

# A call for Greater Protections within our Markets

May 14, 2010

## Quantitative Execution Services

(416) 359-5743  
qes@bmo.com

**Doug Clark**  
(416) 359-4151  
doug.clark@bmo.com

**Rizwan Awan, CFA**  
(416) 359-5195  
rizwan.awan@bmo.com

**Jeremy Dietrich**  
(416) 359-5692  
jeremy.dietrich@bmo.com

**Andrew Ng**  
(416) 359-8692  
andrew.ng@bmo.com

**Andrew Karsgaard**  
(416) 359-7670  
andrew.karsgaard@bmo.com

## Introduction

We do not expect to know the true cause of last Thursday's 2:40pm meltdown for some time. Until then we see little value in adding our wild speculations to the heap. Rather we thought it might be of some interest to examine how Canadian marketplace safe guards have traditionally worked, and how we believe they need to be set up within the current market structure.

## Circuit Breakers

Historically exchanges have had volatility “circuit breaker” bands/thresholds which froze trading in any issue where a single order moved the stock price too far. For example, if a large market order was sent to sell illiquid stock XYZ, the order would sell down the book until it reached the acceptable volatility band (which exchanges generally kept secret to prevent gaming) at which point the stock would ‘freeze’. At this point, the exchange would call the trader (or firm) entering the sell order to ensure the order was indeed valid.

With the advent of algorithms and multiple markets this system has become virtually obsolete. Now, a market order sent to a smart order router is split into child orders sweeping the various order books. As a result, an oversized sell order is split into many child orders that the exchange does not recognize as being a single order and the circuit breaker is not triggered. Similarly a rogue algorithm sending scores of child orders and systematically driving a stock lower (higher) may not be recognized by the exchange circuit breaker as a ‘single’ order, again circumventing the breakers.

On top of this, most of the new ATSS did not institute similar volatility bands citing the extra latency such systems would add to their matching engines. In the multiple market age, significant attention – possibly too much – is paid to a marketplace’s latency rather than other features like error-preventing circuit breakers. Game theory dictates that if latency drives flow – by attracting passive orders from latency sensitive HFTs - then trading venues will not build in new features that increase matching engine latency if they are not required. The only way the ATSS will build in circuit breakers is if they are obligated to do so by the regulators.

## Market Wide Approach Needed

Additionally, when an oversized market order – or an aggressive limit order – does trip the circuit breaker on one marketplace the other trading venues continue to trade. Most Smart Order Routers, unable to transact on frozen, or slowed exchanges, route away to the other, often less liquid, venues. This is exactly what happened to a number of securities last Thursday afternoon. When the NYSE LRP (Liquidity Refresh Point) program slowed trading down, most SORs simply routed orders away from the NYSE significantly reducing the effectiveness of the specialists and taking any large passive orders resting on the NYSE books out of play. One could argue that the NYSE’s decision to slow down trading had the unintended consequence of flow being routed away from that market, which reduced the available liquidity (which had already being greatly reduced by the short term disappearance of significant HFT flow) and exacerbated the situation.

In order for such trading venue “circuit breakers” to work we would need all venues to be singing from the same song sheet. As long as the various venues see implementation of similar controls to be a negative (adding latency and potentially losing orders) they will be reluctant to do so. The new breed of circuit breakers need to be system wide and prevent, or slow down, over-sized movements resulting not just from a single large order, but also from multiple smaller orders. This would require market venues to curb trading should a stock move more than X% in a short time period (e.g. 10% in 30 seconds). The creation of such circuit breakers is a significant build for the various trading venues and will no doubt result in some latency being added to the system. We believe that such latency is far more attractive than a faster market place with no controls. (We have made the same point when

arguing for a ban on naked access). The key to any added latency is that it be reasonable and it be applied equally to all market participants.

As we said at the outset, it will be a while before anyone can say for sure what caused or triggered the mini meltdown. What can be said for sure is that regulators will be looking at the issue of market wide circuit breakers much more closely over the next few days. In fact the SEC and major U.S. exchanges have already announced that they have agreed to work towards industry wide circuit breakers. There is even talk today that the SEC will have finalized a proposal for market wide circuit breakers by next week with the expectation that they will be implemented within 60 days. We find this timeline to be surprisingly aggressive.

The Canadian marketplace would be wise to seriously consider implementing its own system wide circuit breakers to prevent a recurrence of last week's event. Such systems would have to be well thought out so as to allow for unrestricted continuous trading of stocks during volatile times (e.g. after surprise micro or macro news releases), while protecting the system from the types of unsupportable dislocations like the one last week. We will be watching with great interest to see how the SEC proposal handles this challenge.

## Conclusion

While we wait for regulators and trading venues to consider new protections, it is important that dealers and clients take measures to protect themselves. It is now clearer than ever that all orders – including stop loss and algorithmic orders – should have some ultimate limit price. Those brokers that are not converting market orders into aggressive limit orders need to consider doing so. Algorithmic providers need to take another look at the alarms and circuit breakers built into their own systems. And clients would be well served to ask their various providers how they manage such risk. We hope the street takes the event of last week seriously and works to ensure this does not reoccur. Clearly any new controls need to be very well thought out to ensure they are effective when needed without being obtrusive to well functioning markets. The best way to ensure we get it right is for a transparent discussion involving all types of market participants.

If you have any questions regarding these changes please contact the BMO Quantitative Execution Desk at 416-359-5743.

*Doug Clark*  
*Rizwan Awan, CFA*  
*Jeremy Dietrich*  
*Andrew Ng*  
*Andrew Karsgaard*

BMO Capital Markets is a trade name used by the BMO Investment Banking Group, which includes the wholesale/institutional arms of BMO Nesbitt Burns Inc. and BMO Nesbitt Burns Ltée/Ltd. in Canada, BMO Capital Markets Corp. and Harris N.A. in the U.S., BMO Capital Markets Limited in the U.K. and Bank of Montreal globally. This material contained in this paper is for information purposes only and is not an offer or solicitation with respect to the purchase or sale of any security. The opinions, estimates, and projections contained herein are those of BMO Capital Markets as of the date of this paper and are subject to change without notice. BMO Capital Markets endeavours to ensure that the contents have been compiled or derived from sources that it believes are reliable and contain information and opinions that are accurate and complete. However, neither BMO Capital Markets nor any of its affiliates makes any representation or warranty, express or implied, in respect thereof, takes no responsibility for any errors and omissions contained herein, and accepts no liability whatsoever for any loss arising from any use of, or reliance on, this paper or its contents. Nothing in this paper constitutes legal, accounting or tax advice. This material is prepared for general circulation to clients and has been prepared without regard to the objectives of the persons who receive it. No matter contained in this document may be reproduced or copied by any means without the prior written consent of BMO Capital Markets.