implement your policies and procedures in order to comply with a full depth-of-book trade-through requirement? How would this change if a top-of-book trade-through obligation were imposed instead?

Response Summary

One respondent indicated that there would be no change in the manner in which they comply with the requirements. Another respondent indicated that the current router that is used sweeps top-of-book information and can receive updates to evaluate the best price.

One respondent indicated that demonstrating compliance with the requirements under a full-depth standard would require an increase in resources to review trading on a real-time basis resulting in enhanced system monitoring and testing, policies, procedures and record keeping to monitor the marketplaces.

One commenter stated that if “sprays” occur for a single order, then the full depth-of-book prices will need to be captured each time.

2. Relative to your current best execution obligation, what would be the incremental cost of implementing a top-of-book trade-through obligation? Please focus on the cost of developing and implementing a solution rather than the data storage cost associated with demonstrating compliance with the obligation or the cost of connecting/accessing marketplaces.

Most respondents to this question do not believe that the incremental costs will be significant.

One commenter was uncertain about incremental costs, but expected that they would be much higher.

Another commenter expected to need new software, hardware, and telecom lines.

3. Relative to your current best execution obligation, what would be the incremental cost of implementing a full depth-of-book trade-through obligation? Please focus on the cost of developing and implementing a solution rather than the data storage cost associated with demonstrating compliance with the obligation or the cost of connecting/accessing marketplaces.

One respondent noted that the incremental costs of a top-of-book or full depth-of-book obligation are roughly the same if the costs associated with compliance, monitoring and increased latency are discounted. This respondent indicated that the cost of increased latency associated with a full depth requirement would surpass technology related costs.

One respondent stated that a full depth requirement could lead to situations where a client order, when eventually filled is executed at a higher price than what was contemplated. This respondent also noted that a full depth-of-book obligation would impose a competitive disadvantage as U.S. markets only require top-of-book protection.

Another respondent indicated that the only other cost under a full depth obligation would be acquiring a system to monitor compliance independent of the routing technology used.

Another commenter was uncertain about the cost implications but expected they would be much higher.

Another commenter anticipated slightly higher costs.

4. How many levels of order book information would be consumed and evaluated by your systems in order to demonstrate compliance with the existing best execution requirements?

Most respondents indicated that the full depth-of-book data is consumed.

5. Given that the current best price obligation applies to all price levels, what additional costs or cost savings would be incurred by moving to a top-of-book standard?

Responses indicated that cost savings would be realized given that systems modifications would be minimal to ensure compliance. Respondents further explained they would save costs with respect to: consolidated data feeds, data storage, monitoring, exception reporting, and personnel. A couple of respondents also mentioned the cost of latency, with one respondent being of the view that the largest cost savings would be in terms of latency as opposed to hard dollars.

6. Do you currently use a smart order router? Is it provided by a third party vendor or is it proprietary? Do you use more than one router (i.e. different desks use different routers?) In what areas? How much of your order flow is routed through a router?

The vast majority of respondents use smart order routers. Most use a third party smart order router and most use more than one router. The majority of respondents indicated that they send most of their order flow through a smart order router.

Vendors

We received responses to the questions below from three vendors.

Question

Response Summary

1. Please identify if your routing product is an iterative or spray router.

All respondents currently supply an iterative router.

2. How many levels of order book information does the router currently consume and evaluate when making routing decisions?

The majority of respondents indicated that the iterative router bases routing decisions on the top-of-book information but the router continues to send orders until the full depth of the book is exhausted.

3. How many levels of information are considered a requirement for a router to be able to assist its user in achieving best execution?

All respondents indicated that top-of-book information is required for a router to be able to assist the user in achieving best execution.

4. Relative to the requirements associated with the current best execution standard, what is the incremental cost of developing and operating a full depth-of-book router?

The majority of respondents stated that there would be no incremental cost. One respondent indicated that if a more complicated algorithm needs to be designed to consider the entire depth of book across all markets prior to sending orders there would be costs incurred with the design, development and implementation of this algorithm.

5. Please identify any incremental costs that would be incurred if the regulatory standard was changed to top-of-book.

The majority of respondents stated that there would be no incremental cost. However, one indicated that it would need to build the capability to pull orders because the number of times a locked and cross market will occur will increase in a top-of-book environment.

6. What would be the cost-savings of such a change?

The majority of respondents indicated that there would be none or negligible savings. One predicted that it would incur increased costs.

7. Please provide any estimates of the incremental latency associated with evaluating the order book's full depth when making routing decisions.

The majority of respondents stated that there would be no incremental latency associated with a full-depth evaluation.

One respondent indicated that there would be additional latency because of the increased amount of data that must be considered.

8. Optional question – please provide us with an estimate of how many participants and/or how much order flow is routed through your router to the Canadian marketplaces.

The vendors responding to this question provide their services to a large number of traders (including all major Canadian banks) and route a great amount of the order flow in Canada.