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The HOT Study: Phases I and II of IIROC's Study of High Frequency Trading Activity on Canadian Equity Marketplaces

Executive Summary

IIROC has initiated a comprehensive and objective study of certain types of trading activity in Canadian equity markets using its database of confidential regulatory market data, consisting of all orders and trades executed on Canadian equity markets (the "HFT Study"). The HFT Study consists of three phases. IIROC is publishing herein the results of Phases I and II (the "HOT Study").

IIROC's goal is to conduct an unbiased analysis of the data. For the HOT Study, a study group was identified, based on User IDs trading on Canadian equity marketplaces with a high order-to-trade ratio (the "HOT group"). The HOT group encompasses various types of activity and trading strategies, and is not limited to those entities commonly thought of as high frequency traders. Unless otherwise specified, the results presented in the HOT Study apply to the HOT group as a whole.

Concurrent with this notice, IIROC is publishing for comment a proposed Request for Assistance with Phase III of the HFT Study¹.

¹ See IIROC Notice 12-0374 Administrative Notice – Request for Comments – IIROC Study of High Frequency Trading - Request for Assistance



Table of Contents

1. Background	2
2. The IIROC Study	3

1. Background

Over the past several years, the Canadian equity marketplace has experienced significant growth in high-speed, low-latency, and technologically-driven trading, activity commonly known as high frequency trading (“HFT”), which has transformed market dynamics across the industry. The advent of decimalization, multiple marketplaces, increased competition among marketplaces, the globalization of trading and the advancement of trading technologies have all laid the groundwork for HFT. The events of May 6, 2010 and the continuing growth of electronic trading have only served to increase the world-wide scrutiny of this activity and highlight its relevance on trading across multiple asset classes.

HFT is an issue that has polarized market participants. In discussions concerning this activity, most participants have an opinion, which is either supportive of the benefits of HFT or critical of its harmful effects. Proponents of HFT say it results in enhanced liquidity, reduced spreads and greater market efficiency. Critics of HFT say it exacerbates market volatility by withdrawing liquidity when most needed, takes unfair advantage of “real” investors, contributes confusion and cost through excess message traffic, and undermines investor confidence.

Any reading of the large body of literature regarding HFT reveals no precise definition, but rather a general consensus on a set of “commonly held attributes” to describe the activity. The International Organization of Securities Commissions (“IOSCO”) Consultation Report, “Regulatory Issues Raised by the Impact of Technological Changes on Market Integrity and Efficiency” (July 2011)² did not attempt to define HFT, but did identify a series of common features and trading characteristics related to HFT. These included the use of sophisticated technological tools for pursuing a number of different strategies, ranging from market making to arbitrage; employment of algorithms along the whole investment chain; high daily portfolio turnover and order-to-trade ratio; flat or near flat positions at the end of the trading

² Regulatory Issues Raised by the Impact of Technological Changes on Market Integrity and Efficiency – Final Report – Technical Committee of the International Organization of Securities Commissions, FR09/11, October 2011 - <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD361.pdf>



day; mostly proprietary trading; latency sensitivity; and use of services such as direct electronic access and co-location.

Despite the absence of a clear definition, it is evident that HFT is of concern to many stakeholders in the Canadian equity marketplace:

- Retail investors complain that their bids and offers are often continuously bettered by the minimum tick size, forcing them to cross the spread by entering market orders to execute a trade;
- Institutional investors, and inventory traders providing liquidity to them, are concerned that algorithms with a technological advantage prey on their large orders, negatively impacting their transaction prices and trading costs;
- Traditional market makers complain they are unable to compete with high frequency electronic liquidity providers (“ELP”);
- Regulators are concerned with the heightened possibility of spoofing, layering, quote stuffing and other potentially manipulative activity; and
- Participants are impacted by increased messaging rates incurring costs for processing and storing data.

It is evident that a full understanding of the scope and breadth of HFT activity is critical to assessing its effect on market quality and integrity, and assisting in determining the type and extent of regulatory action that is appropriate to achieve desired outcomes.

2. The IIROC Study

As the Regulation Services Provider for all equity markets in Canada, IIROC receives real-time regulatory data feeds from each of the marketplaces it regulates which is, in turn, fed into our surveillance system (“STEP”) creating a virtual consolidated book. These marketplace feeds contain confidential regulatory markers that are not publicly available. As a result, IIROC has in its database a rich repository of regulatory market data consisting of all orders and trades executed on Canadian equity markets.

IIROC’s unique access to this rich data and the holistic cross-market view of trading activity that it provides has allowed us to initiate a comprehensive and objective study of certain types of trading activity in Canadian equity markets. Using the data to drive the analysis allows us to view all types of trading activity in an unbiased manner.

The HFT Study consists of three phases:

- Phase I identifies a study group based on User IDs trading on Canadian equity marketplaces with a high order-to-trade ratio (the “HOT group”).



- Phase II is a descriptive statistical analysis of the trading activity of the HOT group on Canadian equity marketplaces and seeks to answer the five fundamental queries – who, what, where, when and how – as related to HFT.
- Phase III (the “Impact Study”) will assess the impact of HFT activity on Canadian marketplaces with respect to market quality and market integrity. As part of this phase, further analysis will be conducted with the aim to provide a more in-depth view of HFT and other related trading behaviours from multiple perspectives. We will also attempt to identify and quantify the different high frequency trading strategies being employed in our markets and their impacts on different market participants and systems.

It is important to note that the HOT group encompasses various types of activity and trading strategies, and is therefore not limited to those entities commonly thought of as high frequency traders. This is consistent with IIROC’s goal to conduct an unbiased analysis of the data. Unless otherwise specified, the results presented in the HOT Study apply to the HOT group as a whole.

The HOT Study, which will form the basis of the Impact Study that will be undertaken in Phase III, can be found at

<http://docs.iiroc.ca/DisplayDocument.aspx?DocumentID=C03D8B4490324C6B946E6F2BD6CF4E23&Language=en>.