TOKYO STOCK EXCHANGE GROUP, INC.
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Atsushi Saito
President and CEO

August 1, 2011

Re: Public Comment on Consultation Report: "Regulatory Issues Raised by the Impact of Technological Changes on Market Integrity and Efficiency"

Mr. Werner Bijkerk
International Organization of Securities Commissions (IOSCO)
Calle Oquendo 12
28006 Madrid
Spain

Dear Mr. Werner Bijkerk

The consultation paper entitled "Consultation on Regulatory Issues Raised by the Impact of Technological Changes on Market Integrity and Efficiency" released by IOSCO Technical Committee raises the issue of computer technology playing an important role in securities trading today. While advancements in technology bring with it the positive effect of increased market efficiency, on the other hand, we cannot deny the fact that it may also have adverse effects on integrity and equality in the market. IOSCO has taken the initiative to examine the current situation surrounding technology and explore future measures from parties involved in securities trading from various perspectives of entities, such as regulatory authorities, exchanges, and securities associations. This initiative by IOSCO clearly bears great significance.

Tokyo Stock Exchange (TSE) hereby present our response mainly to questions 1 (the impact of technological developments in the markets), 4 (necessity of circuit breakers and limit-up/limit-down systems) and 12 (co-location services) mentioned in the consultation paper and provide our recommendations based on the Japanese experience for building a global regulatory system for the future.

Today, the adoption of cutting-edge technology is indispensable even for securities trading, and the speed of technological developments is gaining pace every year. Coupled with deregulation, securities companies and system operators can now easily establish off-exchange

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trading facilities. This situation has intensified competition between exchanges and off-exchange trading venues in capturing order flow. For an exchange, securing market liquidity is crucial for appropriate price formation of a security. As such, it is important for exchanges to have system infrastructure which increases convenience for market participants. In fact, many exchanges including TSE are also actively channeling their capital and human resources into technological investment.

In particular, in these few years, the world has seen the emergence of new investment strategies, such as algorithmic trading and high frequency trading (HFT), which fully harness the potential of computer programs. With these developments, exchange systems are facing the need for low latency and enhanced capacity. Algorithmic trading and HFT have been criticized for, among others, its speculative aspects and the unfair market access due to the need for substantial funds, as well as the resultant inequality between individual and institutional investors. However, from the perspective of the market as a whole, we cannot deny that these new types of investors are also an important source of liquidity. A market with high liquidity facilitates efficient and proper price formation and this can only benefit all market participants. Therefore, the implementation of unnecessary restrictions on such forms of trading based on discrimination or a lack of understanding should be considered an issue.

However, the raison d'etre of the market is to gather orders from a large number of investors who make a variety of investment decisions, and then to provide investors with opportunities to execute trades at the most appropriate prices. Therefore, it is needless to say that market operators should treat all market participants including HFT firms fairly and provide suitable services.

Accordingly, in order to provide a reliable market in which trades are effected in a fair and smooth manner for all market participants, even for trading which fully utilize cutting-edge technology, market operators, such as exchanges recognize their duty of developing electronic systems and establishing regulations which allow for appropriate monitoring of the market for unfair trading activities. In particular, measures against sharp price movements, or one-sided liquidity should be established in the form of trading rules. The content of such rules and mechanism should also be made known to all participants in advance in order to prevent unnecessary confusion.

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One of the many reasons highlighted for the flash crash which occurred in the US markets in May last year is said to be an existence of excessive market fragmentation. While we do not deny the advantages brought about by competition between markets, it is a problem if liquidity scattered across multiple trading venues hinders fair price formation, and a dearth of liquidity causes price volatility. In addition, a situation where there is no fair and appropriate disclosure of pre or post-trade information will only cause chaos and insecurity in the market. In other words, one reason for the flash crash can be attributed to the lack of a uniform rule for monitoring and supervising multiple trading venues.

In other words, the issue highlighted by the flash crash is that of alternative venues such as privately-operated electronic trading venues facing a surge in sell orders and market-makers neglecting their obligations to provide a certain amount of liquidity in the market, which in turn, causing stock prices to plunge suddenly, due to this order imbalance, without any form of restraint. The public nature of the market accompanying its function to provide fair prices to a large number of investors raises questions on the rationality of allowing profit-seeking private companies to operate markets. The owners of these private trading venues are also market participants. As such, this market structure facilitates the proliferation of proprietary trading in pursuit of profit in these private venues at the expense of the interests of the market. We need to address the problem of such a market structure and establish a uniform rule to be applied worldwide. While we reiterate that the benefits brought about by competition between markets cannot be denied, we should construct a framework that ensures the stability of the important economic infrastructure that is the market and avoids conflicts of interests among market participants.

Moreover, existing regulated exchanges bear various costs associated with self-regulatory operations for ensuring a fair and reliable market. These costs should also be shared by private trading venues to create an environment where there is a level playing field to compete and provide market participants with even better services.

As the necessity of market rules such as single-stock circuit breakers are being considered in the US in the wake of the flash crash, please allow us to mention the market rules traditionally employed in Japan. Mechanisms such as "daily price limits" and "special quotes" have long been implemented to facilitate smooth price formation. They have allowed the Japanese market to cope appropriately with sudden price fluctuation. With these mechanisms in place, a situation

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similar to the flash crash will never occur. Relevant parties should be reminded of the significance and sophistication of Japanese trading rules, and may they serve as a convenient reference.

First among the mechanisms adopted by TSE aimed at stabilizing the market is the limit-up/limit-down rule known as "daily price limits". These are price limits set at a certain range (around 20%) above and below the base price (such as the closing price on the previous day) within which prices may fluctuate on any given day[1].

Next is the "special quote" mechanism. Under this rule, orders may only be executed immediately within a certain range (around 1.5% to 2.0%) from the last contracted price. In this way, it prevents market orders from being executed at unexpected prices. If a prospective trade falls within the price range which is set based on the stock price, the trade will be executed immediately. If execution is likely to occur outside this price range, execution will be halted temporarily and a "special quote" will be displayed[2]. Special quotes can be shown at any time during a trading session including the opening auction before the opening price is determined and continuous auction. A "special bid quote" will be triggered if the prospective trade is to be executed at a price higher than the last stock price, while a "special offer quote" will be shown if the prospective trade is to be executed at a price lower than the last stock price. If no counter orders arrive in the order book even when a special quote is shown, and no trades are executed at the price at which the special quote is shown, the special quote will be renewed in three minute intervals, moving gradually toward the price of the order of the prospective trade.

Furthermore, with the launch of TSE's high speed trading system, arrowhead, in 2010, a new "sequential trade quote" mechanism was introduced. With the new system, it was anticipated that rapid price movement may occur without a special quote being shown due to sequential trades in buying up (or selling down) by a single comparatively large order.

Under this rule, if a single order is likely to be executed beyond the range which is twice the special quote renewal price interval, after the order is executed up or down to the price which is equivalent to the "last execution price ± (special quote renewal price interval x 2)", a sequential trade quote is shown at this price. This quote is shown for one minute to attract orders to counter this price movement.

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[1] Refer to "Daily price limits" in the Appendix.
[2] Refer to "Renewal price intervals" in the Appendix.

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When a sequential trade quote is shown, the "Itayose" method applies (orders are gathered and executed at once at a single price). After one minute elapses, if there are opposing orders within the special quote renewal price interval from the sequential trade quote, such orders will be executed immediately. If an opposing order that is likely to be executed falls outside this range from the sequential trade quote price, the sequential trade quote will then be replaced by a special quote, and a special quote is shown at the price equivalent to the "sequential trade quote price ± special quote renewal price interval".

In this way, even before the arrival of high speed trading, the Japanese market with TSE at its center already had a system in place to prevent sharp and wild price fluctuations in the market and we continue to make constant efforts to provide a market environment to allow all market participants to conduct fair trading in a calm manner with confidence.

The growing variety of trading strategies today which take full advantage of technological evolution presents us with a prime opportunity to re-examine the situation in the global market and recognize its problems. Moving forward, we share the firm belief that there needs to be some extent of coordination on rules or regulatory systems on a global level on how to operate markets to provide investors with efficient and fair order execution services. As such, we recognize the significance of discussing such issues at IOSCO. On this note, we believe that the rules and systems being implemented in Japan mentioned in this paper will serve as a convenient reference and aid ongoing discussions on market rules and regulations.

Sincerely,

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APPENDIX

- Daily Price Limits

Previous Day's Closing Price or Special Quote	Daily Price Limits (±)
Less than ¥100	¥30
¥100 or more ～ less than ¥200	¥50
¥200 " ～ " ¥500	¥80
¥500 " ～ " ¥700	¥100
¥700 " ～ " ¥1,000	¥150
¥1,000 " ～ " ¥1,500	¥300
¥1,500 " ～ " ¥2,000	¥400
¥2,000 " ～ " ¥3,000	¥500
¥3,000 " ～ " ¥5,000	¥700
¥5,000 " ～ " ¥7,000	¥1,000
¥7,000 " ～ " ¥10,000	¥1,500
¥10,000 " ～ " ¥15,000	¥3,000
¥15,000 " ～ " ¥20,000	¥4,000
¥20,000 " ～ " ¥30,000	¥5,000
¥30,000 " ～ " ¥50,000	¥7,000
¥50,000 " ～ " ¥70,000	¥10,000
¥70,000 " ～ " ¥100,000	¥15,000
¥100,000 " ～ " ¥150,000	¥30,000
¥150,000 " ～ " ¥200,000	¥40,000
¥200,000 " ～ " ¥300,000	¥50,000
¥300,000 " ～ " ¥500,000	¥70,000
¥500,000 " ～ " ¥700,000	¥100,000
¥700,000 " ～ " ¥1,000,000	¥150,000
¥1,000,000 " ～ " ¥1,500,000	¥300,000
¥1,500,000 " ～ " ¥2,000,000	¥400,000
¥2,000,000 " ～ " ¥3,000,000	¥500,000
¥3,000,000 " ～ " ¥5,000,000	¥700,000
¥5,000,000 " ～ " ¥7,000,000	¥1,000,000
¥7,000,000 " ～ " ¥10,000,000	¥1,500,000
¥10,000,000 " ～ " ¥15,000,000	¥3,000,000
¥15,000,000 " ～ " ¥20,000,000	¥4,000,000
¥20,000,000 " ～ " ¥30,000,000	¥5,000,000
¥30,000,000 " ～ " ¥50,000,000	¥7,000,000
¥50,000,000 or more	¥10,000,000

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- Special Quote Renewal Price Intervals

Last stock price or special quote price	Special quote renewal price interval (±)
Less than ¥200	¥5
¥200 or more ～ less than ¥500	¥8
¥500 " ～ " ¥700	¥10
¥700 " ～ " ¥1,000	¥15
¥1,000 " ～ " ¥1,500	¥30
¥1,500 " ～ " ¥2,000	¥40
¥2,000 " ～ " ¥3,000	¥50
¥3,000 " ～ " ¥5,000	¥70
¥5,000 " ～ " ¥7,000	¥100
¥7,000 " ～ " ¥10,000	¥150
¥10,000 " ～ " ¥15,000	¥300
¥15,000 " ～ " ¥20,000	¥400
¥20,000 " ～ " ¥30,000	¥500
¥30,000 " ～ " ¥50,000	¥700
¥50,000 " ～ " ¥70,000	¥1,000
¥70,000 " ～ " ¥100,000	¥1,500
¥100,000 " ～ " ¥150,000	¥3,000
¥150,000 " ～ " ¥200,000	¥4,000
¥200,000 " ～ " ¥300,000	¥5,000
¥300,000 " ～ " ¥500,000	¥7,000
¥500,000 " ～ " ¥700,000	¥10,000
¥700,000 " ～ " ¥1,000,000	¥15,000
¥1,000,000 " ～ " ¥1,500,000	¥30,000
¥1,500,000 " ～ " ¥2,000,000	¥40,000
¥2,000,000 " ～ " ¥3,000,000	¥50,000
¥3,000,000 " ～ " ¥5,000,000	¥70,000
¥5,000,000 " ～ " ¥7,000,000	¥100,000
¥7,000,000 " ～ " ¥10,000,000	¥150,000
¥10,000,000 " ～ " ¥15,000,000	¥300,000
¥15,000,000 " ～ " ¥20,000,000	¥400,000
¥20,000,000 " ～ " ¥30,000,000	¥500,000
¥30,000,000 " ～ " ¥50,000,000	¥700,000
¥50,000,000 or more	¥1,000,000