CSTA Trading Issues Committee

Discussion and position statement regarding:

Speed segmentation on exchanges, Competing for slow flow

Paper published January 8, 2018 by IIROC and the Bank of Canada

CSTA

CANADIAN SECURITY
TRADERS ASSOCIATION, INC.

Executive Summary

CSTA Trading Issues Committee has prepared this presentation to offer feedback and foster discussion on IIROC's recently published paper:

"Speed segmentation on exchanges: Competition for slow flow"[1]

As a group of **22 institutional equity trading professionals** (11 Buy-Side, 11 Sell-Side), we find the paper's conclusions inconsistent with our experience with the Alpha Speed Bump. Specifically, the paper does not prove absence of harm to market quality because:

1. **Contrary to stated findings, numerical results indicate Alpha significantly increased segmentation of active retail flow from other markets (both inverted and make-take).**

2. **The chosen market quality metrics are insufficient to support market quality findings – specifically, neglecting to:**

   - measure the impact of active retail segmentation on passive investor fill rates and quality
   - consider dimensions of market quality spanning longer horizons to evaluate possible impact on price discovery or intraday volatility

3. **It leaves unaddressed data and methodological questions that could reveal possible negative impact on execution quality for buy-side investors.**

We appreciate IIROC's and the Bank of Canada's efforts to use the data generated by the STEP feed to produce a report to help the industry understand impacts of recent market structure changes. The CSTA and TIC understands the difficulties in compiling such reports. We highlight the limitations of the report with the overarching goal of fostering an industry dialogue which may improve the quality of the work. We appreciate IIROC and the Bank of Canada taking time to engage with the CSTA and look forward to working with both organizations on this and future papers.

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[1] Ref: IIROC Notice 18-0009, Anderson et. al., January 8, 2018.

Introduction

CSTA TIC is tasked with reviewing and preparing commentary for regulatory bodies on any market structure issues that arise in Canada. The views expressed by us are unique, representing the views of individuals engaged as institutional equity trading professionals, rather than those of their employers.

The following is intended to provide industry feedback on the IIROC/BOC paper and present interpretations of the results for further discussion and research. We believe additional work in the area covered by the paper is warranted, and hope the feedback provided is taken constructively and for the furtherance of additional understanding of Canadian trading dynamics.

Outline:

1. **CSTA Trading Issues Committee – Structure and Mandate**
2. **Discussion Relating to IIROC/BOC Paper**
3. **Concluding Thoughts**

CSTA Trading Issues Committee

Structure and Mandate

The Canadian Security Traders Association, Inc. ("CSTA") is a professional trade organization that works to improve the ethics, business standards and working environment for members who are engaged in the buying, selling and trading of securities (mainly equities). The CSTA represents over 850 members nationwide, and is led by volunteer Governors from each of four distinct regions (Toronto, Montreal, Vancouver and the Prairies). The organization was founded in 2000 to serve as a national voice for our affiliate organizations. The CSTA is also affiliated with the Security Traders Association (STA) in the United States of America, which has approximately 4,200 members globally, making it the largest organization of its kind in the world.

This presentation was prepared by CSTA TIC (the "Committee" or "we"), a group of 22 appointed members from amongst the CSTA. This committee seeks an equal proportion of buy-side and sell-side representatives with various areas of market structure expertise. It is important to note that there was no survey sent to our members to determine popular opinion; the Committee was assigned the responsibility of presenting the views of the CSTA as a whole. The views and statements provided herein do not necessarily reflect those of all CSTA members or of all members of the Trading Issues Committee.

Discussion Relating to IIROC/BOC Paper

Finding 1: Alpha does not segment retail flow away from remaining maker-taker venues

This finding is contrary to Alpha's design goals, our experience and the data presented. The disconnect is in the study's narrow aim of measuring the effect of segmentation on specific maker-taker venues, rather than the impact on Alpha on overall segmentation in the market. With respect, to the latter, Alpha's speed bump design and fee model clearly increase segmentation of active retail flow to inverted markets.

To show this, we replicate the top panel of Table 7 (Retail Share) from the paper:

		Pre-period					Post-period					Change
		Mean	Std.	Min.	Max.	N	Mean	Std.	Min.	Max.	N	
Retail share	Make-take	0.686	0.015	0.663	0.753	51	0.763	0.014	0.732	0.799	48	0.077***
	Inverted	0.122	0.010	0.089	0.141	51	0.121	0.010	0.099	0.140	48	-0.001
	TMX Select	0.048	0.009	0.027	0.078	51	-	-	-	-	-	
	Old Alpha	0.144	0.011	0.120	0.166	51	-	-	-	-	-	
	New Alpha	-	-	-	-	-	0.116	0.014	0.082	0.142	48	

↑**39.4%**

We annotate make-take venues (including Old Alpha which was a make-take venue in the pre-period) **in red** and inverted venues (including TMX Select) **in blue**.

- This shows the proportion of retail 'take' orders sent to inverted markets increased by 39.4%, from 17% (Inverted 12.2% + TMX Select 4.8%) in the pre-period, to 23.7% (Inverted 12.1% + New Alpha, an inverted venue, at 11.6%) in the post-period.

- Alpha immediately constituted 48.9% of the entire volume sent to inverted markets in the post-period. (11.6%/(11.6%+12.1%))

It's notable that the paper's approach to excluding venues not affected by TMX's redesign does not consider their impact on the denominator of aggregate retail take activity. Removal of 19.2% of activity in the pre-period (including the second most popular make-take destination) and 11.6% in the post period (a net 7.6% decrease) naturally increases proportions in remaining markets.

Discussion Relating to IIROC/BOC Paper

Continuing our analysis, we replicate the bottom part of Table A2.1 (effectively a more detailed view of Table 7) from the paper:

	Pre-period					Post-period					Change
	Mean	Std.	Min.	Max.	N	Mean	Std.	Min.	Max.	N	
AQL	0.166	0.035	0.117	0.245	51	0.165	0.041	0.098	0.288	48	-0.001
AQN	0.143	0.051	0.059	0.299	51	0.130	0.023	0.089	0.208	48	-0.013
CHX	0.099	0.013	0.074	0.132	51	0.127	0.015	0.097	0.175	48	0.028***
CSE	0.120	0.023	0.079	0.172	51	0.199	0.082	0.079	0.384	48	0.079***
CX2	0.175	0.025	0.129	0.283	51	0.117	0.016	0.087	0.179	48	-0.058***
LYX	0.196	0.081	0.090	0.538	50	0.189	0.053	0.126	0.453	48	-0.007
OMG	0.139	0.030	0.093	0.215	50	0.179	0.022	0.140	0.226	48	0.040***
TSE	0.117	0.022	0.084	0.233	51	0.123	0.014	0.100	0.167	48	0.006
TMX Select	0.188	0.038	0.142	0.320	51	-	-	-	-	-	-
Old Alpha	0.160	0.019	0.128	0.242	51	-	-	-	-	-	-
New Alpha	-	-	-	-	-	0.248	0.032	0.196	0.359	48	-

(left axis label: Retail component)

Active retail flow on Alpha at **24.8%** is higher than all other venues in both the Pre and Post-Period.

We believe these observations clearly show Alpha serves to segment active retail flow by:

- increasing active retail flow bound for inverted venues by 39.4% in the post period
- becoming the dominant inverted destination for retail flow at 48.9% in the post period
- setting a high for within venue active retail share across all venues in both the pre and post-period.

These findings imply less active retail flow going to remaining marketplaces and more to New Alpha – not only an inverted market but one that leverages a speed bump to increase retail segmentation effects. We feel the impact of this change on fill rates for passive retail and buyside orders is important to explore, but was not adequately addressed in the paper.

Discussion Relating to IIROC/BOC Paper

Finding 2: Market-wide Quality Remains Unchanged

Market-quality metrics are subject to interpretation. Varied participant needs, business models, investible universe, trading styles and opinion lead to differing views on how to measure market quality. The paper examines four metrics: ***effective spread, price impact, top of book depth and execution size***. Most showed no significant change. However ***"absence of proof is not proof of absence."***

One observed change, an increase in average execution size, is unsurprising given Alpha's design. However:

- This asserted improvement is localized to Alpha. Given increased overall retail segmentation and failure to explore the impact on fill rates for passive retail and buy-side investor orders, we believe increased average execution size on Alpha represents a tradeoff with unclear impact on overall market quality.

- The decommissioning of TMX Select removed a marketplace previously receiving 11.4% of retail flow and other flow from spray routers. This reduced the incidence of sprays as one destination market was removed, increasing the probability of larger single-fill tickets for orders which would otherwise be filled in multiple tickets of lower average size across multiple venues. This finding in itself does not represent a quality improvement in our view.

Discussion Relating to IIROC/BOC Paper

Finding 2: Market-wide Quality Remains Unchanged

Concerns with the metrics evaluated:

1. **Each is a point in time measure** – These do not evaluate market quality changes over trading horizons. Measures of impact on price discovery, price volatility (e.g. volatility ratios and autocorrelation) and implementation shortfall are critical dimensions for investors whose orders trade over longer horizons.

2. **The metrics appear to be measured only against active orders** – The change in the ability of passive investor orders to receive a fill and the quality of those passive fills were not investigated. This is a critical oversight given Alpha's segmentation of small <u>active</u> retail flow.

   Passive orders are relevant to investors: Erosion of fill rate/quality from active counterparties can increase spread, market impact and opportunity costs. While passive rates vary for the buy-side, they are a key tool to control these costs, especially over longer trade horizons.

3. **The book depth metric is ambiguous.** Top-of-book depth is hard to define in the context of protected and unprotected markets. Additionally, it requires redefinition when markets feature speed bumps designed for quote fade. If the depth present in one market is expected to fade based on trades in another "depth" it is effectively double-counted.

Discussion Relating to IIROC/BOC Paper

Finding 3: How Traders Adapt to Alpha

The analysis presented in this section largely evaluates the impact of Alpha relative to active investor orders. We reiterate that the experience of passive flow and resting orders is not evaluated.

Key findings:

1. **Reduced use of spray orders including Alpha** – This is to be expected given the removal of one market entirely, and loss of order protection for another. However, a reduction in the use of sprays, in itself, is not an improvement in market quality. Benefits from reduced sprays typically accrue to executing dealers in the form of reduced ticketing fees, with no incremental benefits to clients.

2. **Higher price impact and effective spreads for the buy-side combined with larger fill sizes** – This suggests more price impact is compensated by larger fill sizes. Larger fill size is expected given Alpha's model and the reduction in sprays from decreased marketplaces. The study does not address the rate of unfilled orders, which may result in lower overall fills, with larger fills for the portion completed. In isolation, fill size is not a meaningful metric, while the observed higher price impact and effective spread represents a degradation of market quality for institutional investors.

Discussion Relating to IIROC/BOC Paper

Finding 3: How Traders Adapt to Alpha

3. **No evidence of increased buy-side implementation shortfall ("IS") costs**
   (based on panel regression in Table 10)

   We question the methodology and data supporting this finding for the following reasons:

   - **Table 5 and 6 show significant increase in IS** – the note that IS is a noisy measure makes any finding of significance more important and contradicts the "no evidence" finding
   - **Aggregation of all buy-side orders biases more plentiful single-wave DMA orders** – this likely obfuscates impact on larger orders worked over longer horizons
   - **Use of control variables** – this may overfit the regression, especially in light of the above concerns.

   Overall, we find **limited discussion or acknowledgement of IS costs throughout the paper**. We believe this topic should be explored in greater detail.

Discussion Relating to IIROC/BOC Paper

Finding 3: How Traders Adapt to Alpha

Increase in Implementation Shortfall Costs for Heavy Buy-Side Users of Alpha

Table 5, Panel A (Summary stats for heavy buy-side users of Alpha):

		Pre-period					Post-period				Change
	Mean	Std.	Min.	Max.	N	Mean	Std.	Min.	Max.	N	
Effective Spread	13.88	12.82	1.46	89.64	12342	13.82	13.14	1.38	101.71	11858	-0.06
Price Impact	4.62	4.39	-0.98	35.69	12342	4.54	4.29	-0.03	37.65	11858	-0.08
Execution Size	170.4	96.2	79.0	937.4	12342	189.0	121.5	82.7	1215.3	11858	18.6***
Fill Rate	0.69	0.13	0.23	0.97	12240	0.69	0.13	0.28	0.97	11760	-0.00
IOC Size	785.5	1242.9	101.2	19431.7	12341	837.5	1313.8	103.7	20920.5	11858	51.96**
Order/Trade	1.88	1.73	0.03	36.94	6136	1.65	1.27	0.02	15.06	5837	-0.23***
Imp. Shortfall	23.5	88.5	-942.5	832.1	6136	28.1	86.5	-485.1	724.0	5837	4.65**
Pct. Spray	0.18	0.13	0.00	0.73	6136	0.09	009	0.00	0.58	5837	-0.09***

(row label on left side: Heavy users)

Discussed briefly in the Summary Statistics (p. 11), the authors dismiss this as a "noisy measure." We agree that IS is inherently noisy. The fact that a statistically significant increase is found in a noisy measure suggests significance and that further study is required, and the regression results in Table 10 should be re-evaluated.

Finding 3: How Traders Adapt to Alpha

Increase in Implementation Shortfall Costs for Large Trades

Table 6 (Summary stats on large trades, in excess of $1 million in one day on a stock from one desk):

	Pre-period					Post-period					Change
	Mean	Std.	Min.	Max.	N	Mean	Std.	Min.	Max.	N	
Num. Trades	6922.0	10660.0	1.0	103000	1800	6387.1	9259.6	1.0	88191.0	1862	-534.9
Volume	2.019	3.12	0.002	40.021	1800	2.114	3.661	0.002	63.256	1862	0.095
Value	56.16	96.28	1.002	1377.53	1800	60.64	105.50	1.001	1162.64	1862	4.48
Imp. Shortfall	22.22	96.58	-950.21	1380.82	1800	29.98	91.38	-607.78	1401.24	1862	7.76*
Fraction Spray	0.17	0.12	0.000	0.817	1800	0.10	0.091	0.000	0.796	1862	-0.07***
Order/Trade	1.37	1.15	0.009	31.778	1800	1.35	0.942	0.019	13.872	1862	-0.02
Fraction Active New Alpha	-	-	-	-	-	0.020	0.026	0.000	0.241	1862	-
Fraction Passive New Alpha	-	-	-	-	-	0.006	0.022	0.000	0.215	1862	-

This result points to an increase in IS costs (at the 90% level) for large day orders. The smaller sample size here may hinder possible significance. This table appears to only consider passive orders.

We also note **that large trades having 2% active Alpha participation and 0.6% passive** (well below Alpha's market share at the time of 4.5-5.0%) underscores the segmentation impact of Alpha for large (predominantly institutional) orders.

Concluding Thoughts

The CSTA TIC view of the paper's findings are as follows:

1. **Numerical results appear to indicate Alpha significantly increased segmentation of active retail flow from other markets both inverted and make-take. This is contrary to the stated findings, which reference a metric with limited practical relevance**

2. **The chosen market quality metrics are insufficient to support market quality findings – specifically, neglecting to:**
   - measure the impact of active retail segmentation on passive investor fill rates and quality
   - consider dimensions of market quality spanning longer horizons to evaluate possible impact on price discovery or intraday volatility

3. **It leaves unaddressed several data and methodological questions that could reveal possible negative impact on execution quality for buy-side investors, specifically:**
   - by minimizing the importance of significant changes in IS when it is the <u>only</u> measure aimed at evaluating possible market quality degradation for buy-side investors
   - possible sample bias to more plentiful DMA-style orders