

OSC STAFF NOTICE 21-712

REVIEW OF MARKET QUALITY IMPACT OF ALPHA EXCHANGE ORDER PROCESSING DELAY

I. BACKGROUND

In September 2015, TSX Alpha Exchange (Alpha) implemented a number of amendments to its trading policies (Alpha Amendments) to reflect changes being made to its trading model. The Alpha Amendments included the implementation of a randomized 1-3 millisecond order processing delay applicable to all orders except those marked as “post only”, which by definition cannot remove liquidity from the order book.¹ In addition, a revised inverted fee model was introduced, which charges providers of liquidity a trading fee, and pays those that remove liquidity a trading fee rebate on the execution of an order.

The proposed Alpha Amendments were filed with the Ontario Securities Commission (OSC or the Commission) in October of 2014,² and published for public comment. Fourteen comment letters were received during the 30 day comment period and market participants identified a number of potential benefits and concerns.

Some industry participants believed that the Alpha Amendments would provide an alternative for Canadian dealers seeking to lower trading costs and improve execution results for their clients. Certain commenters agreed with the objective of keeping retail order flow in Canada and were supportive of a marketplace model that could potentially offer order execution and cost outcomes that were consistent with the United States.

A number of concerns with the Alpha Amendments were also identified, including concerns about potential issues that could impact Canadian market quality and the quality of execution for investors. One of the most common concerns raised was that since post only orders are not subject to the speed bump, providers of liquidity using post only orders on Alpha would be able to cancel their orders without delay in response to quote changes on other marketplaces, causing those orders subject to the order processing delay to miss execution opportunities. This issue is often referred to as “quote fade”, the impact of which could negatively affect the quality of order execution in Canada. Other concerns raised include the segmentation of retail order flow, increased complexity of Canadian markets and the costs to industry to adopt technological solutions to manage the changes stemming from the Alpha Amendments.

The benefits and concerns described above were considered by the Commission in its review of the Alpha Amendments. Consequently, in approving the Alpha Amendments in April 2015, the Commission imposed two terms and conditions:

¹ In return for not being subject to the order processing delay, a post only order is subject to a minimum volume requirement and will be rejected if the volume requirement is not met.

² Published at: http://www.osc.gov.on.ca/documents/en/Marketplaces/alpha-exchange_20141106_amd-request-for-comments.pdf.

- (1) Orders displayed in the Alpha order book will not be considered to be “protected orders” under the Order Protection Rule (OPR) in Part 6 of National Instrument 23-101 *Trading Rules* (NI 23-101); and
- (2) Alpha will provide analyses of the impact of the Alpha Amendments on the market as required by the Commission.

OPR requires marketplaces to have written policies and procedures that are reasonably designed to prevent trade-throughs of better-priced protected orders. The rationale for the first condition noted above was later enshrined in amendments to NI 23-101.³ These amendments indicated that where a marketplace imposes an order processing delay that is not applied in the same way to all orders, that marketplace is not providing the ability for an immediate execution and thus for purposes of OPR, displayed orders on that marketplace should not be protected and marketplace participants should not be required to consider them in their policies and procedures to prevent trade-throughs.

In imposing the second condition noted above, the Commission recognized the concerns raised and signalled that we would monitor and review impacts of the Alpha Amendments post-implementation. OSC Staff Notice 21-712 provides an update in this regard.

II. REVIEW OF MARKET QUALITY

As noted above, OSC staff (Staff or we) have been engaged in an ongoing review of Canadian market quality since the Alpha Amendments were implemented (the Alpha Review). The main purpose of the Alpha Review is to examine whether the implementation of the Alpha Amendments has resulted in negative outcomes in terms of market quality, as measured by specific metrics.

Staff has leveraged a number of sources of data and drawn from multiple research sources as part of the Alpha Review. These include data sets and metrics provided by Alpha (in accordance with the terms and conditions of approval of the Alpha Amendments) and the Investment Industry Regulatory Organization of Canada (IIROC), as well as a review of academic studies and consultation with Canadian market participants.

(a) Review of Trading Statistics

We examined a number of metrics that provided an overall picture of trading activity on Alpha as well as a more detailed view of impacts based on traditional market quality metrics.

The composition of traded volume on Alpha did change post-implementation and has continued to evolve over time. Data shows that traded volume attributed to institutional investors initially decreased but gradually recovered, while traded volume attributed to retail investors remained largely unchanged. The data also reveals that the average trade size on Alpha increased

³ Published at: http://www.osc.gov.on.ca/en/SecuritiesLaw_csa_20160407_23-101_noa-amendments-trading-rules.htm

significantly after the implementation of the Alpha Amendments, consistent with the minimum volume requirement for liquidity providers using post only orders.

Staff also examined market quality statistics, including time-weighted average quoted spreads, effective spreads and realized spreads. The market quality measures examined did not materially change for Alpha or other Canadian marketplaces and do not suggest that the Alpha Amendments have negatively impacted market quality.

(b) Review of Academic Studies

Two public studies have been conducted that look at the Alpha Amendments and their impacts. One was published by Chen, Foley, Goldstein and Ruf (2017)⁴ and the other by Anderson, Andrews, Devani, Mueller and Walton (2018).⁵ These are briefly discussed below.

(i) Chen et al., (2017)

The results in Chen et al. (2017) were generated using a publicly available data set. The authors concluded that the Alpha Amendments led to a deterioration of market quality. The authors' findings include a decrease in market-wide liquidity, a widening of spreads and significant levels of quote fade on Alpha.

(ii) Anderson et al., (2018)

Anderson et al., (2018) examine how the Alpha Amendments have impacted market participants and market quality both at individual marketplaces and across the Canadian market as a whole. Their examination focused on market-specific and market-wide quality measures post-introduction of the Alpha Amendments, including effective spreads, realized spreads and price impact. This approach postulates that any negative market-wide impact of quote fade should result in negative changes to market quality measures.

The results of Anderson et al., (2018) show no evidence that the Alpha Amendments impacted market-wide liquidity or contributed appreciably to the further segmentation of retail order flow in Canada's equity market. Further, the authors generally do not find evidence of a negative impact on market-wide trading costs or execution quality. The study does not explicitly examine quote fade as measured by Chen et al., (2017). The rationale for not doing so is that quote fade should be expected on Alpha, given that its model enables providers of liquidity to cancel their orders in response to order book changes on Alpha and/or other marketplaces.

(iii) Staff View

It is difficult to reconcile the divergence in specific conclusions in the academic work reviewed however the use of different research approaches and data sets may be a contributing factor to

⁴ Chen, H., Foley, S., Goldstein, M. A., and Ruf, T, The Value of a Millisecond: Harnessing Information in Fast, Fragmented Markets (November 18, 2017). Available at SSRN: <https://ssrn.com/abstract=2860359>

⁵ Anderson, L., Andrews, E., Devani, B., Mueller, M., & Walton, A. (2018). Speed segmentation on exchanges: Competition for slow flow.

why findings do not align.⁶ For staff to recommend that the Commission consider regulatory changes, we must be able to conclusively show that negative impacts have resulted from the Alpha Amendments. Based on the academic studies reviewed and the different conclusions reached, we are unable to do so.

(c) Consultation with Canadian Market Participants

To supplement both our own data review and the work of academics, we also sought the views of market practitioners in relation to the routing of marketable orders following the implementation of the Alpha Amendments. Staff sent a questionnaire to select dealers and service vendors to better understand any impacts of the Alpha Amendments on order routing and fill rates. We received information about routing strategies and changes made post-implementation, as well as fill rates across all marketplaces. We also asked for any additional data-driven information about impacts.

The responses to the survey indicate that dealers continue to route orders to Alpha, but the manner in which they do so has changed. Given the inherent nature of retail and institutional orders, routing strategies for those participant segments often differ. The responses indicate that in certain situations, fill rates on Alpha have decreased, often for orders that are expected to go through multiple price levels or need to be split and sent to multiple marketplaces simultaneously (e.g. institutional orders). Some dealers reported initial fill rates to be much lower on Alpha in these circumstances, and some have modified their routing strategies to achieve improved outcomes. For smaller orders that can be executed on a single marketplace, some dealers have experienced improved execution results that are consistent with observations of larger average trade sizes on Alpha.

Generally, the key takeaway from the responses is that the introduction of the Alpha Amendments has added complexity into routing decisions; however most dealers appear to have adapted to the changes using a variety of approaches that differ based on factors such as the size of the marketable order and available liquidity.

III. CONCLUSION

As the Canadian market has evolved in recent years, complexity has been unavoidable. The introduction of the Alpha Amendments has certainly introduced additional complexity and the debate around the merits of the model has been polarizing. Where these market changes have been welcomed by some marketplace participants, the changes may have proved more challenging for others.

In approving the Alpha Amendments the Commission, through its decision regarding the applicability of OPR, has provided flexibility to manage this complexity and we have seen evidence that routing practices have been modified to adapt to the changes. Some participants choose to put Alpha at the lowest priority when making routing decisions and have seen execution results on other marketplaces remain consistent with experiences prior to the Alpha

⁶ Anderson et al. (2018) suggest that the different research finding might be explained by the fact that they are better able to identify different participant types with IIROC's regulatory data.

Amendments. Others have selected Alpha as a first priority for certain orders and have provided evidence in response to our industry questionnaire that execution quality has not worsened and in some cases has improved.

The purpose of the Alpha Review was to determine whether the implementation of the Alpha Amendments has resulted in negative outcomes in terms of market quality. This determination must consider the impact on the entire market and include all types of market participants. Although individual impacts may differ, based on the research and data reviewed and based on the information we obtained from market participants, we are unable to conclude that the Alpha Amendments have negatively impacted market quality such that regulatory changes need to be made. In the normal course, we will continue to monitor developments as part of our mandate to foster fair and efficient capital markets and confidence in capital markets.

Questions may be referred to:

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