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**IMPACT OF HIGH FREQUENCY TRADING  
AND CONSIDERATIONS FOR  
REGULATORY CHANGE**

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## Background

Over the past 10 years, trading in the U.S. securities markets has dramatically changed from primarily manual trading to almost predominately computer-based trading. New regulations – such as Regulation ATS, decimalization requirements and Regulation NMS – fostered comprehensive computer linkages among trading venues and concomitant upgrades to market participants’ trading systems.

Technological advances – such as high speed computing and co-located servers, increased bandwidth, and electronic messaging standards – have accelerated the adoption of new electronic trading strategies, tools, and behavior. And, domestic and global trading competition has increased along with these changes.

The media and some market participants have expressed concerns about a perceived unfairness in how different types of investors may be impacted by these changes. Recent concerns raised in connection with the operation of today’s markets have been focused on computer-based trading activities and strategies that generically have been referred to as “high-frequency trading” (HFT). At this time, there does not appear to be an agreed upon definition of HFT among regulators, academics, and the media. Nonetheless, regulators have increasingly focused on the potential effects of computer-based trading, under the rubric of addressing HFT, and are weighing measures to address certain perceived negative effects of these activities.

SIFMA<sup>1</sup> commends U.S. regulators for reviewing securities regulations in this regard and, through this paper, offers its views on computer-based trading, including HFT.<sup>2</sup> We agree that it is difficult to arrive at a clear definition of HFT, and so we discuss some of the complexity of this categorization. Next, we seek to describe in this paper the benefits we believe electronic markets and computer-based trading provide to investors, and also specific activities and behaviors that may warrant additional regulatory consideration. We also offer our views on regulatory measures that we believe would appropriately address valid concerns that have been raised regarding computer-based trading and on those regulatory measures that we believe should not be implemented as they may be harmful to markets and investors.

## What is HFT?

HFT is a relatively new, catch-all term that is used, often interchangeably, to refer to several related but distinct computer-based trading concepts. These concepts include computer-based trading characterized by high portfolio turnover and high order-to-trade ratios, algorithmic trading, market making, and other forms of computer-based trading that employ sophisticated technological tools.<sup>3</sup>

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<sup>1</sup> SIFMA brings together the shared interests of hundreds of securities firms, banks and asset managers. SIFMA's mission is to support a strong financial industry, investor opportunity, capital formation, job creation and economic growth, while building trust and confidence in the financial markets. SIFMA, with offices in New York and Washington, D.C., is the U.S. regional member of the Global Financial Markets Association (“GFMA”). For more information, visit [www.sifma.org](http://www.sifma.org).

<sup>2</sup> This paper supplements previous comment letters submitted by SIFMA relating to its views on HFT.

<sup>3</sup> For discussion of these concepts generally, see, e.g., Securities and Exchange Commission, Concept Release on Equity Market Structure, 75 Fed. Reg. 3594 (Jan. 21, 2010) [hereinafter *Concept Release*]; Foresight Program Working Paper, The future of computer trading in financial markets working paper, July 2011, available at <http://www.bis.gov.uk/assets/bispartners/foresight/docs/computer-trading/11-1276-the-future-of-computer-trading-in-financial-markets.pdf> [hereinafter *Foresight Paper*]; IOSCO Consultation Report, Regulatory Issues Raised by the Impact of Technological Changes on Market Integrity and Efficiency, July 2011, available at <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD354.pdf> [hereinafter, *IOSCO Report*].

Some regulators have sought to identify types of trading strategies or behaviors that are often used in HFT. The SEC, in its 2010 Concept Release on Equity Market Structure, identified four types of trading strategies as illustrative of HFT: passive market making, arbitrage, structural/latency trading, and directional strategies.<sup>4</sup> European financial regulators in proposed revisions to MiFID have defined algorithmic trading as trading in which “a computer algorithm automatically determines individual parameters of orders . . . with limited or no human intervention.”<sup>5</sup> Nonetheless, no consensus definition of HFT has emerged among regulators, academics, market participants, and the media.<sup>6</sup> Indeed, securities regulators have recognized that setting a precise definition for HFT “may not even be practicable for regulatory purposes.”<sup>7</sup>

We note that a variety of market participants employ these types of trading behaviors and strategies, ranging from firms that execute customer orders to those engaged solely in proprietary trading (whether as a proprietary trading firm that may or may not be a registered broker-dealer, a proprietary trading desk of a multiservice broker-dealer, or a hedge fund).<sup>8</sup> We understand HFT to be a type of *trading strategy*, not a type of *trader*. Many market participants employ HFT-type trading strategies in furtherance of market activities – such as market making, customer facilitation and arbitrage – that are critical to the functioning of our equity markets, and we believe it essential to distinguish the use of HFT-type strategies for these activities from their use for purposes that have been recognized as unacceptable. And, not all market participants within a particular category (*e.g.*, hedge funds, mutual funds, proprietary trading broker-dealers, etc.) engage in similar methods of computer-based trading, so any discussion of this trading should be targeted to specific types of activities or behaviors.

The difficulty of defining HFT and the widespread use of the term in a variety of contexts has confused efforts to address substantive concerns about particular trading behaviors that are abusive or manipulative or about potential market structure issues arising from the increase in computer-based trading. SIFMA believes that a discussion of specific trading behaviors and particular developments in U.S. equity markets that may present issues is more productive than designating HFT as beneficial or detrimental to U.S. equity markets. This paper seeks to engage in that discussion.

### Are markets and investors better off?

The transition to an electronic securities market, catalyzed by recent regulatory reforms, has significantly benefited all investors. Market quality has improved concurrently with changes in equity market regulation and technological advances, including the rise of computer-based trading.<sup>9</sup> U.S. equity markets are now characterized by robust competition among trading venues and market participants, increased efficiencies due to automation of trading processes, and faster execution speeds. These developments have increased liquidity, narrowed spreads, lowered transaction costs, and

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<sup>4</sup> Concept Release at 3607-10.

<sup>5</sup> Directive of the European Parliament and of the Council on Markets in Financial Instruments (Oct. 24, 2011), *available at* <http://register.consilium.europa.eu/pdf/en/11/st15/st15939.en11.pdf>.

<sup>6</sup> Foresight Paper; IOSCO Report. For example, the SEC in its Concept Release identifies five types of trading strategies as HFT; IOSCO in its report identifies three.

<sup>7</sup> IOSCO Report at 22.

<sup>8</sup> Concept Release at 3606.

<sup>9</sup> For example, based on a review conducted by a SIFMA member firm, the percentage of trades conducted at very low spreads is remarkably high. In fact, this firm estimates that 78 percent of trades executed in approximately 1,700 top NMS stocks and ETFs on a randomly chosen day in August 2011 had spreads of one penny or less. *See also* Foresight Report.

provided ample opportunities for price improvement.<sup>10</sup> Computer-based trading, including some strategies described as HFT, help to provide liquidity, ensure fair pricing, and contribute to orderly markets.<sup>11</sup>

SIFMA believes the current state of U.S. equity markets is strong, and that investors, including retail investors, enjoy more liquidity, narrower spreads, and lower costs in this market than at any time before.<sup>12</sup> Nonetheless, SIFMA recognizes that some market participants perceive computer-based trading as unfair or as having potential unintended or poorly understood consequences. In this regard, while retail investors have, on the one hand, benefited from lower costs and more liquidity as a result of computer-based trading, on the other hand, they have seen the marketplace become more complex and may not, as a practical matter, have access to the same types of trading tools as large, institutional investors. SIFMA believes that any further regulatory initiatives aimed at addressing these perceived concerns should also recognize the benefits to investors and the markets of computer-based trading and seek to preserve them.

### **What are the potential concerns?**

Unacceptable trading strategies and behaviors can be conducted manually or through electronic means. Regulations prohibiting these practices apply equally whether the practices are conducted manually or electronically. As a senior SEC official noted in a recent speech, “[W]hat’s illegal is illegal at any speed.”<sup>13</sup> Examples of such illegal trading practices include fraudulent trading, manipulative trading, and front running.<sup>14</sup> Regulations have been implemented to address these types of trading behaviors to make sure that our markets remain fair and transparent for all investors.

SIFMA strongly believes that, where these unacceptable practices take place through any form of trading – whether manually or on a computerized basis – rules prohibiting them should be enforced with vigor, and market participants that engage in them should be duly penalized. In general, SIFMA believes that the business of trading should never take precedence over the business of investing. SIFMA recognizes that the increased speed at which these activities may now be conducted undoubtedly poses challenges to regulators in monitoring and enforcing existing securities regulations. Therefore, SIFMA supports the regulators’ efforts to ensure they have the right tools to monitor and detect such activities.

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<sup>10</sup> IOSCO Report; Foresight Report.

<sup>11</sup> Terence Hendershott & Ryan Riordan, Working Paper, High Frequency Trading and Price Discovery (Oct. 10, 2011), *available at* <http://ssrn.com/abstract=1928510>.

<sup>12</sup> Foresight Report; Does High-Speed Trading Hurt the Small Investor?, Wall Street Journal (Oct. 10, 2011).

<sup>13</sup> Gregg Berman, Speech to the 12<sup>th</sup> Annual SIFMA Market Structure Conference (Sept. 21, 2011) (“it’s important to recognize that regardless of how trading is done, there are already rules and regulations to address a host of illegal or prohibited activities such as fraud, insider trading, cyber attacks, and manipulation. These activities can be, and have been, done by humans at a slow pace. And they can also be done by computers at the direction of humans at a very fast pace, in which case I guess I might call that high-frequency violating. But what’s illegal is illegal at any speed.”)

<sup>14</sup> U.S. regulators have publicly acknowledged that there is no evidence that these practices are common. Nonetheless, these practices, as well as others including “spoofing” or layering, and overloading or “stuffing” of market data systems to slow or deny access for others, were recently cited as areas of focus for FINRA enforcement staff. Richard G. Ketchum, Remarks to the Security Traders Association Annual Conference (Oct. 13, 2011), *available at* <http://www.finra.org/Newsroom/Speeches/Ketchum/P124661>.

## Are there broader market structure issues that arise from the increase in computer-based trading?

Our securities markets are continually changing and adapting in order to remain competitive both within the United States and globally. Some of the resulting advances, whether spurred by regulatory changes or technological advances, have significantly changed how stocks are traded in U.S. equity markets. SIFMA believes that, overall, U.S. equity markets are more efficient and investor friendly than at any time in the past; nonetheless, some recent changes raise issues that merit further consideration.

- *Less Quoted Size.* The smaller quotation increment brought by decimalization (1/8th of a dollar to a penny or \$0.125 to \$0.01) has dramatically reduced spreads and thus transaction costs for retail investors. However, the smaller quotation increment has enabled market participants to step ahead of displayed (often large) orders in minimal increments. This step-ahead opportunity, facilitated by electronic trading, may have resulted in a smaller average displayed size.
- *Fragmentation.* The ability to trade in a particular security on more than one trading venue encourages innovative marketplaces and reduces the costs of trading in these markets. We now see, though, that multiple trading venues can result in less displayed liquidity and less “depth” on any one venue.<sup>15</sup>
- *Increased intraday market volatility.* Immediate news sources and market participants’ capacity to respond more quickly to news contribute to the markets moving more swiftly now than in the past. It is unclear whether recent increased market volatility therefore should be accepted as the new norm or is aberrational. Increased volatility may not be a reflection of underlying structural problems, but rather may merely be a temporary effect due to recent economic events, such as the global financial crisis and recent concerns relating to European sovereign debt, or a new normal market state resulting from the use of new technology to respond to an accelerated news cycle. In any event, this increased intraday volatility has been viewed as decreasing investor confidence, particularly when the causes of the volatility are not well understood.
- *Separate data feeds.* Exchanges and other market participants may individually disseminate their own data feeds and often charge more for access to feeds with additional data elements and for data that are delivered more quickly (that is, with lower latency). These separate data feed arrangements disadvantage market participants that cannot afford the sometimes high costs associated with separate data feeds. SIFMA believes that separate data feeds have negative consequences not well addressed by market participants or current regulations.
- *Inaccurate market data (e.g., slow market data feeds, crossed markets, erroneous prints).* Inaccurate or unreliable market data has significant consequences for market participants as the speed of trading increases. Market participants often may be quick to withdraw from markets if they believe they have stale or erroneous data. And, as trading decisions are executed more quickly, those based on inaccurate market data will have more immediate, and potentially larger,

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<sup>15</sup> Recent analysis shows that fragmentation in the U.S. equity market has increased significantly during the last couple of decades. See Maureen O’Hara & Mao Ye, *Is Market Fragmentation Harming Market Quality?*, available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1356839](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1356839) (finding that market fragmentation has increased but that it has not negatively affected market quality).

effects on the markets. These consequences could exacerbate market volatility, among other things.

- *Changes in market making and use of new order types.* The former liquidity provision model of specialists and market makers with central positions in the trading process has shifted to a more electronic form of market making with the ever more sophisticated use of specialized liquidity providing order types. Incentives and obligations for market making arguably have not adapted to, and may not appropriately reflect, this new world of electronic trading.
- *Impacts during periods of market duress.* The combination of fully electronic markets and computer-based trading, coupled with the stress on our market data and connectivity infrastructure, creates the possibility of rapid, extreme moves during times of duress in the markets. For instance, there could be a possible multiplier effect when numerous algorithms react to a single tick change, with those new prices causing further reactions in the market. Computer-based trading also has the potential to exacerbate trading errors or the misuse of electronic trading tools. Also, liquidity providers using HFT strategies and algorithms face challenges in functioning properly during periods of delayed or otherwise non-robust market data and exchange connectivity.

#### **What steps have already been taken to address some of these concerns?**

SIFMA fully supports recently adopted rules and proposed rules that should effectively address several inadvertent consequences caused by the recent technological and regulatory changes.<sup>16</sup> These rules, which promote the efficient functioning of the markets, include:

- *The SEC's Market Access Rule.* SIFMA believes that this rule, when fully implemented, will effectively address many issues that can arise from the use of computer-based trading tools, algorithms, and HFT strategies in unintended ways or contexts. For example, the rule will address the unchecked use of naked market access to route orders to exchanges and alternative trading systems, the inadvertent use of bad parameters, and the use of algorithms for an unintended purpose.
- *Single Stock Circuit Breaker Program.* SIFMA supports the efforts of the SEC and self-regulatory organizations (SROs) to address market volatility through the single stock circuit breaker pilot program. We believe that trading pause rules, such as these circuit breakers, effectively address the effects of erroneous trades and mitigate the potential for major market swings caused by multiplier effects or sudden gaps in liquidity.
- *Limit Up/Limit Down Mechanism.* SIFMA supports the SROs' proposed limit up/limit down mechanism as a refinement of the single stock circuit breaker concept. The mechanism should

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<sup>16</sup>For a more complete discussion of SIFMA's views on any of these rule proposals and on many of the other issues discussed in this paper, please refer to SIFMA's comment letters on these matters at this site: <http://www.sifma.org/issues/allactivity.aspx?contentType=Comment+Letters>. In particular, two broad-based, market structure comment letters may be of interest: SIFMA's letters to the SEC on its Concept Release on Equity Market Structure (<http://www.sifma.org/issues/item.aspx?id=897>) and for the SEC Market Structure Roundtable (<http://www.sifma.org/issues/item.aspx?id=908>).

effectively limit extreme volatility, largely eliminate erroneous trades, and promote orderly market conditions by minimizing unnecessary and potentially harmful interruptions in trading.

- *Revisions to Market-Wide Circuit Breakers.* SIFMA also supports the SROs' proposals to upgrade the existing market-wide circuit breakers, which would enhance the effectiveness of these circuit breakers in curbing undue market volatility, regardless of the source of the volatility. SIFMA also urges the regulators to coordinate market-wide circuit breakers with the single stock circuit breakers and to ensure that securities circuit breakers are coordinated with those in place for other asset classes.
- *Large Trader Reporting System.* SIFMA believes that the large trader reporting requirements recently adopted by the SEC will enhance the agency's ability to monitor the trading activity of many of our most active market participants. While implementation questions and systems issues remain with the new rule, SIFMA believes that the information ultimately produced by this new large trader reporting regime will assist regulators in monitoring for potential abusive trading activities.
- *Consolidated Audit Trail.* SIFMA supports the creation of a consolidated audit trail to significantly enhance the ability of the SEC and other market regulators to monitor the markets for inappropriate trading behavior and to better understand the impact of all trading. SIFMA believes, however, that the proposal in its current form would impose an undue burden on market participants, that the SEC should conduct a comprehensive cost-benefit analysis of the proposal, and that the proposal should be revised to avoid any unnecessary burdens. In this regard, SIFMA recommends building upon an existing audit trail, such as the FINRA Order Audit Trail System (OATS). Finally, SIFMA believes that the SEC should ensure that information reported as part of the consolidated audit trail program is kept confidential and secure.

### What other measures should be considered?

Recently, regulatory proposals to address what appear to be possible adverse consequences of computer-based trading have been widely discussed. SIFMA agrees that certain of these proposals should be considered as additional, reasonable steps to take. However, SIFMA believes that private market solutions should be encouraged as well and recognized by regulators before steps are taken to adopt additional regulatory measures. Moreover, any new regulatory measures should be carefully studied and supported by empirical evidence sufficient to ensure that they would not cause inadvertent consequences for the markets. SIFMA generally favors the use of pilot programs, whenever feasible, to assess the potential impact and unintended consequences of any new regulations before they are made permanent. Below are regulatory proposals that SIFMA believes should be considered:

- *Limits on excessive market data traffic.* SIFMA believes that throttles or disincentives for creating excessive market data inputs should be considered. These measures might include incentives to market participants based on low quote-to-trade ratios and mechanisms to properly assign the costs of excessive market data to its producers, which would discourage the publication of large volumes of quote messages that do not result in transactions.
- *Ensuring market data quality.* As mentioned earlier, SIFMA believes that poor market data quality will have increasingly significant and negative implications for market participants and

that ensuring high quality and timely national best bids and offers is paramount. Market centers must ensure that their market data is both accurate and accessible.<sup>17</sup> Market participants must be able to determine that the trades they see are timely and that the quotes they see are truly accessible instantaneously.<sup>18</sup> In addition, SIFMA believes the impact of separate data feeds merits further consideration.<sup>19</sup>

- *Maker-taker pricing/rebates and access fees.* In previous comment letters, SIFMA expressed concerns that maker-taker rebates and access fees may have a significant impact on market structure. SIFMA therefore believes the Commission should conduct a study of the impact of maker-taker pricing/rebates and access fees on order routing, execution practices, and market quality.<sup>20</sup>
- *Market maker incentives and obligations.* The former liquidity provision model of specialists and market makers with central positions in the trading process has shifted to a more electronic form of market making. Incentives and obligations for market making arguably have not adapted to, and may not appropriately reflect, this new world of computer-based trading. The evolving roles of market participants, including appropriate incentives and obligations for the “new” market makers, should be studied.<sup>21</sup>
- *Additional empirical studies relating to volatility.* SIFMA also believes that it would be helpful to have additional empirical studies conducted on factors causing increased market volatility, including HFT. In particular, these studies should:
  - examine micro-level volatility;
  - identify secular changes related to the accelerating news cycle; and
  - identify particular HFT behavior that may contribute to undesirable market volatility.

### What proposed regulations or regulatory steps being discussed should not be pursued?

Regulators or other market participants have discussed other possible regulatory steps that SIFMA believes would be harmful to the markets and investors. These measures, which SIFMA believes should not be pursued, include the following:

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<sup>17</sup> For instance, to incentivize best practices, we could have higher levels of disclosure around performance statistics for each market center.

<sup>18</sup> For instance, we could have each market center effecting a trade ensure that its millisecond execution timestamp is passed all the way through to the market data consumer. This would enable much easier identification of potentially problematic latencies.

<sup>19</sup> For example, the SEC might consider requiring market centers that sell separate market data feeds to invest more heavily in ensuring that market data generated by the Consolidated Quotation System and Consolidated Tape Association is distributed efficiently, in a timely manner, and with appropriately useful content.

<sup>20</sup> As part of this study, the Commission might consider a pilot program that would consist of stocks across varying price levels that could be traded only without the provision of rebates to determine the impact liquidity rebates may have on order routing, execution practices, and market quality.

<sup>21</sup> We would suggest, for example, consideration be given to whether an expanded system of formal incentives (such as top-tier exchange pricing and exemptions from any proposed fees on excessive market data traffic) should be afforded to those market participants who undertake the formal obligations associated with being registered market makers.

- *Transaction tax.* SIFMA strongly opposes any proposal to establish a tax on financial transactions, such as those proposed recently by European Union regulators and in the U.S. Congress. Such a tax would merely increase costs for all participants, including retail investors and others investing on a long term basis, without addressing any of the concerns that have been raised regarding electronic or computer-based trading. If the tax were imposed on transactions in some financial instruments but not others, it would impair trading in the subject instruments and encourage trading in the other instruments. Also, any such tax could divert electronic trading to non-U.S. financial centers that are not subject to a transaction tax.
  
- *“Banning” HFT or other forms of computer-based trading.* SIFMA believes that efforts to ban HFT or other forms of computer-based trading would be misguided and prove harmful to our markets. As discussed earlier, computer-based trading, including many HFT strategies, provides significant benefits to investors including increased liquidity. Banning such trading likely would significantly reduce liquidity across markets, and the damage caused by this reduced liquidity would outweigh any potential benefits. Moreover, banning any practices that are not easily defined likely would result in overbroad prohibitions that would negatively impact beneficial trading activities. Instead, SIFMA believes that regulators should target specific activities or behaviors that are known to be abusive or manipulative.
  
- *Imposing artificial limits on technological advances.* Similar to efforts to ban HFT or other forms of computer-based trading, imposing broad limits on technological advances could have harmful or unintended consequences for the markets. Such artificial limits also may be less effective in addressing concerns about HFT or computer-based trading generally than, for example, measures designed to ensure fair access to market data and the availability of high quality market data. Examples of artificial limits that could be ineffective or likely harmful include:
  - *Minimum quote durations.* Although such requirements may seem appropriate for addressing some concerns, such as latency arbitrage, they could be easily gamed. Overall, such requirements would have a negative impact on legitimate trading behavior and thus reduce liquidity and impede legitimate market making activities.
  - *Limiting or prohibiting co-location.* SIFMA believes that limiting or prohibiting co-location will not effectively address concerns about fair access to markets that have been raised in connection with co-location arrangements and will harm beneficial market activities. Ensuring fair access to markets should be addressed through more targeted measures, such as through the existing regulatory approval process for co-location arrangements and efforts to improve market data quality and fair access to data feeds, as discussed above.
  
- *Trade-At Rule.* SIFMA strongly opposes the concept of a trade-at rule,<sup>22</sup> as it would adversely and significantly impact the current operation of the markets. A trade-at rule would adversely impact most investors, stifle competition and innovation, and impose significant implementation costs on the markets. SIFMA believes there is no evidence that the basic price discovery model of today’s markets is inherently flawed or that a trade-at rule would encourage

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<sup>22</sup> Recommendations Regarding Regulatory Responses to the Market Events of May 6, 2010: Summary Report of the Joint CFTC-SEC Advisory Committee on Emerging Regulatory Issues (Feb. 18, 2011), available at <http://www.sec.gov/spotlight/sec-cftcjointcommittee/021811-report.pdf>.

deeper or more liquid markets. Indeed, as discussed earlier, today's markets are more efficient than ever before, with greater liquidity, faster executions, narrower spreads, lower transaction costs and more opportunities for size and price improvement, including for retail investors.

- *Controls for trading algorithms.* As discussed above, SIFMA believes that the SEC's Market Access Rule addresses many concerns relating to the use, and potential misuse, of trading algorithms. In addition, SIFMA supports further efforts to enhance oversight over firms that engage in algorithmic trading. However, any new algorithmic trading controls should not include requirements such as those set out in MiFID II for algorithms to be in continuous operation during trading hours and for firms using algorithms to provide liquidity on a regular basis. Those types of requirements are overbroad and would discourage participation in U.S. equity markets by many types of traders, leading to less – not more – liquidity in venues imposing the requirements.
- *Regulatory review of source codes.* We believe that regulatory review of firms' source codes for algorithmic or other computer-based trading programs may be inappropriate, particularly if there is no confidentiality guarantee, as the source codes are highly sensitive and proprietary information.

SIFMA's concerns about these measures are significantly heightened by the likelihood that most non-U.S. markets and regulators will not pursue similar measures. U.S. markets would be seriously disadvantaged if they were subject to these types of regulations, but others were not.

## Conclusion

HFT has been discussed in many different ways by market participants, regulators, and the media. SIFMA believes that, rather than seeking to ascribe a specific definition to HFT, a more productive approach is to focus on specific trading behaviors that are problematic based on empirical information and analyses of the costs and benefits of those behaviors. SIFMA commends regulators for taking a thoughtful approach to market regulation and encourages them to continue to pursue a better understanding of how HFT may affect our markets and what measures may be necessary and appropriate to strengthen the markets.

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SIFMA and its member firms stand ready to assist further in ensuring that the market structure issues and trading concepts and terms discussed in this paper are fully understood, and that revisions to existing regulations or new regulations are instituted where necessary to ensure that the U.S. markets remain robust and efficient and that investors' interests remain protected. In this regard, please contact the following SIFMA staff members if further information or assistance from SIFMA or its member firms would be helpful:

- For press inquiries, please contact Andrew DeSouza ([adesouza@sifma.org](mailto:adesouza@sifma.org)) or Katrina Cavalli ([KCavalli@sifma.org](mailto:KCavalli@sifma.org)).
- For Congressional inquiries, please contact Bradley Edgell ([bedgell@sifma.org](mailto:bedgell@sifma.org)).
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