SECURITIES AND EXCHANGE COMMISSION

17 CFR PART 242

[Release No. 34-61358; File No. S7-02-10]

RIN 3235-AK47

Concept Release on Equity Market Structure

AGENCY: Securities and Exchange Commission.

ACTION: Concept release; request for comments.

SUMMARY: The Securities and Exchange Commission ("Commission") is conducting a broad review of the current equity market structure. The review includes an evaluation of equity market structure performance in recent years and an assessment of whether market structure rules have kept pace with, among other things, changes in trading technology and practices. To help further its review, the Commission is publishing this concept release to invite public comment on a wide range of market structure issues, including high frequency trading, order routing, market data linkages, and undisplayed, or "dark," liquidity. The Commission intends to use the public's comments to help determine whether regulatory initiatives to improve the current equity market structure are needed and, if so, the specific nature of such initiatives.

DATES: Comments should be received on or before April 21, 2010.

ADDRESSES: Comments may be submitted by any of the following methods:

Electronic Comments:

- Use the Commission's Internet comment form (http://www.sec.gov/rules/proposed.shtml); or

- Send an e-mail to rule-comments@sec.gov. Please include File No. S7-02-10 on the subject line; or
- Use the Federal eRulemaking Portal (http://www.regulations.gov). Follow the instructions for submitting comments.

Paper Comments:

- Send paper comments in triplicate to Elizabeth M. Murphy, Secretary, Securities and Exchange Commission, 100 F Street, NE, Washington, DC 20549-1090.

All submissions should refer to File No. S7-02-10. This file number should be included on the subject line if e-mail is used. To help us process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (http://www.sec.gov/rules/proposed.shtml). Comments are also available for public inspection and copying in the Commission's Public Reference Room, 100 F Street, NE, Washington, DC 20549 on official business days between the hours of 10:00 a.m. and 3:00 p.m. All comments received will be posted without change; we do not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly.

FOR FURTHER INFORMATION CONTACT: Arisa Tinaves, Special Counsel, at (202) 551-5676, Gary M. Rubin, Attorney, at (202) 551-5669, Division of Trading and Markets, Securities and Exchange Commission, 100 F Street, NE, Washington, DC 20549-7010.

SUPPLEMENTARY INFORMATION:

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I. Introduction

The secondary market for U.S.-listed equities has changed dramatically in recent years. In large part, the change reflects the culmination of a decades-long trend from a market structure with primarily manual trading to a market structure with primarily automated trading. When

Congress mandated the establishment of a national market system for securities in 1975, trading in U.S.-listed equities was dominated by exchanges with manual trading floors. Trading equities today is no longer as straightforward as sending an order to the floor of a single exchange on which a stock is listed. As discussed in section III below, the current market structure can be described as dispersed and complex: (1) trading volume is dispersed among many highly automated trading centers that compete for order flow in the same stocks; and (2) trading centers offer a wide range of services that are designed to attract different types of market participants with varying trading needs.

A primary driver and enabler of this transformation of equity trading has been the continual evolution of technologies for generating, routing, and executing orders. These technologies have dramatically improved the speed, capacity, and sophistication of the trading functions that are available to market participants. Changes in market structure also reflect the markets' response to regulatory actions such as Regulation NMS, adopted in 2005,[1] the Order Handling Rules, adopted in 1996,[2] as well as enforcement actions, such as those addressing anti-competitive behavior by market makers in NASDAQ stocks.[3]

The transformation of equity trading has encompassed all types of U.S.-listed stocks. In recent years, however, it is perhaps most apparent in stocks listed on the New York Stock Exchange ("NYSE"), which constitute nearly 80% of the capitalization of the U.S. equity

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1 Securities Exchange Act Release No. 51808 (June 9, 2005), 70 FR 37496 (June 29, 2005) ("Regulation NMS Release").

2 Securities Exchange Act Release No. 37619A (September 6, 1996), 61 FR 48290 (September 12, 1996) ("Order Handling Rules Release").

3 See, e.g., In the Matter of National Association of Securities Dealers, Inc., Administrative Proceeding File No. 3-9056, Securities Exchange Act Release No. 37538 (August 8, 1996).

markets.[4] In contrast to stocks listed on the NASDAQ Stock Market LLC ("NASDAQ"), which for more than a decade have been traded in a highly automated fashion at many different trading centers,[5] NYSE-listed stocks were traded primarily on the floor of the NYSE in a manual fashion until October 2006. At that time, NYSE began to offer fully automated access to its displayed quotations.[6] An important impetus for this change was the Commission's adoption of Regulation NMS in 2005, which eliminated the trade-through protection for manual quotations that nearly all commenters believed was seriously outdated.[7]

The changes in the nature of trading for NYSE-listed stocks have been extraordinary, as indicated by the comparisons of trading in 2005 and 2009 in Figures 1 through 5 below:

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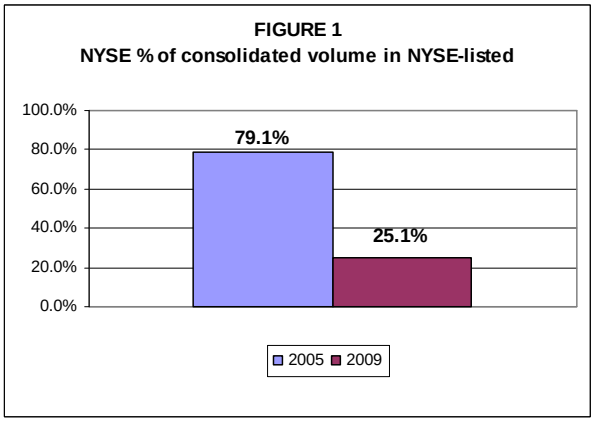
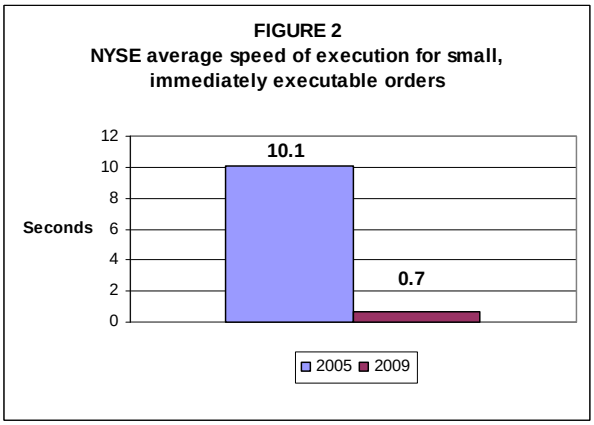
4 In November 2009, for example, NYSE-listed stocks represented approximately 78% of the market capitalization of the Wilshire 5000 Total Market Index. Wilshire Associates, http://wilshire.com/Indexes/Broad/Wilshire5000/Characteristics.html (November 17, 2009).

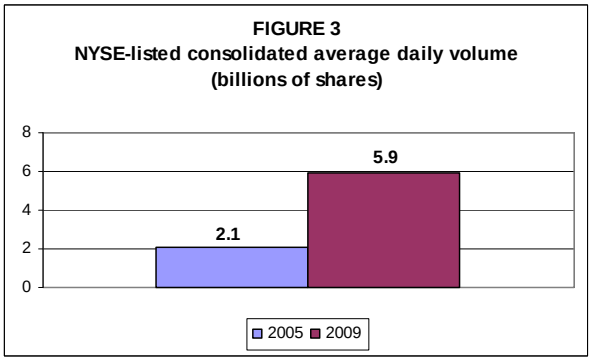
5 NASDAQ itself offered limited automated execution functionality until the introduction of SuperMontage in 2002. See Securities Exchange Act Release No. 46429 (August 29, 2002), 67 FR 56862 (September 5, 2002) (Order with Respect to the Implementation of NASDAQ's SuperMontage Facility). Prior to 2002, however, many electronic communication networks ("ECNs") and market makers trading NASDAQ stocks provided predominantly automated executions.

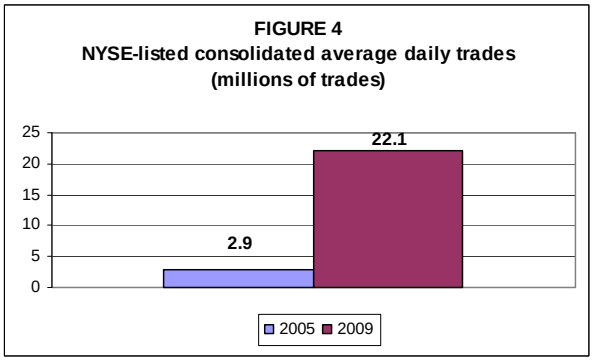
6 See Securities Exchange Act Release No. 53539 (March 22, 2006), 71 FR 16353 (March 31, 2006) (File No. SR-NYSE-2004-05) (approving proposal to create a "Hybrid Market" by, among other things, increasing the availability of automated executions); Pierre Paulden, Keep the Change, Institutional Investor (December 19, 2006) ("Friday, October 6, was a momentous day for the New York Stock Exchange. That morning the Big Board broke with 214 years of tradition when it began phasing in a new hybrid market structure that can execute trades electronically, bypassing face-to-face auctions on its famed floor."). Prior to the Hybrid Market, NYSE offered limited automated executions.

7 Regulation NMS Release, 70 FR at 37505 n. 55 ("Nearly all commenters, both those supporting and opposing the need for an intermarket trade-through rule, agreed that the current ITS trade-through provisions are seriously outdated and in need of reform. They particularly focused on the problems created by affording equal protection against trade-throughs to both automated and manual quotations.").









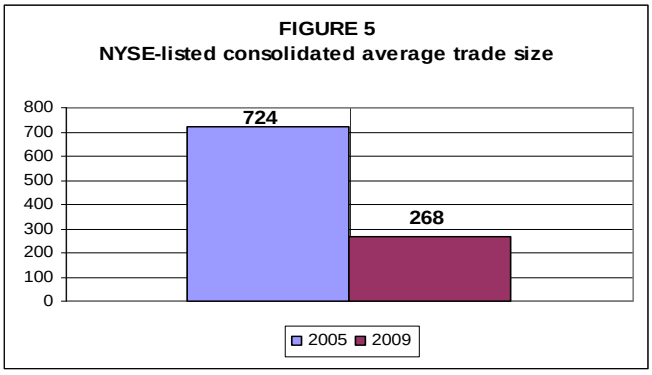


Figure 1 – NYSE executed approximately 79.1% of the consolidated share volume in its listed stocks in January 2005, compared to 25.1% in October 2009.[8]

[8] NYSE Euronext, "NYSE Euronext Announces Trading Volumes for October 2009 (November 6, 2009) ("Tape A matched market share for NYSE was 25.1% in October 2009, above the 24.5% market share reported in October 2008") (available at http://www.nyse.com/press/125741917814.html); Securities Exchange Act Release No. 59039 (December 2, 2008), 73 FR 74770, 74782 (December 9, 2008) (File No. SR-NYSEArca-2006-21) ("Given the competitive pressures that currently characterize the U.S. equity markets, no exchange can afford to take its market share percentages for

Figure 2 – NYSE's average speed of execution for small, immediately executable (marketable) orders was 10.1 seconds in January 2005, compared to 0.7 seconds in October 2009.[9]

Figure 3 – consolidated average daily share volume in NYSE-listed stocks was 2.1 billion shares in 2005, compared to 5.9 billion shares (an increase of 181%) in January through October 2009.[10]

Figure 4 – consolidated average daily trades in NYSE-listed stocks was 2.9 million trades in 2005, compared to 22.1 million trades (an increase of 662%) in January through October 2009.[11]

Figure 5 – consolidated average trade size in NYSE-listed stocks was 724 shares in 2005, compared to 268 shares in January through October 2009.[12]

The foregoing statistics for NYSE-listed stocks are intended solely to illustrate the sweeping changes that are characteristic of trading in all U.S.-listed equities, including NASDAQ-listed stocks and other equities such as exchange-traded funds ("ETFs"). They are <u>not</u> intended to indicate whether these changes have led to a market structure that is better or

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granted – they can change significantly over time, either up or down. . . . For example, the NYSE's reported market share of trading in NYSE-listed stocks declined from 79.1% in January 2005 to 30.6% in June 2008.") (citations omitted).

9 NYSE Euronext, Rule 605 Reports for January 2005 and October 2009 (available at http://www.nyse.com/equities/nyseequities/1201780422054.html) (NYSE average speed of execution for small (100-499 shares) market orders and marketable limit orders was 10.1 seconds in January 2005 and 0.7 seconds in October 2009).

10 NYSE Euronext, Consolidated Volume in NYSE Listed Issues 2000-2009 (available at http://www.nyxdata.com/nysedata/NYSE/FactsFigures/tabid/115/Default.aspx).

11 NYSE Euronext, Consolidated Volume in NYSE Listed Issues 2000-2009 (available at http://www.nyxdata.com/nysedata/NYSE/FactsFigures/tabid/115/Default.aspx).

12 NYSE Euronext, Consolidated Volume in NYSE Listed Issues 2000-2009 (available at http://www.nyxdata.com/nysedata/NYSE/FactsFigures/tabid/115/Default.aspx).

worse for long-term investors – an important issue on which comment is requested in section IV.A.1 below. Rather, the statistics for NYSE-listed stocks provide a useful illustration simply because the changes occurred both more rapidly and more recently for NYSE-listed stocks than other types of U.S.-listed equities.

To more fully understand the effects of these and other changes in equity trading, the Commission is conducting a comprehensive review of equity market structure. It is assessing whether market structure rules have kept pace with, among other things, changes in trading technology and practices. The review already has led to several rulemaking proposals that address particular issues and that are intended primarily to preserve the integrity of longstanding market structure principles. One proposal would eliminate the exception for flash orders from the Securities Exchange Act of 1934 ("Exchange Act") quoting requirements.[13] Another would address certain practices associated with non-public trading interest, including dark pools of liquidity.[14] In addition, the Commission today is proposing for public comment an additional market structure initiative to address the risk management controls of broker-dealers with market access.[15]

The Commission is continuing its review. It recognizes that market structure issues are complex and require a broad understanding of statutory requirements, economic principles, and practical trading considerations. Given this complexity, the Commission believes that its review would be greatly assisted by receiving the benefit of public comment on a broad range of market structure issues. It particularly is interested in hearing the views of all types of investors and

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13 Securities Exchange Act Release No. 60684 (September 18, 2009), 74 FR 48632 (September 23, 2009) ("Flash Order Release").

14 Securities Exchange Act Release No. 60997 (November 13, 2009), 74 FR 61208 (November 23, 2009) ("Non-Public Trading Interest Release").

15 Securities Exchange Act Release No.[citation unavailable] ("Market Access Release").

other market participants and in receiving as much data and analysis as possible in support of commenters' views.

Commenters' views on both the strengths and weaknesses of the current market structure are sought. Views on both strengths and weaknesses can help identify new initiatives that would enhance the strengths or improve on the weaknesses, avoid changes that would unintentionally cause more harm than good, and suggest whether any current rules are no longer necessary or are counterproductive to the objectives of the Exchange Act. As discussed in section II below, Congress mandated that the national market system should achieve a range of objectives – efficient execution of transactions, fair competition among markets, price transparency, best execution of investor orders, and the interaction of investor orders when consistent with efficiency and best execution. Additionally, the Commission's mission includes the protection of investors and the facilitation of capital formation. Appropriately achieving each of these objectives requires a balanced market structure that can accommodate a wide range of participants and trading strategies.

This release is intended to facilitate public comment by first giving a basic overview of the legal and factual elements of the current equity market structure and then presenting a wide range of issues for comment. The Commission cautions that it has not reached any final conclusions on the issues presented for comment. The discussion and questions in this release should not be interpreted as slanted in any particular way on any particular issue. The Commission intends to consider carefully all comments and to complete its review in a timely fashion. At that point, it will determine whether there are any problems that require a regulatory initiative and, if so, the nature of that initiative. Moreover, a new regulatory requirement would

first be published in the form of a proposal that would give the public an opportunity to comment on the specifics of the proposal prior to adoption.

II. Exchange Act Requirements for a National Market System

In Section 11A of the Exchange Act,[16] Congress directed the Commission to facilitate the establishment of a national market system in accordance with specified findings and objectives. The initial Congressional findings were that the securities markets are an important national asset that must be preserved and strengthened, and that new data processing and communications techniques create the opportunity for more efficient and effective market operations. Congress then proceeded to mandate a national market system composed of multiple competing markets that are linked through technology. In particular, Congress found that it is in the public interest and appropriate for the protection of investors and the maintenance of fair and orderly markets to assure five objectives:

(1) economically efficient execution of securities transactions;

(2) fair competition among brokers and dealers, among exchange markets, and between exchange markets and markets other than exchange markets;

(3) the availability to brokers, dealers, and investors of information with respect to quotations and transactions in securities;

(4) the practicability of brokers executing investors' orders in the best market; and

(5) an opportunity, consistent with efficiency and best execution, for investors' orders to be executed without the participation of a dealer.

The final Congressional finding was that these five objectives would be fostered by the linking of all markets for qualified securities through communication and data processing

16 15 U.S.C. 78k-1.

facilities. Specifically, Congress found that such linkages would foster efficiency; enhance competition; increase the information available to brokers, dealers, and investors; facilitate the offsetting (matching) of investors' orders; and contribute to the best execution of investors' orders.

Over the years, these findings and objectives have guided the Commission as it has sought to keep market structure rules up-to-date with continually changing economic conditions and technology advances. This task has presented certain challenges because, as noted previously by the Commission, the five objectives set forth in Section 11A can, at times, be difficult to reconcile.[17] In particular, the objective of matching investor orders, or "order interaction," can be difficult to reconcile with the objective of promoting competition among markets. Order interaction promotes a system that "maximizes the opportunities for the most willing seller to meet the most willing buyer."[18] When many trading centers compete for order flow in the same stock, however, such competition can lead to the fragmentation of order flow in that stock. Fragmentation can inhibit the interaction of investor orders and thereby impair certain efficiencies and the best execution of investors' orders. Competition among trading centers to provide specialized services for investors also can lead to practices that may detract from public price transparency. On the other hand, mandating the consolidation of order flow in a single venue would create a monopoly and thereby lose the important benefits of competition among markets. The benefits of such competition include incentives for trading centers to create

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17 See, e.g., Securities Exchange Act Release No. 42450 (February 3, 2000), 65 FR 10577, 10580 (February 28, 2000) ("Fragmentation Concept Release") ("[A]lthough the objectives of vigorous competition on price and fair market center competition may not always be entirely congruous, they both serve to further the interests of investors and therefore must be reconciled in the structure of the national market system.").

18 H.R. Rep. 94-123, 94th Cong., 1st Sess. 50 (1975).

new products, provide high quality trading services that meet the needs of investors, and keep trading fees low.

The Commission's task has been to facilitate an appropriately balanced market structure that promotes competition among markets, while minimizing the potentially adverse effects of fragmentation on efficiency, price transparency, best execution of investor orders, and order interaction.[19] An appropriately balanced market structure also must provide for strong investor protection and enable businesses to raise the capital they need to grow and to benefit the overall economy. Given the complexity of this task, there clearly is room for reasonable disagreement as to whether the market structure at any particular time is, in fact, achieving an appropriate balance of these multiple objectives. Accordingly, the Commission believes it is important to monitor these issues and, periodically, give the public, including the full range of investors and other market participants, an opportunity to submit their views on the matter. This concept release is intended to provide such an opportunity.

III. Overview of Current Market Structure

This section provides a brief overview of the current equity market structure. It first describes the various types of trading centers that compete for order flow in NMS stocks[20] and

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19 See S. Rep. 94-75, 94th Cong., 1st Sess. 2 (1975) ("S. 249 would lay the foundation for a new and more competitive market system, vesting in the SEC power to eliminate all unnecessary or inappropriate burdens on competition while at the same time granting to that agency complete and effective powers to pursue the goal of centralized trading of securities in the interest of both efficiency and investor protection."); Regulation NMS Release, 70 FR at 37499 ("Since Congress mandated the establishment of an NMS in 1975, the Commission frequently has resisted suggestions that it adopt an approach focusing on a single form of competition that, while perhaps easier to administer, would forfeit the distinct, but equally vital, benefits associated with both competition among markets and competition among orders.").

20 Rule 600(b)(47) of Regulation NMS defines "NMS stock" to mean any NMS security other than an option. Rule 600(b)(46) defines "NMS security" to mean any security for

among which liquidity is dispersed. It then describes the primary types of linkages between or involving these trading centers that are designed to enable market participants to trade effectively. This section attempts to highlight the features of the current equity market structure that may be most salient in presenting issues for public comment and is not intended to serve as a full description of the U.S. equity markets.

A. Trading Centers

A good place to start in describing the current market structure is by identifying the major types of trading centers and giving a sense of their current share of trading volume in NMS stocks. Figure 6 below provides this information with estimates of trading volume in September 2009:[21]

Figure 6

Trading Centers and Estimated % of ShareVolume in NMS Stocks
September 2009

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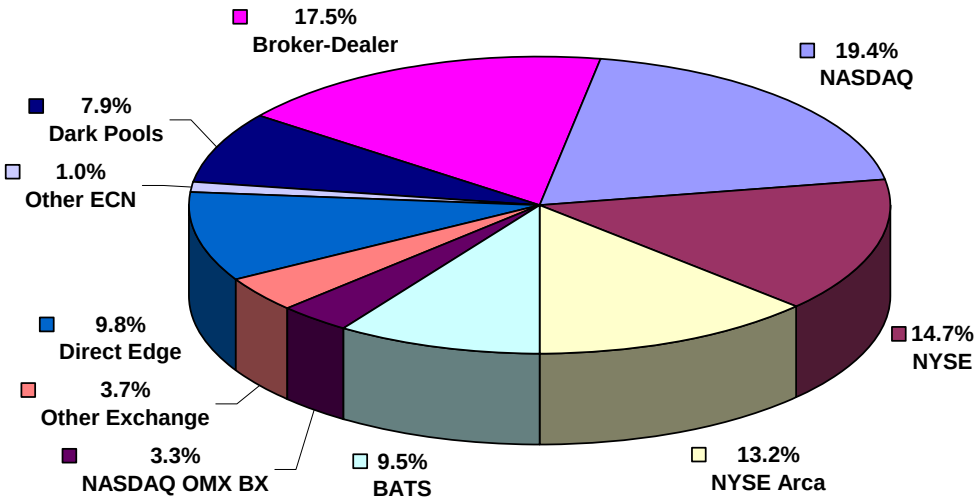
which trade reports are made available pursuant to an effective transaction reporting plan. In general, NMS stocks are those that are listed on a national securities exchange.

[21] Sources of estimated trading volume percentages: NASDAQ; NYSE Group; BATS; Direct Edge; data compiled from Forms ATS for 3d quarter 2009.



NASDAQ	NYSE	NYSE Arca
BATS	NASDAQ OMX BX	Other Registered Exchange
ECN: 2 Direct Edge	ECN: 3 Others	Dark Pools Approximately 32
Broker-Dealer Internalization More than 200		

Registered exchanges:			
NASDAQ	19.4%		
NYSE	14.7%		
NYSE Arca	13.2%		
BATS	9.5%		
NASDAQ OMX BX	3.3%		
Other	3.7%		
Total Exchange		63.8%	
ECNs:			
2 Direct Edge	9.8%		
3 Others	1.0%		
Total ECN		10.8%	
Total Displayed Trading Center			74.6%
Dark Pools:			
Approximately 32[22]		7.9%	
Broker-Dealer Internalization:			
More than 200[23]		17.5%	
Total Undisplayed Trading Center			25.4%

Figure 6 identifies two types of trading centers that display quotations in the consolidated quotation data that is widely distributed to the public – registered exchanges and ECNs.[24] These displayed trading centers execute approximately 74.6% of share volume. Figure 6 also identifies two types of undisplayed trading centers – dark pools and broker-dealers that execute trades internally – that execute approximately 25.4% of share volume. These four types of trading centers are described below.

1. Registered Exchanges

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22 Data compiled from Forms ATS submitted to Commission for 3d quarter 2009.

23 More than 200 broker-dealers (excluding ATSs) have identified themselves to FINRA as market centers that must provide monthly reports on order execution quality under Rule 605 of Regulation NMS (list available at http://apps.finra.org/datadirectory/1/marketmaker.aspx).

24 Consolidated quotation data is described in section III.B.1. below.

Registered exchanges collectively execute approximately 63.8% of share volume in NMS stocks, with no single exchange executing more than 19.4%. Registered exchanges must undertake self-regulatory responsibility for their members and file their proposed rule changes for approval with the Commission. These proposed rule changes publicly disclose, among other things, the trading services and fees of exchanges.

The registered exchanges all have adopted highly automated trading systems that can offer extremely high-speed, or "low-latency," order responses and executions. Published average response times at some exchanges, for example, have been reduced to less than 1 millisecond.[25] Many exchanges offer individual data feeds that deliver information concerning their orders and trades directly to customers. To further reduce latency in transmitting market data and order messages, many exchanges also offer co-location services that enable exchange customers to place their servers in close proximity to the exchange's matching engine. Exchange data feeds and co-location services are discussed further in section IV.B.2. below.

Registered exchanges typically offer a wide range of order types for trading on their automated systems. Some of their order types are displayable in full if they are not executed immediately. Others are undisplayed, in full or in part. For example, a reserve order type will display part of the size of an order at a particular price, while holding the balance of the order in reserve and refreshing the displayed size as needed. In general, displayed orders are given

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[25] See, e.g., BATS Exchange, Inc., http://batstrading.com/resources/features/bats_exchange_Latency.pdf (June 2009) (average latency (time to accept, process, and acknowledge or fill order) of 320 microseconds; NASDAQ, http://www.nasdaqtrader.com/trader.aspx?id=inet (December 12, 2009) (average latency (time to accept, process, and acknowledge or fill order) of 294 microseconds).

execution priority at any given price over fully undisplayed orders and the undisplayed size of reserve orders.[26]

In addition, many exchanges have adopted a "maker-taker" pricing model in an effort to attract liquidity providers. Under this model, non-marketable, resting orders that offer (make) liquidity at a particular price receive a liquidity rebate if they are executed, while incoming orders that execute against (take) the liquidity of resting orders are charged an access fee. Rule 610(c) of Regulation NMS caps the amount of the access fee for executions against the best displayed prices of an exchange at 0.3 cents per share. Exchanges typically charge a somewhat higher access fee than the amount of their liquidity rebates, and retain the difference as compensation. Sometimes, however, exchanges have offered "inverted" pricing and pay a liquidity rebate that exceeds the access fee.

Highly automated exchange systems and liquidity rebates have helped establish a business model for a new type of professional liquidity provider that is distinct from the more traditional exchange specialist and over-the-counter ("OTC") market maker. In particular, proprietary trading firms and the proprietary trading desks of multi-service broker-dealers now take advantage of low-latency systems and liquidity rebates by submitting large numbers of non-marketable orders (often cancelling a very high percentage of them), which provide liquidity to the market electronically. As discussed in section IV.B. below, these proprietary traders often

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[26] See, e.g., BATS Exchange, Inc., Rule 11.12 (equally priced trading interest executed in time priority in the following order: (1) displayed size of limit orders; (2) non-displayed limit orders; (3) pegged orders; (4) mid-point peg orders; (5) reserve size of orders; and (6) discretionary portion of discretionary orders); NASDAQ Rule 4757(a)(1) (book processing algorithm executes trading interest in the following order: (1) displayed orders; (2) non-displayed orders and the reserve portion of quotes and reserve orders (in price/time priority among such interest); and (3) the discretionary portion of discretionary orders.

are labeled high-frequency traders, though the term does not have a settled definition and may encompass a variety of strategies in addition to passive market making.

2. ECNs

The five ECNs that actively trade NMS stocks collectively execute approximately 10.8% of share volume. Almost all ECN volume is executed by two ECNs operated by Direct Edge, which has submitted applications for registration of its two trading platforms as exchanges. [27] ECNs are regulated as alternative trading systems ("ATSs"). Regulation of ATSs is discussed in the next section below in connection with dark pools, which also are ATSs. The key characteristic of an ECN is that it provides its best-priced orders for inclusion in the consolidated quotation data, whether voluntarily or as required by Rule 301(b)(3) of Regulation ATS. In general, ECNs offer trading services (such as displayed and undisplayed order types, maker-taker pricing, and data feeds) that are analogous to those of registered exchanges.

3. Dark Pools

Dark pools are ATSs that, in contrast to ECNs, do not provide their best-priced orders for inclusion in the consolidated quotation data. In general, dark pools offer trading services to institutional investors and others that seek to execute large trading interest in a manner that will minimize the movement of prices against the trading interest and thereby reduce trading costs.[28] There are approximately 32 dark pools that actively trade NMS stocks, and they executed approximately 7.9% of share volume in NMS stocks in the third quarter of 2009.[29] ATSs, both

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27 Securities Exchange Act Release No. 60651 (September 11, 2009), 74 FR 47827 (September 17, 2009) (Notice of filing of applications for registration as national securities exchanges by EDGX Exchange, Inc. and EDGA Exchange, Inc.).

28 See Non-Public Trading Interest Release, 74 FR at 61208-61209.

29 Data compiled from Forms ATS submitted to Commission for 3d quarter 2009. Some OTC market makers offer dark liquidity primarily in a principal capacity and do not operate as ATSs. For purposes of this release, these trading centers are not defined as

dark pools and ECNs, fall within the statutory definition of an exchange, but are exempted if they comply with Regulation ATS. Regulation ATS requires ATSs to be registered as broker-dealers with the Commission, which entails becoming a member of the Financial Industry Regulatory Authority ("FINRA") and fully complying with the broker-dealer regulatory regime. Unlike a registered exchange, an ATS is not required to file proposed rule changes with the Commission or otherwise publicly disclose its trading services and fees. ATSs also do not have any self-regulatory responsibilities, such as market surveillance. The regulatory differences between registered exchanges and ATSs are addressed further in section IV.C.3. below.

Dark pools can vary quite widely in the services they offer their customers. For example, some dark pools, such as block crossing networks, offer specialized size discovery mechanisms that attempt to bring large buyers and sellers in the same NMS stock together anonymously and to facilitate a trade between them. The average trade size of these block crossing networks can be as high as 50,000 shares.[30] Most dark pools, though they may handle large orders, primarily execute trades with small sizes that are more comparable to the average size of trades in the public markets, which was less than 300 shares in July 2009.[31] These dark pools that primarily match smaller orders (though the matched orders may be "child" orders of much larger "parent"

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dark pools because they are not ATSs. These trading centers may, however, offer electronic dark liquidity services that are analogous to those offered by dark pools.

30 See, e.g., http://www.liquidnet.com/about/liquidStats.html (average U.S. execution size in July 2009 was 49,638 shares for manually negotiated trades via Liquidnet's negotiation product); http://www.pipelinetrading.com/AboutPipeline/CompanyInfo.aspx (average trade size of 50,000 shares in Pipeline).

31 See, e.g., http://www.nasdaqtrader.com/trader/aspx?id=marketshare (average size of NASDAQ matched trades in July 2009 was 228 shares); http://nyxdata.com/nysedata/asp/factbook (NYSE Group average trade size in all stocks traded in July 2009 was 267 shares).

orders) execute more than 90% of dark pool trading volume.[32] The majority of this volume is executed by dark pools that are sponsored by multi-service broker-dealers. These broker-dealers also offer order routing services, trade as principal in the sponsored ATS, or both.

4. Broker-Dealer Internalization

The other type of undisplayed trading center is a non-ATS broker-dealer that internally executes trades, whether as agent or principal. Notably, many broker-dealers may submit orders to exchanges or ECNs, which then are included in the consolidated quotation data. The internalized executions of broker-dealers, however, primarily reflect liquidity that is not included in the consolidated quotation data. Broker-dealer internalization accordingly should be classified as undisplayed liquidity. There are a large number of broker-dealers that execute trades internally in NMS stocks – more than 200 publish execution quality statistics under Rule 605 of Regulation NMS.[33] Broker-dealer internalization accounts for approximately 17.5% of share volume in NMS stocks.

Broker-dealers that internalize executions generally fall into two categories – OTC market makers and block positioners. An OTC market maker is defined in Rule 600(b)(52) of Regulation NMS as "any dealer that holds itself out as being willing to buy and sell to its customers, or others, in the United States, an NMS stock for its own account on a regular or continuous basis otherwise than on a national securities exchange in amounts of less than block size." "Block size" is defined in Rule 600(b)(9) as an order of at least 10,000 shares or for a quantity of stock having a market value of at least $200,000. A block positioner generally means any broker-dealer in the business of executing, as principal or agent, block size trades for its

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32 Data compiled from Forms ATS submitted to Commission for 3d quarter 2009.

33 See supra note 23.

customers. To facilitate trades, block positioners often commit their own capital to trade as principal with at least some part of the customer's block order.

Broker-dealers that act as OTC market makers and block positioners conduct their business primarily by directly negotiating with customers or with other broker-dealers representing customer orders. OTC market makers, for example, appear to handle a very large percentage of marketable (immediately executable) order flow of individual investors that is routed by retail brokerage firms. A review of the order routing disclosures required by Rule 606 of Regulation NMS of eight broker-dealers with significant retail customer accounts reveals that nearly 100% of their customer market orders are routed to OTC market makers.[34] The review also indicates that most of these retail brokers either receive payment for order flow in connection with the routing of orders or are affiliated with an OTC market maker that executes the orders. The Rule 606 Reports disclose that the amount of payment for order flow generally is 0.1 cent per share or less.[35]

B. Linkages

Given the dispersal of liquidity across a large number of trading centers of different types, an important question is whether trading centers are sufficiently linked together in a unified national market system. Thus far in this release, the term "dispersed" has been used to describe the current market structure rather than "fragmented." The term "fragmentation" connotes a negative judgment that the linkages among competing trading centers are insufficient to achieve the Exchange Act objectives of efficiency, price transparency, best execution, and order interaction. Whether fragmentation is in fact a problem in the current market structure is a

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34 Review of Rule 606 Reports for 2d quarter 2009 of eight broker-dealers with substantial number of retail customer accounts.

35 Id.

critically important issue on which comment is requested in section IV below in a variety of contexts. This section will give an overview of the primary types of linkages that operate in the current market structure – consolidated market data, trade-through protection, and broker routing services.

1. Consolidated Market Data

When Congress mandated a national market system in 1975, it emphasized that the systems for collecting and distributing consolidated market data would "form the heart of the national market system."[36] As described further below, consolidated market data includes both: (1) pre-trade transparency – real-time information on the best-priced quotations at which trades may be executed in the future ("consolidated quotation data"); and (2) post-trade transparency – real-time reports of trades as they are executed ("consolidated trade data"). As a result, the public has ready access to a comprehensive, accurate, and reliable source of information for the prices and volume of any NMS stock at any time during the trading day. This information serves an essential linkage function by helping assure that the public is aware of the best displayed prices for a stock, no matter where they may arise in the national market system. It also enables investors to monitor the prices at which their orders are executed and assess whether their orders received best execution.

Consolidated market data is collected and distributed pursuant to a variety of Exchange Act rules and joint-industry plans. With respect to pre-trade transparency, Rule 602 of Regulation NMS requires exchange members and certain OTC market makers that exceed a 1% trading volume threshold to provide their best-priced quotations to their respective exchanges or FINRA, and these self-regulatory organizations ("SROs"), in turn, are required to make this

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[36] H.R. Rep. No. 94-229, 94th Cong., 1st Sess. 93 (1975).

information available to vendors. Rule 604 of Regulation NMS requires exchange specialists and OTC market makers to display certain customer limit orders in their best-priced quotations provided under Rule 602. In addition, Rule 301(b)(3) of Regulation ATS requires an ATS that displays orders to more than one person in the ATS and exceeds a 5% trading volume threshold to provide its best-priced orders for inclusion in the quotation data made available under Rule 602.[37]

Importantly, the Commission's rules do not require the display of a customer limit order if the customer does not wish the order to be displayed.[38] Customers have the freedom to display or not display depending on their trading objectives. On the other hand, the selective display of orders generally is prohibited in order to prevent the creation of significant private markets and two-tiered access to pricing information.[39] Accordingly, the display of orders to some market participants generally will require that the order be included in the consolidated quotation data that is widely available to the public.

With respect to post-trade transparency, Rule 601 of Regulation NMS requires the equity exchanges and FINRA to file a transaction reporting plan regarding transactions in listed equity securities. The members of these SROs are required to comply with the relevant SRO rules for

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37 The Commission has proposed lowering the trading volume threshold for order display obligations from 5% to 0.25%. Non-Public Trading Interest Release, 74 FR at 61213.

38 Rule 604 of Regulation NMS, for example, explicitly recognizes the ability of customers to control whether their limit orders are displayed to the public. Rule 604(b)(2) provides an exception from the limit order display requirement for orders that are placed by customers who expressly request that the order not be displayed. Rule 604(b)(4) provides an exception for all block size orders unless the customer requests that the order be displayed.

39 See, e.g., Rule 301(b)(3) of Regulation ATS; Rule 602(a)(1) of Regulation NMS; Order Handling Rules Release, 61 FR at 48307 ("Although offering benefits to some market participants, widespread participation in these hidden markets has reduced the completeness and value of publicly available quotations contrary to the purposes of the NMS.").

trade reporting. FINRA's trade reporting requirements apply to all ATSs that trade NMS stocks, both ECNs and dark pools, as well as to broker-dealers that internalize. FINRA currently requires members to report their trades as soon as practicable, but no later than 90 seconds.[40] FINRA has proposed to reduce the reporting time period to 30 seconds, noting that more than 99.9% of transactions are reported to FINRA in 30 seconds or less.[41]

Finally, Rule 603(b) of Regulation NMS requires the equity exchanges and FINRA to act jointly pursuant to one or more effective national market system plans to disseminate consolidated information, including an NBBO, on quotations for and transactions in NMS stocks. It also requires that consolidated information for each NMS stock be disseminated through a single plan processor.

To comply with these requirements, the equity exchanges and FINRA participate in three joint-industry plans ("Plans").[42] Pursuant to the Plans, three separate networks distribute consolidated market data for NMS stocks: (1) Network A for securities with their primary listing on the NYSE; (2) Network B for securities with their primary listing on exchanges other than the

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40 Securities Exchange Act Release No. 60960 (November 6, 2009), 74 FR 59272, 59273 (November 17, 2009) (File No. SR-FINRA-2009-061) (in its description of the proposed rule change, FINRA stated that "[a]lthough members would have 30 seconds to report, FINRA reiterates that – as is the case today – members must report trades as soon as practical and cannot withhold trade reports, e.g., by programming their systems to delay reporting until the last permissible second").

41 Id. (from February 23, 2009 through February 27, 2009, 99.90% of trades submitted to a FINRA Facility for public reporting were reported in 30 seconds or less).

42 The three joint-industry plans are: (1) the CTA Plan, which is operated by the Consolidated Tape Association and disseminates transaction information for securities with their primary listing on exchanges other than NASDAQ; (2) the CQ Plan, which disseminates consolidated quotation information for securities with their primary listing on exchanges other than NASDAQ; and (3) the NASDAQ UTP Plan, which disseminates consolidated transaction and quotation information for securities with their primary listing on NASDAQ. The CTA Plan and CQ Plan are available at http://www.nyxdata.com/nysedata/default.aspx?tabid=227. The NASDAQ UTP Plan is available at http://www.utpplan.com.

NYSE or NASDAQ; and (3) Network C for securities with their primary listing on NASDAQ. The three Networks establish fees for the data, which must be filed for Commission approval. The three Networks collect the applicable fees and, after deduction of Network expenses (which do not include the costs incurred by SROs to generate market data and provide such data to the Networks), allocate the remaining revenues to the SROs. The revenues, expenses, and allocations for each of the three Networks are set forth in Table 1 below:[43]

Table 1

2008 Financial Information for Networks A, B, and C

	Network A	**Network B**	**Network C**	**Total**
Revenues	$209,218,000	$119,876,000	$134,861,000	463,955,000
Expenses	6,078,000	3,066,000	5,729,000	14,873,000
Net Income	203,140,000	116,810,000	129,132,000	449,082,000
Allocations:				
NASDAQ	47,845,000	34,885,000	60,614,000	143,343,000
NYSE Arca	37,080,000	38,235,000	26,307,000	101,622,000
NYSE	68,391,000	0	0	68,391,000
FINRA	24,325,000	16,458,000	20,772,000	61,555,000
NSX	7,100,000	11,575,000	17,123,000	35,798,000
ISE	15,260,000	1,477,000	1,883,000	18,620,000
NYSE Amex	1,000	9,760,000	14,000	9,775,000
BATS	2,356,000	2,770,000	1,538,000	6,664,000
CBOE	80,000	1,046,000	433,000	1,559,000
CHX	565,000	574,000	298,000	1,437,000
Phlx	134,000	30,000	146,000	310,000
BSE	3,000		4,000	7,000

In addition to providing quotation and trade information to the three Networks for distribution in consolidated data, many exchanges and ECNs offer individual data feeds directly to customers that include information that is provided in consolidated data. The individual data feeds of exchanges and ECNs also can include a variety of other types of information, such as

[43] The Network financial information for 2008 is preliminary and unaudited.

"depth-of-book" quotations at prices inferior to their best-priced quotations. Rule 603(a) of Regulation NMS requires all exchanges, ATSs, and other broker-dealers that offer individual data feeds to make the data available on terms that are fair and reasonable and not unreasonably discriminatory. Exchanges, ATSs, and other broker-dealers are prohibited from providing their data directly to customers any sooner than they provide their data to the plan processors for the Networks.[44] The fact that trading center data feeds do not need to go through the extra step of consolidation at a plan processor, however, means that such data feeds can reach end-users faster than the consolidated data feeds. The average latencies of the consolidation function at plan processors (from the time the processor receives information from the SROs to the time it distributes consolidated information to the public) are as follows: (1) Network A and Network B – less than 5 milliseconds for quotation data and less than 10 milliseconds for trade data; and (2) Network C – 5.892 milliseconds for quotation data and 6.680 milliseconds for trade data.[45] The individual trading center data feeds are discussed below in section IV.B.2.b.

2. Trade-Through Protection

Another important type of linkage in the current market structure is the protection against trade-throughs provided by Rule 611 of Regulation NMS. A trade-through is the execution of a trade at a price inferior to a protected quotation for an NMS stock. A protected quotation must be displayed by an automated trading center, must be disseminated in the consolidated quotation

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44 Regulation NMS Release, 70 FR at 37567 ("Adopted Rule 603(a) will not require a market center to synchronize the delivery of its data to end-users with delivery of data by a Network processor to end-users. Rather independently distributed data could not be made available on a more timely basis than core data is made available to a Network processor. Stated another way, adopted Rule 603(a) prohibits an SRO or broker-dealer from transmitting data to a vendor or user any sooner than it transmits the data to a Network processor."). The plan processor for the CTA Plan and CQ Plan is the Securities Industry Automation Corporation ("SIAC"). The plan processor for the NASDAQ UTP Plan is NASDAQ.

45 Sources: SIAC for Network A and Network B; NASDAQ for Network C.

data, and must be an automated quotation that is the best bid or best offer of an exchange or FINRA. Importantly, Rule 611 applies to all trading centers, not just those that display protected quotations. Trading center is defined broadly in Rule 600(b)(78) to include, among others, all exchanges, all ATSs (including ECNs and dark pools), all OTC market makers, and any other broker-dealer that executes orders internally, whether as agent or principal.

Rule 611(a)(1) requires all trading centers to establish, maintain, and enforce written policies and procedures that are reasonably designed to prevent trade-throughs of protected quotations, subject to the exceptions set forth in Rule 611(b). Protection against trade-throughs is an important linkage among trading centers because it provides a baseline assurance that: (1) marketable orders will receive at least the best displayed price, regardless of the particular trading center that executes the order or where the best price is displayed in the national market system; and (2) quotations that are displayed at one trading center will not be bypassed by trades with inferior prices at any trading center in the national market system.

Rule 611 also helps promote linkages among trading centers by encouraging them, when they do not have available trading interest at the best price, to route marketable orders to a trading center that is displaying the best price. Although Rule 611 does not directly require such routing services (a trading center can, for example, cancel and return an order when it does not have the best price), competitive factors have led many trading centers to offer routing services to their customers. Prior to Rule 611, exchanges routed orders through an inflexible, partially manual system called the Intermarket Trading System ("ITS").[46] With Regulation NMS, however, the Commission adopted a "private linkages" approach that relies exclusively on

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[46] See Regulation NMS Release, 70 FR at 37538-37539 ("Although ITS promotes access among participants that is uniform and free, it also is often slow and limited.").

brokers to provide routing services, both among exchanges and between customers and exchanges. These broker routing services are discussed next.

3. Broker Routing Services

In a dispersed and complex market structure with many different trading centers offering a wide spectrum of services, brokers play a significant role in linking trading centers together into a unified national market system. Brokers compete to offer the sophisticated technology tools that are needed to monitor liquidity at many different venues and to implement order routing strategies. To perform this function, brokers may monitor the execution of orders at both displayed and undisplayed trading centers to assess the availability of undisplayed trading interest. Brokers may, for example, construct real-time "heat maps" in an effort to discern and access both displayed and undisplayed liquidity at trading centers throughout the national market system.

Using their knowledge of available liquidity, many brokers offer smart order routing technology to access such liquidity. Many brokers also offer sophisticated algorithms that will take the large orders of institutional investors and others, divide a large "parent" order into many smaller "child" orders, and route the child orders over time to different trading centers in accordance with the particular trading strategy chosen by the customer. Such algorithms may be "aggressive," for example, and seek to take liquidity quickly at many different trading centers, or they may be "passive," and submit resting orders at one or more trading centers and await executions at favorable prices.

To the extent they help customers cope with the dispersal of liquidity among a large number of trading centers of different types and achieve the best execution of their customers'

orders, the routing services of brokers can contribute to the broader policy goal of promoting efficient markets.

Under the private linkages approach adopted by Regulation NMS, market participants obtain access to the various trading centers through broker-dealers that are members or subscribers of the particular trading center.[47] Rule 610(a) of Regulation NMS, for example, prohibits an SRO trading facility from imposing unfairly discriminatory terms that would prevent or inhibit any person from obtaining efficient access through an SRO member to the displayed quotations of the SRO trading facility. Rule 610(c) limits the fees that a trading center can charge for access to its displayed quotations at the best prices. Rule 611(d) requires SROs to establish, maintain, and enforce rules that restrict their members from displaying quotations that lock or cross previously displayed quotations.

Section 6(a)(2) of the Exchange Act requires registered exchanges to allow any qualified and registered broker-dealer to become a member of the exchange – a key element in assuring fair access to exchange services. In contrast, the access requirements that apply to ATSs are much more limited. Regulation ATS includes two distinct types of access requirements: (1) order display and execution access in Rule 301(b)(3); and (2) fair access to ATS services in general in Rule 301(b)(5). An ATS must meet order display and execution access requirements if it displays orders to more than one person in the ATS and exceeds a 5% trading volume threshold.[48] An ATS must meet the general fair access requirement if it exceeds a 5% trading

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47 See Regulation NMS Release, 70 FR at 37540 ("[M]any different private firms have entered the business of linking with a wide range of trading centers and then offering their customers access to those trading centers through the private firms' linkages. Competitive forces determine the types and costs of these private linkages.").

48 The Commission has proposed reducing the threshold for order display and execution access to 0.25%. Non-Public Trading Interest Release, 74 FR at 61213. It has not proposed to change the threshold for fair access in general.

volume threshold. If an ATS neither displays orders to more than one person in the ATS nor exceeds a 5% trading volume threshold, Regulation ATS does not impose access requirements on the ATS.

An essential type of access that should not be overlooked is the fair access to clearance and settlement systems required by Section 17A of the Exchange Act. If brokers cannot efficiently clear and settle transactions at the full range of trading centers, they will not be able to perform their linkage function properly.

The linkage function of brokers also is supported by a broker's legal duty of best execution. This duty requires a broker to obtain the most favorable terms reasonably available when executing a customer order.[49] Of course, this legal duty is not the only pressure on brokers to obtain best execution. The existence of strong competitive pressure to attract and retain customers encourages brokers to provide high quality routing services to their customers. In this regard, Rules 605 and 606 of Regulation NMS are designed to support competition by enhancing the transparency of order execution and routing practices. Rule 605 requires market centers to publish monthly reports of statistics on their order execution quality. Rule 606 requires brokers to publish quarterly reports on their routing practices, including the venues to which they route orders for execution. As the Commission emphasized when it adopted the rules in 2000, "[b]y increasing the visibility of order execution and routing practices, the rules adopted today are intended to empower market forces with the means to achieve a more competitive and efficient

[49] See, e.g., Regulation NMS Release, 70 FR at 37537-37538 (discussion of duty of best execution).

national market system for public investors."[50] In section IV.A.1.b. below, comment is requested on whether Rules 605 and 606 should be updated for the current market structure.

IV. Request for Comments

This section will focus on three categories of issues that the Commission particularly wishes to present for comment – the performance of the current market structure, high frequency trading, and undisplayed liquidity. The Commission emphasizes, however, that it is interested in receiving comments on all aspects of the equity market structure that the public believes are important. The discussion in this release should not be construed as in any way limiting the scope of comments that will be considered.

This concept release focuses on the structure of the equity markets and does not discuss the markets for other types of instruments that are related to equities, such as options and OTC derivatives. The limited scope of this release is designed to focus on a discrete set of issues that have gained increased prominence in the equity markets. Comment is requested, however, on the extent to which the issues identified in this release are intertwined with other markets. For example, market participants may look to alternative instruments if they believe the equity markets are not optimal for their trading objectives. Should the Commission consider the extent to which instruments substitute for one another in evaluating equity market structure?

In addition, comment is requested on the impact of globalization on market structure. How does global competition for trading activity impact the U.S. market structure? Should global competition affect the approach to regulation in the U.S.? Will trading activity and capital tend to move either to the U.S. or overseas in response to different regulation in the U.S.? How should the Commission consider these globalization issues in its review of market structure?

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[50] Securities Exchange Act Release No. 43590 (November 17, 2000), 65 FR 75414, 75415 (December 1, 2000) (Disclosure of Order Execution and Routing Practices).

A. Market Structure Performance

The secondary markets for NMS stocks are essential to the economic success of the country and to the financial well-being of individual Americans. High quality trading markets promote capital raising and capital allocation by establishing prices for securities and by enabling investors to enter and exit their positions in securities when they wish to do so.[51] The Commission wishes to request comment broadly on how well or poorly the current market structure is performing its vital economic functions.

In recent months, the Commission has heard a variety of concerns about particular aspects of the current market structure, as well as the view that recent improvements to the equity markets have benefitted both individual and institutional investors. The concerns about market structure often have related to high frequency trading and various types of undisplayed liquidity. Prior to discussing these particular areas of concern in this release, the Commission believes it is important to assess more broadly the performance of the market structure, particularly for long-term investors and for businesses seeking to raise capital. Assessing overall market structure performance should help provide context for particular concerns, as well as the nature of any regulatory response that may be appropriate to address concerns.

1. Long-Term Investors

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51 See, e.g., S. Report 94-75 at 3 ("The rapid attainment of a national market system as envisaged by this bill is important, therefore, not simply to provide greater investor protection and bolster sagging investor confidence but also to assure that the country maintains a strong, effective and efficient capital raising and capital allocating system in the years ahead. The basic goals of the Exchange Act remain salutary and unchallenged: to provide fair and honest mechanisms for the pricing of securities, to assure that dealing in securities is fair and without undue preferences or advantages among investors, to ensure that securities can be purchased and sold at economically efficient transaction costs, and to provide, to the maximum degree practicable, markets that are open and orderly.").

In assessing the performance of the current equity market structure and whether it is meeting the relevant Exchange Act objectives, the Commission is particularly focused on the interests of long-term investors. These are the market participants who provide capital investment and are willing to accept the risk of ownership in listed companies for an extended period of time. Unlike long-term investors, professional traders generally seek to establish and liquidate positions in a shorter time frame. Professional traders with these short time frames often have different interests than investors concerned about the long-term prospects of a company.[52] For example, short-term professional traders may like short-term volatility to the extent it offers more trading opportunities, while long-term investors do not. The net effect of trading strategies pursued by various short-term professional traders, however, may not increase volatility and may work to dampen volatility.

Nevertheless, the interests of investors and professional traders may at times be aligned. Indeed, the collective effect of professional traders competing to profit from short-term trading strategies can work to the advantage of long-term investors. For example, as just noted, short-term trading strategies may work to dampen short-term volatility. Professional traders with an informed view of prices can promote efficient pricing. Professional traders competing to provide liquidity may narrow spreads and give investors the benefit of better prices when they simply want to trade immediately at the best available price.

Given the difference in time horizons, however, the trading needs of long-term investors and short-term professional traders often may diverge. Professional trading is a highly

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[52] See Regulation NMS Release, 70 FR at 37500 ("The Commission recognizes that it is important to avoid false dichotomies between the interests of short-term traders and long-term investors, and that many difficult line-drawing exercises can arise in precisely defining the difference between the two terms. For present purposes, however, these issues can be handled by simply noting that it makes little sense to refer to someone as 'investing' in a company for a few seconds, minutes, or hours.") (citation omitted).

competitive endeavor in which success or failure may depend on employing the fastest systems and the most sophisticated trading strategies that require major expenditures to develop and operate. Such systems and strategies may not be particularly useful, in contrast, for investors seeking to establish a long-term position rather than profit from fleeting price movements. Where the interests of long-term investors and short-term professional traders diverge, the Commission repeatedly has emphasized that its duty is to uphold the interests of long-term investors.[53]

Comment is requested on the practicality of distinguishing the interests of long-term investors from those of short-term professional traders when assessing market structure issues. In what circumstances should an investor be considered a "long-term investor"? If a time component is needed to define this class of investor, how should the Commission determine the length of expected ownership that renders an investor "long-term"? Under what circumstances would a distinction between a long-term investor and a short-term professional trader become unclear, and how prevalent are these circumstances? To the extent that improved market liquidity and depth promote the interests of long-term investors by leading to reduced transaction costs, what steps should the Commission consider taking to promote market liquidity and depth?

Long-term investors include individuals that invest directly in equities and institutions that invest on behalf of many individuals. The Commission is interested in hearing how all types

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53 See, e.g., Flash Order Release, 74 FR at 48635-48636; Regulation NMS Release, 70 FR at 37499-37501; Fragmentation Concept Release, 65 FR at 10581 n. 26; see also S. Rep. No. 73-1455, 73rd Cong., 2d Sess. 5 (1934) ("Transactions in securities on organized exchanges and over-the-counter are affected with the national public interest. . . . In former years transactions in securities were carried on by a relatively small portion of the American people. During the last decade, however, due largely to the development of means of communication . . . the entire Nation has become acutely sensitive to the activities on the securities exchanges. While only a fraction of the multitude who now own securities can be regarded as actively trading on the exchanges, the operations of these few profoundly affect the holdings of all.").

of individual investors and all sizes of institutional investors – small, medium, and large – are faring in the current market structure. For example, has the current market structure become so dispersed and complex that only the largest institutions can afford to deploy their own highly sophisticated trading tools? If so, are smaller institutions able to trade effectively? Some broker-dealers offer sophisticated trading tools, such as smart routing and algorithmic trading. How accessible are these trading tools to smaller institutions? Are the costs of paying for these tools so high that they are effectively inaccessible? Moreover, to the extent that a competitive advantage flows from these trading tools, does that competitive advantage help to promote and enable competition, beneficial innovation, and, ultimately, enhanced market quality? Is there a risk that certain competitive advantages may reduce competition or lead to detrimental innovations? To what extent is it important for market participants to be allowed to gain competitive advantages, such as by using more sophisticated trading tools?

In addition, the Commission recognizes that there is wide variation in types of equity securities and that there may be important differences in market performance among the different types. With respect to corporate equities, for example, the Commission is interested in how market structure impacts stocks of varying levels of market capitalization (for example, top tier, large, middle, and small). A vital function of the equity markets is to support the capital raising function, including capital raising by small companies. The Commission recognizes that small company stocks may trade differently than large company stocks and requests comment specifically on how the market structure performs for smaller companies and whether it supports the capital raising function for them.

a. Market Quality Metrics

Given these broad concerns for all types of long-term investors and the full range of equities, what are useful metrics for assessing the performance of the current market structure? In the past, the Commission and its staff have considered a wide variety of metrics, most of which have applied to smaller orders (such as 10,000 shares or less).[54] These metrics have included measures of spreads – the difference between the prices that buyers pay and sellers receive when they are seeking to trade immediately at the best prices. Spread measures include quoted spreads, effective spreads (which reflects whether investors receive prices that are better than, equal to, or worse than quoted spreads), and realized spreads (which reflects how investors are affected by subsequent price movements in a stock). Another often used metric has been speed of execution.[55]

Short-Term Volatility. Spreads and speed of execution may not, however, give a full picture of execution quality, even for the small orders of individual investors that generally will be fully executed in one transaction (unlike the large orders of institutional investors that may require many smaller executions). For example, short-term price volatility may harm individual

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54 See, e.g., Memorandum to File from Office of Economic Analysis dated December 15, 2004 regarding comparative analysis of execution quality on NYSE and NASDAQ based on a matched sample of stocks ("Comparative Analysis of Execution Quality") (available at http://www.sec.gov/spotlight/regnms.htm); Memorandum to File from Office of Economic Analysis dated December 15, 2004 regarding Analysis of Volatility for Stocks Switching from Nasdaq to NYSE (available at http://www.sec.gov/spotlight/regnms.htm); Office of Economic Analysis, Report on Comparison of Order Executions Across Equity Market Structures (January 8, 2001) ("Report on Comparison of Order Executions") (available at http://www.sec.gov/news/studies/ordrxmkt.htm); Commission, Report on the Practice of Preferencing (April 15, 1997) (available at http://www.sec.gov/news/studies/studiesarchive/1997archive.shtml).

55 When assessing market structure during the development of Regulation NMS, for example, Commission staff used Rule 605 data to measure quoted spreads, effective spreads, realized spreads, price impact, net price improvement, execution speed, and fill rates. All of the cost values were calculated both in terms of absolute value (cents) and in terms of proportional costs as a percentage of stock prices. Comparative Analysis of Execution Quality at 8-9.

investors if they are persistently unable to react to changing prices as fast as high frequency traders. As the Commission previously has noted, long-term investors may not be in a position to assess and take advantage of short-term price movements.[56] Excessive short-term volatility may indicate that long-term investors, even when they initially pay a narrow spread, are being harmed by short-term price movements that could be many times the amount of the spread.

The Commission has used a variety of measures of short-term volatility, including variance ratios (for example, 5 minute return variance to 60 minute return variance, 1 day return variance to 1 week return variance, and 1 day return variance to 4 week return variance).[57] Variance ratios are useful because they focus on short-term volatility that may be directly related to market structure quality, as opposed to long-term volatility that may be much more affected by fundamental economic forces that are independent of market structure quality. Another possible metric for assessing whether investors are harmed by short-term volatility is realized spread, which indicates whether prices moved for or against the submitter of the order after the order was executed. Rule 605, for example, measures realized spreads based on quotations 5 minutes after the time of order execution.

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56 Fragmentation Concept Release, 65 FR at 10581 n. 26 ("In theory, short-term price swings that hurt investors on one side of the market can benefit investors on the other side of the market. In practice, professional traders, who have the time and resources to monitor market dynamics closely, are far more likely than investors to be on the profitable side of short-term price swings (for example, by buying early in a short-term price rise and selling early before the price decline).").

57 Variance ratios are calculated by comparing return variances for a short time period with return variances for a longer time period. One of the advantages of this measure of volatility is that "there is a built-in control for the underlying uncertainty as to the 'true' value of the stock. For example, the high variance of returns on technology stocks is to be expected given the high uncertainty as to their future cash flows. The point is that this uncertainty will manifest itself in both the daily and weekly return variances. When [Commission staff] divide the weekly return by the daily return, the natural uncertainty associated with the stock 'washes out' and [Commission staff] are left with a measure associated with transaction costs or some other form of inefficiency." Report on Comparison of Order Executions, supra note 54, at 18.

Finally, the Commission has evaluated various measures of the depth that is immediately available to fill orders. These metrics include fill rates for limit orders, quoted size at the inside prices, the effect of reserve size and undisplayed size at the inside prices or better, and quoted depth at prices away from the inside.

Metrics for Smaller Orders. Comment is requested on whether these metrics that focus on the execution of smaller orders continue to be useful. Which metrics are most useful in today's market structure? Are there other useful metrics not listed above? Are there other relevant metrics that reflect how individual investors are likely to trade? For example, a significant number of individual investor orders are submitted after regular trading hours when such investors have an opportunity to evaluate their portfolios. These orders typically are executed at opening prices. What are the best metrics for assessing whether individual investor orders are executed fairly and efficiently at the opening? Are there other particular times or contexts in which retail investors often trade and, if so, what are the best metrics for determining whether they are treated fairly and efficiently in those contexts as well?

Measuring Institutional Investor Transaction Costs. Most of the Commission's past analyses of market performance have focused on the execution of smaller orders (for example, less than 10,000 shares), rather than attempting to measure the overall transaction costs of institutional investors to execute large orders (for example, greater than 100,000 shares). Measuring the transaction costs of institutional investors that need to trade in large size can be extremely complex.[58] These large orders often are broken up into smaller child orders and

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[58] See generally Investment Company Act Release No. 26313 (December 18, 2003), 68 FR 74820, 74821 (December 24, 2003) (Request for Comments on Measures to Improve Disclosure of Mutual Fund Transaction Costs) ("The Commission is aware of the need for transparency of mutual fund fees and expenses and committed to improving disclosure of the costs that are borne by mutual fund investors; but it is mindful of the

executed in a series of transactions. Metrics that apply to small order executions may miss how well or poorly the large order traded overall. Direct measures of large order transaction costs typically require access to institutional order data that is not publicly available. In this regard, a few trading analytics firms with access to institutional order data publish periodic analyses of institutional investor transaction costs.[59] These analyses allow such costs to be tracked over time to determine whether they are improving or worsening. Comment is requested on these published analyses generally and whether they accurately reflect the transaction costs experienced by institutional investors. Are there other studies or analyses of institutional trading costs that the Commission should consider? Comment is requested in general on other means for assessing the transaction costs of institutional investors in the current market structure. For example, are any of the measures of short-term volatility discussed above useful for assessing the transactions costs of larger orders and, if so, how?

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complexities associated with identifying, measuring, and accounting for transaction costs.").

[59] See, e.g., U.S. Government Accountability Office, "Securities Markets: Decimal Pricing Has Contributed to Lower Trading Costs and a More Challenging Trading Environment," at 96 (May 2005) ("We obtained data from three leading firms that collect and analyze information about institutional investors' trading costs. These trade analytics firms . . . obtain trade data directly from institutional investors and brokerage firms and calculate trading costs, including market impact costs (the extent to which the security changes in price after the investor begins trading), typically for the purpose of helping investors and traders limit costs of trading. These firms also aggregate client data so as to approximate total average trading costs for all institutional investors. Generally, the client base represented in aggregate cost data can be used to make generalizations about the institutional investor industry."); see also Pam Abramowitz, Technology Drives Trading Costs, Institutional Investor (November 4, 2009) (13th annual survey of transaction costs conducted for Institutional Investor Magazine by Elkins/McSherry); Elkins McSherry LLC, "Trading Cost Averages and Volatility Continued to Decline in 3Q09" (November 2009) (available at https://www.elkinsmcsherry.com/em/pdfs/Newsletters/Nov_2009_newsletter.pdf); Investment Technology Group, Inc., "ITG Global Trading Cost Review: 2009 Q2" (September 15, 2009) (available at http://www.itg.com/news_events/papers/ITGGlobalTradingCostReview_2009Q2.pdf).

Trend of Market Quality Metrics. With respect to all of the metrics that are useful for assessing market structure performance for long-term investors, the Commission is interested in whether commenters believe they show improvement or worsening in recent years. For example, do the relevant metrics indicate that market quality has improved or worsened over the last ten years and the last five years? Have markets improved or worsened more recently, since January 2009? Which of the recent developments in market structure do you consider to have the greatest effect on market quality? The Commission wishes to hear about any current regulations that may be harming, rather than improving, market quality. Specifically, how could any current regulations be modified to fit more properly with the current market?

Recognizing that there is no such thing as a perfect market structure that entirely eliminates transaction costs, the Commission believes that an understanding of trends is important because they provide a useful, pragmatic touchstone for assessing the goals with respect to market structure performance.[60]

Effect of Broad Economic Forces. The Commission notes that many metrics of market performance may be affected by broad economic forces, such as the global financial crisis during the Autumn of 2008, that operate independently of market structure. Periods of high volatility may be associated with high intermediation costs. This may reflect both compensation for risk assumed by liquidity providers and the higher demand for immediacy by long-term investors. How should the effect of these economic forces be adjusted for in assessing the performance of

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[60] A very recent study, for example, examined trading activity trends through the end of 2008. Chordia, Tarun, Richard Roll, & Avanidar Subrahmanyam, Why Has Trading Volume Increased? (January 6, 2010). It focused on comparisons of pre- and post-decimal trading in NYSE-listed stocks (subperiods from 1993-2000 and 2001-2008). Among the study's findings are that average effective spreads decreased significantly (from 10.2 cents to 2.2 cents for small trades (<$10,000) and from 10.7 cents to 2.7 cents for large trades (>$10,000)), while average depth available at the inside bid and offer declined significantly (from 11,130 shares to 2797 shares).

market structure over the last ten years, five years, and the last year? For example, the CBOE Volatility Index ("VIX") reached record levels during 2008.[61] The VIX is sometimes referred to as the "fear index" because it measures expected volatility of the S&P 500 Index over the next 30 calendar days.[62] To what extent are metrics of market structure performance correlated with the VIX or other analogous measures of volatility? Is the level of the VIX largely independent of market structure quality or are the level of the VIX and market structure quality interdependent? Given that the VIX measures expected volatility over the next 30 days, how important is the VIX to long-term investors?

b. Fairness of Market Structure

The Commission requests comment on whether the current market structure is fair for long-term investors. For example, the speed of trading has increased to the point that the fastest traders now measure their latencies in microseconds. Is it necessary or economically feasible for long-term investors to expend resources on the very fastest and most highly sophisticated systems or otherwise obtain access to these systems? If not, does the fact that professional traders likely always will be able to trade faster than long-term investors render the equity markets unfair for these investors? Or do the different trading needs and objectives of long-term investors mean that the disparities in speed in today's market structure are not significant to the interests of such investors? In addition, what standards should the Commission apply in assessing the fairness of the equity markets? For example, is it unfair for market participants to

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61 See infra note 81 and accompanying text.

62 See Chicago Board Options Exchange, "The CBOE Volatility Index – VIX," at 1, 4 ("VIX measures 30-day expected volatility of the S&P 500 Index. The components of VIX are near- and next-term put and call options, usually in the first and second SPX contract months.") (available at http://www.cboe.com/micro/vix/vixwhite.pdf).

obtain a competitive advantage by investing in technology and human resources that enable them to trade more effectively and profitably than others?

Rules 605 and 606 and Other Tools to Protect Investor Interests. In assessing the fairness of the current market structure, the Commission is interested in whether long-term investors and their brokers have the tools they need to protect their own interests in a dispersed and complex market structure. Do, for example, broker-dealers provide routing tools to their agency customers that are as powerful and effective as the routing tools they may use for their proprietary trading? If not, is this difference in access to technology unfair to long-term investors? Or is a broker-dealer's ability to develop and use more powerful and effective trading tools a competitive advantage that spurs competition and beneficial innovation?

In addition, comment is requested on Rules 605 and 606, which were adopted in 2000. Do these rules need to be updated and, if so, in what respects? Do Rule 605 and Rule 606 reports continue to provide useful information for investors and their brokers in assessing the quality of order execution and routing practices? The Commission notes that Rule 606 statistics reveal that brokers with significant retail customer accounts send the great majority of non-directed marketable orders to OTC market makers that internalize executions, often pursuant to payment for order flow arrangements.[63] Do individual investors understand and pay attention to Rule 605 and 606 statistics? If not, what market participants, if any, make decisions based on this data? Are those decisions beneficial to individual investors?

Rule 605 currently requires that the speed of execution for immediately executable orders (market orders and marketable limit orders) be disclosed to the tenth of a second. Do investors and brokers need more finely tuned statistics, such as hundredths or thousandths of a second?

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63 See supra note 34 and accompanying text.

For non-marketable limit orders with prices that render them not immediately executable at the best displayed prices, the shortest time category is 0-9 seconds. Would a shorter time period be useful for investors that use non-marketable limit orders? In addition, Rule 605 does not include any statistics measuring the execution quality of orders submitted for execution at opening or closing prices. Would such statistics be helpful to investors? Rule 605 also does not include any statistics measuring commission costs of orders, access fees, or liquidity rebates. Would such statistics be helpful to investors?

Rule 605 does not require disclosure of the amount of time that canceled non-marketable orders are displayed in the order book of trading center before cancellation. Considering the high cancellation percentage of non-marketable orders, should Rule 605 require the disclosure of the average time that canceled orders were displayed in the order book? Conversely, should Rule 605 exclude or otherwise distinguish canceled orders with a very limited duration (such as less than one second)?

Moreover, Rules 605 and 606 were drafted primarily with the interests of individual investors in mind and are focused on the execution of smaller orders. Orders with large sizes, for example, are excluded from both rules.[64] Should the rules be updated to address the interests of

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[64] Orders with a size of 10,000 shares or greater are exempt from Rule 605 reporting. See generally Staff Legal Bulletin 12R: Frequently Asked Questions About Rule 11Ac1-5 (Revised), now Regulation NMS Rule 605, Question 26: Exemption of Block Orders (available at http://www.sec.gov/divisions/marketreg/disclosure.htm). Rule 606 requires broker-dealers to report on their routing of "non-directed orders," which is defined in Rule 600(b)(48) as limited to customer orders. "Customer order" is defined in Rule 600(b)(18) of Regulation NMS to exclude an order in NMS stocks with a market value of at least $200,000. See generally Staff Legal Bulletin 13A: Frequently Asked Questions About Rule 11Ac1-6, now Regulation NMS Rule 606, Question 6: Definition of Customer Orders – Large Order Exclusion (available at http://www.sec.gov/divisions/marketreg/disclosure.htm).

institutional investors in efficiently executing large orders (whether in one large trade or many smaller trades)? If so, what metrics would be useful for institutional investors?

Intermarket sweep orders ("ISOs") are mostly used by institutional traders.[65] Rule 605 disclosures do not report regular orders and ISOs separately.[66] Would a distinction between ISO and non-ISO marketable orders benefit individual and/or institutional investors? Should any other order types be treated differently in Rule 605 reports?

More broadly, are there any approaches to improving the transparency of the order routing and order execution practices for institutional investors that the Commission should consider? For example, do institutional investors currently have sufficient information about the smart order routing services and order algorithms offered by their brokers? Would a regulatory initiative to improve disclosure of these broker services be useful and, if so, what type of initiative should the Commission pursue?

2. Other Measures

The Commission requests comment on any other measures of market structure performance that the public believes the Commission should consider. For example, are there useful metrics for assessing the quality of price discovery in equity markets, such as how

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65 Intermarket sweep orders are exceptions provided in Rule 611(b)(5) and (6) that enable an order router to sweep one or more price levels simultaneously at multiple trading centers without violating trade-through restrictions. As defined in Rule 600(b)(30) of Regulation NMS, intermarket sweep orders must be routed to execute against the full displayed size of any protected quotation that otherwise would be traded through by the orders. In addition, a single ISO can be routed to the best displayed price at the time of routing to help assure an execution even if quotations change after the order is routed. See Responses to Frequently Asked Questions Concerning Rule 611 and Rule 610 of Regulation NMS, Question 4.04 (April 4, 2008 Update) (available at http://www.sec.gov/divisions/marketreg/nmsfaq610-11.htm)

66 An ISO is excluded from a Rule 605 report as requiring special handling if it has a limit price that is inferior to the NBBO at the time of order receipt. All other ISOs should be included in a Rule 605 report, absent another applicable exclusion. Id. at Question 7.06.

efficiently prices respond to new information? In addition, what is the best approach for assessing whether the secondary markets are appropriately supporting the capital-raising function for companies of all sizes?

B. High Frequency Trading

One of the most significant market structure developments in recent years is high frequency trading ("HFT"). The term is relatively new and is not yet clearly defined. It typically is used to refer to professional traders acting in a proprietary capacity that engage in strategies that generate a large number of trades on a daily basis. These traders could be organized in a variety of ways, including as a proprietary trading firm (which may or may not be a registered broker-dealer and member of FINRA), as the proprietary trading desk of a multi-service broker-dealer, or as a hedge fund (all of which are referred to hereinafter collectively as a "proprietary firm"). Other characteristics often attributed to proprietary firms engaged in HFT are: (1) the use of extraordinarily high-speed and sophisticated computer programs for generating, routing, and executing orders; (2) use of co-location services and individual data feeds offered by exchanges and others to minimize network and other types of latencies; (3) very short time-frames for establishing and liquidating positions; (4) the submission of numerous orders that are cancelled shortly after submission; and (5) ending the trading day in as close to a flat position as possible (that is, not carrying significant, unhedged positions over-night). Estimates of HFT volume in the equity markets vary widely, though they typically are 50% of total volume or higher.[67] By any measure, HFT is a dominant component of the current market structure and is likely to affect nearly all aspects of its performance.

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[67] See, e.g., Jonathan Spicer and Herbert Lash, Who's Afraid of High-Frequency Trading?, Reuters.com, December 2, 2009 (available at http://www.reuters.com/article/idUSN173583920091202) ("High-frequency trading now

The Commission today is proposing an initiative to address a discrete HFT concern that the Commission already has identified. It would address the use of various types of arrangements to obtain the fastest possible market access.[68] This concept release is intended to request comment on the full range of concerns with respect to HFT, in contrast to the discrete concerns the Commission already has identified.

The lack of a clear definition of HFT, however, complicates the Commission's broader review of market structure issues. The lack of clarity may, for example, contribute to the widely varying estimates of HFT volume in today's equity markets. Although the term itself clearly implies a large volume of trades, some concerns that have been raised about particular strategies used by proprietary firms may not necessarily involve a large number of trades. Indeed, any particular proprietary firm may simultaneously be employing many different strategies, some of which generate a large number of trades and some that do not. Conceivably, some of these strategies may benefit market quality and long-term investors and others could be harmful.

In sum, the types of firms engaged in professional trading and the types of strategies they employ can vary considerably. Rather than attempt any single, precise definition of HFT, this release will focus on particular strategies and tools that may be used by proprietary firms and inquire whether these strategies and tools raise concerns that the Commission should address.

1. Strategies

Comment generally is requested on the strategies employed by proprietary firms in the current market structure. What are the most frequently used strategies? What are the key

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accounts for 60 percent of total U.S. equity volume, and is spreading overseas and into other markets."); Scott Patterson and Goeffrey Rogow, What's Behind High-Frequency Trading, Wall Street Journal, August 1, 2009 ("High frequency trading now accounts for more than half of all stock-trading volume in the U.S.");

[68] Market Access Release, supra note 15.

features of each strategy? What technology tools and other market structure components (such as exchange fee structures) are necessary to implement each strategy? Have any of these strategies been a competitive response to particular market structure components or to particular problems or challenges in the current market structure? Does implementation of a specific strategy benefit or harm market structure performance and the interests of long-term investors? Is it possible to reliably identify harmful strategies through, for example, such metrics as adding or taking liquidity, or trading with (momentum) or against (contrarian) prevailing price movements? Are there regulatory tools that would address harmful strategies while at the same time have a minimal impact on beneficial strategies?

Do commenters believe that the overall use of harmful strategies by proprietary firms is sufficiently widespread that the Commission should consider a regulatory initiative to address the problem? What type of regulatory initiative would be most effective? For example, should there be a minimum requirement on the duration of orders (such as one second) before they can be cancelled, whether across the board, in particular contexts, or when used by particular types of traders? If so, what would be an appropriate time period? Should the use of "pinging" orders by all or some traders to assess undisplayed liquidity be prohibited or restricted in all or some contexts?[69]

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[69] A "pinging" order is an immediate-or-cancel order that can be used to search for and access all types of undisplayed liquidity, including dark pools and undisplayed order types at exchanges and ECNs. The trading center that receives an immediate-or-cancel order will execute the order immediately if it has available liquidity at or better than the limit price of the order and otherwise will immediately respond to the order with a cancellation. As noted in section IV.B.1.d. below, there is an important distinction between using tools such as pinging orders as part of a normal search for liquidity with which to trade and using such tools to detect and trade in front of large trading interest as part of an "order anticipation" trading strategy.

The use of certain strategies by some proprietary firms has, in many trading centers, largely replaced the role of specialists and market makers with affirmative and negative obligations.[70] Has market quality improved or suffered from this development? How important are affirmative and negative obligations to market quality in today's market structure? Are they more important for any particular equity type or during certain periods, such as times of stress? Should some or all proprietary firms be subject to affirmative or negative trading obligations that are designed to promote market quality and prevent harmful conduct? Is there any evidence that proprietary firms increase or reduce the amount of liquidity they provide to the market during times of stress?

As noted above, the Commission wishes to request comment broadly on all strategies used by proprietary firms. To help present issues for comment, but without limiting the broad request, this release next will briefly discuss four broad types of trading strategies that often are associated with proprietary firms – passive market marking, arbitrage, structural, and directional. The discussion of directional strategies will focus on two directional strategies that may pose particular problems for long-term investors – order anticipation and momentum ignition. The Commission notes that many of the trading strategies discussed below are not new. What is new is the technology that allows proprietary firms to better identify and execute trading strategies.

a. Passive Market Making

Passive market making primarily involves the submission of non-marketable resting orders (bids and offers) that provide liquidity to the marketplace at specified prices. While the

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[70] Affirmative and negative obligations generally are intended to promote market quality. Affirmative obligations might include a requirement to consistently display high quality, two-sided quotations that help dampen price moves, while negative obligations might include a restriction on "reaching across the market" to execute against displayed quotations and thereby cause price moves.

proprietary firm engaging in passive market making may sometimes take liquidity if necessary to liquidate a position rapidly, the primary sources of profits are from earning the spread by buying at the bid and selling at the offer and capturing any liquidity rebates offered by trading centers to liquidity-supplying orders. If the proprietary firm is layering the book with multiple bids and offers at different prices and sizes, this strategy can generate an enormous volume of orders and high cancellation rates of 90% of more. The orders also may have an extremely short duration before they are cancelled if not executed, often of a second or less.

Although proprietary firms that employ passive market making strategies are a new type of market participant, the liquidity providing function they perform is not new. Professional traders with a permanent presence in the marketplace, standing ready to buy and sell on an ongoing basis, are a perennial type of participant in financial markets. Proprietary firms largely have replaced more traditional types of liquidity providers in the equity markets, such as exchange specialists on manual trading floors and OTC market makers that trade directly with customers. In contrast, proprietary firms generally are not given special time and place privileges in exchange trading (nor are they subject to the affirmative and negative trading obligations that have accompanied such privileges). In addition, proprietary firms typically do not trade directly with customer order flow, but rather trade by submitting orders to external trading venues such as exchanges and ATSs.[71]

Proprietary firms participate in the marketplace in some ways that are similar to both exchange specialists and OTC market makers. Indeed, a single firm or its affiliates may operate simultaneously in all three capacities. For example, proprietary traders are like exchange

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[71] It is possible for a single firm to provide liquidity in a variety of different forms. Some firms, for example, may blur the distinction between proprietary firms and OTC market makers by both trading actively in external trading centers and operating trading centers themselves that offer customers direct electronic access to their liquidity.

specialists in the sense that they transact most of their volume in public markets where their orders will trade with all comers. Unlike the traditional floor specialists, however, they do not have time and place advantages, except insofar as their sophistication and size enables them to employ the fastest, most powerful systems for generating, routing, and cancelling orders and thereby most take advantage of the current highly automated market structure (including such tools as individual trading center data feeds and co-location discussed below in section IV.B.2.). Proprietary traders are analogous to OTC market makers in that they have considerable flexibility in trading without significant negative or affirmative obligations for overall market quality. But unlike an OTC market maker, a proprietary firm typically does not trade directly with customers. The proprietary firm therefore may not have ongoing relationships with customers that can pressure the proprietary trader to provide liquidity in tough trading conditions or less actively traded stocks.

Quality of Liquidity. The Commission requests comment on the passive market making strategies of proprietary firms. To what extent do proprietary firms engage in the types of strategies described above? Do they provide valuable liquidity to the market for top-tier, large, medium, and small capitalization stocks? Has market quality improved or worsened as traditional types of liquidity providers have been replaced by proprietary firms? Does the very brief duration of many of their orders significantly detract from the quality of liquidity in the current market structure? For example, are their orders accurately characterized as phantom liquidity that disappears when most needed by long-term investors and other market participants? Or, is the collective result of many different proprietary firms engaging in passive market making a relatively stable quoted market in which there are many quotation updates (primarily

updates to size of the NBBO), but relatively few changes in the price of the NBBO? What types of data are most useful in assessing the quality of liquidity provided by proprietary firms?

Liquidity Rebates. One important aspect of passive market making is the liquidity rebates offered by many exchanges and ECNs when resting orders that add liquidity are accessed by those seeking to trade immediately by taking liquidity. The Commission requests comment on the volume of high frequency trading geared toward earning liquidity rebates and on the benefits or drawbacks of such trading. Are liquidity rebates unfair to long-term investors because they necessarily will be paid primarily to proprietary firms engaging in passive market making strategies? Or do they generally benefit long-term investors by promoting narrower spreads and more immediately accessible liquidity? Do liquidity rebates reward proprietary firms for any particular types of trading that do not benefit long-term investors or market quality? For example, are there risk-free trading strategies driven solely by the ability to recoup a rebate that offer little or no utility to the marketplace? Are these strategies most likely when a trading center offers inverted pricing and pays a liquidity rebate that is higher than its access fee for taking liquidity? Does the distribution of consolidated market data revenues pursuant to the Plans lead to the current trading center pricing schedules? If so, would there be any benefits to restructuring the Plans and, if so, how?

b. Arbitrage

An arbitrage strategy seeks to capture pricing inefficiencies between related products or markets. For example, the strategy may seek to identify discrepancies between the price of an ETF and the underlying basket of stocks and buy (sell) the ETF and simultaneously sell (buy) the underlying basket to capture the price difference. Many of the trades necessary to execute an arbitrage strategy are likely to involve taking liquidity, in contrast to the passive market making

strategy that primarily involves providing liquidity. In this respect, it is quite possible for a proprietary firm using an arbitrage strategy to trade with a proprietary firm using a passive market making strategy, and for both firms to end up profiting from the trade. Arbitrage strategies also generally will involve positions that are substantially hedged across different products or markets, though the hedged positions may last for several days or more.

The Commission requests comment on arbitrage strategies and whether they benefit or harm the interests of long-term investors and market quality in general. To what extent do proprietary firms engage in the types of strategies described above? For example, what is the volume of trading attributable to arbitrage involving ETFs (both in the ETF itself and in any underlying securities) and has the increasing popularity of ETFs in recent years significantly affected volume and trading patterns in the equity markets? If so, has the impact of ETF trading been positive or negative for long-term investors and overall market quality?

In addition, to what extent are arbitrage strategies focused on capturing pricing differences among the many different trading centers in NMS stocks? For example, do these arbitrage strategies significantly depend on latencies among trading center data feeds and the consolidated market data feeds? Are these strategies beneficial for long-term investors and market structure quality? If not, how should such strategies be addressed?

c. Structural

Some proprietary firm strategies may exploit structural vulnerabilities in the market or in certain market participants. For example, by obtaining the fastest delivery of market data through co-location arrangements and individual trading center data feeds (discussed below in section IV.B.2.), proprietary firms theoretically could profit by identifying market participants who are offering executions at stale prices. In addition, some market participants offer guarantee

match features to guarantee the NBBO up to a certain limit. A proprietary firm could enter a small limit order in one part of the market to set up a new NBBO, after which the same proprietary firm triggers guaranteed match trades in the opposite direction.[72] Are proprietary firms able to profitably exploit these structural vulnerabilities? To what extent do proprietary firms engage in the types of strategies described above? What is the effect of this trading on market quality?

d. Directional

Neither passive market making nor arbitrage strategies generally involve a proprietary firm taking a significant, unhedged position based on an anticipation of an intra-day price movement of a particular direction. There may, however, be a wide variety of short-term strategies that anticipate such a movement in prices. Some "directional" strategies may be as straightforward as concluding that a stock price temporarily has moved away from its "fundamental value" and establishing a position in anticipation that the price will return to such value. These speculative strategies often may contribute to the quality of price discovery in a stock.[73]

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72 The Commission has found that similar conduct is manipulative, in violation of Section 10(b) of the Exchange Act and Rule 10b-5 thereunder. See Terrance Yoshikawa, Securities Exchange Act Release No. 53731 (April 26, 2006) (Commission opinion affirming NASD disciplinary action).

73 See, e.g., Sanford Grossman & Joseph Stiglitz, On the Impossibility of Informationally Efficient Markets, American Economic Review (June 1980) ("We propose here a model in which there is an equilibrium degree of disequilibrium: prices reflect the information of informed individuals (arbitrageurs) but only partially, so that those who expend resources do receive compensation. How informed the price system is depends on the number of individuals who are informed, but the number of individuals who are informed is itself an endogenous variable in the model.").

The Commission requests comment on two types of directional strategies that may present serious problems in today's market structure – order anticipation and momentum ignition.

Order Anticipation Strategies. One example of an order anticipation strategy is when a proprietary firm seeks to ascertain the existence of one or more large buyers (sellers) in the market and to buy (sell) ahead of the large orders with the goal of capturing a price movement in the direction of the large trading interest (a price rise for buyers and a price decline for sellers).[74] After a profitable price movement, the proprietary firm then may attempt to sell to (buy from) the large buyer (seller) or be the counterparty to the large buyer's (seller's) trading. In addition, the proprietary firm may view the trading interest of the large buyer (seller) as a free option to trade against if the price moves contrary to the proprietary firm's position.

Of course, any proprietary firm or other person that violates a duty to a large buyer or seller or misappropriates their order information and then uses the information for its own trading to the detriment of the large buyer and seller has engaged in misconduct that already is prohibited, such as forms of front running. Regulatory authorities currently examine for, investigate, and prosecute this type of misconduct and will continue to do so. The Commission requests comment on any regulatory change that would limit the potential for proprietary firms to profit from misconduct with respect to the trading activities of large buyers and sellers.

The type of order anticipation strategy referred to in this release involves any means to ascertain the existence of a large buyer (seller) that does not involve violation of a duty,

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74 See Larry Harris, Trading and Exchanges: Market Microstructure for Practitioners (2003) at 222, 245 ("Harris Treatise") ("Order anticipators are speculators who try to profit by trading before others trade. They make money when they correctly anticipate how other traders will affect prices or when they can extract option values from the orders that other traders offer to the market.") (emphasis in original).

misappropriation of information, or other misconduct. Examples include the employment of sophisticated pattern recognition software to ascertain from publicly available information the existence of a large buyer (seller), or the sophisticated use of orders to "ping" different market centers in an attempt to locate and trade in front of large buyers and sellers.

It is important to recognize the distinction between order anticipation and a normal search for liquidity to implement a trading strategy. When a proprietary firm employs an order anticipation strategy and detects a large buyer (seller), it will first attempt to buy (sell), and the proprietary firm largely will be indifferent to whether the party is a buyer or a seller. In contrast, long-term investors searching for liquidity to trade against will be seeking specifically either to establish a position or to liquidate a position. If buying, the long-term investor will attempt to find large selling interest and buy from it or, if selling, will attempt to find large buying interest and sell to it. Both the long-term investor and the large buyer (seller) benefit from the liquidity seeking strategy, in contrast to the order anticipation strategy where the large buyer (seller) is harmed when the proprietary firm initially trades in front of the large buyer (seller).

Order anticipation is a not a new strategy. Indeed, a 2003 treatise on market structure described order anticipation as follows: "Order anticipators are parasitic traders. They profit only when they can prey on other traders. They do not make prices more informative, and they do not make markets more liquid. . . . Large traders are especially vulnerable to order anticipators."[75] An important issue for purposes of this release is whether the current market structure and the availability of sophisticated, high-speed trading tools enable proprietary firms to engage in order anticipation strategies on a greater scale than in the past. Alternatively, is it possible that the widespread use of high-speed trading tools by a variety of proprietary firms and

[75] Harris Treatise at 251 (emphasis in original).

institutions limits the ability of market participants to engage in profitable order anticipation strategies? Does your answer depend on whether top tier, large, medium, or small market capitalization stocks are considered?

The Commission requests comment on all aspects of order anticipation strategies. Do commenters believe that order anticipation significantly detracts from market quality and harms institutional investors (for example, does it represent a substantial transfer of wealth from the individuals represented by institutional investors to proprietary firms)? Do commenters believe that order anticipation has become more or less prevalent in recent years? If more prevalent, is the use of proprietary firm strategies an important factor in this development? If commenters believe order anticipation has become more prevalent, are there ways to distinguish order anticipation from other beneficial trading strategies? Are there regulatory tools that would effectively address concerns about order anticipation, without unintentionally interfering with other strategies that may be beneficial for long-term investors and market quality?

Momentum Ignition Strategies. Another type of directional strategy that may raise concerns in the current market structure is momentum ignition. With this strategy, the proprietary firm may initiate a series of orders and trades (along with perhaps spreading false rumors in the marketplace) in an attempt to ignite a rapid price move either up or down. For example, the trader may intend that the rapid submission and cancellation of many orders, along with the execution of some trades, will "spoof" the algorithms of other traders into action and cause them to buy (sell) more aggressively. Or the trader may intend to trigger standing stop loss orders that would help cause a price decline. By establishing a position early, the proprietary firm will attempt to profit by subsequently liquidating the position if successful in igniting a price movement. This type of strategy may be most harmful in less actively traded stocks, which

may receive little analyst or other public attention and be vulnerable to price movements sparked by a relatively small amount of volume.

Of course, any market participant that manipulates the market has engaged in misconduct that already is prohibited. The Commission and other regulatory authorities already employ their examination and enforcement resources to detect violations and bring appropriate proceedings against the perpetrators. This concept release is focused on the issue of whether additional regulatory tools are needed to address illegal practices, as well as any other practices associated with momentum ignition strategies. For example, while spreading false rumors to cause price moves is illegal, such rumors can be hard to find (if not spread in writing), and it can be difficult to ascertain the identity of those who spread rumors to cause price moves.

The Commission requests comment on whether momentum ignition strategies are a significant problem in the current market structure. To what extent do proprietary firms engage in the types of strategies described above? Does, for example, the speed of trading and ability to generate a large amount of orders across multiple trading centers render this type of strategy more of a problem today? If momentum ignition strategies have caused harm, are there objective indicia that would reliably identify problematic strategies? Are there regulatory tools (beyond the currently applicable anti-fraud and anti-manipulation provisions) that would effectively reduce or eliminate the use of momentum ignition strategies while at the same time have a minimal impact on other strategies that are beneficial to long-term investors and market quality?

2. Tools

This section will focus on two important tools that often are used by proprietary firms to implement their short-term trading strategies – co-location and trading center data feeds.

a. Co-Location

Many proprietary firm strategies are highly dependent upon speed – speed of market data delivery from trading center servers to servers of the proprietary firm; speed of decision processing of trading engines of the proprietary firm; speed of access to trading center servers by servers of the proprietary firm; and speed of order execution and response by trading centers. Speed matters both in the absolute sense of achieving very small latencies and in the relative sense of being faster than competitors, even if only by a microsecond. Co-location is one means to save micro-seconds of latency.

Co-location is a service offered by trading centers that operate their own data centers and by third parties that host the matching engines of trading centers. The trading center or third party rents rack space to market participants that enables them to place their servers in close physical proximity to a trading center's matching engine. Co-location helps minimize network and other types of latencies between the matching engine of trading centers and the servers of market participants.

The Commission believes that the co-location services offered by registered exchanges are subject to the Exchange Act. Exchanges that intend to offer co-location services must file proposed rule changes and receive approval of such rule changes in advance of offering the services to customers.[76] The terms of co-location services must not be unfairly discriminatory, and the fees must be equitably allocated and reasonable.[77]

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[76] Section 3(a)(27) of the Exchange Act defines "rules of an exchange" as, among other things, a stated policy, practice, or interpretation of the exchange that the Commission has by rule determined to be rules of the exchange. Rule 19b-4(b) under the Exchange Act defines "stated policy, practice, or interpretation" to mean, in part, [a]ny material aspect of the operation of the facilities of the self-regulatory organization." The Commission views co-location services as being a material aspect of the operation of the facilities of an exchange.

[77] Section 6(b)(4) and (5) of the Exchange Act.

Fairness of Co-Location Services. Beyond these basic statutory requirements, the Commission broadly requests comment on co-location and whether it benefits or harms long-term investors and market quality. For example, does co-location provide proprietary firms an unfair advantage because they generally will have greater resources and sophistication to take advantage of co-location services than other market participants, including long-term investors? If so, specify how this disparity harms long-term investors. Conversely, does co-location offer benefits to long-term investors? For example, do co-location services enable liquidity providers to operate more efficiently and thereby increase the quality of liquidity they provide to the markets? Please quantify any harm or benefits, if possible. Is it fair for some market participants to pay to obtain better access to the markets than is available to those not in a position to pay for or otherwise obtain co-location services? Aside from physical proximity, are there other aspects of services offered by exchanges to co-location participants that may lead to unfair access concerns?

In addition, are brokers generally able to obtain and use co-location services on behalf of their customers? If so, are long-term investors harmed by not being able to use co-location directly? Are co-location fees so high that they effectively create a barrier for smaller firms? Do commenters believe that co-location services fundamentally differ from other respects in which market participants can obtain latency advantages, particularly if co-location services are not in short supply and are available to anyone on terms that are fair and reasonable and not unreasonably discriminatory?

If commenters believe that co-location services create unfair access to trading, should the Commission prohibit or restrict exchanges, and other trading centers, such as ATSs, from offering co-location services? If exchanges and other trading centers were no longer permitted to

provide the services, would third parties, who may be outside the Commission's regulatory authority, be encouraged to obtain space close to an exchange's data center and rent such space to market participants? Alternatively, could exchanges and other trading centers batch process all orders each second and, if so, what would be the effect of such a policy on market quality?

The Commission also requests comment on exchanges and other trading centers that place their trading engines in data facilities operated by third parties. Such parties are not regulated entities subject to the access and other requirements of the Exchange Act and Commission rules. Could this disparity create competitive disadvantages among trading centers? Should the third party data centers be considered facilities of the exchange or trading center? Alternatively, should the Commission require trading centers to obtain contractual commitments from third parties to provide any co-location services on terms consistent with the Exchange Act and Commission rules?

With respect to those market participants that purchase co-location services, should exchanges and other trading centers be subject to specific requirements to help assure that all participants are treated in a manner that is not unfairly discriminatory? Latency can arise from a variety of sources, such as cable length and capacity, processing capabilities, and queuing. Is it possible for trading centers to guarantee equal latency across all market participants that use comparable co-location services? Should the Commission require latency transparency – the disclosure of information that would enable market participants to make informed decisions about their speed of access to an exchange or other trading center? Such disclosures could include, for example, periodic public reports on the latencies of the fastest market participants (on an anonymous basis), as well as private reports directly to individual market participants of

their specific latencies. If latency disclosure should be required, what information should be disclosed and in what manner?

Affirmative or Negative Trading Obligations. Finally, the Commission requests comment on whether all or some market participants (such as proprietary firms) that obtain co-location services should be subject to any affirmative or negative obligations with respect to their trading behavior. Such obligations historically were applied to exchange specialists that enjoyed a unique time and place advantage on the floor of an exchange. Are co-location services analogous to the specialist advantages? Or does the wider availability of co-location services to many market participants distinguish co-located market participants from exchange specialists? If all or some co-location participants should be subject to trading obligations, what should be the nature of such obligations? For example, should some or all co-location participants be prohibited from aggressively taking liquidity and moving prices always or only under specified circumstances? If only under specified circumstances, what should those include or exclude? Should some or all co-location participants ever be required to provide liquidity on an ongoing basis or in certain contexts?

b. Trading Center Data Feeds

Another important tool widely used by proprietary firms is the individual data feeds offered by many exchanges and ECNs. As discussed in section III.B.1. above, the consolidated data feeds include the best-priced quotations of all exchanges and certain ATSs and all reported trades. The individual data feeds of exchanges and ECNs generally will include their own best-priced quotations and trades, as well as other information, such as inferior-priced orders included in their depth-of-book. When it adopted Regulation NMS in 2005, the Commission did not require exchanges, ATSs, and other broker-dealers to delay their individual data feeds to

synchronize with the distribution of consolidated data, but prohibited them from independently transmitting their own data any sooner than they transmitted the data to the plan processors.[78]

Given the extra step required for SROs to transmit market data to plan processors, and for plan processors to consolidate the information and distribute it the public, the information in the individual data feeds of exchanges and ECNs generally reaches market participants faster than the same information in the consolidated data feeds. The extent of the latency depends, among other things, on the speed of the systems used by the plan processors to transmit and process consolidated data and on the distances between the trading centers, the plan processors, and the recipients. As noted above,[79] the Commission understands that the average latency of plan processors for the consolidated data feeds generally is less than 10 milliseconds. This latency captures the difference in time between receipt of data by the plan processors from the SROs and distribution of the data by the plan processors to the public.

Latency of Consolidated Data. The Commission requests comment on all aspects of the latency between consolidated data feeds and individual trading center data feeds. What have market participants experienced in terms of the degree of latency between trading center and consolidated data? Is the latency as small as possible given the necessity of the consolidation function, or could plan processor systems be improved to significantly reduce the latency from current levels, while still retaining the high level of reliability required of plan processors?

More broadly, is the existence of any latency, or the disparity in information transmitted, fair to investors or other market participants that rely on the consolidated market data feeds and do not use individual trading center data feeds? If so, should the unfairness be addressed by a requirement that trading center data be delayed for a sufficient period of time to assure that

78 Regulation NMS Release, 70 FR at 37567.

79 See supra note 45 and accompanying text.

consolidated data reaches users first? Would such a mandated delay adequately address unfairness? Would a mandatory delay seriously detract from the efficiency of trading and harm long-term investors and market quality? Should the Commission require that additional information be included in the consolidated market data feeds?

Odd-Lot Transactions. Finally, the consolidated trade data currently does not include reports of odd lot orders or odd lot transactions (transactions with sizes of less than 1 round lot, which generally is 100 shares). It appears that a substantial volume of trading (approximately 4%) may be attributable to odd lot transactions. Why is the volume of odd lots so high? Should the Commission be concerned about this level of activity not appearing in the consolidated trade data? Has there been an increase in the volume of odd lots recently? If so, why? Do market participants have incentives to strategically trade in odd lots to circumvent the trade disclosure or other regulatory requirements? Would these trades be important for price discovery if they were included in the consolidated trade data? Should these transactions be required to be reported in the consolidated trade data? Why?

3. Systemic Risks

Stepping back from the particular strategies and tools used by proprietary traders, comment is requested more broadly on whether HFT poses significant risks to the integrity of the current equity market structure. For example, do the high speed and enormous message traffic of automated trading systems threaten the integrity of trading center operations? Also, many proprietary firms potentially could engage in similar or connected trading strategies that, if such strategies generated significant losses at the same time, could cause many proprietary firms to become financially distressed and lead to large fluctuations in market prices. To the extent that proprietary firms obtain financing for their trading activity from broker-dealers or other types of

financial institutions, the significant losses of many proprietary firms at the same time also could lead to more widespread financial distress.[80]

Comment also is requested on whether proprietary traders help promote market integrity by providing an important source of liquidity in difficult trading conditions. The Commission notes that, from an operational standpoint, the equity markets performed well during the world-wide financial crisis in the Autumn of 2008 when volume and volatility spiked to record highs.[81] Unlike some financial crises in the past, the equity markets continued to operate smoothly and participants generally were able to trade at currently displayed prices (though most investors likely suffered significant losses from the general decline of market prices). Does the 2008

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80 A broker-dealer conducting a general securities business that is required to register with the Commission under Section 15(b) of the Exchange Act must comply with the Commission's net capital rule, Exchange Act Rule 15c3-1. Under Rule 15c3-1, broker-dealers are required to maintain, at all times, a minimum amount of net capital. This means that firms must be able to demonstrate that they have sufficient net capital for intra-day positions. In addition, if a broker-dealer is engaged in proprietary trading on margin, it may be subject to certain provisions of Regulation T, 12 CFR 220.1, et. seq., as well as SRO margin rules applicable to broker-dealers. See, e.g., NYSE Rule 431(e)(5) (specialists' and market makers' accounts), (e)(6)(A) (broker/dealer accounts), (e)(6)(B) (Joint Back Office Arrangements) and NASD Rule 2520(e)(5), (e)(6)(A) and (e)(6)(B). Moreover, high frequency traders who are not broker-dealers must comply with the SRO day trading rules if they meet the definition of "pattern day trader." NYSE Rule 431(f)(8)(B) and NASD Rule 2520(f)(8)(B).

81 See, e.g., NYSE Euronext, Consolidated Volume in NYSE Listed Issues 2000-2009 (available at http://www.nyxdata.com/nysedata/NYSE/FactsFigures/tabid/115/Default.aspx) (consolidated average daily volume in NYSE-listed stocks reached a then record high of 7.1 billion shares in October 2008, compared to an average of 3.4 billion shares for the year 2007); Pam Abramowitz, Technology Drives Trading Costs, Institutional Investor (November 4, 2009) ("[V]olatility has fallen substantially over the past six to nine months as equity markets have rallied. . . . [The] VIX, which hit an all-time high of 89.53 in October 2008, averaged 25.49 in the third quarter of 2009, close to its precrisis historical average of 20.3"); Tom Lauricella, Volatility Requires New Strategies, Wall Street Journal (October 20, 2008) ("The stock market's collapse and unprecedented daily price swings are forcing investors of all stripes to rethink their strategies, all the while looking for any hints that the financial markets will stabilize. . . . So far this month, there have been 10 days where the Dow Jones Industrial Average ricocheted in a range of more than 5% . . .").

experience indicate that systemic risk is appropriately minimized in the current market structure? If not, what further steps should the Commission take to address systemic risk? Should, for example, all proprietary firms be required to register as broker-dealers and become members of FINRA to help assure that their operations are subject to full regulatory oversight? Moreover, does the current regulatory regime adequately address the particular concerns raised by proprietary firms and their trading strategies and tools?

C. Undisplayed Liquidity

As noted in section III.A. above, undisplayed liquidity is trading interest that is available for execution at a trading center, but is not included in the consolidated quotation data that is widely disseminated to the public. Undisplayed liquidity also is commonly known as "dark" liquidity. The Commission recently published proposals to address certain practices with respect to undisplayed liquidity. These include the use of actionable indications of interest, or "IOIs," to attract order flow, the lowering of the trading volume threshold that would trigger ATS order display obligations, and the real-time disclosure of the identity of ATSs on the public reports of their executed trades.[82] This release is intended to request comment on a wide range of issues with respect to undisplayed liquidity in all of its forms.

Undisplayed liquidity in general is not a new phenomenon. Market participants that need to trade in large size, such as institutional investors, always have faced a difficult trading dilemma. On the one hand, if they prematurely reveal the full extent of their large trading interest to the market, then market prices are likely to run away from them (a price rise for those seeking to buy and a price decline for those seeking to sell), which would greatly increase their transaction costs and reduce their overall investment returns. On the other hand, if an

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[82] See Non-Public Trading Interest Release, 74 FR at 61209-61210.

institutional investor that wants to trade in large size does nothing, then it will not trade at all. Finding effective and innovative ways to trade in large size with minimized transaction costs is a perennial challenge for institutional investors, the brokers that represent their orders in the marketplace, and the trading centers that seek to execute their orders.

A primary source of dark liquidity for many years was found on the manual trading floors of exchanges. The floor brokers "worked" the large orders of their customers by executing such orders in a number of smaller transactions without revealing to potential counterparties the total size of the order. One consequence of the decline in market share of the NYSE floor in recent years is that this historically large undisplayed liquidity pool in NYSE-listed stocks appears to have largely migrated to other types of venues. As discussed in section III.A.3. above, a recent form of undisplayed liquidity is the dark pool – an ATS that does not display quotations in the consolidated quotation data. Other sources of undisplayed liquidity are broker-dealers that internalize orders[83] and undisplayed order types of exchanges and ECNs.

Although they offer liquidity that is not included in the consolidated quotation data, dark pools and OTC market makers generally trade with reference to the best displayed quotations and execute orders at prices that are equal to or better than the NBBO. Indeed, all dark pools and OTC market makers are covered by the trade-through restrictions of Rule 611 and, subject to limited exceptions, cannot execute transactions at prices that are inferior to the best displayed prices.

The Commission requests comment on all forms of undisplayed liquidity in the current market structure. It particularly wants to present three issues for comment – the effect of

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83 As noted in section III.A.2. above, many broker-dealers may submit orders to exchanges or ECNs, which then are included in the consolidated quotation data. The internalized executions of broker-dealers, however, primarily reflect liquidity that is not included in the consolidated quotation data and are appropriately classified as undisplayed liquidity.

undisplayed liquidity on order execution quality, the effect of undisplayed liquidity on public price discovery, and fair access to sources of undisplayed liquidity.

1. Order Execution Quality

It appears that a significant percentage of the orders of individual investors are executed at OTC market makers, and that a significant percentage of the orders of institutional investors are executed in dark pools. Comment is requested on the order execution quality provided to these long-term investors. Given the strong Exchange Act policy preference in favor of price transparency and displayed markets, do dark pools and OTC market makers offer substantial advantages in order execution quality to long-term investors? If so, do these advantages justify the diversion of a large percentage of investor order flow away from the displayed markets that play a more prominent role in providing public price discovery? If investors were limited in their ability to use undisplayed liquidity, how would trading behavior change, if at all? What types of activity might evolve to replace undisplayed liquidity if its use were constrained?

Individual Investors. Liquidity providers generally consider the orders of individual investors very attractive to trade with because such investors are presumed on average to not be as informed about short-term price movements as are professional traders. Do individual investor orders receive high quality executions when routed to OTC market makers? For example, does competition among OTC market makers to attract order flow lead to significantly better prices for individual investor orders than they could obtain in the public markets? Do OTC market makers charge access fees comparable to those charged by public markets? Does the existence of payment for order flow arrangements between routing brokers and OTC market makers (and internalization arrangements when the routing broker and OTC market maker are affiliated) detract from the quality of executions for investor orders? If more individual investor

orders were routed to public markets, would it promote quote competition in the public markets, lead to narrower spreads, and ultimately improve order execution quality for individual investors beyond current levels? Finally, are a significant number of individual investor orders executed in dark pools and, if so, what is the execution quality for these orders?

Institutional Investors. An important objective of many dark pools is to offer institutional investors an efficient venue in which to trade in large size (often by splitting a large parent order into many child orders) with minimized market impact. To what extent do dark pools meet this objective of improving execution quality for the large orders of institutional investors? Does execution quality vary across different types of dark pools and, if so, which types? If so, does this difference depend on the characteristics of particular securities (such as market capitalization and security price)?

As noted above in section IV.C., many dark pools execute orders with reference to the displayed prices in public markets. Does this reference pricing create opportunities for institutional investors to be treated unfairly by improper behavior (such as placing a small order to change the NBBO for a very short period and quickly submitting orders to dark pools for execution at prices affected by the new NBBO)?[84] If so, to what extent does gaming occur? Do all types of dark pools employ anti-gaming tools? How effective are such tools?

Finally, are institutional investors able to trade more efficiently using undisplayed liquidity at dark pools and broker-dealers than they are using the undisplayed liquidity at exchanges and ECNs? What are the advantages and disadvantages of each form of undisplayed liquidity? If the use of undisplayed liquidity at dark pools and broker-dealers were curtailed in

[84] The Commission has found that similar conduct is manipulative. See supra note 72.

any way, could institutional investors adjust by using undisplayed liquidity on exchanges and ECNs without incurring higher transaction costs?

2. Public Price Discovery

Comment is requested on whether the trading volume of undisplayed liquidity has reached a sufficiently significant level that it has detracted from the quality of public price discovery and execution quality. For example, has the level of undisplayed liquidity led to increased spreads, reduced depth, or increased short-term volatility in the displayed trading centers? If so, has such harm to public price discovery led to a general worsening of execution quality for investors in undisplayed markets that execute trades with reference to prices in the displayed markets?

It appears that a significant percentage of the orders of long-term investors are executed either in dark pools or at OTC market makers, while a large percentage of the trading volume in displayed trading centers is attributable to proprietary firms executing short-term trading strategies. Has there in fact been an increase in the proportion of long-term investor orders executed in undisplayed trading centers? If so, what is the reason for this tendency and is the practice beneficial or harmful to long-term investors and to market quality? With respect to undisplayed order types on exchanges and ECNs, do commenters believe that these order types raise similar concerns about public price discovery as undisplayed liquidity at dark pools and broker-dealers?

If commenters do not believe the current level of undisplayed liquidity has detracted from the quality of public price discovery, is there any level at which they believe the Commission should be concerned? In this regard, it appears that the overall percentage of trading volume between undisplayed trading centers and displayed trading centers has remained fairly steady for

many years between 70% and 80%.[85] Does this overall percentage accurately reflect the effect of undisplayed liquidity on public price discovery or does it mask potentially important changes in the routing of underlying types of order flow? For example, the NYSE captures a smaller percentage of trading in NYSE-listed stocks, while the overall volume in NYSE stocks has increased dramatically.[86] Should this change in market share be interpreted to mean that a greater percentage of long-term individual investor and long-term institutional investor order flow in NYSE-listed stocks has shifted to dark pools and OTC market makers, while the public markets are executing an expanding volume of trading that is primarily attributable to HFT strategies? If so, does this underlying shift in order flow affect the quality of public price discovery in NYSE-listed stocks and what are the reasons for this development? Do similar order flow patterns affect the quality of public price discovery in stocks listed on other exchanges as well?

Trade-At Rule. If commenters believe that the quality of public price discovery has been harmed by undisplayed liquidity, are there regulatory tools that the Commission should consider to address the problem? Should the Commission consider a "trade-at" rule that would prohibit any trading center from executing a trade at the price of the NBBO unless the trading center was displaying that price at the time it received the incoming contra-side order? Under this type of rule, for example, a trading center that was not displaying the NBBO at the time it received an incoming marketable order could either: (1) execute the order with significant price improvement (such as the minimum allowable quoting increment (generally one cent)); or (2)

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85 See supra note 21 and accompanying text (estimated 25.4% of share volume in NMS stocks executed in undisplayed trading centers in September 2009).

86 See supra notes 8 and 10 and accompanying text.

route ISOs to full displayed size of NBBO quotations and then execute the balance of the order at the NBBO price.

The Commission requests comment on all aspects of a trade-at rule. Would it help promote pre-trade public price discovery by preventing the diversion of a significant volume of highly valuable marketable order flow away from the displayed trading centers and to undisplayed trading centers? If so, to what extent would the increased routing of this marketable order flow to displayed trading centers create significantly greater incentives for market participants to display quotations in greater size or with more aggressive prices?

Given the order-routing and trading system technologies currently in place to prevent trade-throughs, would it be feasible for market participants to comply with a trade-at rule at reasonable cost? Should a trade-at rule apply to all types of trading centers (e.g., exchanges, ECNs, OTC market makers, and dark pools) or only to some of them? If so, which ones and why? In addition, if the Commission were to consider such a rule, how should it treat the issue of displayed markets that charge access fees? Should it, for example, condition the "trade-at" protection of a displayed quotation on there being no access fee or an access fee that is much smaller than the current 0.3 cent per share cap in Rule 610(c) of Regulation NMS?

Depth-of-Book Protection. Rule 611 currently provides trade-through protection only to quotations that reflect the best, "top-of-book," prices of a trading center.[87] Should Rule 611 be expanded to provide trade-through protection to the displayed "depth-of-book" quotations of a trading center? Would depth-of-book protection significantly promote the greater display of

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87 See Regulation NMS Release, 70 FR at 37529-37530 (discussion of decision not to adopt a "Voluntary Depth Alternative" that would have provided trade-through protection to depth-of-book quotations that a market voluntarily included in the consolidated quotation data).

trading interest? Is depth-of-book protection feasible under current trading conditions and could the securities industry implement depth-of-book protection at reasonable cost?

Low-Priced Stocks. There may be greater incentives for broker-dealer internalization in low-priced stocks than in higher priced stocks. In low-priced stocks, the minimum one cent per share pricing increment of Rule 612 of Regulation NMS is much larger on a percentage basis than it is in higher-priced stocks. For example, a one cent spread in a $20 stock is 5 basis points, while a one cent spread in a $2 stock is 50 basis points – 10 times as wide on a percentage basis. Does the larger percentage spread in low-price stocks lead to greater internalization by OTC market makers or more trading volume in dark pools? If so, why? Should the Commission consider reducing the minimum pricing increment in Rule 612 for lower priced stocks?

3. Fair Access and Regulation of ATSs

A significant difference between the undisplayed liquidity offered by exchanges and the undisplayed liquidity offered by dark pools and broker-dealers is the extent of access they allow to such liquidity. As noted in section III.B.3. above, registered exchanges are required to offer broad access to broker-dealers. As ATSs that are exempt from exchange registration, dark pools are not required to provide fair access unless they reach a 5% trading volume threshold in a stock, which none currently do.[88] Broker-dealers that internalize also are not subject to fair access requirements. As a result, access to the undisplayed liquidity of dark pools and broker-dealers is determined primarily by private negotiation.

The Commission requests comment on whether trading centers offering undisplayed liquidity are subject to appropriate regulatory requirements for the type of business they conduct.

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[88] The Commission understands that ECNs, unlike most dark pools, generally offer wide access to their services, including undisplayed liquidity, even if not subject to the fair access requirement of Rule 301(b)(5) of Regulation ATS.

For example, should the trading volume threshold in Regulation ATS that triggers the fair access requirement be lowered from its current 5%? If so, what is the appropriate threshold?

If an ATS exceeds the trading volume threshold, Regulation ATS requires that the ATS have access standards that do not unreasonably prohibit or limit any person in respect to access services, and prohibits the ATS from applying such standards in an unfair or discriminatory manner. Do commenters believe that all types of dark pools can comply with this fair access requirement, yet still achieve the objective of enabling institutional investors to trade in large size with minimized price impact? Can dark pool restrictions designed to prevent predatory trading behavior[89] be drafted in an objective fashion that would comply with the Regulation ATS fair access requirement?

The majority of dark pool volume is executed in ATSs that are sponsored by multi-service broker-dealers.[90] Can a broker-dealer sponsored dark pool apply objective fair access standards reasonably to prevent predatory trading, but without using such standards as a pretext to discriminate based on the competitive self interest of the sponsoring broker?

Finally, do investors have sufficient information about dark pools to make informed decisions about whether in fact they should seek access to dark pools? Should dark pools be required to provide improved transparency on their trading services and the nature of their participants? If so, what disclosure should be required and in what manner should ATSs provide such disclosures?

More broadly, are there any other aspects of ATS regulation that should be enhanced for dark pools or for all ATSs, including ECNs? For example, do ATSs contribute appropriately to

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89 See, e.g., section IV.B.1.d. supra (discussion of order anticipation strategies that seek to ascertain the existence of large buyers and sellers).

90 Data compiled from Forms ATS submitted to Commission for 3d quarter 2009.

the costs of consolidated market surveillance? Currently, FINRA is the SRO for ATSs, and ATSs must pay the applicable FINRA regulatory fees. Do these FINRA fees adequately reflect the significant volume currently executed by ATSs? Should ATSs be required to contribute more directly to the cost of market surveillance? Finally, are there any ways in which Regulation ATS should be modified or supplemented to appropriately reflect the significant role of ATSs in the current market structure?

D. General Request for Comments

The Commission requests and encourages all interested persons to submit their views on any aspect of the current equity market structure. While this release was intended to present particular issues for comment, it was not intended in any way to limit the scope of comments or issues to be considered. In addition, the views of commenters are of greater assistance when they are accompanied by supporting data and analysis.

By the Commission.

Elizabeth M. Murphy
Secretary

Dated: January 14, 2010