

# FEDERAL RESERVE BANK OF CHICAGO

DAVID A. MARSHALL  
Senior Vice President  
Financial Markets Group

March 25, 2010

Ms. Elizabeth M. Murphy  
Secretary  
Securities and Exchange Commission  
100 F Street, NE  
Washington, DC 20549-1090

SUBJECT: Proposed Rule 15c3-5, Risk Management Controls for Brokers or Dealers with Market Access (File No. S7-03-10)<sup>1</sup>

Dear Ms. Murphy:

The Federal Reserve Bank of Chicago's Financial Markets Group appreciates the opportunity to provide comments on the Securities and Exchange Commission's new Rule 15c3-5 that addresses issues related to high frequency trading and unfiltered sponsored access.

In the past decade, the convergence of decimalization, advances in technology, and algorithmic trading have placed pressures on trade intermediaries and exchanges to reduce the latency of both trade entry and quotation receipt. This high frequency trading environment has, in turn, created demand for unfiltered sponsored access and co-location services from high frequency trading firms.

On the whole, high frequency trading would appear to be beneficial to our financial markets, as evidenced by tighter bid/offer spreads and greatly increased speeds of execution. Tighter bid/offer spreads have been attributed to high frequency trading activity in the academic literature.<sup>2</sup> Furthermore, it is noted in the Commission's recent Concept Release on Equity Market Structure, the average execution time of small immediately executable orders went from 10.1 seconds in 2005 to 0.7 seconds in 2009.<sup>3</sup> This is undoubtedly due at least in part, to the liquidity provided by high frequency trading activity. In addition, we note that high frequency trading was not, to our knowledge, a source of problems during the recent market turmoil.

That being said, the competitive quest for greater and greater speed must be balanced with appropriate risk controls so that a clearly erroneous trade does not destabilize markets by precipitating a cascade of other trades in response. This letter presents our perspective on appropriate methods for controlling risks inherent in a high frequency trading environment in order to maintain fair and orderly markets.

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## Federal Reserve Bank of Chicago Comments on Proposed Rule 15c3-5

We concur that,

“Without systemic risk protection, erroneous trades, whether resulting from manual errors or a faulty automated, high-speed algorithm, could potentially expose a broker or dealer to enormous financial burdens and disrupt the markets. Because the impact of such errors may be most profound in the “unfiltered” access context, but are not unique to it, it is clearly in a broker or dealer’s financial interest, and the interest of the U.S. markets as whole, to be shielded from such a scenario regardless of the form of market access.”

The Federal Reserve Bank of Chicago’s Financial Markets Group believes that risk controls to prevent and limit losses should exist at multiple levels. Risk controls cannot be addressed in a piecemeal fashion or limited to broker-dealers in what is largely a straight-through processing environment. Rather, each financial market participant, including broker-dealers, their customers, exchanges, alternative trading systems (ATSs), and clearing houses, should have appropriate risk controls in place relative to their trading activities and/or oversight responsibilities. Furthermore, we believe that the adequacy of these controls in an ever increasingly automated trading environment should be assessed continually.

We are aware of a number of specific risk management issues, described below, that may require further attention:

1. We believe that price, quantity, and other risk controls should be imposed at the exchange/ATS level. Such controls may affect latency, but would affect all market participants equally, whether they self clear or whether their trades are cleared by a carrying broker-dealer. If the limits are set appropriately, such controls should prevent a clearly erroneous order from ever reaching the exchange’s trade matching engine. In this manner many, if not most, clearly erroneously trades will likely be rejected by the exchange/ATS and thus be rendered harmless. Appropriate pre-trade controls should reduce the necessity to bust erroneous trades after the fact. In addition, controls at the exchange/ATS level should also preclude having a clearly erroneous order disseminated as an unexecuted quote. We recommend that the Commission routinely review such controls to ensure that they are appropriate for a high frequency trading environment.

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2. Exchanges should provide all market participants connected directly to their trade matching engines with a “kill switch” function that prevents any new orders from being received from that participant and cancels all orders from that participant already present in the exchanges’ or ATSs’ order book. This functionality must be operable at the trader workstation level. Any independent software vendor or trading firm that writes to the exchange’s or ATS’s application programming interface must implement this functionality. Compliance with this standard should be ensured by conformance tests for connectivity to the exchange’s or ATS’s gateway. A kill switch would be essential if, for any reason, the trading firm needs to shut down a runaway trading algorithm or loses connectivity with its co-located server. Similarly, it would be desirable for carrying broker-dealers that have granted unfiltered sponsored access to other market participants to have the ability to prevent additional orders from reaching the exchange’s trade matching engine and to cancel all resting orders for that customer. Telephone-based procedures for interrupting trading, whether initiated by the exchange/ATS or the trading firm, are inadequate for today’s highly automated trading environment, given the time needed to telephone appropriate staff, verify that the staff member is authorized to make such a request, and actually stop the relevant trades.
3. Exchanges and ATSs should be required to provide promptly a drop copy of all orders (entered and/or executed) to both the carrying broker-dealer and to the market participant. The timeliness with which drop copy information is received by the broker-dealer should be commensurate with the speed at which trades are executed. Therefore, best practice would be to provide such drop copy confirmations as soon as the exchange/ATS accepts orders into the order book. Doing so would give both the carrying broker-dealer and the market participant the ability to monitor trading activity in near real-time. We also note that even when exchanges provide drop copy information on a timely basis, broker-dealers may not adequately integrate this information into their back end risk management systems. For example, SWS Securities suffered losses when its correspondent’s trades exceeded preset limits. Even though SWS received alerts from NASDAQ that these limits were surpassed, SWS’ policies and procedures were inadequate to deal with these alerts in a timely manner.<sup>4</sup> Best practices for broker-dealers should address this concern.

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4. We believe that price, quantity, and other risk controls (both pre- and post-trade) should also exist at either the broker-dealer level or at the level of the trading firm granted sponsored access. If such controls exist at the trading firm level, the carrying broker-dealer must have control over the parameters that set such limits and filters. If the carrying broker-dealer is satisfied that appropriate price and risk controls are in place at the trading firm, and if the carrying broker-dealer controls the parameters of those controls and the passwords that grant access to them, we see no further need to force the trades to pass through the carrying broker-dealer's risk management and order routing systems. If the trading firm does not have its own risk management controls, or if the carrying broker-dealer is not satisfied with them or its authority to unilaterally change them, the trades should be routed through the carrying broker-dealer's own risk management filters and order routing systems.
5. We also note that "the Commission is mindful of a potential race-to-the-bottom issue in which broker-dealers competing for sponsored access or unfiltered sponsored access clients with low prices will skimp on spending for risk controls." We share the Commission's concern. Therefore, we recommend SIFMA work with the industry to develop best practices in risk management for broker-dealers and that the Commission monitor adherence to these best practices on an ongoing basis to control the potential risk of such behavior.
6. High frequency trading practices also have implications for risk management at derivatives clearing houses. Derivatives clearing houses typically require that only positions held overnight be properly secured with so-called performance bond collateral. However, high frequency trading firms normally hold few open positions overnight. As a result, intraday positions of high frequency trading firms are not typically required to be secured by a material amount of performance bond collateral. This practice strikes us as imprudent. It may result in an inadequate financial cushion for a class of trades that exposes the clearing organization to a significant fraction of its risk. While we are not suggesting that all intraday positions be collateralized, we do believe that this issue deserves further analysis. It could be addressed simply by imposing prudential minimum capital requirements for high frequency trading firms. This is especially important for trading firms active on multiple markets, where no single clearing organization has a complete picture of the firms' trading activities.

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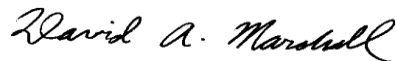
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Senior Vice President  
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7. Finally, we note that the stringency of pre-trade risk controls employed by trading venues, as well as the time needed to execute these pre-trade checks, varies by trading venue globally. It would be desirable to have uniform standards internationally for such exchange-level controls. It would be beneficial for the Commission to coordinate with other international regulators in an effort to harmonize these practices.

Overall, in order to address these issues, we recommend that the Commission work with other national authorities and with the industry to develop best risk management practices in highly automated trading environments for each type of market participant, and that the Commission monitor adherence to these best practices on an ongoing basis.

Thank you for the opportunity to share our thoughts on these critically important issues.

Sincerely,



David A. Marshall  
Senior Vice President  
Financial Markets Group

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<sup>1</sup> This comment letter was prepared by David Marshall, Carol Clark, Richard Heckinger, and John McPartland.

<sup>2</sup> See, for example, Hendershott, Jones, and Menkveld (2007) "Does Algorithmic Trading Improve Liquidity?" Working paper available at <http://faculty.haas.berkeley.edu/hender/Algo.pdf>.

<sup>3</sup> Even greater speeds of execution have been reported on the NYSE website. See web page <http://www.nyse.com/pdfs/Education-Technology.pdf>.

<sup>4</sup> Hintze (2009), "Risk Revealed in Post-Trade Monitoring, Securities Industry News, September 7, p. 4.