January 14, 2005
Princeton University
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Princeton, NJ 08544

Jonathan G. Katz
Secretary, Securities and Exchange Commission
450 Fifth Street, NW.,Washington, DC
20459-0609

**Re: File No. S7-10-04, Release No. 34-50870 (December 16, 2004)
Regulation NMS**

Dear Secretary Katz,

This fall a Princeton University undergraduate task force in the Woodrow Wilson School of Public Policy examined the regulation of publicly traded securities. The task force consisted of eight third-year policy students who were led by two fourth-year policy students and were advised by Harvard Law School Professor and Visiting Princeton Professor Hal S. Scott. Each of the eight students investigated a different area of securities regulation, and arrived at their own individual conclusions. The task force discussed each of the topics and eventually arrived at a collective set of recommendations summarized in the attached task force report. The comments and the recommendations the students have produced are the result of objective and extensive independent work and their opinions are entirely their own. The recommendations in this report are not necessarily the views of the senior commissioners or Professor Scott.

The students investigated some of the issues within proposed Regulation NMS and its Reproposal: the trade-through rule, data distribution and market access. We also considered the need for a broader review of other trading rules by a Presidential Working Group and the issue of payment for order flow which is important in determining the overall market structure. The task force also looked at the issue of governance of exchanges, the subject of another pending SEC proposal, and self-regulation of exchanges and other market centers, the subject of a pending Concept Release. Finally, the task force addressed short sales and the integration of the U.S. market with the broader international market. In the appendix to the report, you will find the two papers on Regulation NMS, the paper looking at the need for a broader review of trading rules and the paper on payment for order flow. These papers are the views of individual task force members. The collective judgment of the task force on these issues is expressed in the report. Our comment consists only of the task force recommendations on trade-through, data distribution and market access, payment for order flow and the need for a broad review of trading rules. The four individual papers are included only for background.

The Princeton students discussed these issues among themselves and with distinguished industry professionals over twelve weeks.[1] The students' lack of bias regarding the securities industry combined with the depth of knowledge they have about each topic makes their work unique and invaluable. We are looking forward to having an impact on improving the efficiency of American financial markets. Thank you for your consideration of these comments.

Best Regards,

Jayda Dagdelen
Senior Task Force Commissioner

Mara Tchalakov
Senior Task Force Commissioner

cc: Chairman William H. Donaldson
Commissioner Paul S. Atkins
Commissioner Roel C. Campos
Commissioner Cynthia A. Glassman
Commissioner Harvey J. Goldschmid
Annette L. Nazareth, Director, Division of Market Regulation
Robert L. D. Colby, Deputy Director, Division of Market Regulation

[1] Over the course of the semester, the task force met with Annette Nazareth, Director, Division of Market Regulation, Securities and Exchange Commission; John Thain, Chief Executive Officer, NYSE; Robert Britz, President and Chief Operating Officer, NYSE; Richard Ketchum, Chief Regulatory Officer, NYSE; David Shuler, Chief of Staff, NYSE; Richard Bernard, General Counsel, NYSE; Robert McCooey, Member of the Board of Executives, NYSE; Cameron Smith, General Counsel, The Island ECN; Peter Wallison, American Enterprise Institute; Douglas Shulman, President, Markets, Services and Information, NASD; Benn Steil, Council on Foreign Relations; Eric Roiter, General Counsel, Fidelity Investments.

PRINCETON UNIVERSITY

Woodrow Wilson School of

Public and International Affairs

POLICY TASK FORCE REPORT*

THE REGULATION OF PUBLICLY TRADED SECURITIES

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January 2005

*** This report represents the views of the Task Force Members but not necessarily those of Professor Scott or the senior commissioners.**

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I. INTRODUCTION

A Brief Overview of the Task Force

The monumental task facing the Securities and Exchange Commission (SEC) and United States policymakers today is how to administer rules and reforms that facilitate a more globally efficient and competitive marketplace, while maintaining the nation's commitment to a high level of individual investor protection. This Woodrow Wilson School report sets forth a set of policy recommendations on the aspects of securities regulation relevant to the SEC's recent Regulation National Market System Proposal (Reg NMS),[2] its proposal on Self-Regulatory Organizations, especially regarding Fair Administration and Governance of Self-Regulatory Organizations, [3] its Concept Release Concerning Self-Regulation,[4] and other securities regulation issues: the topics addressed are the trade-through rule, data distribution fees and market access fees, payment for order flow, corporate governance of the exchanges, regulation of the NYSE, Nasdaq and electronic communication networks (ECNs), the role of the federal government in securities market regulation, the regulation of short sales (Reg SHO), and the integration of international securities markets with a focus on transatlantic trading.

Advised by Harvard Law Professor and Visiting Princeton Professor Hal Scott, the task force brought together eight third-year public policy students and two fourth-year students known as "senior commissioners" for a semester of intense study of the policies regulating publicly traded securities under rapidly changing market conditions. The report is comprised of an introduction and background context, a summary of the task force recommendations and findings, a conclusion and an appendix of reports written by individual members of the task force on Regulation NMS. Before presenting the task force's recommendations, a brief exploration of the context of the regulation of publicly traded securities follows. This context is intended to provide the background for a larger discussion of the task force recommendations and arguments for why the SEC's approach to market regulation may no longer be appropriate.

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[2] Securities and Exchange Commission, *Regulation NMS*, File No. S7-10-04, December 16, 2004, http://www.sec.gov/rules/proposed/34-50870.pdf

[3] Securities and Exchange Commission, *Self-Regulatory Organizations-Various Amendments, Proposed Rule*, File No. S7-39-04, November 18, 2004 http://www.sec.gov/rules/proposed/34-50699.pdf

[4] Securities and Exchange Commission, *Concept Release Concerning Self-Regulation,* File No. S7-40-04, November 18, 2004, http://www.sec.gov/rules/concept/34-50700.pdf

The Evolving Context of Domestic Securities Regulation and Reg NMS

On February 26, 2004 the Securities and Exchange Commission (hereafter denoted SEC) proposed Regulation National Market System (Reg NMS). The proposal's intention to modernize existing and possibly outdated regulations concerning domestic equity markets represents the culmination of a long tradition of attempts by the SEC to integrate securities markets. The National Market System concept was originally enacted in the 1970s (through the congressionally mandated 1975 Exchange Act amendments) under Section 11A of the Securities Exchange Act (1934) in an attempt to ensure equal regulation of all markets for NMS securities.[5]

In the more than thirty years that have since passed, market conditions have changed rapidly in response to higher trading volume, lower trading costs and the evolving technology that has facilitated both trends. The National Market System now comprises the stocks of over 5000 listed companies that collectively represent more than $14 trillion in U.S. market capitalization.[6] Intense competition now exists between very different market centers (including automated electronic communication networks as well as traditional exchanges, regional exchanges, and other market-making securities dealers) resulting in a greater fragmentation of the marketplace. Computerized trading systems now handle close to forty-five percent of the orders in securities listed on the Nasdaq and almost seven percent of the orders in all exchange-listed securities.[7] The SEC's proposals stem in large part from a growing discrepancy between "fast" and "slow" markets—prompted by innovative trading technologies (ECNs, smart-order routers, direct access technology) and new market centers.

Reg NMS is an attempt by the SEC to update the existing National Market System through four proposals. Respectively, these include a uniform trade-through rule for exchange and Nasdaq-listed securities (the Reproposal eliminates any opt-out exemption for institutional investors and applies only to automated quotes under Rule 611), a uniform market access rule (barring lock and cross quotations and establishing prohibitions on ECN access fees), prohibitions on displaying sub-penny quotes, and a modified method of allocating and pricing

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[5] Freeman, David, Zambrowicz, Kevin and Eunice Yang. "The SEC's Proposed Regulation NMS." *Banking and Financial Services Policy Report*, Volume 23, No. 6, June 2004.

[6] Securities and Exchange Commission, *Regulation NMS*, File No. S7-10-04, February 26, 2004, <http://www.sec.gov/rules/proposed/34-49325.htm>

[7] Oesterle, Dale A. *Congress's 1975 Directions to the SEC for the Creation of a National Market System: Is the SEC Operating Outside the Mandate?* Public Law and Legal Theory Working Paper Series, No. 11, May 2004.

market data. After the February 26th, 2004 initial proposal of Reg NMS, on May 20, 2004, the SEC extended its comment period[8] so as to reflect the results of the hearing on Reg NMS held on April 21, 2004. On December 16, 2004, after having received comments, the SEC amended and reproposed the Reg NMS.[9] The December Reproposal contains two alternatives for the scope of quotations protected, one protecting the NBBOs of the nine SROs and Nasdaq whose members trade NMS stocks, and the other protecting NBBOs of these same organizations but would secure additional protection for a market's depth-of-book quotations. The Reproposal additionally attempts to simplify the formulas in Reg NMS for allocating revenues generated by market data fees and authorizes markets to distribute their own data independently. The Reproposal intended to perfect the NMS, and promote equal regulation of different markets and stocks and greater order interaction and displayed depth. However, this task force views Reg NMS as one more step down a path towards an anti-competitive and inefficient trading market.

The birth of the national market system in 1975 consisted of a proposal for an electronic communication linkage of existing markets[10] (referring primarily to listed stocks on the registered exchanges of NYSE and AMEX) to which Congress referred to as a "public utility" that "should be regulated accordingly." This initiative developed into the set of semi-centralized order routing procedures for listed securities known as the Intermarket Trading System (ITS). Once almost exclusively the domain of the NYSE, ECNs have rapidly been encroaching on the market for trading exchange-listed stocks (the ITS most recently admitted a computerized electronic facility Archipelago).[11] Currently the SEC mandates order routing links through the ITS for listed securities and through the NASD system or Alternative Display Facility (ADF) for NMS securities. The SEC now appears to be in favor of moving towards an over-arching national computerized market trading system.

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[8] Securities and Exchange Commission, *Proposed Regulation NMS: Request for Additional Comment*, May 26, 2004, http://www.sec.gov/rules/proposed/34-49749.htm

[9] Securities and Exchange Commission, *Regulation NMS*, File No. S7-10-04, December 16, 2004, http://www.sec.gov/rules/proposed/34-50870.pdf

[10] Oesterle, Dale A. *Congress's 1975 Directions to the SEC for the Creation of a National Market System: Is the SEC Operating Outside the Mandate?* Public Law and Legal Theory Working Paper Series, No. 11, May 2004. .

[11] Ibid Oesterle.

A Tale of Two Markets

The essential policy debate that faces securities regulators today is a clash between the forces of centralization and competition. Contemporary U.S. securities markets in the new millennium are characterized by two entirely different trading structures—floor-based auction markets in the form of NYSE and AMEX, registered exchanges where a predominantly centralized venue accounts for the majority of trading in NYSE and AMEX securities, and electronic trading venues vying for a dominant share of Nasdaq securities.[12] The fragmentation in trading of Nasdaq securities among different venues appears to offer a more competitive, and less centralized market in these securities. Both the nature of the NYSE's auction exchange and its restrictions on competition (most prominently the trade-through rule) have contributed to the centralization in trading of NYSE-listed stocks (on the NYSE) versus Nasdaq stocks. Despite these restrictions, over the last five years increased competition from ECNs has diminished the NYSE's market share in the trading of its own stock (as of 2004 the NYSE only had 80% of the market in its own stock). In 2004 Nasdaq began to cross-list shares that are listed on the NYSE which resulted in direct competition for the trading of NYSE stocks. Intense speculation has emerged as to which system provides a better market structure for investors (in terms of execution, spread, speed, and total costs), and the SEC has been criticized for not taking a strong public stance. As Peter Wallison of the American Enterprise Institute notes, "What is unusual in the heavily regulated securities market is that government regulation seems to be preventing competition, perpetuating support for two different market structures so that competition between them cannot resolve the question of which is best for investors and public companies. It is as though the Federal Communications Commission were fostering two different and incompatible telephone systems, so that users of one system could not place calls to users of the other."[13] This incompatibility poses significant challenges: Are centralized markets better for investors in the long-term? Could ECNs out-compete the NYSE if competitive markets became the dominant strategy? This task force report attempts to address some of these significant policy issues.

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[12] Wallison, Peter J. "The SEC and Market Structure Reform: No Data, No Analysis, No Vision (July 2004)." American Enterprise Institute for Public Policy Research.
[13] Ibid Wallison.

Task Force Policy Recommendations: An Overview

Balancing Deregulation with Investor Protection

The task force has determined that most of the SEC's recent proposals to modernize the regulatory structure of the U.S. equities environment (Reg NMS and recently its December 15th 2004 Reproposal) unnecessarily interfere with competitive, market-based efficiency to the detriment of investors. After examining the effects of existing trading rules, the task force has concluded that the SEC continues to over-complicate and micro-manage market trading structure, creating burdensome and potentially harmful trading rules, and fixing prices (particularly in the arena of access fees and market data distribution where the SEC, in effect, sets price ceilings) that are better left determined by market forces. The task force focuses the majority of its recommendations on a deregulatory approach to the securities industry, keeping in mind the paramount importance of investor protection. Thus, in arenas such as corporate governance the task force decided to opt for a greater degree of federal oversight. In many other areas like trade-through and market data distribution however, the task force suggests the SEC significantly scale back its intervention in the market.

The Role of the SEC and the Future of US Capital Market Structure

The United States continues to compete among the world's exchanges for listings and liquidity. In examining the future of U.S. capital market structure, this task force has promoted a set of recommendations in tune with an increasingly global securities marketplace. To that end, this report recommends the SEC adopt a more European-styled approach to securities regulation. On a conceptual level, the European Union has demonstrated a much greater commitment than the United States to harmonization of worldwide accounting standards. It has also managed to maintain an optimal level of investor protection without sacrificing the liberalization of markets necessary for a healthy, competitive marketplace. The EU has fostered both electronic trading and competition among trading venues to a much greater degree than has the United States. The European Union currently has no Intermarket Trading System (ITS), and no such restrictions on competition as a trade-through rule or price-fixing of data fees. The EU's Directive on Financial Instruments Markets adopts a "best-execution" rule that allows for the consideration of factors such as time and size of the order in addition to price. The SEC's position on these issues in the

name of investor protection and "best price" priority will significantly impede progress towards an internationally integrated market. The SEC should reconsider its position by overhauling its restrictive trading regulations that stifle competition among markets, and refrain from protecting the NYSE's near-monopoly on trading in NYSE-listed stocks.

The task force reevaluates the proper boundaries of the SEC's regulatory jurisdiction. The criticism of Reg NMS suggests the possible need for a new non-SEC review of these issues. To that end, the task force has recommended the formation of a Presidential Commission to evaluate current trading rules and regulations. Based on the findings of the Commission, it may even be appropriate for a congressional reevaluation of the National Market System a generation after its inception in 1975. Free markets and a competitive environment between market centers should determine the structure of US capital markets.

II. Summary of Task Force Recommendations

The Trade-Through Rule

The task force examined the trade-through rule for securities listed on the NYSE or the AMEX and considered options for reforming it. The rule prohibits trading at a price other than the best one posted on any market in a security. A number of market centers and institutional investors have called for the rule to be repealed or for there to be exceptions. The New York Stock Exchange has called for the rule to be extended to Nasdaq securities. In proposed Regulation NMS, the Securities and Exchange Commission seeks to expand the regulation to all securities (thereby making the trading rules consistent for all securities) but to apply the rule only to automated quotes. This is a change from the original SEC proposal that extended the trade-through rule to all quotes for NMS securities but permitted trade-throughs of manual markets and permitted institutional investors to opt-out of the rule. The Commission believes the trade-through rule protects consumers and encourages the posting of aggressive limit orders.

The SEC's December Reproposal on the trade-through rule considers whether the rule should be extended to each market's depth-of-book or whether it should apply only to the market's best bid or offer. The proposed depth-of-book trade-through rule is intended by the Commission to provide investors with an incentive to display additional limit orders and to improve the execution quality of larger limit orders. Considering the task force's position generally on the trade-through rule, it does not recommend extending the rule in this manner—the Reproposal represents another step down a regulatory path towards an artificial centralization of the market in NYSE-listed stocks and restricts the fierce competition and technological innovation that characterizes trading in the Nasdaq markets which up until now have functioned successfully without it.

Neither does the SEC address the issue of internalization with respect to this reproposed new rule, particularly since the rule only requires that orders entered into the market be routed to the best-priced quotations. Internalization is allowed to continue as long as internalizers match the best prices displayed in the market.[14] To address this problem, the SEC may, in the future, be tempted to prevent "free-riding" of such internalizers off the prices established by the displayed

[14] SEC remarks. http://www.sec.gov/news/speech/spch121504psa.htm

limit orders, rather than relying on market forces. This could provide the foundation for the creation of a future nationalized central limit order book. As Commissioner Paul Atkins remarks, “Market participants' order routing decisions that are now based upon fiduciary duties and competitive pressures would be replaced with a government mandate to route orders based on its own rigid definition of what constitutes the best price.”[15]

The debate about the trade-through rule is closely tied to the question of what constitutes the best execution for investors. If the best posted-price is the sole factor in determining execution quality, then the trade-through rule is an effective way of protecting investors. But if other factors such as speed, certainty of execution and minimal market impact are important to execution quality, then the trade-through rule is unduly simplistic and makes it harder for some investors to obtain best execution. If the number of trade-throughs that currently occur in domestic securities markets is any indication of how reliant investors are on the rule to protect best price execution quality, the rule is unnecessary. The number of trade-throughs that occur in both the NYSE and Nasdaq amounts to only 2-3% of the total number of trades.[16] In its concept release, the SEC estimated that the absence of a stronger trade-through rule cost American investors roughly $326 million in 2003. This amounts to only .002% of the $17 trillion in total dollar share volume that traded in both the NYSE and Nasdaq markets in that same year.

The specific question this task force considers also involves the larger issue of market structure. What types of markets are best for investors? The NYSE presently dominates the market in securities listed there, whereas the market for OTC volume is much more competitive. This competition has led to innovation in market technology and increased responsiveness to investors’ demands. As primarily a floor-based auction market, the NYSE operates slowly compared to Nasdaq and ECNs such as INET. The prices posted on the NYSE are sometimes superior to prices posted elsewhere, but they are also prices at which there is little depth and at which execution is far from certain. The difference between a posted price and a price at which one can execute a trade immediately is critical. For many investors, particularly institutions trading in large blocks, it can be difficult to complete an order and the overall price for the order may move against the institution as it is filled. This experience suggests that there is more to best execution than price alone.

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[15] SEC remarks December 15, 2004.
[16] Ibid. SEC remarks December 15, 2004.

Applying the trade-through rule only to automated quotes is problematic. It raises questions about how to define an automated quote. The SEC has tried to provide this definition, but the proposed definition is complicated and requires several exceptions. It may also adversely affect the incentives for further innovation once the minimal requirements for being "automated" have been satisfied. Furthermore, it is unclear why a fast quote at which someone could execute immediately would ever be traded through, making a rule superfluous.

Therefore, this task force recommends that the Commission repeal the trade-through rule for NYSE securities and take no action with respect to non-listed securities. Experience with non-listed securities suggests that liquidity has been adequate and trade-throughs have not affected the confidence of investors nor discouraged them from posting limit orders. There is no compelling empirical data that shows otherwise. The trade-through rule has restricted competition for trading volume in listed securities and stalled innovation in those markets. It has also harmed investors whose overall execution quality has been negatively impacted by delays and market impact. Repeal of the trade-through rule would eliminate the regulatory protection the NYSE has enjoyed for decades. Though a venerable institution and powerful franchise, the NYSE should not enjoy special status compared to other securities markets. Competition based on execution quality should be encouraged. The NYSE has already shown itself to be capable of reform by developing and proposing to expand the NYSE Direct+ system and turn itself into a hybrid market. Volume and liquidity will flow to the market center that most effectively serves the needs of all investors.

Without a trade-through rule to define best execution simply on the basis of one factor, price, the best execution obligation under which brokers operate will be increasingly important. It must be enforced either by the SEC or alternatively the courts. This standard is a sounder basis for regulating the execution of trades and affords investors important protection.

Payment for Order Flow

At the core of the payment for order flow controversy is the principal-agent problem that arises between investors and their brokers. Solving the principal agent problem requires either aligning broker-investor incentives with those of their customers or obtaining complete price transparency in the market. Due to the difficulty of obtaining the latter, this task force

recommends regulatory measures that compel agents to act in the best interest of their customers. The task force concludes that a deregulatory approach will most effectively solve the principal-agent problem. Specifically, it recommends the removal of the brokers' requirement to credit their clients' accounts based on the price at which the trade was ultimately executed and instead allow brokers to promise to give their customer the national best bid or offer, even if the broker were to obtain a better price. The benefits the brokers receive from getting a better price would be passed on in whole or in part to customers in the form of lower brokerage commissions. The commission-only pricing option would eliminate the principal-agent problem by creating incentives for brokers to minimize costs – a goal that matches the desires of investors. Retail customers would have the choice to either have the broker credit their account with the NBBO or at the price at which the trade was executed.

The rule would allow investors to cheaply audit the quality of their brokers' services by looking to commission fees, thereby eliminating the incentive to remain rationally ignorant. Brokers would likely find the commission-only pricing option attractive because it would enable them to reduce their commissions – the variable to which customers are most attune – while not necessarily decreasing their profit per trade. Institutional investors however would not take this option because of their ability to monitor and their desire to capture all price improvement. Taken together, these factors would standardize fee structures while retaining the benefits of a competitively fragmented marketplace.

Regulation of the NYSE, Nasdaq and ECNs

A registration system that categorizes and regulates trading venues by operational differences and ownership obligations is preferable to one that relies on arbitrary definitions. Nasdaq's application to be an exchange has been pending before the SEC since 2000 and the SEC has granted itself an indefinite period to act on the application. The major stumbling block to approval is an asserted barrier regarding the central limit order book (CLOB). Until now, the SEC has required that every exchange possess a CLOB, which Nasdaq officially does not possess. The SEC has required exchanges to operate a CLOB honoring time/price priority. Rule 3b-16 of the Regulation ATS act release specifies that a CLOB brings together orders of multiple

buyers and sellers and displays this information on screens.[17] Furthermore, a CLOB allows the orders to interact in the system before execution.

Nasdaq's Supermontage, implemented in 1997, has features pursuant to a CLOB, but the SEC is concerned with Nasdaq's internalized trades.[18] Supermontage collects quotes posted by market makers and ECNs. It displays bid and ask prices five levels deep on the Level II screens (which are viewed by institutional investors).[19] However, financial intermediaries off the primary market execute Nasdaq's internalized trades when Nasdaq dealers route orders.[20] Nasdaq's system allows orders to be executed without interaction with out other Nasdaq market makers on the condition that trades are reported within 90 seconds.[21] Furthermore, orders do not necessarily follow the time/price priority by allowing preferenced customers while neglecting price displays on Supermontage. The SEC is concerned about these internalized trades which do not go through Supermontage. The task force does not believe exchange status, as described below, should depend on having a CLOB.

Furthermore, an inherent conflict of interest lies in Nasdaq's affiliation with NASD, so it is undesirable for the SEC to, in effect, require Nasdaq to continue to be affiliated with NASD because it is unwilling to grant Nasdaq separate exchange status. Therefore, the task force believes the SEC should approve Nasdaq's application to be an exchange to minimize conflicts of interest and avoid anti-competitiveness.

The task force would adopt a two-tier system of regulation—under which an exchange would be defined as, "a venue that provides a facility through which, or sets material conditions under which, participants entering such orders may agree to terms of a trade" (modified from SEC Concept Release). "Facility" in this instance does not have to be a physical place. This new definition of an exchange will include traditional exchanges and ECNs. Tier 1 is any exchange (under the new definition) without members. Tier 2 is any exchange (under the new definition) with members (persons having the right to trade in the venue). Tier 1 exchanges would be regulated by NASD and Tier 2 exchanges would be regulated by themselves.

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[17] Securities and Exchange Commission, Rule Release No. 34-40760
[18] Interview with Stephanie Dumont, December 13, 2004.
[19] Biais, B., Davydoff, D. "Internalization, Investor Protection and Market Quality." 2002. Retrieved on December 14, 2004 from http://www.oee.fr/pdf/oeefree_pdf/361_10.pdf
[20] Ibid.
[21] Brown, J. Cincinnati Stock Exchange's Comments to SEC on Nasdaq's application to be an exchange. 2001. Retrieved on December 14, 2004 from http://www.sec.gov/rules/other/10-131/brown1.htm

The main differentiation between the trading venues is the presence or absence of members. Members entail significantly more regulatory and enforcement responsibilities. Therefore exchanges with members should be recognized as functionally different from venues without members. As set forth later in this summary, the task force recommends that all trading venues should be able to sell their own data. Thus the ability to charge data fees will no longer determine the status of exchanges. Similarly the charging of listing fees should not be used to determine whether an entity is an exchange. Under this system, ECN's are formally acknowledged as exchanges. ECNs meeting the definition of an exchange should not have the option of registering as broker-dealers since ECNs should be held to a higher degree of responsibility for enforcing anti-fraud practices and anti-manipulation practices. Likewise, ECNs should be responsible for efficient operating systems, such as adequate software.

Governance of the Stock Exchanges

The SEC (as opposed to states or the Congress) is the appropriate body to oversee the regulation of the corporate governance of stock exchanges. First, the SEC currently is the authority that exchanges must report to when they change their rules. The SEC approves the rules submitted by self-regulatory organizations (SROs) and maintains its authority through its enforcement of the SRO rules. Because governance of exchanges can effect how they discharge their SRO function, the SEC should oversee exchange governance standards. Second, the SEC as a federal agency can oversee all exchanges, wherever they might be incorporated, and is thus able to ensure that investors in all states receive adequate protection. Given the highly technical nature of exchange regulation and the consequent transaction costs of individual investors examining various state regulatory regimes and then deciding to do business with exchanges in states with investor-friendly regulation, state control of exchange governance does not make sense. Third, the SEC is capable of being flexible in its examination of SRO governance proposals. By setting baseline standards and allowing individual exchange variation, the SEC can ensure that regulation of governance is fair and appropriate for each institution.

The task force also recommends certain requirements for exchange corporate governance. The task force recommends that terms for Board of Director members last for two years and be staggered in terms of expiration. This will allow the more experienced members of the board to communicate to the newer members the history and rationale of various exchange rules and

procedures. In this way, the public directors shall not have to rely exclusively upon the non-public directors for information; rather, they can gain information from both independent and non-independent sources. Second, the task force recommends mandated separation of the positions of CEO and chairman of the board; this will prevent the chief executive officer from exerting too much authority during board meetings. This prevents his or her perspective from automatically being the "accepted" one, and places him or her as an equal among the other board members. Third, the task force also recommends limited board size (a maximum of 13 voting members). Smaller boards prevent board members from not being fully engaged and relying on others to do the work in committee meetings. Fourth, an 8-consecutive-year term limit prevents individuals who have sat on the board for too long from becoming stale and failing to be as active. Fifth, required quarterly executive sessions without the presence of non-independent directors will allow these independent directors time to think critically about the suggestions of the board members that may have conflicts of interest.

Currently the SEC's proposed governance rule requires structural separation of the regulatory and business functions of the exchange. Complete independence of the regulatory function is necessary to prevent the business-side board members from influencing the decisions of the regulatory oversight committee. This would guard the SRO function from conflicts of interest and guarantee objective regulatory oversight. Complete independence could be codified either as a fully separate board of regulators or a standing committee on regulatory oversight that does not report to any non-independent directors – essentially it could only report to the executive sessions of the boards of directors. The task force also recommends mandated inclusion of the public, members, and listed companies in the nomination process as a way to safeguard that various constituencies are represented on the board of directors. While independent directors can represent the public in their nomination of directors, it is vital that members and listed companies be guaranteed a procedure by which they can nominate members to represent their interests as well.

The Integration of International Securities Markets

This task force recommends that the SEC permit foreign companies listing on US exchanges to organize their financial statements in accordance with either International

Accounting Standards (IAS) or US Generally Accepted Accounting Principles (US GAAP) – that is, foreign firms would no longer be required to reconcile IAS with US GAAP. This would significantly reduce the costs of cross-listing, allowing more companies to afford to cross-list and thus facilitating more globally integrated, liquid and efficient equity markets. Several in depth studies over the past decade have indicated that the differences between IAS and US GAAP are minor in impact and that the information they provide are valued almost identically by investors when all other factors are held constant. Permitting foreign companies to comply with IAS would contribute to an improved marketplace at no expense to investor protection. In addition, the International Accounting Standards Board (IASB) and FASB are already working to eliminate some of the key remaining differences between IAS and US GAAP. Mutual recognition of IAS and US GAAP is preferential to immediate, complete harmonization because allowing the two standards to compete should lead to a more efficient and informative uniform standard. Accounting standards sometimes reflect nuances in different countries' regulatory frameworks, and a harmonized standard may be less compatible with certain countries than existing standards, particularly if a new standard is formed to resemble US GAAP more closely than IAS.

The task force also recommends that the SEC permit qualified institutional buyers (QIB or professional investors) to access foreign screens within the US. Professional investors already trade on foreign markets, and have sufficient expertise to accurately assess the risks of trading on foreign exchanges with different disclosure requirements. For this reason, solicitation of institutional investors in unregistered stocks located on foreign screens should be allowed. Permitting foreign screens in the US would give investment companies the ability to solicit foreign stocks that are *already* being traded by these institutional investors, and thus inform their clients of a wider variety of investment options and opportunities without risk to investor protection. The task force does not recommend that retail investors be solicited with respect to trading in unregistered foreign stock, regardless of the existence of foreign screens in the United States. Retail investors in general do not have the sufficient expertise, capacity and depth of experience to accurately assess the risks of trading in unregistered foreign stock.

While permitting compliance with IAS in lieu of US GAAP will allow more access to foreign stocks through cross-listing on US exchanges, permitting foreign screens will provide another avenue for US investors to trade foreign stocks. Having both options will allow foreign

companies to decide whether listing on US exchanges or simply having their stock traded by institutional investors via foreign screens within the US is most efficient.

Further, as noted in the introduction, we believe the EU approach to market structure is a preferable model for the United States and the SEC to look to as it reforms the US domestic market.

A Presidential Commission to Examine Trading Rules

In the current system, the SEC plays the dominant regulatory role, with no clear supervision from the Congress or other branches of the government. The dominance of one federal agency creates efficiency, since it consolidates in one institution expertise and experience. However the trade-off is the entrenchment of SEC philosophy into market regulation, through price-fixing and standard-setting, to serve as the "official market referee."[22]

Many existing regulations that may or may not be appropriate for current market conditions are still in place (what is sometimes referred to as "institutional memory-loss"), and this plethora of regulations hampers the functioning of a more efficient marketplace. We propose that a Presidential Commission be formed to review the various market regulations that currently exist. The Presidential Commission will consist of four members: one chosen representative each from the U.S. Treasury, the Federal Reserve, the Commodities Futures Trading Commission (CFTC), and from the SEC. This Commission would be an outgrowth of a pre-existing organization known as the President's Working Group on Financial Markets (formed in the wake of the 1998 Long-term Capital Management debacle)[23] which meets regularly to discuss issues relevant to all financial services regulators and consists of the Treasury Secretary, the Chairman of the SEC, and members from the CFTC and Board of Governors of the Federal Reserve system.

This Commission will have a lifetime of two years, and the members will present their analysis to the president at the end of that time. During its tenure, the Commission will review all the regulations that affect the operation of domestic securities markets and it will recommend to the president which regulations may be outdated and therefore unnecessary or in need of reform.

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[22] Speech by SEC Commissioner Paul Atkins: Remarks before the Open Meeting to Consider the Reproposal of Regulation NMS December 15, 2004.
[23] President's Keynote Address http://www.ici.org/issues/dir/01_mfimc_fink_spch.html

At the discretion of the Commission, input may be brought from relevant constituencies. This Commission is the most efficient way of reviewing the current regulatory system as a whole, and the most effective way of involving the executive branch of the government in the review of market regulation without disrupting an existing system that relies primarily on the input of the SEC and the Congress.

Regulation of Short Sales

This task force believes that short selling is a necessary and beneficial aspect of an efficient market. Short sellers stabilize prices by providing liquidity and creating demand-by covering their shorts-in a falling market. The practice of margin trades and shorts are simply the inverse of one another: the margin trader borrows cash to buy stock; the short seller borrows stock to raise cash. The margin trader closes his position by repaying the cash loan through the sale of the stock; the short seller closes his position by purchasing the stock and returning it to the lender. In the opinion of this report, it is no less legitimate to borrow a stock in anticipation of a decline, than to borrow money and purchase in anticipation of a rise. Furthermore, the price that can be diminished by short selling is an inflated value, and the accurate pricing of securities is the aim of an efficient market.

The SEC made adjustments to short sale governance through Regulation SHO. The new regulations are a progressive measure. In Regulation SHO, the SEC has shown a willingness to consider the benefits of deregulation by constructing a pilot program to examine the behavior of stocks without a price test. After the pilot provides sufficient data to the SEC, this report urges a decision that moves toward a greater deregulation of short selling through removal of price tests altogether. Since the pilot has yet to be implemented and its results await a more distant time frame (nor has the SEC constructed a pilot program to determine how a uniform bid test might be preferable to current rules), this task force recommends the need for more research although the removal of price tests appears preferable to the current tick test.

Market Access Fees and Data Distribution

The task force recommends a market-based approach to the charging of fees for data and the means by which data is distributed. The SEC should eliminate its reporting and consolidation requirements and allow private entities to process, consolidate, and distribute data

according to investor demand. Market centers should be allowed to sell their own data and investors should be allowed to buy the data that they desire. Market forces will determine the price of securities data and the revenues of market centers. If a market center attempts to keep its data private or charge too much for it, then investors will move their trading volume to market centers that sell their data at affordable prices and the withholding market center will lose market share. In the new system, the SEC must only ensure the integrity of market data in order to protect investors. In addition under this reformed structure, ECNs (like exchanges) would be able to sell their own data and this would eliminate payments necessary for print flow.

The current system of fee disclosure in price quotations requires market centers to include few of the fees that investors incur for trading. In particular, under current SEC regulations quotations do not have to include access fees, which are charged by market centers to fund liquidity rebates and business costs. The rise of ECNs, which often rely on access fees as an integral part of their business model, creates a situation in which an ECN quote and a market maker quote posted at the same price are not equivalent. Brokers trying to find the best price for their customers often cannot execute against best overall price, including access fees. Access fees also create incentives for market participants to lock and cross the markets in order to reap liquidity rebates without incurring access fee charges.

The task force further recommends a disclosure-based approach to trading fees. All market centers, including ECNs, exchanges, and Nasdaq should be able to charge any access, transaction, or communications fee they deem necessary, but must display all fees paid by all traders in the posted prices. Prices should continue to omit trader-specific fees such as brokerage commissions. The disclosure of all universal fees will most likely result in sub-penny pricing. In order to prevent the front-running associated with sub-penny quotes, market maker quotes should be subject to a minimum tick size.   The SEC should reduce its control over the data distribution system and allow market forces to efficiently price the data of each market center according to investor demand. By allowing ECNs to participate in this market-based approach, this would eliminate the need for payment-for-print flow. At the same time the SEC should increase its disclosure regulation of trading fees in order to ensure the accuracy of market information. The technological ability of modern markets to provide market data according to investor demand and the rise of ECN access fees requires an adjustment in SEC policy.

III. CONCLUSION

In conclusion, the task force recommendations are to eliminate the trade-through rule, establish a Presidential Commission to review all trading rules and regulations, allow brokers to credit their client's accounts with the NBBO, allow compliance with IAS standards for foreign companies that cross-list on US exchanges, permit institutional buyers to access foreign screens, approve Nasdaq's application to be an exchange, adopt a two-tiered system of exchange regulation, provide for exchange corporate governance rules of one-year term limits for Board of Directors, mandated separation of the positions of CEO and Chairman and limited board size, mandated inclusion of the public in the nomination process for directors, the removal of price tests altogether for short sales trading, and a market-based approach to data distribution and access fees.

APPENDIX:

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Reform of the Trade-Through Rule

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I. EXECUTIVE SUMMARY

This paper examines the trade-through rule currently in place for securities listed on the NYSE and considers options for reforming it. The rule prohibits trading at a price other than the best bid or offer posted on any market in a security subject. A number of market centers and institutional investors have called for the rule to be repealed or for there significant changes. In its proposed Regulation NMS, the Securities and Exchange Commission seeks to expand the regulation to all securities (thereby making trading rules consistent for all securities) but to apply the rule only to automated quotes. The SEC believes the trade-through rule protects consumers and encourages the posting of aggressive limit orders, thereby enhancing liquidity. However, because of data concerning market quality and the benefits of competition, this paper recommends that the trade-through rule be repealed.

The debate about the trade-through rule is closely tied to the question of what constitutes the best execution for investors. If the best-posted price is the sole factor in determining execution quality, then the trade-through rule is an effective way of protecting investors. But if other factors such as speed, certainty of execution and minimal market impact are important to execution quality, then the trade-through rule is unduly simplistic and makes it harder for some investors to obtain best execution.

The specific question of the trade-through rule also involves the larger issue of market structure. What types of markets are best for investors? Because of the trade-through rule, the NYSE presently dominates the market in securities listed there, whereas the market for Nasdaq volume is much more competitive. This competition has led to innovation in market technology and increased responsiveness to investors' demands.

The trade-through rule is controversial because, as a manual auction market, the NYSE operates slowly compared to Nasdaq and ECNs such as INET. The prices posted on the NYSE are sometimes superior to prices posted elsewhere, but they are also prices at which execution is far from certain. The difference between a posted price and a price at which one can execute a trade immediately is critical. For many investors, particularly institutions trading in large blocks, it can be difficult to complete an order and the overall price for the order may move against the institution as it is filled. The experience of many investors suggests that there is more to best execution than price alone.

A reform that would attempt to address these concerns by applying the trade-through rule only to automated quotes is problematic. It raises questions about how to define an automated quote. The SEC has tried to provide this definition, but the proposed regulation is complicated and requires several exceptions. It may also adversely affect the incentives for further innovation once the minimal requirements for being "automated" have been satisfied. Furthermore, it is unclear why someone would trade-through a truly accessible quote.

Therefore, this paper recommends that the SEC repeal the trade-through rule for NYSE-listed securities and take no action with respect to non-listed securities. Data about the quality of the markets for Nasdaq securities suggests that liquidity has been adequate, that effective spreads have been narrow and that trade-throughs have neither dented the confidence of investors nor discouraged them from posting limit orders. There is no need for increased regulation of Nasdaq securities. The trade-through rule has restricted competition for trading volume in NYSE-listed securities and stalled innovation in those markets. It has also harmed investors whose overall execution quality has been negatively impacted.

Repeal of the trade-through rule would facilitate competition between markets for trading volume in NYSE-listed securities because investors would have more choice as to where to place an order. Volume and liquidity will flow to the market center that most effectively serves the needs of all investors. Repeal would also benefit investors who are currently forced into unfavorable trading situations.

Without a trade-through rule to define best execution simply on the basis of one factor, price, the best execution obligation under which brokers operate will be crucial. It must be enforced. This standard is a sounder basis for regulating the execution of trades and affords investors important protection.

II. INTRODUCTION

Securities trading is an enormous business in the United States; an average of 1.4 billion shares are traded on the New York Stock Exchange (NYSE) and an average of 1.5 billion shares are traded on the Nasdaq each business day.[24] More than half of all Americans own stock in a publicly traded company. Several institutions are charged with regulating trading to ensure fair and efficient operation of the equity markets: the Federal government, through the Securities and Exchange Commission ("SEC"), and stock exchanges themselves all have regulatory powers.

Just as there are many regulatory authorities, there are many different venues on which stocks are traded. When an investor places an order to buy or sell stock, that order can be routed to several different markets; there is not one central market to which all orders are routed. In addition to the well-known NYSE and the Nasdaq, there are numerous regional exchanges, and, more recently, electronic communications networks ("ECNs") have captured a significant share

[24] Yahoo! Finance Data.

of trading volume. In 1975, Congress passed amendments to the Securities Exchange Act of 1934 that sought to create a "national market system" ("NMS") to link the different markets existing at that time. Since then, the SEC has devoted considerable attention to the links between and among markets to enable investors to access the different markets and exchanges where a particular security is traded in order to receive the best execution possible. The Intermarket Trading System ("ITS"), composed of a number of major exchanges, was set up to improve these links. In order to fulfill that mandate, ITS members adopted a rule in 1981 to protect the national best bid and offer for securities listed on the NYSE and regional exchanges. A seller must sell at the highest bid on any market and a buyer must buy at the lowest offer on any market. This rule is known as the "trade-through rule" because instances of ignoring a better price and trading with an inferior order are known as "trading-through." The trade-through rule has never applied to securities traded primarily on the Nasdaq.

Regulators have recently been reconsidering this trade-through rule. In February 2004, the SEC released a series of proposed changes called Proposed Regulation NMS and released a revised proposal in December 2004 after a comment period.[25] A major provision of the proposed regulation would make the trade-through rule applicable to all securities that are part of the National Market System, including securities traded on the Nasdaq. This paper will evaluate the status quo and the SEC's proposal. It will then consider alternative means of facilitating a fair, modern system for equities trading before making a final recommendation on the trade-through rule.

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[25] References to proposals from the SEC are to the revised version unless otherwise indicated.

This paper will recommend that the SEC repeal the trade-through rule. The rule is unnecessary and costly and has inhibited competition between different market centers and harmed investors. Repealing it will promote further innovation and benefit all investors.

III. BACKGROUND

Supporters of the trade-through rule offer several arguments for why it helps investors. The first argument is that the rule protects market participants, particularly so-called retail investors, who trade small amounts of stock. Proponents argue that, without a trade-through rule, retail investors might be harmed if larger institutions could simply ignore better-priced orders from retail investors.[26] A small trader, for instance, could place a limit order that was the highest bid or lowest offer for a stock, but a large institution could ignore that limit order and buy at a higher price or sell at a lower price.[27] This trade-through harms the small trader whose limit order was ignored even though it was the best-priced limit order. Thus, advocates of the rule argue, trading-through ought to be curtailed so that the best-priced limit orders are protected.

The trade-through rule benefits the entire market by increasing depth and liquidity and facilitating price discovery, its supporters say.[28] According to these supporters, the confidence that a superior order will not be ignored gives traders an incentive to place limit orders that are "aggressive," i.e. close to the current market price. The abundant use of limit orders enhances liquidity by providing market participants with many opportunities to trade and by helping to identify the market price. Price discovery also benefits from the interaction of multiple market

[26] SEC, *Regulation NMS*, February 26, 2004, http://www.sec.gov/rules/proposed/34-49325.htm.
[27] A limit order is an offer to buy or sell a particular stock at a specified price.
[28] Liquidity refers to the ease with which a trade can be executed without a substantial change in value. Depth refers to the amount of a stock available at a particular price level. Price discovery refers to the process of determining the price of a stock based on supply and demand.

centers and the corresponding rise in the number of market participants.[29] To many people, these benefits justify strict regulation about how an order must be executed and to which market an order must be sent.

Notwithstanding the theorized benefits of the trade-through rule, the structure of America's securities markets in 2004 has changed considerably and volumes are much larger than when Congress and the SEC devised the National Market System in 1975 or when the trade-through rule was applied to NYSE-listed securities in 1981. In 1975, the vast majority of trading occurred on the existing regional exchanges and the New York Stock Exchange. These markets were manual auction markets, meaning that a specialist on a trading floor handled all the trading in a particular stock. The architects of the trade-through rule envisioned that this structure would persist. However, many stock markets have adopted technology and a radically different structure that executes trades much faster and eliminates the need for human intervention.[30]

Nasdaq and ECNs like INET and ArcaEx are all markets that have used technology to change stock trading, cutting the time it takes to trade and eliminating the role of the human specialist. By contrast, the New York Stock Exchange has largely retained a floor trading system similar to what it had twenty-five or one hundred years ago; only recently has it added an electronic alternative called NYSE Direct+. Because the same securities can be traded on multiple markets, manual and automated markets interact. A conflict has developed between fast automated markets and slow manual markets. This conflict is at the heart of efforts to alter the trade-through rule. Securities not listed on the NYSE or another ITS-member exchange are not subject to a trade-through rule and so brokers may direct an order to the market of their choice,

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[29] SEC, *Regulation NMS*, February 26, 2004.
[30] Annette Nazareth (SEC), meeting with class, October 13, 2004.

subject to a professional obligation that they obtain the "best execution" possible.[31] NYSE-listed securities, by contrast, must interact with the best-priced quote regardless of which market or which type of market is posting the best bid or offer. In practice, the trade-through rule has forced many orders in listed securities to be directed to the NYSE, which many times has posted the best bid or offer. However, the best bid or offer may be gone before the order is executed.[32] These instances of following after an inaccessible quote exemplify the fundamental dilemma created by the trade-through rule and differences in markets–a quoted price is not necessarily a price at which a trade can be executed.[33] A quoted price can disappear or change long before an execution happens.

The order flow the NYSE receives because of the trade-through rule has insulated it from competition from electronic alternatives that has reshaped the way Nasdaq securities are traded.[34] The insulation is evident in data about the market share of trading that the NYSE has in the securities listed there—approximately 80%.[35] By contrast, Nasdaq handles about 50% of the volume in Nasdaq securities.[36] In recent years, Nasdaq has had to dramatically alter and upgrade its operations in response to competition from ECNs that investors could use as an alternative. The NYSE has not faced this sort of competition and, as a result, it has not had to significantly update its business model.[37]

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[31] The best execution obligation requires brokers to get the best deal possible when executing an order on behalf of a client. The precise meaning of the best execution requirement has been developed through a series of legal decisions. Douglas Shulman (NASD), meeting with class, October 20, 2004.
[32] Cameron Smith (Instinet), meeting with class, October 6, 2004.
[33] Matthew Andresen, Testimony before the U.S. House Subcommittee on Capital Markets, May 18, 2004, http://financialservices.house.gov/media/pdf/051804ma.pdf, 6.
[34] Fidelity Investments (Eric Roiter), *Re: Regulation NMS*, June 22, 2004, http://www.sec.gov/rules/proposed/s71004/fmrc062204.pdf, 3.
[35] NYSE, *The Exchange,* July 2004, http://www.nyse.com/pdfs/xnlv11n07.pdf, 4.
[36] Nasdaq, *Performance Report,* November 2004, http://www.nasdaq.com/newsroom/stats/main.stm.
[37] Instinet (Edward Nicoll) *Re: Proposed Regulation NMS and Supplemental Request for Comment*, June 30, 2004, http://www.sec.gov/rules/proposed/s71004/igi063004.pdf, 3.

The NYSE has been insulated from competition because of efforts to protect investors with the trade-through rule. A number of powerful interest groups disagree with the argument that banning trade-throughs protects investors and have called for changes to the rule. Many market participants claim the rule has harmed them by denying them control over how they execute a trade. The quoted price may not be the only factor in determining what would be the best overall trade for the customer, according to such participants; they believe factors like speed, certainty of execution and market impact should also be considered.[38]

For many retail traders, lack of choice in execution may not make much difference. But for institutional investors, whose business constitutes a significant percentage of all trades, choice and non-price factors can be very important. Executing a trade of a few hundred or a few thousand shares of a stock is generally quite easy. Buying or selling tens or hundreds of thousands of shares–the average mutual fund trade is 800,000 shares–can be much more difficult.[39] This difficulty arises because the price of the stock can change as the trade is executed. Such price changes lead to a phenomenon called "slippage," which can occur when a large number of shares are bid for or offered.[40] Slippage, which the trade-through rule can cause by directing orders to manual markets, imposes significant costs on institutional investors.[41] Even though the best-priced order was executed, slippage may alter the average price per share to the extent that an institution would prefer to interact with an inferior quote if it knows it can complete the entire trade with minimal impact on the market price.[42]

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[38] Fidelity Investments (Eric Roiter), *Re: Regulation NMS*, 2.
[39] Benn Steil, meeting with class, October 27, 2004.
[40] Slippage is more likely to occur if market participants see that an institution is buying or selling a large number of shares. A slow market or a market where the identity of an institutional trader is revealed is more likely to have significant slippage.
[41] SEC, *Regulation NMS*, December 16, 2004, http://www.sec.gov/rules/proposed/34-50870.pdf, 35.
[42] Fidelity Investments (Eric Roiter), *Re: Regulation NMS*, 9.

IV. THE SEC VIEWPOINT: REGULATION NMS

In late February 2004, the SEC released Proposed Regulation NMS to address concerns about the trade-through rule and invited comment from interested parties and the public. In December 2004, the SEC released a revised proposal in response to comments about the initial proposal.

Proposed Regulation NMS consists of four parts, one of which is reform of the trade-through rule. One of the most significant aspects of the reform is the extension of the trade-through rule to all NMS securities, including securities that trade on Nasdaq and ECNs. Many advocates of the rule have stressed the argument that liquidity would be more abundant if there were a trade-through rule in calling for the rule to be extended.[43] Trade-throughs do occur occasionally on the Nasdaq or ECNs, but it is debatable whether they have had the effects such as reduced liquidity and retail investor confidence that supporters of the trade-through rule fear.

Although the proposed regulation takes steps to strengthen the trade-through rule by making it applicable to all NMS securities, the proposal simultaneously alters the requirements for a quote to receive trade-through protection. The SEC proposes to apply trade-through protection only to automated quotes; the existing rule does not discriminate between automated and manual markets quotes or markets. Manual markets such as the NYSE trading floor would no longer receive trade-through protection.[44] Protection of manual markets that offer slow response times and uncertain execution has been one of the chief complaints of reform advocates.

One of the most important and challenging parts of adopting trade-through protection for quotes on automated exchanges will be defining what constitutes an automated quote. How an

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[43] SEC, *Regulation NMS,* December 16, 2004, 253.
[44] Ibid, 13.

automated quote is defined will set important standards for operators of stock exchanges. The SEC attempts to define an automated quote in the proposal. For a quote to be automated, it must be posted on a market that has qualified as an automatic trading center. This means that the market must be able to provide an immediate response, show all non-automated quotes as being manual quotes and control changes from one classification to the other. For the quote itself to be automated, a trader must be able to send an immediate-or-cancel order and execute a trade for the full size of the quote immediately. There is no specific standard for response time for a quote to be considered automated.[45] The SEC says the standard should simply be "immediate," which it defines to be the "fastest response possible without any programmed delay."[46] It goes on to argue that the trade-through rule should not force markets with "well-functioning systems" to wait on markets slowed down by, for example, technical problems. In an effort to resolve this issue, the SEC creates what it calls a "self-help" remedy, which permits trade-throughs if the market posting the best bid or offer is repeatedly unresponsive. What constitutes unresponsiveness? The SEC currently believes that the time standard for unresponsiveness is one second. Thus, repeated failure to respond within one second would justify trading-through.[47] The SEC also acknowledges that some quotes, known as flickering quotes, change very quickly and creates an exception for quotes posted for less than one second.[48]

The SEC has proposed two different alternatives for how broadly trade-through protection would apply to automated quotes. The first alternative would simply prevent traders from trading-through the best bid or offer, as the current rule for NYSE-listed securities does.[49]

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[45] Ibid, 44-45. An immediate or cancel order is one in which the broker requests either immediate execution of the order or cancellation of the order if it cannot be executed as soon as it is received.
[46] Ibid, 45.
[47] Ibid.
[48] Ibid, 51.
[49] Ibid, 15.

The SEC calls the second alternative the Voluntary Depth Alternative. It would enable an exchange to obtain trade-through protection for lower bids and higher offers in its limit order book if the exchange chose to do so. To obtain protection for these quotes, the exchange would have to make all the quotes available to other exchanges through the National Market System.[50]

These elements of Proposed Regulation NMS are considerably different from the proposal the SEC released in February 2004. That proposal also extended the trade-through rule to all NMS securities but with two exceptions. The first exception was an opt-out for informed investors. It would have permitted entities such as hedge funds and mutual funds to consent to opting-out of the trade-through rule on a trade-by-trade basis, effectively exempting such entities from the burdens of the trade-through rule. In removing the opt-out from its revised proposal, the SEC stated that an opt-out would be inconsistent with the objective of price protection and that there would be little reason to opt-out with only automated orders being protected.[51] The second exception allowed a trader to trade-through a manual market to trade with an automated market.[52] This exception forms the basis for the SEC's emphasis on automated quotes in the revised proposal.

V. POSITIONS OF RELEVANT INTEREST GROUPS

Securities markets bring together a variety of parties, from institutional investors to retail investors to brokers to regulators to the markets themselves. Each of these parties has a large stake in the debate on the trade-through rule because the resolution of this debate will have a significant effect on the future of many of these parties. Thus many of them have taken a position on the trade-through rule.

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[50] Ibid, 65.
[51] Ibid, 62.
[52] SEC, *Regulation NMS,* February 26, 2004.

New York Stock Exchange

The New York Stock Exchange, having benefited from the trade-through rule for many years, strongly supports its continued existence and opposes adding an opt-out provision that would weaken the effect of the rule. It also defends the effectiveness of the NYSE in getting the best price for investors. CEO John Thain offered written testimony on Regulation NMS that said, "The trade-through rule plays a key role in protecting the investor, both large and small."[53] A trade-through, Thain argues, creates four victims: the investor who traded at something other than the best price, the investor whose superior order was ignored, price discovery and liquidity.[54]

Thain makes a passionate argument for the trade-through rule, but he also acknowledges the degree to which speed and certainty of execution matter to many investors. It is this concern, Thain contends, that has prompted the NYSE to offer an electronic alternative to the existing manual auction market.[55] The NYSE has proposed expanding Direct+, the NYSE's automated system for executing trades, and moving to a hybrid business model that integrates the trading floor and Direct+. Direct+ is designed to be much faster than the trading floor and to enable the NYSE to qualify as a trading center capable of providing automated quotes.[56]

In commenting on the original NMS proposal, NYSE officials emphasized the importance of Direct+ to their future business plans. Accordingly, NYSE officials believe that

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[53] John A. Thain (NYSE), *Written Testimony Before the SEC Hearing on Proposed Regulation NMS,* April 21, 2004, http://www.nyse.com/press/p1020656068695.html?displayPage=%2Fpress%2F1020656068695.html.
[54] Ibid.
[55] Ibid.
[56] Darla C. Stuckey (NYSE), *Comments to the SEC on Proposed Regulation NMS,* July 2, 2004, http://www.sec.gov/rules/proposed/s71004/nyse070204.pdf, 4. The SEC has delayed approving the NYSE's plan for Direct+ until it finalizes Regulation NMS. Some observers have argued that Commission should address Direct+ first given its relationship to the trade-through rule.

the distinction between automated and manual should be made on a quote-by-quote rather than a market-by-market basis.[57] The SEC adopted this approach in the December 2004 re-proposal.

Nasdaq and ECNs

Exchanges not previously covered by the trade-through rule reject the NYSE's position and favor weakening the trade-through rule substantially or eliminating it completely to induce more competition and enable their own growth. Nasdaq, in its comments on the SEC's original proposal, opposed extending the trade-through rule to Nasdaq securities and instead called for eliminating it altogether. In the absence of repeal, it supports the opt-out exception.[58] Nasdaq's claim is principally based on the argument that it operates well without the rule. The Nasdaq's comments quote the SEC in saying that, "even without a trade-through rule, the Nasdaq market does not appear to lack competitive quoting in the most actively traded securities."[59] Nasdaq officials also express concern that compliance with the rule will be costly and argue that trade-throughs in Nasdaq securities are infrequent. Furthermore, they cite the benefits of competition and better execution of large trades that may result from abolishing the rule.[60] Nasdaq prefers the opt-out exception to the automated market or quote exception, arguing that market participants should be permitted to define what they consider to be automated quotes through their trading decisions.[61]

The views of ECN officials generally mirror what Nasdaq officials have said. They maintain that spreads are narrower and execution faster in Nasdaq securities and that the absence

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[57] Ibid, 4-5.
[58] Nasdaq (Edward Knight), *Re: Proposed Regulation NMS,* July 2, 2004, http://www.sec.gov/rules/proposed/s71004/knight070504.pdf, 3.
[59] Ibid, 5.
[60] Ibid, 6-8.
[61] Ibid, 8-9.

of a trade-through rule has enabled innovation not evident in the trading of listed securities.[62] The leadership of Instinet, which operates an ECN called INET, supports extending the trade-through rule to Nasdaq securities as long as the rule includes the opt-out exception. [63] Instinet officials prefer the opt-out to the fast market exception because they are concerned about the difficulty of defining an automated quote and the potential effect on the incentive for market operators to innovate.[64]

Institutional Investors

The opt-out exception to the trade-through rule is intended primarily for institutional investors, many of whom have complained about the trade-through rule and its effect on execution quality. Few institutions have complained more vigorously than Fidelity Investments, which manages over 300 funds. Fidelity strongly opposes the implementation of a broadened trade-through rule, contending that its primary effect is to protect certain markets and stifle competition rather than protect investors and promote liquidity.[65] Fidelity officials reject the need for trade-through protection of automated markets, arguing that market participants should be free to determine which market is best for them. The Fidelity representatives also argue that a trade-through rule for automated markets may not be technically feasible.[66]

Other institutional investors have reacted more favorably to the SEC's proposal. The Investment Company Institute ("ICI"), a mutual fund industry organization, supports applying the trade-through rule to all securities and opposes the opt-out as long as the rule permits investors to trade-through a non-automated market. ICI's position emphasizes price priority and liquidity. Its opposition to the opt-out is based on the belief that an exception for automated

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[62] Instinet Group (Edward Nicoll), *Re: Proposed Regulation NMS*, 9-10.
[63] Ibid, 11.
[64] Ibid, 4.
[65] Fidelity Investments (Eric Roiter), *Re: Regulation NMS*, 3, 10.
[66] Ibid, 7-8.

markets would render the opt-out unnecessary and that the opt-out would be inconsistent with the stated objective of protecting the best price.[67]

Other institutions take more moderate positions than Fidelity or ICI. CalPERS, for instance, favors extension of the trade-through rule subject to the inclusion of the opt-out and automated market exceptions.[68] In nearly all of the comments from institutional investors, there is strong sentiment in favor of automated trading. Thus, there is high demand for an effective way to trade NYSE-listed securities on an automated market.

VI. ALTERNATIVE POLICIES

The changes in the SEC position reflected in the revised proposal and proposals from other interested parties testify to the complexity of this issue and the number of different viewpoints. There are several alternatives that have been touted as being more effective and more consistent with the long-term development of the securities markets.

Strengthened Trade-Through Alternative

The first of these alternatives would be to apply the trade-through rule to all NMS securities. No opt-out provision or other exceptions would be included. This choice would be most consistent with the SEC's emphasis on price protection. It would ensure that, no matter what, the best price posted on any market center would take precedence over an inferior price. A broadened trade-through rule with no significant exceptions gives the most weight to the investor protection argument and largely ignores the questions about competition and quality of execution that some institutional investors have raised. An unquestionably strengthened trade-through rule

[67] Investment Company Institute (Ari Burstein), *Re: Regulation NMS,* June 30, 2004, http://www.sec.gov/rules/proposed/s71004/ici063004.pdf, 7, 9.
[68] CalPERS (Mark Anson), *Re: Regulation NMS,* May 13, 2004, http://www.sec.gov/rules/proposed/s71004/calpers051304.pdf, 2.

would make it harder for markets with superior systems to compete with the manual floor auction system.

Global Opt-out Alternative

A second alternative option would closely resemble the original Regulation NMS proposal, but it would seek to make the opt-out more effective and reduce the costs of imposing the trade-through rule on Nasdaq securities. Informed investors could be permitted to opt-out on a broader basis rather than on the trade-by-trade basis the SEC proposed. A trade-by-trade opt-out could be unduly complicated and costly. A trader could be permitted to opt-out of the trade-through rule on all trades, trades over a certain size or another parameter of the trader's choosing. A broader opt-out would allow investors greater flexibility over how their trades would be executed without imposing an excessive burden on them or their brokers. This alternative would be more cost effective and would still apply trade-through protection in many cases.[69]

The opt-out exception, however, is flawed in general. If the trade-through rule does protect investors and increase liquidity, then allowing an opt-out for sophisticated investors would undermine those objectives. If the trade-through rule does not do as its supporters claim, then the opt-out is merely a half-measure that would come with costly reporting requirements.

Repeal Alternative

A third alternative, proposed by a number of individuals and institutions, is to take a very different approach than the SEC has pursued thus far and abolish the trade-through rule altogether. This option emphasizes the value of competition between market centers based on execution quality. It also gives investors maximum discretion over how they participate in the

[69] Instinet Group (Edward Nicoll), *Re: Proposed Regulation NMS*, 19-21.

securities markets. However, there are risks to repeal, specifically, as the SEC has warned, that retail investors would be harmed or that liquidity would be less abundant.

VII. CONSIDERATIONS FOR POLICYMAKERS

In evaluating the SEC's current proposal and the alternatives to it, policymakers should pursue several objectives. These objectives are focused on ensuring fairness for all market participants and facilitating an effective market structure.

Objective of Fairness for Retail and Institutional Investors

A major consideration for policymakers should be ensuring that both retail investors and institutional investors are treated fairly. The action the Commission takes should not favor one group. The perception of favoritism could discourage people from participating in the stock market; furthermore, SEC officials and other interested parties state that that perception might lead to market-wide consequences such as loss of liquidity and distorted price discovery.[70] By extension, policymakers must consider how important the trade-through rule is in encouraging the behavior the SEC believes is so important to the smooth operation of markets. The comparison of the present trading in NYSE-listed and Nasdaq securities will provide some insight into this aspect of the debate by revealing information about market quality and the incidence of trade-throughs. The data also provide some indication as to how many trade-throughs would occur without a rule banning the practice.

At the same time, institutional investors' concerns about getting the best overall execution for large trades should be addressed. After all, many institutional investors are

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[70] SEC, *Regulation NMS*, February 26, 2004.

executing trades on behalf of small investors whose interests the SEC purports to safeguard.[71] When a mutual fund loses money because a large trade moves the market in a stock away from the fund managers, less sophisticated investors also lose.

Objective of Creating Incentives to Innovate

Policymakers should also consider the trade-through rule with an eye to creating a regulatory structure in which market centers have an incentive to innovate and improve the service they provide to investors. In order to encourage innovation, there must be significant competition between market centers over quality and meeting the demands of investors. Some aspects of the present system promote competition; this competition has led to dramatic changes in the trading of non-listed securities and has benefited investors by giving them multiple platforms on which to trade. The market for NYSE-listed securities, by contrast, does not allow for significant competition, and the NYSE has not taken advantage of technology to the same extent as a result. [72] In an environment in which investors have multiple alternatives from which to choose, their behavior will reveal which alternative is the best for investors. Volume will flow to preferred markets, thereby concentrating liquidity.[73]

Objective of Minimizing Implementation Costs

Implementation costs should also impact the thinking of policymakers. These costs will not only be paid by brokers and large institutions but also by retail investors. The costs of some versions of the trade-through rule, if implemented, could be so high that any reduction in indirect costs arising from trade-throughs would be negated. Potential costs range from updating the technology that monitors markets and routes trades to obtaining the consent of investors and

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[71] Benn Steil, meeting with class, October 27, 2004.
[72] Instinet Group (Edward Nicoll), *Re: Proposed Regulation NMS*, 8-9.
[73] Benn Steil, meeting with class, October 27, 2004.

complying with whatever reporting requirements are attached to the new rules.[74] Every effort should be made to adopt a policy that can be smoothly and inexpensively implemented.

Objective of Creating a Modern Market Structure

The final decision about the trade-through rule will also depend on how policymakers answer two broader questions. The first is the significance of non-price factors such as speed and certainty of execution. If price is the sole consideration for investors, then a strong trade-through rule would be desirable because it protects quoted prices. If other factors such as speed and certainty of execution have a significant effect on overall quality, then a weaker rule would be desirable in order to give brokers more freedom to consider those factors.

The other broad question for policymakers to consider is which market structure is best for the future. Specifically, is an automated exchange superior to a floor auction exchange? Should liquidity be concentrated in one place or should it be spread between competing market centers? The current system favors the NYSE's trading floor, but a number of reform proposals favor automated markets. The answers to these questions will influence the resolution of this debate by setting objectives about investor choice and market structure.

VIII. RECOMMENDATION

Based on the changes in securities markets since the trade-through rule was adopted and the available data relating to market quality, this paper recommends that the SEC should not extend the trade-through rule to Nasdaq securities, but rather should repeal the trade-through rule for NYSE-listed securities. There is ample evidence to show that repeal would benefit many investors and the overall marketplace. Repealing the rule would make regulation consistent for

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[74] SEC, *Regulation NMS,* December 16, 2004, 28, 72, and SEC, *Regulation NMS*, February 26, 2004.

all securities and promote competition. The risks of repeal that some critics have cited seem overstated, and established securities markets have demonstrated that they can operate effectively without a trade-through rule. In the absence of evidence showing that there is a need to apply the trade-through rule to Nasdaq securities, it is hard to justify imposing such new regulations.

Market Quality Data

The conclusion that markets can operate effectively without a trade-through rule is based on data that shows the Nasdaq market is, at worst, of comparable quality to the NYSE. If market quality is measured in terms of effective spread, then both the Nasdaq and NYSE can produce presentations favorable to their systems.[75] Nasdaq claims that effective spreads for S&P 500 stocks traded on the Nasdaq are 50% smaller than effective spreads for S&P 500 stocks traded on the NYSE.[76] Instinet conducted a study that also found narrower spreads on Nasdaq as well as faster execution times and less slippage.[77] By contrast, the NYSE's execution quality study found that NYSE-listed securities had narrower effective spreads than comparable Nasdaq securities.[78] The SEC disputes the studies produced by Nasdaq partisans but does not claim that the quality of Nasdaq is lower than the quality of the NYSE.[79] The SEC's study indicates that effective spreads are narrower on the NYSE for smaller trades and narrower on Nasdaq for larger trades.[80]

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[75] Effective spread is a measure of the implicit costs involved in trading. The SEC defines it to be twice the difference between the trade price and the midpoint between the bid quote and the ask quote.
[76] Nasdaq (Edward Knight), *Re: Proposed Regulation NMS,* 38.
[77] Instinet Group (Edward Nicoll), *Re: Proposed Regulation NMS*, 9-10.
[78] NYSE, Execution Quality in 2003-2004, April 2004, http://www.nyse.com/pdfs/nyseexecutionquality.pdf, 4.
[79] SEC, *Regulation NMS,* December 16, 2004, 34.
[80] SEC (Office of Economic Analysis), Comparative Analysis of Execution Quality on NYSE and Nasdaq based on a matched sample of stocks, December 15, 2004, http://www.sec.gov/spotlight/regnms/companalysis121504.pdf.

In addition to data about effective spreads, data about trade-through rates indicates that the Nasdaq is effective without the trade-through rule. Trade-through rates are similar for Nasdaq and NYSE-listed securities. According to the SEC, the rate for Nasdaq is 7.9 percent of trading volume; for the NYSE, it is 7.2 percent of trading volume.[81] The percentage of trades that are trade-throughs is identical (2.5% for both), and the average amount of each trade-through is nearly identical.[82] The fact that the percentage of volume that represents a trade-through is significantly greater than the percentage of trades that are trade-throughs indicates that trade-throughs most commonly occur with large blocks of stock that can be difficult to trade. The SEC attributes the rate of trade-throughs on the NYSE to loopholes in the existing trade-through rule and says that closing the loopholes would lower the rate of trade-throughs in NYSE securities.[83] Nevertheless, it is significant that Nasdaq quotes do not seem to be traded-through much more frequently than NYSE quotes, even though there is no rule against doing so.

Based on the market quality data about both spreads and trade-throughs, it is not clear how trading on Nasdaq or ECNs would benefit from the trade-through rule. The SEC contends that somewhat higher transitory volatility in Nasdaq securities than in NYSE-listed securities evidences a lack of liquidity, but the connection to trade-throughs is tenuous, especially given the fact that the NYSE's trade-through rate is nearly the same as Nasdaq's.[84] There is insufficient evidence to warrant a trade-through rule for Nasdaq securities. In fact, the strength of Nasdaq and ECNs suggests that repealing the trade-through rule for NYSE-listed securities would not cause significant problems.

Factors in Best Execution

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[81] Ibid, 37.
[82] Ibid.
[83] Ibid, 38.
[84] Ibid, 36.

The recommendation to take the additional step of repealing the trade-through rule for NYSE-listed securities is based upon both the market quality data and the conviction that although price is an important consideration in obtaining best execution, it must not be the only consideration. The experience of many investors shows that other factors (speed, certainty of execution, market impact) matter as well. Speed and price are not mutually exclusive and a trader's decision about where to send an order should not be thought of as simply choosing between the two.[85] Although it will often be optimal to trade with the best-priced quote, taking the second or even third best price and getting a quicker or more certain execution may occasionally enable a broker to get a better average price per share for the whole trade. In many cases, there might be a lack of depth at the best bid or offer that would make it preferable for someone making a large trade to execute a trade at a slightly inferior price where there is greater depth.[86] Investors and their agents will want to choose where to route an order based on the details of the order and market conditions. The trade-through rule denies this choice to investors, institutional and otherwise, and forces them into unfavorable situations.

Competition and a Modern Market Structure

In addition to offering investors more choice in placing orders, repealing the trade-through rule would encourage competition that would lead to the development of a more efficient market structure. The current trade-through rule has stymied the transition to automated markets, and there is broad agreement that most trading will occur on automated markets in the future.[87] The NYSE has admitted as much with its hybrid market proposal. But the SEC does not need to express a preference for automated markets through the trade-through rule in order to

[85] Citadel (Kenneth Griffin), *Re: Regulation NMS,* July 9, 2004, http://www.sec.gov/rules/proposed/s71004/s71004-436.pdf, 3.
[86] Peter Wallison, e-mail with the author, December 21, 2004.
[87] Citadel (Kenneth Griffin), *Re: Regulation NMS,* 5-6.

create a modern market structure. Repeal of the trade-through rule will produce a better market structure by empowering investors to choose where to place an order. The aggregate of individual investors' choices will reflect the results of the competition between markets and investors' market structure preferences. Competition in the market for non-listed securities has been "brutally efficient", according to an Instinet official.[88] That competition would likely have the same effect as the battle for market share in Nasdaq securities – quality will go up and costs will go down as markets seek a competitive advantage.[89]

Moreover, investors' preferences need not be the same for all stocks; they may vary based on the characteristics of the stock such as liquidity. For instance, investors might want to trade less liquid stocks on a trading floor or a market with some form of intermediation, either human or electronic. Repeal gives them the option to do this.[90]

Furthermore, robust competition between markets to offer the best service will make the trade-through rule unnecessary. If the best-priced quotes are accessible (as they would have to be in a competitive environment), then there would be no reason to trade-through them. If the relevant aspects of execution quality are essentially identical, no one would want to trade-through a price.[91] However, if many quotes on a particular market are traded-through, then that shows that those quotes are not well regarded by market participants and that the market posting them must improve to remain competitive.

The SEC recognizes the importance of competition and maintains that its proposal will preserve it.[92] However, the protection for automated quotes contained in the SEC proposal only provides an incentive for markets to meet a minimum standard for having automated quotes.

[88] Cameron Smith, meeting with class, October 6, 2004.
[89] Nasdaq (Edward Knight), *Re: Proposed Regulation NMS*, 7.
[90] Benn Steil, meeting with class, October 27, 2004
[91] Citadel (Kenneth Griffin), *Re: Regulation NMS,* 6.
[92] SEC, *Regulation NMS,* December 16, 2004, 10.

Once that standard is satisfied, markets would have little to gain from investing in better technology and improving their product.[93] Defining what constitutes an automated quote, which is critically important to market operators, has been difficult and controversial.[94] The definition of an automated quote the SEC proposes relies on the "immediate or cancel" standard, but it is not clear how this definition will work in practice. The "immediate or cancel" standard may not be the same for all markets, especially if some markets are marginally faster or provide better execution than others. The "self-help" remedy that becomes an option after a one-second delay and the exception for flickering quotes exemplify how difficult it is to define what constitutes an automated quote. Market participants can determine for themselves which quotes are the most accessible; the SEC need not define accessibility for them.[95]

Furthermore, the emphasis on automated quotes in the proposed rule forces the SEC to involve itself in the minutiae of how a market operates on an ongoing basis.[96] An example of this phenomenon is the NYSE's proposal to expand Direct+, its electronic trading system, and shift to a hybrid model. Because the NYSE wants its hybrid model to offer quotes that are protected from trade-throughs, there will be a lengthy dialogue between the SEC and the NYSE to make sure the hybrid qualifies for trade-through protection. However, this dialogue is unnecessary. Even without a trade-through rule, traders will not trade-through quotes on the NYSE hybrid if those quotes meet investors' needs. Competition would require the NYSE and other markets to develop systems that serve investors in order to be successful.

Because competition can lead to improvements in market quality, it is imperative that the SEC not adopt the Voluntary Depth Alternative it has proposed. This alternative expands trade-

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[93] Instinet Group (Edward Nicoll), *Re: Proposed Regulation NMS*, 17-18.
[94] Fidelity investments (Eric Roiter), *Re: Regulation NMS*, 7.
[95] Nasdaq (Edward Knight), *Re: Proposed Regulation NMS*, 11.
[96] Instinet Group (Edward Nicoll), *Re: Proposed Regulation NMS*, 4.

through protection to quotes higher than the lowest offer and bids lower than the highest bid. It is essentially a form of the Consolidated Limit Order Book (CLOB) proposal that has been discussed and discarded in the past.[97] If adopted, it would gravely undermine competition between markets. It would mean that it would make no difference to an investor where an order was placed since the order would be routed to a protected quote somewhere else.[98]

Incentives to Provide Liquidity

Despite the disadvantages of the trade-through rule with respect to slippage and competition, many of its supporters argue that repeal would harm the investors whose orders are traded-through. But if an investor's limit orders are consistently traded-through on one market, then that investor will have the option of posting limit orders on a different market where limit orders will not be traded-through because that market offers the execution quality other investors are seeking.[99] As Benn Steil of the Council on Foreign Relations said, repeal of the trade-through rule will not discourage people from placing limit orders, but repeal will discourage them from placing limit orders on markets where orders are traded-through. Liquidity, in turn, will concentrate in the market that investors believe provides the best service because that is where investors will choose to trade.[100] The argument that limit orders would not be placed without trade-through protection or that the trade-through rule is a precondition for liquidity seems exaggerated.

The Best Execution Obligation

Nevertheless, there are some issues with repeal of the trade-through rule that would need to be addressed for markets to operate effectively in its absence. Just as repeal would give

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[97] John A. Thain, "The Quest for the Right Balance," *The Wall Street Journal,* December 21, 2004.
[98] Peter Wallison, e-mail to the author, December 21, 2004.
[99] Benn Steil, meeting with class, October 27, 2004..
[100] Ibid.

investors more choice in how they place orders, it would also give brokers more flexibility in directing orders to the marketplace. Without the trade-through rule, brokers will simply operate under the long-standing requirement that they obtain the best execution possible.[101] Throughout history, many brokers have tried to profit personally by taking advantage of their customers and routing orders to inferior markets.[102] Because it is possible that some brokers will take advantage of the added flexibility that repeal provides to benefit themselves, it is imperative that regulators enforce the best execution obligation and that customers who have been wronged have an opportunity to seek redress.

Best execution is inherently difficult to define given the number of factors involved in executing a trade. For this reason, a common law definition will be more effective than a codified trade-through rule that focuses on only one factor. The concept of best execution will better adapt to changing situations than the trade-through rule. Even though the best execution obligation is less clearly defined than the trade-through rule, it will still be possible to spot violations. The fact that an increasing amount of trading will occur on electronic markets for which record-keeping is extensive and automatic will make the best execution obligation easier to enforce because irregularities may be spotted by monitoring trading activity.[103] As experience shows which markets offer the most accessible quotes, anomalies will be more easily identifiable.

Implementation

Finally, in terms of implementation, repeal of the trade-through rule would be the simplest of all the alternatives under consideration. It could be done by amending the language in Proposed Regulation NMS to require the ITS to eliminate its trade-through rule. No changes

[101] Douglas Shulman (NASD), meeting with class, October 20, 2004.
[102] Peter Kyle, meeting with author, October 26, 2004.
[103] Citadel (Kenneth Griffin), *Re: Regulation NMS,* 6.

would be necessary for non-listed securities. Modest changes to the systems of regional exchanges and the NYSE as well as ECNs may be necessary to permit trade-throughs to occur in NYSE-listed stocks.

IX. CONCLUSION

The attention and energy that industry leaders and government officials have devoted to the trade-through rule confirm its importance. Whether a trade-through rule continues to exist and which quotes it protects will shape the futures of the New York Stock Exchange, regional exchanges, Nasdaq and ECNs for decades to come. It will also determine how much choice investors and brokers have in executing trades.

The regulation that has been in place since 1981 is clearly unsuitable for the securities markets that exist today. It is therefore appropriate for the SEC to consider changes to the rule. Expanding the rule's reach in pursuit of consistency is tempting but there is not a clear reason for increasing the regulatory burden. On the contrary, the competitiveness and innovation of the markets for non-listed securities show that the trade-through rule is not only unnecessary but also detrimental to the equity markets. The market structures that best meet the demands of investors will flourish without the rule. For all of these reasons, repeal is the best solution.

X. BIBLIOGRAPHY

Andresen, Matthew (Former CEO of Island), Testimony before the House Subcommittee on Capital Markets, May 18, 2004, http://financialservices.house.gov/media/pdf/051804ma.pdf.

CalPERS (Mark Anson), *Re: Proposed Regulation NMS*, May 13, 2004, http://www.sec.gov/rules/proposed/s71004/calpers051304.pdf.

"Can we trade through," *Wall Street Journal,* October 30, 2003.

Citadel (Kenneth Griffin), *Re: Regulation NMS,* July 9, 2004, http://www.sec.gov/rules/proposed/s71004/s71004-436.pdf

DeSano, Scott (Fidelity Investments), Testimony before the Senate Banking Committee, July 22, 2004, http://www.senate.gov/~banking/_files/desano.pdf.

Donaldson, William (SEC), Testimony before the Senate Banking Committee, July 21, 2004, http://www.senate.gov/~banking/_files/ACF2F4.pdf.

Donaldson, William (SEC), Testimony before the House Subcommittee on Capital Markets, October 30, 2003, http://financialservices.house.gov/media/pdf/103003wd.pdf.

Fidelity Investments (Eric Roiter), *Re: Regulation NMS*, July 22, 2004, http://www.sec.gov/rules/proposed/s71004/fmrc062204.pdf.

Harris, David (Amex), Testimony before the Senate Banking Committee July 21, 2004, http://www.senate.gov/~banking/_files/harris.pdf.

Instinet (Edward Nicoll), *Re: Proposed Regulation NMS*, June 30, 2004, http://www.sec.gov/rules/proposed/s71004/igi063004.pdf.

Investment Company Institute (Ari Burstein), *Re: Regulation NMS*, June 30, 2004, http://www.sec.gov/rules/proposed/s71004/ici063004.pdf.

Kyle, Peter, meeting with author, 26 October 2004.

LaBranche, Michael (LaBrance & Co.), Testimony before the House Subcommittee on Capital Markets, October 30, 2003, http://financialservices.house.gov/media/pdf/103003ml.pdf.

Nasdaq, *Nasdaq Performance Report*, November 2004, www.nasdaq.com/newsroom/stats/Performance_Report.stm.

Nasdaq, *Ensuring Competitive American Stock Markets*, October 15, 2003, http://www.nasdaq.com/newsroom/presentations/documents/NASDAQ_WhitePaper_101503.pdf.

Nasdaq (Edward Knight), *Re: Proposed Regulation NMS,* July 2, 2004, http://www.sec.gov/rules/proposed/s71004/knight070504.pdf.

Nazareth, Annette (SEC), meeting with class, October 13, 2004.

Nazareth, Annette (SEC), Remarks before the SIA Market Structure Conference, May 21, 2004. www.sec.gov/news/speech/spch052104aln.htm.

Nicoll, Edward (Instinet), "What's the best price," *Securities Industry News,* March 24, 2003.

NYSE (Darla Stuckey), *Comments to the SEC on Proposed Regulation NMS*, July 2, 2004, http://www.sec.gov/rules/proposed/s71004/nyse070204.pdf.

NYSE, *Execution Quality in 2003-2004*, New York Stock Exchange, April 2004, http://www.nyse.com/pdfs/nyseexecutionquality.pdf.

NYSE, *The Exchange,* July 2004, http://www.nyse.com/pdfs/xnlv11n07.pdf,

NYSE Research, *Potential Costs of Weakening the Trade-Through Rule*, February 2004, http://www.nyse.com/pdfs/tradethrough.pdf.

Oxley, Michael. Statement before the House Subcommittee on Capital Markets, October 30, 2003, http://financialservices.house.gov/media/pdf/103003ox.pdf.

Putnam, Gerald (Archipelago Holdings), Testimony before the Senate Banking Committee, July 21, 2004, http://www.senate.gov/~banking/_files/ACF2FD.pdf.

Roiter, Eric (Fidelity), meeting with class, November 3, 2004.

SEC, *Regulation NMS*, File No. S7-10-04, February 26, 2004, http://www.sec.gov/rules/proposed/34-49325.htm.

SEC, *Proposed Regulation NMS: Request for Additional Comment*, May 26, 2004, http://www.sec.gov/rules/proposed/34-49749.htm.

SEC, *Regulation NMS*, December 16, 2004, http://www.sec.gov/rules/proposed/34-50870.pdf.

SEC (Office of Economic Analysis), *Comparative Analysis of Execution Quality on NYSE and Nasdaq based on a matched sample of stocks*, December 15, 2004, http://www.sec.gov/spotlight/regnms/companalysis121504.pdf.

Securities Industry Association (Marc Lackritz), *Re: Regulation NMS*, June 30, 2004, http://www.sec.gov/rules/proposed/s71004/s71004-362.pdf.

Shulman, Douglas (NASD), meeting with class, October 20, 2004.

Smith, Cameron (Instinet), meeting with class, October 6, 2004.

Steil, Benn, meeting with class, October 27, 2004.

Steil, Benn, Testimony before the House Subcommittee on Capital Markets, May 18, 2004, http://financialservices.house.gov/media/pdf/051804bs.pdf.

Thain, John (NYSE), Testimony before the SEC Hearing on Proposed Regulation NMS, April 21, 2004, http://www.nyse.com/events/1082972326269.html.

Thain, John (NYSE), Testimony before the Senate Banking Committee, July 21, 2004, http://www.senate.gov/~banking/_files/thain.pdf.

Thain, John (NYSE), "The Quest for the Right Balance," *The Wall Street Journal,* December 21, 2004.

Vanguard Group (George Sauter), *Re: SEC's Request for comments on Regulation NMS*, July 14, 2004, http://www.sec.gov/rules/proposed/s71004/sauter071404.pdf.

Wallison, Peter, e-mail to the author, December 21, 2004.

Wallison, Peter, meeting with class, October 6, 2004.

Wallison, Peter, "Shooting from the Hip: The SEC has stopped doing its homework," AEI. October 2004.

Wallison, Peter, Testimony before the House Subcommittee on Capital Markets, May 18, 2004, http://financialservices.house.gov/media/pdf/051804pw.pdf.

Wheeler, John (Investment Company Institute), Testimony to the SEC Hearing on Proposed Regulation NMS, April 21, 2004, http://www.sec.gov/spotlight/regnms/nmstrans042104.txt.

Yahoo! Finance, Volume Data, December 30, 2004, http://finance.yahoo.com/q/cq?d=v1&s=%5eTV.N%2c+%5eTV.O.

THE COMMISSION-ONLY PRICING OPTION:

A Proposed Solution to the Payment for Order Flow Controversy

Jason Brein

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IX. Conclusion

I. Executive Summary

Payments for order flow occur when dealers offer monetary rewards or other non-pecuniary services to brokers in exchange for the routing of retail market bid or ask offers.[104] Market makers execute orders at the NBBO rather than actively pursuing opportunities to improve upon the quoted spread, as specialists on an exchange would do.[105] At the core of the payment for order flow controversy is the principal-agent problem that arises between investors and their brokers. A principal-agent problem arises when an agent – who has an obligation to act on behalf of the principal – makes self-interested decisions when two conditions are met.[106] These conditions are misaligned incentives, which occur when the interests of the agent (the broker) do not necessarily coincide with the interests of the principal (the investor), and insufficient monitoring, which occurs when the investor cannot audit the quality of his broker's services for because of asymmetric information (The broker possesses knowledge to which the investor does not have access.) or rational ignorance (Even if the investor could, in theory, obtain the information known by the broker, the principal opts to remain uninformed because the costs of securing this knowledge outweigh the benefits of attaining it.)

The purpose of this analysis will be to recommend regulatory measures that compel agents to act in the best interest of the principals, in order to solve the principal agent problem. After examining three alternatives, maintaining the status quo, adopting additional regulations, and repealing specific rules, this analysis will conclude that a deregulatory approach is the most effective solution. Specifically, it will recommend the removal of the brokers' requirement to

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[104] Chordia, Tarun and Avanidhar Subramanyam. "Market-Making, the Tick Size, and Payment for Order Flow: Theory and Evidence." *The Journal of Business* Oct. 1995, Vol. 68, Iss. 4. pp. 543. (543)
[105] Parlour, Christine A. and Uday Rajan. "Payment for Order Flow." *Journal of Financial Economics* 2003, Iss. 68. pp. 379-411. (380)
[106] Hillman, Arye. *Public Finance and Public Policy: Responsibilities and Limitations of Government*. Cambridge, United Kingdom: Cambridge University Press, 2003.

credit their clients' accounts with the price at which the trade was ultimately executed and instead allow brokers the option of competing in the securities market solely on the basis of commission fees.

This analysis depicts current regulatory measures taken to align broker-investor incentives and establish transparency, such as the ITS' trade through prohibition, NASD's "Best Execution" obligations and the Disclosure of Order Execution and Routing Practices Rule, are ineffective in creating adequate transparency.

The analysis recommends implementing the *commission-only retail pricing option*[107] – a proposal advocating the removal of brokers' requirement to credit their clients' accounts with the price at which trades are ultimately executed. Instead, brokers would hold the option of crediting their retail clients' account with the NBBO and personally profiting from any price improvement opportunities. Institutional investors, who can typically more readily monitor their brokers' services, could continue to negotiate their desired terms of execution to suit their specific needs – which, unlike retail customers, often encompass factors other than merely price.

The commission-only retail pricing option would eliminate the principal-agent problem by creating incentives for brokers to minimize costs – a goal that matches the desires of investors. Brokers electing this choice, would "have a powerful incentive" to route small orders to the securities market offering prices more competitive than the NBBO, since "a failure to do so would come only at his [own] expense."[108] A broker's profits would increase with his ability to obtain best execution, and clients would benefit through reduced commissions. A broker

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[107] The "commission-only retail pricing option" is modeled after Harvard professor Allen Ferrell's "NBBO pricing option," but, since it differs substantially, warrants a separate name. The commission-only retail pricing option allows a broker to choose the pricing option for his retail customer, but permits institutional investors to continue to negotiate the terms of the execution. The "NBBO pricing option," in contrast, allows both retail and institutional investors alike to choose their desired pricing option.

[108] Ferrell (2001) 1073.

electing this option would extricate himself from any unrealistic pressure from retail customers to individually address small orders.[109]

Moreover, the rule would allow investors to cheaply audit the quality of their brokers' services. Retail customers prioritizing price over all other factors would minimize their costs by surveying brokers operating under the commission-only retail pricing option, and simply select the broker advertising the cheapest commissions. Brokers failing to route customer orders to securities markets offering price improvement opportunities, explains Ferrell "would have to charge higher commission rates to compensate for this misallocation"[110] – a certain recipe for disaster in the brutally competitive securities industry.[111] Brokers, too, would likely find the commission-only retail pricing option attractive because it would enable them to reduce their commissions – the variable to which customers are most attune – while not necessarily decreasing their profit per trade.[112] Taken together, these factors would standardize fee structures while retaining the benefits of a competitively fragmented marketplace.[113]

Implementing the commission-only retail pricing options would require the SEC to conduct the following regulatory changes:

1. Repeal the trade-through rule.[114]
2. Void any existing common law interpretations suggesting that brokers must credit their clients with the price at which the trade was ultimately executed, and

[109] The stipulation that brokers choose the pricing option, rather than their retail customers, is efficient because it allows brokers to achieve economies of scale – which, as this section explains, benefits principals and agents alike.
[110] Ferrell (2001) 1074.
[111] Harris 4.
[112] E.g. Battalio, Harris.
[113] Mahoney, Joseph. "Toward a New Social Contract Theory in Organizational Science." *Journal of Management Inquiry*, 1994, Vol. 3, Iss. 2. pp. 153-168.
[114] While repeal of the trade-through rule may be politically unpopular, this suggestion coincides with other recommendations offered by this task force.

explicitly state that brokers may conduct business in accordance with the commission-only retail pricing option.

3. Repeal NYSE Rule 353, the regulation prohibiting payment for order flow on the Exchange floor.
4. Require brokers to clearly indicate – both to their customers and to the SEC – whether they will be operating under the "traditional pricing option" or the "commission-only retail pricing option."[115] While brokers may change their pricing option, they must provide their clients with 90-days notice before doing so in order to prevent any confusion.

II. Introduction

Once considered a radical practice but only a minor source of inefficiency, payments for order flow – agreements by which dealers offer monetary rewards or other non-pecuniary services to brokers in exchange for the routing of retail market bid or ask offers[116] — have become a core regulatory concern. The controversy became prominent in 1993, when Madoff Investments mysteriously garnered 10% of NYSE-listed volume through a legal "kickback" scheme that permitted brokers to increase personal revenues without obtaining the consent of their clients.[117] The practice spread rapidly and the routine soon became formulaic: Rather than actively pursuing opportunities to improve upon the quoted spread, as specialists on an exchange

[115] With regard to the latter, while brokers may change their pricing option, they must provide their clients with 90-days notice in order to prevent any confusion.
[116] Chordia, Tarun and Avanidhar Subramanyam. "Market-Making, the Tick Size, and Payment for Order Flow: Theory and Evidence." *The Journal of Business* Oct. 1995, Vol. 68, Iss. 4. pp. 543.
[117] Vise, David A. "A Broker and the Angry Exchanges: Bernie Madoff's Stock Buying Rivalry Irks NYSE, AMEX." *Washington Post* 14 Apr. 1993. F1.

would do,[118] brokers would execute orders with a market maker promising to match the NBBO; the market maker would return the favor by rebating a portion of their profits to the broker routing the order. The contracts proved profitable, and, by the turn of the century, OTC market makers had employed this technique to commandeer 38% of Exchange-listed volume.[119]

Under the current regulatory scheme, rules specifically governing payment for order flow schemes are both lax and inconsistent. Regulators and legislators have remained unusually mum and allowed each venue to determine its own rules – only requiring that a broker disclose the venues to which he routes orders and indicate the markets from which he has received rebates, either now or in the past.[120] Thus, while the New York Stock Exchange dismisses payment for order flow as disingenuous and prohibits it altogether,[121] market makers and alternative trading systems encourage the practice and assert that the rebates actually benefit customers.[122]

a. Effects of Decimalization

Much of the current debate centers on why payment for order flow continues to thrive in the era of decimalization, and the extent to which allowing free markets for data would temper or eliminate the practice. Contrary to popular opinion, the "Decimalization Implementation Plan"

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[118] Parlour, Christine A. and Uday Rajan. "Payment for Order Flow." *Journal of Financial Economics* 2003, Iss. 68. pp. 379-411.
[119] Weinberg, Neil. "The Big Board Comes Back from the Brink." *Forbes* 13 November 2000. pg. 274.
[120] Specifically, the broker must disclose the venues to which he routes at least ten percent of his total order flow. Moreover, a broker has no obligation to tell a customer whether or not he received rebates for that particular investor's order.
[121] New York Stock Exchange Rule 353 prohibits anyone trading on the Exchange floor from rebating "any part of the compensation he receives for the solicitation of orders for the purchase or sale of securities or other similar instruments for the accounts of customers of his member organization employer." (Adopted May 11, 1979)
[122] While payment for order flow is prohibited on the floor of the NYSE, specialists in other auction markets are technically permitted to provide rebates to brokers, yet seem to be "institutionally incapable" of doing so profitably. Most of the trading in these markets occurs between floor brokers who, more often then not, successfully match orders without the need for the specialists' services. [Ferrell (2001) 1042-1043]

of 2000-2001[123] did not markedly affect the *frequency* of purchased order flow agreements, but it did drastically alter their landscape. In one sense, as SEC Director of Market Regulation Annette Nazareth explains, the reduction in tick size from $0.125 to $0.010 mitigated incentives for purchased order flow arrangements by reducing the funds available for broker payments[124]; paradoxically, by narrowing spreads, decimalization increased the regional exchanges' dependence upon market data revenues. This new emphasis spawned the creation of "print facilities" that have created additional incentives for purchased order flow agreements.

"Payment for printed flow" occurs when self-regulatory organizations ("SROs") allocate a substantial portion of their lucrative market access fees – sometimes as much as fifty percent[125] – to alternative trading systems in exchange for the privilege of reporting, or "printing," the ATS' trades to data Network A, Network B, or Nasdaq UTP.[126] Because the distribution formulas are based only upon the number of *trades* reported by an SRO, and not the size or quality of the trade, alternative trading systems have little incentive to generate the highest quality quotations that prove vital for price discovery – i.e. those quotes that have the most competitive prices for the largest number of shares[127] – but extraordinary incentives to attempt to generate the maximum *number* of possible trades. ECNs have met the regional exchanges' newfound demand for high-volume printed flow agreements by increasing payments for order flow.

[123] Commission Notice: Decimals Implementation Plan for the Securities and Options Market. Exchange Committee on Decimals. *Securities and Exchange Commission*. 24 July 2000. ("decimalization")
[124] Introduced on July 24, 2000, and gradually phased in over the course of the ensuing nine months, the "Decimals Implementation Plan" lowered the minimum price variation for equity issues from $0.125 to $0.01.
[125] Regulation NMS. *Securities and Exchange Commission*. 17 CFR Parts 200, 230, 240, 242, 249. Release No. 34-49325. ("Regulation NMS")
[126] Trades of NYSE securities are reported to Network A, trades of Amex-listed securities are reported to Network B, and trades are Nasdaq-listed securities are reported to Network C (Regulation NMS 98).
[127] Paragraph XII(a)iii of the CTA plan allocates income to SRO participants according to their "Annual Shares" = total number of trades of Network securities reported by SRO / total number of trades Network securities by *all* SRO's (Regulation NMS 99).

If, then, regulators heeded the recommendations of this Task Force and permitted free markets for data, regional exchanges would no longer benefit from merely reporting trades and would therefore presumably no longer pay for printed flow. Such an occurrence – in light of the post-decimalization decline in broker rebates – the argument goes, would *practically eliminate* purchased order flow agreements, and would therefore render additional regulatory changes unnecessary.

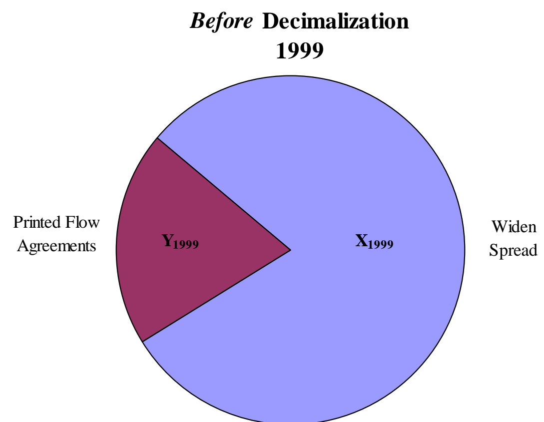
b. Necessity of Further Study

For the "free market for data" solution to *practically eliminate* payment for order flow, the number of purchased order flow contracts attributable to printed flow agreements must be significantly larger than the number of agreements attributable to dealers attempting to widen spreads. That is:

$$\frac{Y_{2005}}{X_{2005}} > C,$$

where X_i = purchased order flow contracts attributable to attempts to widen spreads
Y_i = purchased order flow contracts attributable to printed flow agreements
i = year
C = a very large constant representing the minimum quotient for which the establishment of a free market for data would *practically eliminate* purchased order flow agreements.

Figure 1



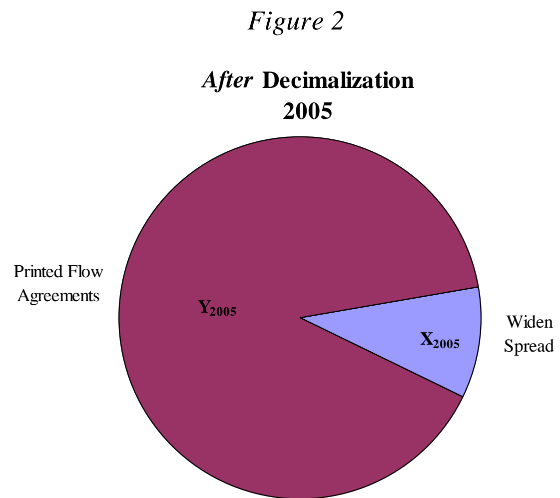
The extent to which the above hypothesis holds true depends upon both the ratio of the frequency of dealers' two possible motivations to pay for order flow[128] and upon

[128] This ratio is equal to the number of purchased order flow the number of purchased order flow contracts attributable to

society's definition of *practically eliminate*. Before decimalization (as indicated in *Figure 1*), dealers paid for order flow primarily for the purpose of attracting liquidity without having to improve upon the NBBO (X_{1999} was high). Furthermore, with tick sizes of $0.125, regional exchanges profited more from trading – and disproportionately less from data distribution fees – allowing them to generate similar revenues while purchasing less printed flow than they do currently (Y_{1999} was low). Hence, prior to decimalization: $X_{1999} > Y_{1999}$.

After decimalization (as indicated in *Figure 2*), dealers began to pay for order flow in order to *increase their sheer trading volume* – thereby increasing the value of their printed flow contracts (Y_i increased). Simultaneously, each individual purchased order flow agreement became less profitable than it was prior to decimalization (X_i decreased). Naturally, then, Y_i grew in relation to X_i.

Figure 2



Two problems, however, arise that preclude an accurate determination of whether or not the quotient exceeds C:

1. $\frac{Y_{2005}}{X_{2005}}$ is unknown. While market participants generally agree that $Y_{2005} > X_{2005}$, the relative sizes of the variables prove extraordinarily difficult – if not impossible – to measure.
2. Market participants define *practically eliminate* very differently. Formally, the value of C, while admittedly large, is unknown because individuals disagree about the

efficient and socially desirable value of X_i; put more simply, people disagree on how much payment for order flow is too much.[129]

These two reasons illustrate the necessity of analyzing the payment for order flow landscape independently of any effects a free market for data might have on the prevalence of the practice.

III. The Principal-Agent Problem

This fundamental disagreement regarding the relative values of the variables and the socially desirable level of C has led regulators and legislators to hold roundtable discussions[130] and Congressional hearings,[131] respectively, to investigate the extent to which purchased order flow agreements conflict with investors' "best execution" rights. Yet, despite thorough investigations into spread widths, tick sizes, and disclosure practices, neither body has realized that a *principal-agent problem* between investors and their brokers lies at the heart of the payment for order flow controversy.

A principal-agent problem arises when an agent – who has an obligation to act on behalf of the principal – makes self-interested decisions when both of the following two conditions are met[132]:

1. *Misaligned Incentives:* The interests of the agent (the broker) do not necessarily coincide with the interests of the principal (the investor).
2. *Insufficient Monitoring:* The investor cannot audit the quality of his broker's services for one of two reasons.

[129] The New York Stock Exchange, for instance, selects a much higher value of C than do ECNs and market makers.
[130] Roundtable on Commission Dollar and Payment for Order Flow Practices. *Securities and Exchange Commission.* 24 July 1989. File No. 4-348.
[131] National Market System: Hearings Before the Subcommittee on Telecommunications and Finance of the House Committee on Energy and Commerce. *103rd Congress*. 1993. pp. 303-429.
[132] Hillman, Arye. *Public Finance and Public Policy: Responsibilities and Limitations of Government*. Cambridge, United Kingdom: Cambridge University Press, 2003.

a. *Asymmetric Information:* The agent possesses knowledge to which the principal does not have access.

b. *Rational Ignorance:* Even if the investor could, in theory, obtain the information known by the broker, the principal opts to remain uninformed because the costs of securing this knowledge outweigh the benefits of attaining it.[133]

Solving the principal agent problem, then, requires either aligning broker-investor incentives or obtaining complete price transparency in the market. Due to the infeasibility of obtaining the latter, the purpose of this analysis will be to recommend regulatory measures that compel brokers to act in the best interest of their clients. That is, rather than attempt to define the optimal level of X_i, it will instead recommend regulatory changes that render a retail investor's probability of attaining "best execution" independent of whatever the value of X_i happens to be.

a. Relevant Decision Variables

This paper will look beyond the establishment of a free market for data distribution to examine three proposed alternatives – maintaining the status quo, adopting additional regulations, and repealing specific rules – with regards to their effectiveness in solving the principal-agent problem. Regulators believe that the *current system*, while admittedly imperfect, strikes a balance between transparency and competition; moreover, proponents of the status quo assert that designing a foolproof solution to the principle-agent problem sometimes proves impossible, and argue that regulators should adopt the Hippocratic Oath's injunction of "First, do no harm."[134] Others advocate implementing more stringent regulations – either through an overhaul of the market infrastructure or through the prohibition of purchase order flow

[133] Nelson, Phillip. "Information and Consumer Behavior." *Journal of Political Economy* Mar./Apr. 1970, vol. 78. pp. 311.
[134] Ferrell, Allen. "Much Ado About Order Flow." *Securities and Investment* Spring 2002, vol 25, iss. 1. pp. 58.

agreements altogether. After examining the merits of these suggestions, the analysis will instead conclude that a deregulatory approach will most effectively solve the principal-agent problem. Specifically, it will recommend the removal of the brokers' requirement to credit their clients' accounts with the price at which the trade was ultimately executed and instead allow brokers the option of competing in the securities market solely on the basis of commission fees.

b. Current Regulatory Framework

The current regulatory framework purports to solve the principal agent problem by aligning broker-investor incentives and establishing market transparency. With regard to the former, the ITS' trade-through prohibition and NASD's "Best Execution" obligations require dealers not only to pursue the best readily available quote, but also to credit their customers' accounts with the prices at which trades are ultimately executed. With respect to the latter, the Disclosure of Order Execution and Routing Practices Rule require market centers to publish reports disclosing uniform statistical benchmarks for execution quality and identifying the destinations to which they most frequently route customer orders.

i. ITS' Trade-Through Prohibition

In its 1975 additions to the 1934 Securities and Exchange Act,[135] the SEC established three electronic communication systems that have become the central infrastructure of the national market system: the Consolidated Tape (CT) to disseminate transaction information, the Consolidated Quotation System (CQS) to broadcast the NBBO, and the Intermarket Trading System to transfer orders to the market offering the most competitive price.[136] Shortly thereafter,

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[135] *1934 Securities and Exchange Act.* Amendments of 1975. Publication L. No. 94-29, 7, 89 Stat. 111 (1975).
[136] Ferrell, Allen. "A Proposal for Solving the 'Payment for Order Flow' Problem." *Southern California Law Review* May 2001, Vol. 74. pp. 1027. (1061)

in 1981, ITS participants independently but uniformly established a trade-through rule requiring brokers to route all orders to the market posting the most competitive quote.[137]

More discretely, but equally significantly, each exchange's trade-through rule contains a clause stipulating that brokers must credit their clients' accounts with the prices at which orders were ultimately executed. For instance, amidst the fine print of the New York Stock Exchange's rulebook lies a clause mandating that investors receive either "the price that caused the trade-through, or the [the NBBO]" – whichever is lowest." Even if an order is traded-through, the Exchange emphasizes, brokers must credit customers accounts with the lowest possible market price and the "resulting money differences shall be the liability of the member [i.e. broker] who initiated the trade-through."[138] Other ITS participants have since implemented comparable rules towards parallel ends.[139] If all trades execute at the NBBO, regulators rationalize, other broker-dealer pacts – such as purchased order flow agreements – would become far less profitable.

ii. NASD's Best Execution Obligations

While no such trade-through rule applies to Nasdaq-listed securities, the courts have repeatedly determined that "Best Execution" responsibilities – a body of general principles delineating a broker's fiduciary obligations – require broker-dealers to "obtain the most favorable terms available under the circumstances" for every transaction.[140] Although neither the SEC nor the NASD has established objective criterion by which to gauge "Best Execution" compliance, in its 1998 *Newton vs. Merrill, Lynch, Pierce, Fenner & Smith, Inc.,* verdict, the Third Circuit Court of Appeals interpreted this obligation to require brokers to credit their

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[137] E.g. NYSE Rule 15A, 2 N.Y.S.E. Guide (CCH) P2015A, at 2538 (adopted April 9, 1981).
[138] NYSE Rule 15A(b)(2)(C)
[139] E.g. NASD Rule 5262, *NASD Manual* (1999), CSE Rule 14.9. *Rules of the Cincinnati Stock Exchange* 441 (2000).
[140] Guide to Broker-Dealer Registration. "Division of Market Regulation." *Securities and Exchange Commission.* Aug. 2004. (V.A.2)

investors' accounts with the transaction price ultimately obtained – and not merely the NBBO.[141] Kenneth Newton had sued Merrill Lynch for executing his order at the NBBO while the defendant routed its own orders to markets offering price improvement opportunities[142]; overturning a district court ruling, the Third Circuit ruled "that the basis for the duty of best execution is the mutual understanding that the client is engaging in the trade…solely for the purpose of maximizing his own economic benefit," and therefore decided broker-dealers must "periodically examine their practices…to enable their clients to obtain the best reasonably available prices."[143] Hence, the court established a clear precedent that the principal's fiduciary obligations require it to "assess the quality of competing markets to ensure that its order flow is directed to market providing the most advantageous terms."[144]

iii. SEC's Fair Disclosure Rule

Implemented to improve market transparency, the Disclosure of Order Execution and Routing Practices Act amended Rule 11 of the 1934 Securities and Exchange Act ("Exchange Act") to require:

1. Market centers trading New York Stock Exchange ("Exchange") or Nasdaq-listed securities to electronically publish monthly reports disclosing uniform statistical benchmarks for execution quality[145];
2. Broker-dealers to make publicly[146] available quarterly reports identifying the destinations to which they most frequently route customer orders[147];

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[141] *Newton v. Merrill, Lynch, Pierce, Fenner & Smith, Inc.* C.A.3 (N.J.),1998. 135 F.3d 266, Fed. Sec. L. Rep. P 90, 130. ("*Newton vs. Merrill, Lynch*.)
[142] The Newton legal team argued that such a practice violated Rule 10b-5 of the 1934 Securities and Exchange Act. (*Newton vs. Merrill, Lynch*, Section I)
[143] *Newton vs. Merrill, Lynch*, Section III
[144] Reversing the district court's ruling, the Third Circuit judiciary determined that "the duty of best execution requires the defendants to execute the plaintiffs' trades at the best reasonably available price," which, it implied, might very well prove more competitive than the NBBO. (*Newton vs. Merrill, Lynch*. Section IV)
[145] *1934 Securities and Exchange Act.* Section 240.11Ac1-5. ("Rule 11Ac1-5")

3. Brokers to disclose the extent of their relationships with dealers, and whether or not they received payment for order flow.

Taken together, the SEC believed that the new rules would "significantly improve the opportunity for public investors to evaluate what happens to their orders after they submit them to a broker-dealer for execution."[148]

IV. Option #1: Maintain Status Quo

a. Support for Current Regulatory Structure

Proponents of the status quo assert that the current rules strike a delicate balance between transparent pricing and market competition by guaranteeing execution at the NBBO while still permitting price improvement opportunities that might arise through payments for order flow. "In a system with so many competing market centers and pools of liquidity," explains the SEC in its recent Regulation NMS proposal, market participants not only need to know what the best prices are, but "they also must be able to access that market routinely and efficiently"[149] – a goal accomplished, it claims, by the Regulation ATS[150], a regulatory measure designed to facilitate broker auditing and minimize fragmentation while protecting the anonymity[151] of institutional liquidity providers.[152] By requiring all market makers to display their most competitive bids and

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[146] Specifically, this amendment stipulated that brokers must disclose the destinations to which they routed at least 5% of their orders.
[147] *1934 Securities and Exchange Act.* Section 240.11Ac1-6. ("Rule 11Ac1-6")
[148] Final Rule: Disclosure of Order Execution and Routing Practices. *Securities and Exchange Commission.* 17 CFR Part 240. Release No. 34-43590. ("Fair Disclosure Rule")
[149] Regulation NMS 56
[150] Regulation of Exchanges and Alternative Trading Systems. *Securities and Exchange Commission*. 17 CFR Parts 202, 240, 242, and 249. Release No. 34-40760. ("Regulation ATS")
[151] The SEC justified the repeal of the "ECN Display Alternative" by explaining that Regulation ATS would preserve investor anonymity by permitting each ECN to associate itself – and not its customer – with the posted quote (Regulation ATS FN 190).
[152] The act mandates that alternative trading systems with five percent or more of the trading volume in NYSE or Nasdaq-listed securities choose between registering with the SEC as an exchange or becoming a member of an SRO. In either case, the Commission cleverly reasoned, because each major broker-dealer would associate with a self-regulatory organization in some fashion, all would become subject to the Quote Rule's mandatory quotation

offers, the SEC contends, Regulation ATS facilitates price transparency by integrating "institutional and non-market maker broker-deal orders into the national market system" and "[preventing] the development of a two-tiered market" – a phenomenon that it contends increases competition and lowers total costs.

Indeed, several recent studies have examined the impact of order flow payments across multiple markets and independently concluded that competition narrows effective spreads and generally reduces investor fees[153] – just as it does in many other industries despite any side agreements that might exist among supply-side actors. "Who would argue that a car manufacturer that received from its muffler supplier an annual rebate on its purchases in the form of a cash payment is thereby placed in a conflicted position?" rhetorically questions Harvard professor Allen Ferrell in a recent *Southern California Law Review Article.* "Presumably any rebate would be passed along to the car manufacturer's customers in the form of lower prices." As long as the trade-through rule and the "Best Execution" obligations remain unchanged, the argument goes, customers can do no worse than the NBBO; moreover, due to the Fair Disclosure Rule, transparent purchased order flow agreements might even lower commission rates, and, as a result, decrease overall fees.

b. Criticisms of Current Regulatory Structure

Nevertheless, the principal-agent problem persists because lingering asymmetric information in the marketplace continues to induce investors to remain rationally ignorant.

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dissemination requirement (Regulation ATS 11). Only exchanges, alternative trading systems with limited volume (less than 5% in a listed security), and those systems operated by a national securities association – such as NASD-operated Nasdaq – are exempted from the rule (Regulation ATS 30). Not surprisingly, explains Richard Bernard, General Counsel of the New York Stock Exchange, given the substantial time and monetary costs of establishing a self-regulatory wing, as well as the loss of anonymity to institutional investors, all major ECNs opted to register as broker-dealers and post their quotations on Nasdaq.

[153] E.g. Battalio 39, Kam 1713

Structural differences among market centers and crucial shortcomings of the Fair Disclosure Rule cause confusion among investors as to the ideal venue for execution. As a result, brokers have little incentive to seek the most advantageous terms for execution, despite common law obligations specifically stating otherwise.

i. Structural Differences Among Exchanges

Structural differences among exchanges create confusion among investors regarding the most advantageous market for execution. "Whether a broker has chosen the appropriate market for a particular order can be very difficult to ascertain, notes Ferrell – especially "given all the various, and sometimes competing, considerations involved" (Ferrell 1041). Indeed, brokers could route any given order to the New York Stock exchange, to one of eight other regional exchanges, to any one of dozens of ECNs or other OTC market makers; moreover, while the NBBO may be visible to investors, it represents only one of several variables that determine total fees incurred. While principals rarely observe – much less influence – where brokers route retail orders, different trading venues operate under unique procedural and fee structures that significantly affect terms of execution. Structural differences among auction and dealer markets represent one of the "invisible" variables affecting fees incurred; in the former, price improvement obtained on the exchange floor decreases total costs, whereas, in the latter, access fees actually increase total expenses.

While up to three-fourths of the trades on the NYSE occur on the exchange floor – off the specialists' books – and inside quoted spread, broker-dealers offer no such price improvement opportunities. Thus, quoted spreads on the Exchange and Nasdaq-listed securities approximate one another closely, but effective spreads – which represent fees after price improvement –

remain twice as wide for Nasdaq-listed securities as for matched samples of NYSE stocks.[154] As a result, over-the-counter market makers often earn excess rents simply by matching the NBBO and accepting payments for order flow[155] – a phenomenon that partly explains why ECNs and other markets have garnered an increasing share of the trading volume in NYSE-listed securities.

While a perfectly transparent market should theoretically place downward pressure on commission fees, asymmetric information regarding pricing intricacies prevents brokers from adjusting their commissions to fully compensate investors for discrepancies across market structures.[156] Due to market structural differences[157] that aggravate the principal-agent problem, order flow relationships often provide monopoly-style profits for dealers, lucrative kickbacks for brokers, and only marginally rebated commissions for investors.[158]

Secondly, some broker-dealers charge additional fees above and beyond the listed spread. While ECNs may charge "access fees" to non-subscriber market participants,[159] other market makers must trade only at their displayed quote[160]; therefore, depending upon the identity of the market participant displaying the NBBO, the advertised price may represent the actual price at which the trade will be executed, or it may comprise the base price subject to an additional access fee imposed only after the order is routed to that market. "Published quotes today do not reliably indicate the true prices that are actually available to investors," admits the SEC in

[154] E.g. Chordia 571, Huang (1996) 346, Parlour 380.
[155] Huang (1996) 328. In their article, Hans and Stoll systematically eliminated other factors (including inventory risk and trade sizes) as possible primary sources of wider spreads.
[156] Report on the Comparison of Order Executions Across Equity Market Structures. "Office of Economic Analysis." *Securities and Exchange Commission.* 8 Jan. 2001. ("Comparison of Order Executions")
[157] The Comparison of Order Executions report measured effective and realized spreads in fifty-eight matched-sample securities during the one-week period of June 5, 2000, to June 9, 2000. The SEC found realized spreads in Nasdaq-listed securities to be an average of eleven cents wider than those on the New York Stock Exchange. The study has withstood scrutiny and the results are statistically significant for a two-tailed test at the 1% for large and mid-capped stocks, and for a two-tailed test at the 5% level for small-cap stocks (31)
[158] Huang (1996) 330.
[159] Only ECNs that display their quotes may charge access fees. Under Regulation ATS, ECNs trading 5% or more of the total volume in a particular security must display their most competitive quote for that stock.
[160] Order Execution Obligations. *Securities and Exchange Commission.* CFR Part 240. Release No. 37619A. ("Order Execution Obligations.")

Regulation NMS, and, as a result, the Commission concedes, the investor has little knowledge of whether the displayed NBBO actually represents the most competitive spread available or an "artificially narrow" fraction of the total fees to be incurred.[161]

Consider, for instance, the following model, in which there exist two possible outcomes, high (*H*) and low (*L*).

> Let p_i = probability of obtaining price improvement.
> Let C_i =costs incurred by the broker.
> Let i = effort exhibited by the broker towards achieving price improvement.
>
> When $i = H$, brokers exhibit a *high* level of effort towards obtaining price improvement. When $i = L$, brokers exhibit a *low* level of effort towards obtaining price improvement

Investors prefer $i = H$ because $p_H > p_L$. That is, brokers actively seeking price improvement opportunities are more likely to achieve it than those who do not. Brokers, however, choose $i = L$ because $C_H > C_L$. Brokers, in other words, will seek to minimize consumption of both time and money. Therefore, the rational broker's decision ($i = L$) directly conflicts with the investor's best interests ($i = H$), and the principal-agent problem persists.

Informational asymmetries, however, extend beyond ECN access fees to affect total costs in other OTC broker-dealer markets as well. Fee differences often create "difficulties" for investors "seeking the best available prices," the Commission admits. [162] Investors whose orders are ultimately routed to market makers linked to SuperMontage[163]– the Nasdaq-operated order collection, display, and execution facility – incur an additional three mil per share network user fee; moreover, customers whose orders are routed *to* an ECN *by* SuperMontage often pay *two* extra fees – one to the broker-dealer and one to the networking system. Furthermore, broker-

[161] Regulation NMS 59.
[162] Order Execution Obligations
[163] Schmerken, Ivy. "Nasdaq's battle over locked and crossed markets." *Wall Street and Technology* May 2003. pp. 12.

dealers instead posting quotes on the Automatic Display Facility (ADF), a non-linked NASD-sponsored alternative to SuperMontage, may charge three mil "liquidity premiums" to customers posting market orders.[164] Even the Commission sheepishly admits that the fee differences "[create] difficulties for brokers as they seek to obtain the best available prices for customer orders." Therefore, not only do informational asymmetries induce brokers not to explicitly seek price improvement, but they also permit broker-dealers to impose hidden costs that raise fees above the listed figure.

ii. Shortcomings of Fair Disclosure Rule

Despite SEC claims that the Fair Disclosure Rule would reduce rational ignorance by enabling investors "to compare and evaluate execution quality among different market centers and order routing practices among broker-dealers"[165] – a change that it claimed would save retail investors upwards of $110 million annually – the rule has not actually improved the principals' ability to distinguish between $i = H$ and $i = L$. The monitoring challenges persist for three primary reasons.

First, the "uniform statistics" that the SEC employs as a metric emphasize speed and price over order size, trading technology, and anonymity protection, other variables that also help to determine the most favorable market center for a particular execution.[166] "An investor should not necessarily be concerned with brokerage receipt of side payments, per se," explains Professor Ferrell, "but rather the extent to which the broker is forgoing price-improvement opportunities as a result." Moreover, broker-dealers lack an obligation to report internalization policies or non-

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[164] Schmerken 14.
[165] Fair Disclosure Rule 6-7.
[166] E.g. Letter from Richard Brueckner, Chief Operating Officer of the Pershing Division of Donaldson, Lufkin & Jenrette Securities Corporation (September 29, 2000), Letter from Mark Sutton, the Chairman of the Securities Industry Association's Market Structure Committee (September 26, 2000).

pecuniary order flow arrangements – two common practices that drastically affect execution quality.[167] While the Commission responded to these concerns by stipulating in an amendment to the Securities and Exchange Act[168] that price and speed "do not encompass all of the factors that may be important to investors in evaluating the order routing services of a broker-dealer," very few investors carefully read the fine print of a lengthy 1930's legislative decree couched in confusingly archaic legalese.[169]

Secondly, the sheer volume and considerable complexity of the statistics purporting to "alleviate confusion" and "provide clarity" hardly mitigate incentives to remain rationally ignorant.[170] While the Commission admits that first-time investors might experience some "initial confusion," it would result from "lack of *familiarity* with the statistical measures," and not from "their inherent complexity." Disclosing a large volume of data, the Commission reasons, safeguards against "the dangers of overly-general statistics"; that is, it contends, merely employing a single statistical measure would further conceal fundamental aspects of executing quality, "potentially creating far more problems than it solved."[171]

Despite this barrage of information, however, broker-dealers are not required to provide information that customers would likely find most useful. Brokers have neither an obligation to estimate how much money they receive in kickbacks, nor to provide a clear summary of their order routing practices, because, the SEC explains, such estimates prove "difficult, subjective,

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[167] Ferrell (2001) 1071-1072.
[168] Rule 11Ac1-5.
[169] Parlour 380.
[170] Consider, for instance, that the disclosures must include all of the following information: For each category of security, the reports include the number and percentage of "non-directed" customer orders, broken down into numbers and percentages of market orders, limit orders, and a category known only as "other." Then, for each of the ten most-commonly routed venues, broker-dealers must further disclose the number and percentage of directed and non-directed orders, as well as any other venues receiving five percent or more of a particular broker's order flow – each, once again, broken into the percentages of total non-directed market orders, non-directed limit orders, and non-directed "other" orders. These figures, the SEC reasons, should "alert customers to potential conflicts of interest that may influence the broker-dealer's order-routing practices" (Fair Disclosure Rule 25-26).
[171] Fair Disclosure Rule 11-12

and costly."[172] Further, customers do not directly receive the new mandatory quarterly reports described in Rule 11Ac1-6 unless they issue a formal request, but even those savvy enough to do so find that the statements disclose neither where their particular orders were routed, nor whether their brokers struck order flow purchase agreements.[173] In justification, the Commission argues that such information might unfairly prejudice customers against order flow relationships from which they might ultimately benefit[174]; while this argument may contain merit, it unfortunately undermines the Fair Disclosure Act's primary premise – that customers, above all, should have access to the details of their execution affecting best execution practices. Therefore, because it only minimally alleviates an investor's burden of gathering information, the degree to which the Fair Disclosure Act benefits customers remains very much in question.

V. Option #2: Increase Regulation

Increasing regulation is the most commonly-proposed method of resolving the principal-agent problem, and two primary methods have been proposed towards achieving this end. One recommendation suggests that prohibiting purchased order flow agreements altogether would remove an unnecessarily opaque aspect from the broker/dealer/investor relationship; a second school of thought calls for increased regulation of market infrastructure in hopes of aligning incentives and improving transparency. Unfortunately, as this analysis will demonstrate, both of these suggestions would represent a digression from the status quo, and, as a result, should not be implemented.

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[172] While the Commission occasionally justifies concealing information from investors on grounds that it will unnecessarily confuse them, it readily admits that knowing the details of order flow purchase agreements would not mistakenly alter investor understanding of execution quality. (Fair Disclosure Rule 27)

[173] It must be noted that the Commission asks brokers to release where they routed individual orders if the customer specifically requests this information. Under no circumstance, however, are they required to disclose whether they received payments in exchange for directing orders to particular brokers (Fair Disclosure Rule 27).

[174] There exist a limited body of research suggesting that, under specific circumstances, payments for order flow benefits investors. (E.g. Battalio, Kam.)

a. Prohibit Payments for Order Flow

After viewing the misaligned incentives structures that can result from purchased order flow relationships, some individuals advocate prohibiting the practice entirely. That is, brokers accepting cash payments from dealers would consider those payments a form of price improvement and automatically deduct the entire amount from the spread. Unfortunately, this proposal ignore two crucial points. First, purchased order flow agreements often *benefit* customers, and, as a result, do not necessarily conflict with best execution obligations. Secondly, even *if* payments for order flow *did* systematically harm investors, prohibiting them would, in effect, simply force them into the "shadow economy" – an unofficial market in which discreet cash payments and other non-pecuniary incentives would replace "official" payments for order flow.[175]

Secondly, because the often-criticized broker-dealer agreements do not, *in principle*, differ from generally-accepted practices prevalent in other industries, in some instances payments for order flow can ultimately benefit investors by lowering overall costs.[176] Consider the following hypothetical example:

- A retail investor places a market buy offer for 100 NYSE-listed equity shares with his broker.
- The New York Stock Exchange is listing the most competitive quote, but Instinet – a prominent ECN – promises to match the NBBO.
- While the quoted spread is twenty cents in both markets, the effective spread on the NYSE would likely have fallen to ten cents after price improvement.[177] Therefore, after price improvement, total anticipated implicit costs are $20 (*$0.20 per share x 100 shares*) on Instinet and only $10 (*$0.10 per share x 100 shares*) on the NYSE floor.
- Instinet, however, pays the broker eight cents per share for his order flow – of which the broker rebates seven cents per share to his client in the form of

[175] Hillman 519-521.
[176] Eg. Ferrell (2001), Kam, Parlour.
[177] Comparison of Order Executions 31.

reduced commissions. The total value of the rebate, then, is $7 *($0.07 per share x 100 shares*).

- Ordinarily, commission costs are $21 per transaction (*i.e. for all 100 shares*) on the NYSE floor and $17 per transaction on Instinet.[178] The ECN, however, rebates a total of $7 to the customer, in effect reducing its commission to a total of $10.
- As a result, the investor pays a total $31 to execute the trade on the NYSE *($10 in spread + $21 in commissions = $31 total*), but, with the benefit of the purchased order flow rebates, pays only $30 on Instinet (*$20 in spread + $17 in commissions – $7 in rebates = $30 total*).

A transaction summary for execution on both markets is listed below for this hypothetical example:

Venue	*Commissions*	*Effective Spread*	*Total Cost*
NYSE	$21	$10	$31
Instinet	$17 - $7 rebate = $10	$20	$30

Therefore, prohibiting purchased order flow arrangements might often inhibit, rather than facilitate, a customer's ability to obtain best execution.

Moreover, even if payments for order flow *do* disadvantage investors, prohibiting these agreements either altogether or indirectly – i.e. compelling brokers to credit their clients' account with the rebate in full – would likely render the practice more opaque but equally prevalent. Instead of carefully documenting and reporting purchased order flows, as the Fair Disclosure Rule currently mandates, explains economist Larry Harris in his article, "The Economics of Best Execution," dealers would simply offer discreet cash payments or other "non-pecuniary inducements" to attract order flow.[179] Not only would such a decree increase internalization – a practice in which brokers exchange order flows among their dealer subsidiaries[180] – but also remove what little protection the Fair Disclosure Rule provides. Most customers would likely

[178] Commission costs are typically slightly lower for Nasdaq-listed securities than for NYSE-listed stocks due to the greater costs associated with executing trades on the NYSE floor.
[179] Harris, Lawrence. "The Economics of Best Execution." Paper presented at the New York Stock Exchange Conference on Best Price 15 Mar. 1996. (8)
[180] Harris 8.

remain unaware of these untraditional arrangements,[181] but even savvy investors would encounter tremendous difficulty in both calculating the cash equivalents of non-pecuniary rebates and comparing their value relative to potential price improvement opportunities available on exchanges. Hence, the "I'll-scratch-your-back-if-you'll-scratch-mine" relationship between brokers and dealers that would result from banning purchased order flow agreements would harm, rather than benefit, retail investors.

b. Regulate Market Structure

In its Regulation NMS, the SEC endeavors to correct the current fee disparity by limiting access and network fees to $0.001 per share – a price that the Commission considers an appropriate *de minimis* amount. Although the proposal might curtail hidden fees, it would not align broker-dealer incentives, nor would it render broker services more auditable; moreover, it would likely annihilate the ECN business model and prove rigidly inflexible in the long term.

Most simply, Regulation NMS offers no solution for *fixing* the principal agent problem – only for mitigating its effects. Because investors would still have little ability to evaluate broker quality, agents would continue to choose $i = L$ in spite of their principals' preference for $i = H$. Customers whose orders are routed on SuperMontage to an ECN, for instance, would continue to inadvertently incur more than one charge per share on a single transaction – only now, the SEC asserts, investors would lose less money per share than they did previously. The approach endeavors to contain losses but makes no attempt to properly align incentives.

Secondly, the proposed access fee restriction would compromise the livelihood of alternative trading systems by severely restricting one of its primary sources of profit. ECNs already earn little in direct commission fees, and, unlike registered exchanges, cannot collect

[181] Harris 9.

data distribution or listing revenues.[182] The ECN business model largely hinges upon the automatic execution of high-volume transactions for institutional investors happy to pay a few mils per share premium to complete a trade at a single price and in only one transaction. If this alternative were to disappear, institutional investors might opt to move their block trades "upstairs," and, as a result, the markets would lose valuable sources of liquidity.

Lastly – and possibly most significantly – centrally regulating market prices would represent a drastic and risky move, especially within such a rapidly-changing industry. In its effort to eliminate any "loopholes" from the Regulation, the SEC limited additional fees across *all* trading venues; thus, if changing market conditions or new business models render the fee restrictions obsolete, changing the regulation would prove extraordinarily costly, if not altogether politically impossible. Even minor alterations – say, changing the *amount of the permissible fee* – would consume considerable resources. Such strict regulations thwart innovation by erecting formidable barriers to entry and increasing the influence of suppliers already enjoying economies of scale.

VI. Option #3: Deregulation

The current regulatory infrastructure and the proposed additional measures fail to solve the agency problem because, in both instances, the sellers – that is, the brokers and the dealers – profit from wide spreads, while the buyers – i.e. the investors – benefit from price improvement. Solving the principal-agent problem, then, requires moving the brokers from the sell to the buy side – in other words, altering the incentive structure to pit brokers *with* their clients and *against*

[182] Although Regulation NMS proposes to slightly alter the distribution of the data revenues among exchanges, the size of the data pie remains constant.

dealers. Therefore, the following recommendation is designed to *compel brokers to pursue price improvement by basing a significant percentage of their total compensation upon attaining it.*

While this problem of imposing investor incentives upon "middlemen" is complex, it is not new; in fact, after Michael Jensen and William Meckling first extended the principal-agent conflict concept to the private sector in 1976,[183] the conflict between corporate *managers* and their companies' investors became one of the most hotly-debated controversies of the last quarter of the twentieth century. Due to fixed salaries and limited profit-earning opportunities, managers had little incentive to act in the best interests of company investors; furthermore, because individual retail investors tend to own diversified stock in a broad range of industries, the benefits that they could have derived from carefully monitoring each holding would have paled in comparison to the costs they would have incurred by doing so.[184]

Much like the current agency problem, reflects Jensen, the management-shareholder problem was "accompanied by strong pressure on regulators and legislators to enact restrictions that would curb [market activity]" and limit compensation. [185] Critics, however, questioned the extent to which investors could accurately measure "non-pecuniary payments." Do managers actually require four personal secretaries, or might only three suffice, skeptics questioned; also, under what condition does a four-course, two-hundred dollar lunches represent a necessary "business expenses." Others suggested simply restricting *all* forms of compensation to a maximum amount, but such a drastic step would have further reduced incentives for hard work. Instead, predicts Jensen, solving the agency problem requires holding managers "personally

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[183] Jensen, Michael and William Meckling. "Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure." *Journal of Financial Economics* 1976, Vol. 3. pp. 305-360.
[184] Hillman 425.
[185] Gutierrez, Maria. "An economic analysis of corporate directors' fiduciary duties." *RAND Journal of Economics* Autumn 2003, Vol. 34, Issue 3. pp. 516.

liable for failure to comply with their fiduciary duties"[186] – a goal effectively accomplished through the implementation of stock options.

By endowing executives with the right to purchase company stock at discounted prices in the future, 1980's "corporate raiders" successfully solved the principal-agent problem by tying the managers' personal wealth to firms' future profits.[187] "Economic analysis and evidence indicate that the market for corporate control is benefiting shareholders,"[188] reflected Jensen in 1988 – to the tune of $570 billion annually.[189] The deceptively simple solution involved no additional regulation, but relied upon fundamental economic principles: By minimizing company costs and reinvesting profits in the firm, management increases the present value of the company's future expected earnings – the primary determinant of a stock's price. Managers' newfound goal of elevating the firm's price per share far above the option's strike price positively affected investors and fueled the mid-1990's stock boom. Perhaps, then, resolving a similar principal-agent problem between broker*s* and investors also requires less regulation, and not more.[190]

a. Recommendation: The Commission-Only Retail Pricing Option

Towards this end, this analysis recommends implementing the *commission-only retail pricing option*[191] – a proposal advocating the removal of brokers' requirement to credit their

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[186] Jensen, Michael. "Takeovers: Their Causes and Consequences." *The Journal of Economic Perspectives* Winter 1988, Vol. 2, Iss. 1. pp. 21.
[187] Hillman 425.
[188] Jensen (1988) 21.
[189] This estimate uses the CPI method to convert Jensen's stated investor benefit of $346 billion in 1986 dollars to its 2004 equivalent.
[190] Ferrell (2002) 58.
[191] The "commission-only retail pricing option" is modeled after Harvard professor Allen Ferrell's "NBBO pricing option," but, since it differs substantially, warrants a separate name. The commission-only retail pricing option allows a broker to choose the pricing option for his retail customer, but permits institutional investors to continue to negotiate the terms of the execution. The "NBBO pricing option," in contrast, allows both retail and institutional investors alike to choose their desired pricing option.

clients' accounts with the price at which trades are ultimately executed. Instead, brokers would hold the option of crediting their retail clients' account with the NBBO and personally profiting from any price improvement opportunities. Institutional investors, who can typically more readily monitor their brokers' services, could continue to negotiate their desired terms of execution to suit their specific needs – which, unlike retail customers, often encompass factors other than merely price.

The commission-only retail pricing option would eliminate the principal-agent problem by creating incentives for brokers to minimize costs – a goal that matches the desires of investors. Brokers electing this choice, explains Harvard professor Allen Ferrell, would "have a powerful incentive" to route small orders to the securities market offering prices more competitive than the NBBO, since "a failure to do so would come only at his [own] expense."[192] A broker's profits would increase with his ability to obtain best execution, and clients would benefit through reduced commissions. Moreover, a broker electing this option would extricate himself from any unrealistic pressure from retail customers to individually address small orders.[193] In sharp contrast to the current incentive structure, the principal would actually *prefer* that his agent achieve economies of scale, as fees would no longer decrease with the broker's active pursuit of price improvement opportunities, but would instead decline as his expenses become cheaper on the margin.

Therefore, the proposal solves the principal agent-problem:

Let R_i = revenue earned by broker.
Let C_i =costs incurred by the broker.
Let i = effort exhibited by the broker towards achieving price improvement.

[192] Ferrell (2001) 1073.
[193] The stipulation that brokers choose the pricing option, rather than their retail customers, is efficient because it allows brokers to achieve economies of scale – which, as this section explains, benefits principals and agents alike.

Just as before, the rational broker chooses $i = H$ when, and only when, $R_H - C_H > R_L - C_L$. Now, however, if the broker does not seek price improvement, his revenue will equal only the cost of commissions; because commission costs have historically decreased over time, and, notes Larry Harris, will likely continue to do so,[194] price improvement opportunities will comprise an increasing portion of brokers' profits. Therefore, as long as the benefits of trading continue to exceed the costs – that is, $R_H > C_H$ – the rational broker now chooses $i = H$.

Moreover, the rule would allow investors to cheaply audit the quality of their brokers' services, thereby eliminating the incentive to remain rationally ignorant. Retail customers prioritizing price over all other factors would minimize their costs by surveying brokers operating under the commission-only retail pricing option, and simply select the broker advertising the cheapest commissions. Brokers failing to route customer orders to securities markets offering price improvement opportunities, explains Ferrell "would have to charge higher commission rates to compensate for this misallocation"[195] – a certain recipe for disaster in the brutally competitive securities industry.[196] Brokers, too, would likely find the commission-only retail pricing option attractive because it would enable them to reduce their commissions – the variable to which customers are most attune – while not necessarily decreasing their profit per trade.[197] Taken together, these factors would standardize fee structures while retaining the benefits of a competitively fragmented marketplace.[198]

b. Implementation

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[194] Harris 4.
[195] Ferrell (2001) 1074.
[196] Harris 4.
[197] E.g. Battalio, Harris.
[198] Mahoney, Joseph. "Toward a New Social Contract Theory in Organizational Science." *Journal of Management Inquiry*, 1994, Vol. 3, Iss. 2. pp. 153-168.

Implementing the commission-only retail pricing options would require the SEC to conduct the following regulatory changes:

5. Repeal the trade-through rule.[199]
6. Void any existing common law interpretations suggesting that brokers must credit their clients with the price at which the trade was ultimately executed, and explicitly state that brokers may conduct business in accordance with the commission-only retail pricing option.
7. Repeal NYSE Rule 353, the regulation prohibiting payment for order flow on the Exchange floor.
8. Require brokers to clearly indicate – both to their customers and to the SEC – whether they will be operating under the "traditional pricing option" or the "commission-only retail pricing option."[200] While brokers may change their pricing option, they must provide their clients with 90-days notice before doing so in order to prevent any confusion.

VII. Criticism: Inefficient Transfer of Risk

The most compelling objection to the commission-only retail pricing option stems from the argument that it would compel brokers, rather than market makers, to assume the risk that a particular order might not receive price improvement. The system, critics assert, would compel brokers to base their commissions upon expected probabilities for price improvement – a

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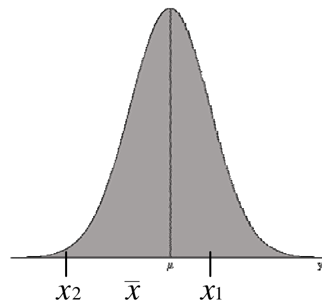
[199] While repeal of the trade-through rule may be politically unpopular, this suggestion coincides with other recommendations offered by this task force.
[200] With regard to the latter, while brokers may change their pricing option, they must provide their clients with 90-days notice in order to prevent any confusion.

phenomenon, the argument goes, that forces them either to bear additional unwanted risk or to raise fees as a form of insurance.[201]

This criticism, however, ignores a widely-accepted empirical principle: Because stock returns are normally distributed, a broker would only have to estimate the *average* price improvement for a high volume of transactions.[202]



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Stock Returns and the Normal Distribution

]While the broker would be assuming additional risk for any one particular order (x_i), as the number of orders increases, his risk declines.[203] As the number of trades (n) grows, the sample average approaches the statistical mean (μ), thereby mitigating the broker's risk burden. Moreover, the task of increasing n should not present a major obstacle, because – as explained in the next section – the commission-only retail pricing option facilitates the attainment of economies of scale.

VIII. Positive externalities

Beyond accomplishing its primary objective of solving the principal-agent problem, implementation of the commission-only retail pricing option would benefit investors by contributing to price discovery and preserving the efficient aspects of purchased order flow agreements.

[201] Ferrell (2001) 1082.
[202] Ferrell (2001) 1082.
[203] Kropinski, Michael A. "The Normal Distribution Tutorial." 17 Dec. 1997. <http://ce597n.www.ecn.purdue.edu/CE597N/1997F/students/michael.a.kropinski.1/project/tutorial>.

a. Facilitating Price Discovery

Currently, a disproportionate fraction of price discovery occurs on the NYSE floor because market makers in alternative trading venues face burdensome search costs and little potential benefits. The present system creates disincentives for brokers to make substantial contributions to price discovery by requiring them to credit investors' accounts with the execution prices ultimately obtained, thereby prohibiting them from retaining any of those savings for themselves. Actively contributing to price discovery would entail seeking out the most advantageous market for execution – a destination likely unable to pay for order flow. [204] Therefore, a broker's decision to facilitate price discover would likely preclude him from striking purchased order flow agreements, and would thereby eliminate profit opportunities from the implicit aspects of a trade.[205] To compensate for this concession, the broker would have to increase his commissions – the aspect of the fee structure most visible to customers. While the current system offers virtually no incentive for broker-dealers to facilitate price discovery, the commission-only retail pricing option, in contrast, would permit brokers to profit from price improvement opportunities, subsequently allowing them to *reduce* their commissions without sacrificing profits.

Moreover, contributing to price discovery requires expenditure of equal resources for large and small orders alike. Thus, because small orders provide relatively little revenue per share, brokers currently face additional disincentives to seek price improvement opportunities for retail customers. Whereas the rational broker currently merely matches the NBBO for small

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[204] Such a market would likely not be able to afford to pay for order flow because it would have already reduced its revenues by improving upon the NBBO.
[205] The implicit parts of the trade are those aspects of the transaction that the customer cannot carefully monitor.

orders,[206] the commission-only retail pricing option would render the pursuit of price improvement vital to earning profits.

b. Retaining Economies of Scale

Secondly, the commission-only retail pricing option would preserve the efficient aspects of purchased order flow arrangements. While it proves very expensive to simply match the NBBO for individual orders, dealers can reduce marginal costs by bundling numerous small orders into one purchased order flow contract; thus, even if prohibiting purchased order flow relationships *could* remedy the principle-agent problem – certainly by no means a foregone conclusion – the resulting full transparency between brokers and their clients would likely compel brokers to address each customer's individual order.[207] Although such an incentive would ostensibly appear to benefit the customer, the subsequent increase in search costs incurred by the dealer would likely be passed onto the consumer in the form of higher commissions, thereby greatly reducing – if not altogether eliminating – any advantages accrued to the consumer.[208]

IX. Conclusion

Because market participants cannot agree on the desirability of payment for order flow – much less accurately measure the fraction of agreements resulting from printed flow arrangements relative to the number attributable to dealers' attempts to widen the spread – the issue merits consideration even after the establishment of a free market for data. While regulators argue in favor of the status quo, and auction markets advocate either an overhaul of

[206] Garbade 494
[207] Jensen (1976) 305.
[208] Garbade 495.

the market structure or a prohibition of the practice altogether, a deregulatory approach will most effectively solve the agency problem arising between retail investors and their brokers. By removing brokers' requirement to credit their clients' account with the price at which trades are ultimately executed, and instead permitting them to personally profit from price improvement, the commission-only pricing option would both reduce both informational asymmetries and monitoring costs. Last – and most importantly – unlike other proposed remedies, the proposal delineated in this analysis does not pass judgment on the social desirability of payments for order flow; rather, it merely removes the obstacles currently inhibiting customers from doing so themselves.

Bibliography

1934 Securities and Exchange Act. Amendments of 1975. Publication L. No. 94-29, 7, 89 Stat. 111 1975.

---. Section 240.11Ac1-5.

---. Section 240.11Ac1-6.

Battalio, Robert and Robert Jennings. "The Relationship Among Market-Making Revenue, Payment for Order Flow, and Trading Costs for Market Orders." *Journal for Financial Services Research* 2001, Vol. 19, Iss. 1. pp. 39-56.

Brueckner, Richard. Letter to SEC. "Re: Disclosure of Order Routing and Execution Practices Release No. 34-43084; File No. S7-16-00." 29 Sept. 2000. <http://www.sec.gov/rules/proposed/s71600/brueckn2.htm>.

Chordia, Tarun and Avanidhar Subramanyam. "Market-Making, the Tick Size, and Payment for Order Flow: Theory and Evidence." *The Journal of Business* Oct. 1995, Vol. 68, Iss. 4. pp. 543.

Commission Notice: Decimals Implementation Plan for the Securities and Options Market. Exchange Committee on Decimals. *Securities and Exchange Commission*. 24 July 2000.

Cincinnati Stock Exchange Rule 14.9. *Rules of the Cincinnati Stock Exchange* 441. 2000.

Ferrell, Allen. "A Proposal for Solving the 'Payment for Order Flow' Problem." *Southern California Law Review* May 2001, Vol. 74. pp. 1027.

---. "Much Ado About Order Flow." *Securities and Investment* Spring 2002, Vol 25, Iss. 1. pp. 58.

Final Rule: Disclosure of Order Execution and Routing Practices. *Securities and Exchange Commission.* 17 CFR Part 240. Release No. 34-43590.

Guide to Broker-Dealer Registration. "Division of Market Regulation." *Securities and Exchange Commission.* August 2004.

Gutierrez, Maria. "An economic analysis of corporate directors' fiduciary duties." *RAND Journal of Economics* Autumn 2003, Vol. 34, Issue 3. pp. 516.

Harris, Lawrence. "The Economics of Best Execution." Paper presented at the New York Stock Exchange Conference on Best Price 15 Mar. 1996.

Hillman, Arye. Public *Finance and Public Policy: Responsibilities and Limitations of Government.* Cambridge, United Kingdom: Cambridge University Press, 2003.

Huang, Roger D. and Hans R. Stoll. "Dealer versus auction markets: A paired comparison of execution costs on Nasdaq and the NYSE." *Journal of Financial Economics* 1996, Vol. 41. pp. 313-357.

---. "Tick Size, Bid-Ask Spread, and Market Structure." *Journal of Financial and Quantitative Analysis* Dec. 2001, Vol. 36, Iss. 4. pp. 503.

Jensen, Michael and William Meckling. "Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure." *Journal of Financial Economics* 1976, Vol. 3. pp. 305-360.

---. "Takeovers: Their Causes and Consequences." *The Journal of Economic Perspectives* Winter 1988, Vol. 2, Iss. 1. pp. 21.

Kam, Tai-Kong et. al. "Competition among markets: The repeal of Rule 390." *Journal of Banking and Finance* 2003, Iss. 27. pp. 1711-1736.

Kropinski, Michael A. "The Normal Distribution Tutorial." 17 Dec. 1997. <http://ce597n.www.ecn.purdue.edu/CE597N/1997F/students/michael.a.kropinski.1/project/tutorial>.

Mahoney, Joseph. "Toward a New Social Contract Theory in Organizational Science." *Journal of Management Inquiry*, 1994, Vol. 3, Iss. 2. pp. 153-168.

NASD Rule 5262, *National Association of Securities Dealers* Manual. 1999.

National Market System: Hearings Before the Subcommittee on Telecommunications and Finance of the House Committee on Energy and Commerce. *103rd Congress*. 1993. pp. 303-429.

Nelson, Phillip. "Information and Consumer Behavior." *Journal of Political Economy* Mar./Apr. 1970, vol. 78. pp. 311.

Newton v. Merrill, Lynch, Pierce, Fenner & Smith, Inc. C.A.3 (N.J.),1998. 135 F.3d 266, Fed. Sec. L. Rep. P 90, 130.

NYSE Rule 353. *New York Stock Exchange Rules and Regulations.* 11 May 1979.

Order Execution Obligations. *Securities and Exchange Commission.* CFR Part 240. Release No. 37619A.

Parlour, Christine A. and Uday Rajan. "Payment for Order Flow." *Journal of Financial Economics* 2003, Iss. 68. pp. 379-411.

Regulation NMS. *Securities and Exchange Commission*. 17 CFR Parts 200, 230, 240, 242, 249. Release No. 34-49325.

Regulation of Exchanges and Alternative Trading Systems. *Securities and Exchange Commission*. 17 CFR Parts 202, 240, 242, and 249. Release No. 34-40760.

Report on the Comparison of Order Executions Across Equity Market Structures. "Office of Economic Analysis." *Securities and Exchange Commission.* 8 Jan. 2001.

Roundable on Commission Dollar and Payment for Order Flow Practices. *Securities and Exchange Commission.* 24 July 1989. File No. 4-348.

Rule 15A, 2 N.Y.S.E. Guide (CCH) P2015A, at 2538. 9 Apr. 1981.

Schmerken, Ivy. "Nasdaq's battle over locked and crossed markets." *Wall Street and Technology* May 2003. pp. 12.

Sutton, Mark. Letter to SEC. "Re: Securities Exchange Act Release No. 34-43084; File No. S7-16-00." 26 Sept. 2000. < http://www.sec.gov/rules/proposed/s71600/sutton1.htm>.

Vise, David A. "A Broker and the Angry Exchanges: Bernie Madoff's Stock Buying Rivalry Irks NYSE, AMEX." *Washington Post* 14 Apr. 1993. F1.

Weinberg, Neil. "The Big Board Comes Back from the Brink." *Forbes* 13 November 2000. pp. 274.

Market Information: Data Distribution Fees and Market Access Fees

Michael Murray

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Knowledge is power.
Sir Francis Bacon

I. Executive Summary

Investors depend on access to accurate securities market information. The market data distribution system determines the ability of investors to cost-efficiently access real-time data. The term “data distribution” refers to the method of processing and disseminating market data, including prices, buying and selling interest, and transaction reporting. The system of disclosure of fees in displayed prices determines the accuracy of the quotes displayed to investors. The term “market access fees” refers to the charges that some market centers levy on investors who desire to interact with posted orders.

The SEC mandated the current system of market data distribution over thirty years ago as a means to the facilitation of the national market system envisioned by Congress in the 1975 Amendments to the Exchange Act of 1933. The current system requires market centers, such as the NYSE, the Nasdaq, or the Amex, to report transactions and current quotations for securities to one of four consolidated information processors according to type of security (NYSE-listed, regional exchange-listed, Over-the-counter, or options). The market centers run the information processors by committee. The SEC requires that these information processors consolidate the data from the various markets by security and then resell this consolidated data to information vendors and subscribers. Because as a result of SEC mandate the information processors experience a monopoly while information vendors and subscribers are vulnerable to monopoly exploitation, the SEC regulates the price of the consolidated market data through a public commenting process. After determining data fees, the SEC allows each information processor to distribute data revenues to the market centers according to an SEC-approved formula.

The SEC-mandated monopoly has created several problems because it eliminates competition from the market data marketplace. First, the system forces the SEC to regulate the

fees for market data instead of relying on the judgment of the marketplace concerning the value and quality of market center's data. Second, the consolidated information requirement hampers the ability of investors to obtain market information customized to their specific needs. While in 1975 consolidated information represented a technological breakthrough, SEC regulation currently stifles technological innovation by forcing investors to buy consolidated data. Finally, the revenue allocation formulas create incentives for market centers to manipulate their market data in order to take advantage of the formulas' attempts to measure data quality.

This paper recommends a market-based approach to data distribution. The SEC should eliminate its reporting and consolidation requirements and allow private entities to process, consolidate, and distribute data according to investor demand. Market centers should be allowed to sell their own data and investors should be allowed to buy the data that they desire. Market forces will determine the price of securities data and the revenues of market centers. If investors desire consolidated data because of its usefulness, then they will demand it and the market will supply it. If a market center attempts to keep its data private, then investors will move their trading volume to market centers that sell their data at affordable prices and the withholding market center will lose market share. In the new system, the SEC must only ensure the integrity of market data in order to protect investors.

The current system of fee disclosure in price quotations requires market centers to include few of the fees that investors incur for trading. In particular, under current SEC regulations quotations do not have to include access fees, which are charged by market centers to fund liquidity rebates and business costs. The rise of ECNs, which often rely on access fees as an integral part of their business model, creates a situation in which an ECN quote and a market maker quote posted at the same price are not equivalent. Brokers trying to find the best price for

their customers often cannot execute against best overall price, including access fees. Access fees also create incentives for market participants to lock and cross the markets in order to reap liquidity rebates without incurring access fee charges.

This paper recommends a disclosure-based approach to trading fees. All market centers, including ECNs, exchanges, and Nasdaq should be able to charge any access, transaction, or communications fee they deem necessary, but must display all fees paid by all traders in the posted prices. Prices should continue to omit trader-specific fees such as brokerage commissions. The disclosure of all universal fees will likely result in sub-penny pricing. In order to prevent the front-running associated with sub-penny quotes, market makers should be subject to a minimum tick size.

The SEC should reduce its control over the data distribution system and allow market forces to efficiently price the data of each market center according to investor demand. At the same time the SEC should increase its disclosure regulation of trading fees in order to ensure the accuracy of market information. The technological ability of modern markets to provide market data according to investor demand and the rise of ECN access fees require an adjustment in SEC policy.

II. Introduction

In a mercurial twenty-first century marketplace, investors depend on accurate and current market information. Market opportunities change so quickly that investors must continuously adapt to succeed. Investment success requires knowledge of the marketplace because information concerning prices, buying and selling interest, transaction costs, and other costs is critical in evaluating investment opportunities. Investors require two characteristics in their information: availability and integrity. Investors must be able to access as much information as

they need to make an informed investment decision. At the same time, the available information must accurately portray the details investors use to make decisions. The current controversies surrounding data distribution and market access fees strike at the very heart of the ability of investors to adapt to a changing marketplace.

Market data includes prices, buying and selling interest, and transaction reports. The term "data distribution" refers to the method of processing and disseminating market data. Without adequate data distribution, investors lack the information necessary to make informed decisions. The current government-sponsored system of data distribution successfully communicates a great deal of information to investors, but has recently come under attack for several inefficiencies, including allegedly exorbitant fees and a stifling of innovation and consumer choice. The term "market access fees" refers to the charges that market centers levy on investors who interact with orders posted on the market center's system. Under current regulation these access fees do not appear in the quote displayed to market participants. While access fees are only one of many transaction costs, the current regulation has been criticized for deceiving investors as to the true costs of securities.

While data distribution fees and market access fees both ultimately determine information transparency, each topic raises its own market structure and regulatory issues and must be addressed independently. The first section of this paper will analyze the development of the current data distribution system and recommend a market-based approach for future regulation. The second section of this paper will analyze the controversy surrounding market access fees and recommend a disclosure-based system to remedy the distortions created by the current framework.

III. Data Distribution Fees

Market data plays a crucial role in the functioning of securities markets. Investors make decisions based upon the quotation information generated by the stock markets. Many types of information, including the price of a security, the depth of the book, and the trading history, inform investment decision-making. The dissemination of this data to the investing public is a precondition of a functioning securities market. The term "data distribution fees" refers to the prices investors must pay for this market data. The term "data distribution revenues" refers to the income received by the sellers of this data.

The Evolution of the Current System

The current U.S. system of data distribution evolved over the course of the 20th century. Between 1905 and 1926 the Supreme Court decided a series of "ticker cases" that set the legal framework for securities information. In *Hunt v. New York* the Court declared that "quotations are property and are entitled to the protection of the law" and that an "exchange may keep them to itself or communicate them to others."[209] Exchanges could require users of data to sign data agreements restricting the redistribution of market information because securities data belonged to the exchange from which it originated.[210] The exchanges used these rulings to defend proprietary rights to their market information. In particular, the New York Stock Exchange (NYSE) restricted public access to quotation information and instead only pursued written agreements with its members.[211]

In the 1970s the Securities and Exchange Commission (SEC)"recogniz[ed] that the public needed greater access to higher quality market information" and focused on facilitating

[209] *Hunt v. New York,* 205 US 322 (1907), 333, 336.
[210] U.S. Securities and Exchange Commission, "SEC Concept Release: Regulation of Market Information Fees and Revenues," Release no. 34-42208, <http://www.sec.gov/rules/concept/34-42208.htm> (1 October 2004), 14.
[211] Ibid., 15.

unrestricted public access and consolidated information as means to a central market system, "a major goal and ideal of the securities markets and securities industry."[212] In 1972 the SEC stated that "an essential step toward the formation of a central market system is to make information on prices, volume, and quotes for all securities in all markets available to investors" because "such a communications system would thus serve to link the now scattered markets for listed securities."[213] Congress authorized the SEC to oversee the creation of a national market system (NMS) in the 1975 Amendments to the Securities Exchange Act of 1934. The Amendments argued that "communications systems, particularly those designed to provide automated dissemination of last sale and quotation information with respect to securities, will form the heart of the national market system" and granted the SEC broad authority to pursue the goals of a national market system "in those situations where competition may not be sufficient, such as the creation of a composite quotation system or a consolidated transactional reporting system."[214] Congress additionally noted that any exclusive information processor would be similar to a public utility whose fees must be regulated for neutrality with its competitors.[215] In keeping with this mandate, the SEC decided in 1984 that the National Association of Securities Dealers (NASD) could not use data fees for competitive advantage against Instinet.[216]

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[212] U.S. Securities and Exchange Commission, "Institutional Investor Study Report," H.R. Doc. No. 92-64, 92nd Congress, 1st Session. 1971, (Washington, D.C.: GPO, 1972).

[213] U.S. Securities and Exchange Commission, "Statement of the Securities and Exchange Commission on the Future Structure of the Securities Markets," 2 February 1972, 37 FR 3286, (Washington, D.C.: GPO, 1973).

[214] Congressional Conference Report, H.R. Report no. 944-229, 94th Congress, 1st Session, 1975, (Washington, D.C.: GPO, 1975).

[215] Ibid.

[216] SEC, "Market Information Concept Release," 20. At the time NASD provided a basic quotation service through vendors and a montage service to subscribers. Instinet wanted to compete in the market for providing a full montage. The NASD proposed to charge a subscriber fee to Instinet, effectively charging a competitor a retail fee for a wholesale service. The SEC ruled that "the proposed fees must be cost-based in order to ensure the reasonableness of NASD's charge to Instinet and its subscribers because Instinet seeks to distribute information in competition." The SEC decision was upheld in federal court on the grounds that it prevented an "unfair competitive advantage." U.S. Securities and Exchange Commission, "Instinet Order," Release no. 20974, 17 April 1984, 49 FR 17640, (Washington, D.C.: GPO, 1984) and *NASD v. SEC*, 801 F. 2d 1415 (CDC. Cir. 1986).

The 1975 Amendments established the current system of data distribution, which includes four Exchange Act rules[217] and four networks. First, the Transaction Reporting Rule requires Self-Regulatory Organizations (SROs) to file transaction reporting plans with the SEC for securities listed on a national securities exchange or Nasdaq and requires SRO members to report the necessary information to the SRO. Second, the Quote Rule requires SROs to establish procedures for making member quotations available to information vendors and requires SRO members to comply with these procedures. Third, the Display Rule requires information vendors to provide customers with a consolidated display of information from all reporting market centers for a particular security. A fourth rule details the SEC procedures for the approval of plans and plan amendments.

Four networks consolidate and disseminate the data. The consolidated data for each security includes the National Best Bid and Offer (NBBO) with price, size, and market center identification, the best bid and offer (BBO) of each SRO with prices, sizes, and market center identifications, and a consolidated set of trade reports. Network A operates according to the Consolidated Tape Association Plan (CTA Plan) and the Consolidated Quotation Plan (CQ Plan) and displays information for securities listed on the NYSE. All of the SROs participate in the network, but the NYSE serves as the administrator of the day-to-day operations. The Securities Industry Automation Corporation (SIAC) processes the information. Network B also operates under the CTA and CQ Plans and uses SIAC, but it displays stocks listed only on the American Stock Exchange (Amex) or the other regional exchanges. Amex administers this network. The Nasdaq System includes Nasdaq stocks and other over-the-counter (OTC) stocks and follows the Nasdaq/UTP Plan. Nasdaq serves as the day-to-day administrator and the information processor.

[217] Rules 11Aa3-1, c1-1, c1-2, and a3-2, respectively.

The Options Price Reporting Authority administers the fourth network, the OPRA system, which publishes options information. The Chicago Board Options Exchange (CBOE) and SIAC provide information processing services. A committee of participants governs each Plan and must approve Plan Amendments, fee increases, new fees, or new participants.

The SEC exercises oversight over the fees charged by the Plans to information vendors and subscribers. Network administrators initiate fee proposals on the basis of business needs or opportunities for sale of data. After soliciting comments from the market data community, the fees come before the SRO representatives on the Network governing committee. Upon approval, the SEC solicits public comments and approves the fees if they are "fair and reasonable" and "not unreasonably discriminatory."[218] The Networks charge fees to two types of customers. Information vendors distribute information, often after providing information services, to their clients. Subscribers receive information from vendors or directly from the Networks. The Networks receive the fees of all subscribers because vendors must pass on the fees of their clients. Each Network collects its revenues into a single pool for distribution. The Network administrator first recoups the operating expenses of the Network from this pool. The remaining revenues are distributed to the participants in the Network according to the Plans. Networks A and B allocate revenue based solely on the number of trades per SRO.[219] Network C allocates based on the average of the number of trades per SRO and the share volume per SRO.[220] In accordance with SEC approval, SROs use these revenues to finance self-regulatory actions. In

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[218] U.S. Securities and Exchange Commission, "Report of the Advisory Committee on Market Information: A Blueprint for Responsible Change," 14 September 2001, <http://www.sec.gov/divisions/marketreginfo/finalreport.htm> (1 October 2004), 31, and SEC, "Market Information Concept Release," 19.

[219] The CTA Plan provides that Networks A and B allocate income according to "Annual Share," defined as SRO trades divided by total trades in a Network security. CTA Plan Section XII(a).

[220] The Nasdaq/UTP Plan provides that allocation occur according to the "percentage of total volume," defined as the average of an SRO's percentage of total trades in a Network security and its percentage of total share volume in the same Network security. Nasdaq/UTP Plan Exhibit 1.

2003 the Networks together collected $424 million in revenue from market data fees. After deducting expenses, the Plans distributed $386 million to the individual SRO participants. Together the Networks distributed $148 million to the NYSE, $115 million to NASD/Nasdaq, and about $30 million to the American Stock Exchange and the National Stock Exchange.[221]

Recent Developments: 1999 SEC Concept Release

The SEC asserts that the current system serves as "an essential element in the success of U.S. securities markets" because "it is the principal tool for enhancing the transparency of the buying and selling interest in a security, for addressing the fragmentation of buying and selling interest among different market centers, and for facilitating the best execution of customers' orders by their broker-dealers."[222] By guaranteeing that "proprietary interests in this information are subordinated to the Exchange Act's objectives for a national market system," the SEC "assures" the public of highly reliable consolidated information.[223] Nonetheless, in a 1999 Concept Release, the Commission argued that "improved technology for communicating and organizing information" necessitates review of the data distribution system for two reasons.[224] First, the emergence of online retail investors prompted SEC concerns that retail investor fees remained unreasonably high despite technological improvements.[225] The SEC desires to fulfill "one of its most important functions" by "assuring that market information fees to do not restrict their access" and ability to protect themselves.[226] Second, the rise of for-profit Alternative Trading Systems (ATSs) prompted concerns that competition among market centers, including the possibility of for-profit SROs, may necessitate "closer monitoring of the SRO's fees and

[221] U.S. Securities and Exchange Commission, "Regulation NMS," Release No. 34-49325, 20 May 2004. <http://www.sec.gov/rules/proposed/34-49749.htm> (1 October 2004), Sec. VI C(1).
[222] SEC, "Market Information Concept Release," 4.
[223] SEC, "Reg NMS," Sec. VI A.
[224] SEC, "Market Information Concept Release," 5.
[225] Ibid.
[226] Ibid.

financial structure, including funding and use of resources," to ensure public availability to accurate information.[227] In particular, the SEC fears that for-profit SROs, such as ATSs registered as exchanges and publicly-owned SROs, will not allocate enough resources to operating and regulating their markets to prevent information systems outages, fraud or manipulation, and inaccuracy.[228]

With these concerns in mind, the SEC proposed a cost-based approach to limiting fees in the 1999 Concept Release. The direct costs for SROs to comply with Network requirements and a portion of the common costs of self-regulation necessary for the maintenance of accurate market information would serve as "flexible guides" to setting data fees subject to SEC oversight.[229] The Commission asserted that "the total amount of market information revenues should remain reasonably related to the cost of market information" because "the fees charged by a monopolistic provider of service (such as the exclusive processors of market information) need to be tied to some type of cost-based standard in order to preclude excessive profits [...] or underfunding." [230] The cost of market information includes direct costs such as Plan costs occurred by processors and administrators and a percentage of common costs for operating and regulating markets in accordance with the Exchange Act. However, common costs do not include member regulation, the governing of all aspect of the members' securities business, including financial condition, operational capabilities, sales practices, and employee qualifications. The SEC argued that common costs should be allocated among all three main sources of revenues, listing fees, transaction service fees, and market information fees, because these costs "must be funded in one way or another" and excluding market information revenue as

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[227] Ibid.
[228] Ibid., 6.
[229] Ibid., 32.
[230] Ibid., 28.

a funding source would "force SROs to rely more heavily on other sources of funding" in ways that may not further the objectives of the Exchange Act.[231]

The Concept Release proposal contained several flaws. First, the Commission's foray into rate-making opposes centuries of experience in government rate-setting. The Securities Industry Association summarizes the vast consensus against price controls: "virtually no firm believes it is a good idea to have the SEC act as a ratemaker and decide which individual cost items should be funded by market data fees."[232] As Fidelity argues, even a price cap allows more market competition than price-setting.[233] Bloomberg fears that the "gold-plated telephone pole problem," in which a regulated utility incurs excessive costs, will enter the data markets.[234] Second, the Commission's proposal admits the difficulty of calculating a percentage of common costs to include in market information costs yet fails to describe a technique other than "flexibility" through which these costs could be calculated. Furthermore, the distinction within common costs between member regulation and compliance with Exchange Act objectives proves hard to draw in today's markets. Like market regulation, member regulation also protects investors because it ensures that transactions can be completed. As Bloomberg summarizes, both equally help markets because sales practices and member regulation are parts of a trading continuum that cannot be compartmentalized.[235] Finally, the Commission ignored the possibility of unintended consequences from this "flexible cost-based approach." The Commission's proposal to include a percentage of common costs will encourage SROs to adapt regulatory

[231] Ibid., 30. The SEC believes that data revenues are necessary in order to adequately fund the "front-line responsibilities" of the SROs in the U.S. securities markets.
[232] Marc E. Lackritz, "Securities Industry Association Comments on SEC Concept Release on Market Information," 11 April 2000, <http://www.sec.gov/rules/concept/s72899lackrit1.thm> (1 October 2004), 1.
[233] Eric D. Roiter,"Fidelity Investments Comments on SEC Concept Release on Market Information," 12 April 2000, <http://www.sec.gov/rules/concept/s72899/roiter1.htm> (1 October 2004), 4.
[234] Lou Eccleston, "Bloomberg Comments on SEC Concept Release on Market Information," 11 April 2000, <http://www.sec.gov/rules/concept/s72899/ecclest1.htm> (1 October 2004), 7.
[235] Ibid.

actions in order to qualify for "common cost" status. Unnaturally adapted regulatory actions will likely prove less effective in regulating the markets. The SEC should not encourage creative accounting of common costs nor incentives to indirectly, and thus inefficiently, regulate members under the guise of fulfilling Exchange Act objectives.

The Seligman Report

The Concept Release generated widely disparate comment letters.[236] In response, the SEC created the Advisory Committee on Market Information. The Commission chartered the Committee to address six areas of market information, including the value of transparency, the impact of decimalization, the merits of consolidated information, alternative data distribution models, and the determination of data fees.[237] Professor Joel Seligman of Washington University chaired the 25 member committee composed of representatives of exchanges, Electronic Communications Networks (ECNs), broker-dealers, retail and institutional investors, data vendors, and the public. The Committee in 2001 produced the report "A Blueprint for Responsible Change," which made the following recommendations:

1) Price transparency and consolidated market information should remain as core elements in the securities markets
2) The consolidated display rule should be retained
3) Non-core data should be sold according to the demand of the free market
4) Data aggregation should move to a competing consolidators model

[236] NYSE suggested that "the best answer lies in unleashing market forces and relying on constituent self-determination" and the ECN NexTrade added that competition would improve innovation and remove "the last bastion of protectionism in our financial markets." Fidelity suggested that at the very least the central processor function should be opened to competitive bidding. At the same time, Amex indicated that it "strongly believes the method of setting SRO market information fees, proven effective for over 24 years, should not be changed" and Schwab claimed that SROs do not have an ownership claim to market data. James E. Buck, "New York Stock Exchange Comments on SEC Concept Release on Market Information," 10 April 2000, <http://www.sec/gov/rules/concept/s72899/buck1.html> (1 October 2004), 16; John M. Schaible, "NexTrade Holdings, Inc. Comments on SEC Concept Release on Market Information," 7 April 2000, <http://www.sec.gov/rules/concept/s72899/schaibl1.htm> (1 October 2004), 3; Roiter, "Fidelity Comments on Market Information Concept Release, 2; American Stock Exchange, "American Stock Exchange Comments on SEC Concept Release on Market Information," 16 May 2000, <http://www.sec.gov/rules/concept/s72899/amex1.htm> (1 October 2004), 1; David S. Pottruck, "Charles Schwab & Co. Comments on SEC Concept Release on Market Information," 14 March 2000, <http://www.sec.gov/rules/concept/s72899/pottruc1.htm> (1 October 2004), 2.
[237] SEC, "Seligman Report," 2-3.

5) Competitive bidding and broadened governance should exist if competing consolidators are not allowed and
6) A cost-based standard for reviewing rates is unwise.[238]

The Seligman committee's recommendations sum to a system of competing consolidators governed by the consolidated display requirement. Market centers would be free to contract with information processors who would be required to consolidate the data of all the market centers. According to the Report, this system would have four benefits.[239] First, the competition among consolidators would encourage innovation. Second, there would be "ancillary gains" from disbanding the costly joint administration of the Plans by SROs. Third, the elimination of enforced artificial cooperation among competing market centers would enhance competition by allowing market centers to keep business practices private. Finally, competing consolidators would encourage intermarket competition in data fees and eliminate revenue sharing arrangements.

However, one significant drawback condemns the competing consolidators model: it creates regulatory monopolies for all market centers because it does "not introduce any additional market forces into the setting of data fees and the receipt of revenues by SROs."[240] If all competing consolidators must provide consolidated data, then they "would have no choice but to obtain data from each of the SROs that trade a security."[241] Market centers would become monopolies able "to seek monopoly rents for their data fees" and, consequently, the SEC would have to review their rates.[242] Since there are nine SROs and Nasdaq, a competing consolidators model would involve the SEC in at least ten market data fee reviews. The SEC was right to

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[238] Ibid
[239] Ibid., 53.
[240] SEC, "Reg NMS," Sec VI B 2, and SEC, "Seligman Report," 53.
[241] SEC, "Reg NMS," Sec VI B 2.
[242] SEC, "Seligman Report," 53.

reject this model because it does not provide true competition and creates unnecessary monopolies.

Reproposed Regulation NMS

The Commission's latest proposal,[243] Reproposed Regulation NMS, attempts to address several additional perceived problems of the current system. First, the SEC believes that the current distribution mechanisms create economic and regulatory distortions by failing to reward market centers that generate high quality quotes. Quotes with the highest quality, defined as the best price and the largest size, are a "critically important source of public price discovery."[244] Yet, currently price and size for a quote are irrelevant to SRO share of revenues: a 5000 share trade is equivalent to a 100 share trade in Networks A and B. Second, the SEC believes that the current formulas also establish incentives for SROs to operate "print facilities" to which ATSs and market makers report their trades for a rebate of data revenue. According to the SEC, this system forces the "purely commercial consideration of market data revenue" to "determine which SRO is responsible for reporting (and regulating) a trade" instead of an SROs regulatory expertise or trading services.[245] Consequently, the system creates confusion as to the source of liquidity, especially when market centers report trades to one SRO and display quotes to another. Finally, the SEC believes that the formula detracts from accuracy of data streams because it incentivizes fraudulent reporting practices like "wash trades," in which no real trade occurs, and "shredding of trades," in which large trades are broken up into small trade sizes.[246]

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[243] This paper will refer to the original release as "Reg NMS" and the reproposed release as "reproposed Reg NMS." The paper relies on the reproposed rules where significant differences exist. In such cases, the original proposal will be noted, often in the footnotes.
[244] SEC, "Reg NMS," Sec. VI C 1.
[245] Ibid.
[246] Ibid.

The new formula separates distribution of revenue into two steps.[247] First, Networks will allocate their income by security (Security Income Allocation, SIA) according to the square root of dollar volume of trading.[248] Then, Networks will allocate each security's income among the SROs according to two criteria: trading shares and quoting shares. Trading Share refers to the "SRO's proportion of trading in each security" and is calculated by multiplying fifty percent of the SIA by the Trade Rating of the SRO, which is the average of the SRO's percentage dollar volume and percentage of number of trades in a security. The other fifty percent of the SIA is shifted to the quoting share to reward quality of quotes. The Quoting Share is calculated by multiplying fifty percent of SIA by the Quote Rating, which is the percentage of quotes of an SRO at the NBBO for a security.[249] One quote credit is earned per second per dollar volume for automated and accessible quotes.[250]

Reg NMS also adopts several of the suggestions of the Seligman Report. The proposal would create non-voting advisory committees, allow SROs to distribute core and non-core data separately from compliance with Plan requirements, reduce the amount of data required for consolidation, and eliminate the consolidated display rule except when trade decision-making

[247] SEC, "Reg NMS," Sec. VI C 2, and U.S. Securities and Exchange Commission, "Reproposed Regulation NMS," Release No. 34-50870, 16 December 2004, <http://www.sec.gov/rules/proposed.shtml> (27 December 2004), 156.

[248] The SEC chose the square root of dollar volume (instead of strict reliance on dollar volume or equal distribution regardless of dollar volume) because the formula should reflect different values of quotes and trades in heavily versus rarely traded securities and should adjust for the disproportionate level of trading in the top five percent of securities, which would swamp any revenue for the rest of securities. The formula accounts for the decreasing marginal value of individual quotes as the number of quotes increases. Because "substantial theoretical and empirical research in finance suggests that prices generally follow a random walk with large trades having greater impact" and "it is reasonable to associate the flow of information in price changes with the average size of price changes," therefore "the price change standard deviation is a sensible measure of the flow of information in prices." According to "basic probability theory," the "standard deviation [of the sum of dollar volume] is proportional to the square root of the [sum]." Therefore, the square root of dollar volume equals informational value. SEC, "Reg NMS," Ftnte. 290.

[249] The original proposed Reg NMS allocated thirty-five percent of SIA to Quoting Share and the remaining fifteen percent to NBBO Improvement Share, calculated by multiplying fifteen percent of SIA by the NBBO Improvement Rating. NBBO Improvement Credits were based on the percentage of an SRO's quotes that improved the NBBO and then remained at the NBBO.

[250] SEC, "Reproposed Reg NMS," 158.

capability exists.[251] First, the non-voting advisory committees attempt to broaden participation in the Plan process by including all interested parties in data fee decision-making. Reg NMS requires that a non-voting advisory committee include at least one member serving a two year term from five groups: broker-dealers with an institutional investor customer base, broker-dealers with a retail investor customer based, Alternative Trading Systems (ATSs), data vendors, and investors. Second, the proposal also requires Plan Operating Committees to hear the advise of non-advisory voting committees before any decision. Reg NMS also distinguishes between core data, defined as the trades and best quotes of a market center, and non-core data, defined as all other data, for example the rest of the book. Under Reg NMS market centers could independently distribute both core and non-core data to vendors as long as they do not discriminate against the mandated SIPs. Third, the proposal reduces the consolidated display requirement to the NBBO, and not the best quotes of all market centers. Finally, brokers must only display consolidated information to customers when a trading or order-routing decision can be made. For example, an informational website need not include a consolidated display, but websites with software that allows for trading must provide the full consolidated display.

Opponents of the market data proposals of Reg NMS advance two main lines of criticism. First, the proposed market data regulations do not improve the current system because they do not increase competition. Nasdaq summarizes the criticisms of the current system: the "Plan products have not adapted and evolved to better serve investors" because the Plan operating committees are "dysfunctional."[252] While the Plans' original consolidated products "represented a significant advance for investors," twenty five years later "private vendors use

[251] SEC, "Reg NMS," Secs. VI D-E.
[252] Edward S. Knight, "Nasdaq Stock Market, Inc. Comments on Proposed Regulation NMS," 2 July 2004, < http://www.sec.gov/rules/proposed/s71004.shtml> (1 October 2004), 25.

superior technology and innovation to offer products that far surpass the Plans' products."[253] Consequently, the Plan system "stifles competition and choice" and investors must pay the same fees for the same products for years despite decreasing technological costs and increasing technological capacity.[254]

Even if the Plan system adequately served the securities markets, a second argument condemns Reg NMS: in an attempt to eliminate the distortive effects of the old trading volume standard, the proposed formula substitutes arbitrary assessments of quotation value and as a result creates its own distortions. Two examples are instructive. First, the trading share attempts to reward SROs for their share of transaction reports. In order to eliminate "the very small trades that often have the least price discovery value and reduce the potential for significant numbers of 'shredded trades,'"[255] the trading share calculation excludes all transactions with less than $5000 in dollar volume. The consequences are arbitrary and distortive: a 2000 share trade for a $2.49 security does not count while a 200 share trade for a $25 security counts, despite the obviously greater informational value of the 2000 share trade.[256]

The reproposed regulations propose attributing fractional trades (1/2 a transaction report, 1/3, etc) to trades with dollar volume less than $5000, but this only ameliorates the problem of undervaluing small trades and encouraging "bundling of smaller trades" and does nothing to curb shredding incentives.[257] The Chicago Board Options Exchange (CBOE) points out that this requirement provides incentives "for exchanges to engage in new types of tape shredding."[258]

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[253] Ibid.
[254] Ibid.
[255] SEC, "Reg NMS," Sec. VI C 2 b i.
[256] Edward J. Nicoll, "Instinet Group Comments on Proposed Regulation NMS," 30 June 2004, <http://www.sec.gov/rules/proposed/s71004.shtml> (1 October 2004), 42.
[257] Knight, "Nasdaq Comment on Reg NMS," 31.
[258] William J. Brodsky, "Chicago Board Options Exchange, Inc. Comments on Proposed Regulation NMS," 1 July 2004, <http://www.sec.gov/rules/proposed/s71004.shtml> (27 December 2004), 12.

Exchanges with trades at $10,000 will have an incentive to shred them into $5,000 trades in order to increase the number of qualified trades. The reproposed rules miss the point: a mandatory size encourages shredding to trades of that size.[259] Furthermore, the Chicago Stock Exchange (CHX) adds that this emphasis on dollar value "inappropriately rewards markets that handle higher-priced stocks" and may encourage market centers to decide that the cost of trading lower-priced securities outweighs the benefits.[260] As a result, investors may suffer from decreased market competition for these securities and companies with lower-priced securities may lose opportunities to raise capital.[261]

Second, Archipelago decries that "no one knows" whether the fundamental assumption of the SEC's formula "that the increasing frequency of a quote or trade in a particular stock reduces the information content of an incremental quote or trade" according to the square root of trading volume is true at all or for all stocks.[262] Under Reg NMS, the SEC assumes that liquid stocks should subsidize illiquid stocks.[263] Furthermore, CBOE argues that the proposal would give "an exchange an incentive to introduce trading in a large number of products even if it has no reasonable expectation that these products may ever account for any significant share of trading activity" in order to "capture a greater share of market data revenue."[264]

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[259] Ibid.
[260] David A. Herron, "Chicago Stock Exchange Comments on Proposed Regulation NMS," 30 June 2004, <http://www.sec.gov/rules/proposed/s71004.shtml> (27 December 2004), 18.
[261] Ibid.
[262] Kevin J.P. O'Hara, "Archipelago Holdings, Inc. Comments on Proposed Regulation NMS," 24 September 2004, <http://www.sec.gov/rules/proposed/s71004.shtml> (1 October 2004), 12.
[263] Ibid., 13.
[264] Brodsky, "CBOE Comment on Reg NMS," 11. CBOE provides the following example of the distorting incentives of the square root formula: The QQQ accounted for 16.3 million trades in 2003 while ELK accounted for 145. Thus, the QQQ had 99.98% of dollar volume and 20 securities like ELK had .02%, resulting in $99.98 million and $20,000 in data revenues in the absolute dollar volume standard, respectively. But, under the square root of dollar volume standard, QQQ would get an allocation of $94.38 million and 20 ELKs would earn $5.62 million, a swing of $5.6 million. According to CBOE, this subsidization of unsuccessful products" is "likely to lead to a proliferation of new products without regard […] to demand for such products."

The SEC experience with the data distribution formula suggests that any proposed formula will create arbitrary distortions and be vulnerable to gaming. The simple trading volume standard led to shredding, washing, and printing. The proposed formula, which adds complexity in an attempt to eliminate gaming, appears vulnerable to gaming as well, if the ease with which commenters found vulnerabilities is any indication.[265] As John Thain, CEO and Chairman of NYSE, adds, "in our [NYSE] experience, adding complexity increases the potential for 'gaming' the formula."[266] The SEC itself intimates the reason for the inherent gaming problems of formulas: they are "useful" to evaluate data value "not necessarily in every case, but in general and on average."[267] They cannot completely capture value nor can they predict gaming behavior.[268] As Instinet concludes, the distortive effect from gaming inherently plagues any formula because of "the inherently low cost for market participants to generate quotation information."[269] While the SEC responds that the reproposed formula is not "unacceptably vulnerable" to gaming quoting behavior because only "accessible quotes" count for quoting shares and this requirement makes gaming potentially very costly,[270] the reproposed formula will

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[265] As Brut puts it, "no experimental economist can foresee all the incentives and opportunities created by gerrymandering how a $424 million pool of revenue is distributed." For example, the original quoting share included a manual quote cutoff in an attempt to reward quotes at the NBBO while correcting for the stale quotes of manual markets by making manual markets ineligible to receive credits unless they resubstitute their original quotations. But, Instinet correctly points out that an "immediately recognizable distortive effect of this measure would be to incent manual marketplaces to change their quoting behavior." The reproposed rule, however, may incent manual marketplaces to refrain from updating stale quotes, the problem the SEC originally tried to address. Both the inclusion and omission promote distortion. William O'Brien, "Brut Comments on Proposed Regulation NMS," 29 July 2004, <http://www.sec.gov/rules/proposed/s71004.shtml> (27 December 2004), 22 and Nicoll, "Instinet Comment on Reg NMS," 41.

[266] New York Stock Exchange, "Written Testimony of John A. Thain, NYSE Chief Executive Officer and Robert G. Britz, NYSE President and Chief Operating Officer, before the U.S. Securities and Exchange Commission Hearing on Proposed Regulation NMS," 21 April 2004, <http://www.nyse.com/events/1082972326269.html> (1 October 2004), 3.

[267] SEC, "Reproposed NMS," 155-156.

[268] Ibid., 156. The SEC admittedly puts forth the new formula because it is a "substantial improvement," not a perfect solution to gaming.

[269] Nicoll, "Instinet Comments on Reg NMS," 41.

[270] SEC, "Reproposed Reg NMS," 158-159. CBOE disagrees and argues that the Quoting Share is vulnerable to manipulation because it does not take into account diminishing marginal returns for increased quote size. Exchanges will be incented to show large quote size to take advantage of this inaccuracy. CHX adds that

not eliminate trading share abuses such as the previous ones of shedding, washing, and printing. The SEC leaves unanswered the question of how these types of abuses will be curbed, beyond "continuing to enforce regulations."[271]

Furthermore, many critics, including the NYSE, Archipelago, Instinet, Nasdaq, and others, believe that the formula is too complex to be workable.[272] The original formula would have required astronomical calculations because of the multiplication of dollar volume, share volume, and seconds for Quote Credits.[273] However, the elimination of the NBBO Improvement Share and manual cutoff brings the formula to the level of basic spreadsheet programs. Nonetheless, Brut argues that "there will be significant costs imposed" because "these formulas will be tracked in real time by SROs in order to get an accurate sense of their revenues as quickly as possible, to comply with financial reporting requirements, SRO governing policies, and Sarbanes-Oxley regulatory responsibilities."[274]

A Market-based Approach

The criticisms of the current system and proposed Reg NMS point to a different approach that avoids the pitfalls of allocation formulas: market competition. The SEC should dissolve the Plans and the consolidation requirements and allow private entities to process, consolidate, and distribute data according to the market demand. Each SRO should be able to sell its data as it sees fit. Opening consolidation and distribution to market competition will eliminate the need to

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"automated systems could be developed to both disseminate a large-value quotes when there are many other quotes already existing at that price point, and to remove it quickly, limiting the possibility of execution, but generating substantial Quote Credits. The probabilities may favor gaming when a one second display of a 50,000 share bid at $10 generates 500,000 Quote Credits. Brodsky, "CBOE Comment on Reg NMS," 14 and Herron, "CHX Comment on Reg NMS," Ftnte 50.

[271] SEC, "Reproposed Reg NMS," 159. The Alliance of Floor Brokers suggest a different method for curbing abuse: "let competition police the process." Brendan R. Dowd, Daniel W. Tandy, and Ronald Zdrojeski, "Alliance of Floor Brokers Comments on Proposed Regulation NMS," 24 June 2004, <http://www.sec.gov/rules/proposed/s71004.shtml> (27 December 2004), 11.

[272] See Appendix, Figure 1 for the visual representation of the formula.

[273] Brodsky, "CBOE Comment on Reg NMS," 14.

[274] O'Brien, "Brut Comments on Reg NMS," 23.

set fees or regulate distribution of revenues in order to capture value. Market forces will price securities data and determine each SRO's sales revenue.

Objection 1: Investor Harm

The SEC strongly criticizes the competitive model on the grounds that it will harm investors by eliminating the consolidated, real-time stream of market information. The SEC and the Seligman Report argue that the current consolidated stream enhances price transparency, mitigates market fragmentation, and facilitates best execution of customer orders.[275] Investors require price transparency, measured as "the extent to which market information is made publicly available on a prompt and widespread basis," in order to make informed investment decisions. A fully transparent marketplace makes available information that reflects "the price and size of all definitive trading interest" and "the trade price and volume of completed transactions from all markets." [276] The current consolidation requirements provide this price transparency and as a result protect investors from information disparities caused by the fragmentation of buying and selling interest among competing market centers.[277] The consolidated stream also helps brokers to easily fulfill best execution obligations for customers and allows investors to easily monitor the success of brokers in fulfilling these duties.[278]

The competitive model's "most significant drawback" concerns "the risk of confusion and harm to retail investors" who would now lack consolidated information. Consequently, they would "need to monitor the quality of data disseminated by brokers and vendors" in order to protect themselves but often lack the time, inclination, and knowledge.[279] The Commission notes that "broad public access to consolidated market information was not the fortuitous result of

[275] SEC, "Reg NMS, Sec. VI A, and SEC, "Seligman Report," 13.
[276] SEC, "Seligman Report," 14.
[277] SEC, "Reg NMS, Sec. VI B 1.
[278] Ibid.
[279] Ibid.

private market forces, but of planning and concerted effort by Congress, the Commission, the SROs, and the security industry as a whole."[280] In fact, the SEC believes that "an inherent tension" exists between the objectives of assuring price transparency and the public availability of market information, which are fundamental objectives of the Exchange Act, and the "objective of expanding the operation of market forces with respect to data fees and revenue allocation."[281] The SEC also asserts that multiple consolidators "necessarily entail a risk of loss of uniformity of data that is distributed to the public."[282] The Seligman Report believed that problems of this nature concerning sequencing, validation tolerances, capacity, and data protocols and formats could be overcome, but did exist. [283] Consequently, "data quality could be compromised."[284] According to the SEC, a competition-based model intrinsically cannot protect investors.

However, the SEC criticism that the competition-based model cannot provide consolidated information fails to recognize the technological and economic developments of the last twenty-five years. In the 1970s, the Plans created a technologically superior product and "represented a significant advance for investors, who welcomed the advent of truly consolidated data."[285] In the beginning of the twenty-first century, technological improvements and investor

[280] SEC, "Concept Release on Market Information," 4.
[281] SEC, "Reg NMS," Sec. VI B.
[282] Ibid., Sec. VI B 2.
[283] SEC, "Seligman Report," 51-52. However, it is important to realize that the current system does not provide perfect data. For example, the International Securities Exchange notes that currently market centers have 90 seconds to report transactions and there is no uniform requirement for reporting quotations. Consequently, "there is no guarantee that current market data is properly sequenced" and a minimum and uniform standard for private vendors "might actually improve the accuracy of reported data." Michael J. Simon, "International Securities Exchange Comments on Proposed Regulation NMS," 30 June 2004, <http://www.sec.gov/rules/proposed/s71004.shtml> (27 December 2004), 9.
[284] SEC, "Reg NMS," Sec. VI B 2.
[285] Knight, "Nasdaq Comment on Reg NMS," 25,

demand eliminate the need for government sponsorship of consolidation.[286] Plummeting technological costs signify that the private market forces have the capability of providing consolidated data. The recent emergence of a sophisticated investor class fuels a demand for market information.[287] As the NYSE and Bloomberg argue, the SEC should "should reexamine the basic premise, which underlies the current system of data dissemination, that a monopoly aggregator and data integrator [such as SIAC] in its performance of those functions, is necessary or useful" because "technology has removed the systemic and economic barriers to consolidation either by each vendor or broker-dealer independently or by non-exclusive service bureaus performing the function at market rates."[288] If consolidated information is critical to investors, then investors are now in a position to demand consolidated information from the marketplace. In fact, investors already successfully demand market information. Datek Online and Interactive Brokers consolidate information from various market centers, including ECNs, Nasdaq, and NYSE. As a group of George Mason scholars points out, "this provides an example of how competition in information provision results in a consolidated real-time stream available to investors at very low cost."[289]

[286] According to a group of George Mason scholars, "demand for market data has skyrocketed while computers and communication costs have plummeted." NYSE refers to the "sea change in technology over the past 25 years [that] has clearly enabled solutions previously unavailable." Bloomberg confirms the "dramatic advances in technology and reduction in communication costs." Susan E. Dudley and Wendy L. Gramm, "Regulatory Studies Program of the Mercatus Center at George Mason University Comments on SEC Concept Release on Market Information," 31 March 2000, <http://www.sec.gov/rules/concept/s72899/gramm1.htm> (1 October 2004), 15; Buck, "NYSE Comment on SEC Concept Release on Market Information," 18; Eccleston, "Bloomberg Comment on Concept Release on Market Information," 10; Knight, "Nasdaq Comment on Reg NMS," 25.
[287] Dudley, "Mercatus Center Comment on Concept Release on Market Information," 15.
[288] Buck, "NYSE Comment on SEC Concept Release on Market Information," 16.
[289] Dudley, "Mercatus Center Comment on SEC Concept Release on Market Information," 14. According to Nasdaq, ILX, Bloomberg, Reuters, Bridge, Hyperfeed, BRASS, Lava, Thomas Financial, OM, and many others provide increasingly sophisticated market data beyond the Plans. Even the Seligman Report notes that "market forces have already stimulated the collection and dissemination of market-related data by the private sector, for example www.yahoo.com and www.3dstockcharts.com. Knight, "Nasdaq Comment on Reg NMS," 30, and SEC, "Seligman Report," Ftnte. 227.

Nor does the pre-1975 failure of the marketplace to report and consolidate market data imply that market centers will tend to keep their data private in the twenty-first century.[290] The competition among market centers for trading business serves as an incentive for trading venues to reach disclosure agreements with vendors.[291] The contemporary futures markets demonstrate the development of a data distribution system free from extensive regulation.[292] The Commodity Futures Trading Commission only mandates daily reporting of total volume, open interest, futures for cash transactions, and options exercised and unexercised for the day. Yet, the futures exchanges provide real-time continuous reporting to information vendors who distribute data to the public. In the same vein, Island provides free real-time display of its quotes in order to attract market share.[293] As the George Mason group of scholars aptly summarizes, "the Commission's policy of seeking a uniform and centralized stream of information may be unnecessary at best, and possibly harmful since it attenuates market forces that would lead SROs to provide the desired level and price of transparency for the customers they serve."[294]

The Commission also falsely assumes that only mandated consolidated information streams will protect unknowing investors from price disparities in a system of fragmented markets. Two reasons argue otherwise. First, best execution obligations will still guide

[290] The SEC could require disclosure without requiring consolidation (and setting prices), but such regulation would be superfluous in a current environment that requires market centers to compete with one another. A market center that keeps its data private will not attract market share in a competitive marketplace. For example, European exchanges are often subject to disclosure requirements. However, the European markets do not consider withholding market information. Rather, the debate concerning market data is between those who want to charge for it and those who want to give it away for free. International Federation of Stock Exchanges, "Notes on FIBV Workshop on Data Management & Vending." 8 October 2001, <http://www.world-exchanges.org/WFE/home.asp?menu=11&document=980> (27 December 2004), 7.
[291] Dudley, "Mercatus Center Comment on SEC Concept Release on Market Information," 6.
[292] Ibid
[293] Ibid., 14.
[294] Ibid., 7.

brokers.[295] Those professionals who do not take reasonable steps to protect their clients will still violate their duties.[296] It may be argued that investors can only measure best execution using a consolidated data stream and that, consequently, less information will lead to worse execution. However, a brief examination of the current enforcement of best execution demonstrates that the removal of guaranteed consolidated information has little if any effect on investor's abilities. Currently, an investor suspecting best execution violations must tediously examine the consolidated data stream moment by moment for the entire period between the placement of an order and the execution of a trade.[297] This is not a simple task nor does the average retail investor often pay for its performance. The investor obtains the consolidated data stream either from his broker or from another source, perhaps the Internet.[298] The removal of guaranteed consolidate information will influence only one part of the process. Instead of sorting through one intense time series, the investor may, in the unlikely case that no information processor, broker, or academic institution provides free consolidated data for past prices, sort through several market centers' data. Because each data stream has less data than a consolidated stream, the labor should not increase significantly. If a processor provides consolidated data that can be obtained through a broker or on the Internet for past data free of charge, then there is no difference.

Second, arbitrageurs will reduce the discrepancies in security prices among trading venues because "advances in information and communications technology" have given rise to

[295] Best execution is grounded in the common law principles of agency and is often enforced at the SRO level. Jonathan R. Macey and Maureen O'Hara, "The Law and Economics of Best Execution," *Journal of Financial Intermediation*. 6 (1997), 192.
[296] Datek Online further argues that the duty of best execution will create demand among broker-dealers for consolidated information. SEC, "Seligman Report," Ftnte. 223.
[297] Robert A. Schwartz and Robert A. Wood, "Best Execution," *Journal of Portfolio Management*. 29, no. 4, (Summer 2003), 3.
[298] Most market centers provide free data for the past. Island provides free real-time data.

inexpensive and rapid arbitrage opportunities across trading venues.[299] In the event that market centers post different prices from other market centers, arbitrageurs will reap profits until they reduce price discrepancies to economically insignificant levels. Arbitrageurs will thus guarantee the quality of the prices of the produced data streams. As a result, investors may be able to save money by only subscribing to price information from one SRO.[300] This savings will outweigh the cost to ignorant investors of arbitrageurs reaping profits.

Finally, the SEC concern regarding data quality ignores the existing self-regulatory checks on market integrity. SRO members and market center owners depend on investor participation for business profits. Because "maintaining a reputation for fair and competitive execution of trade is crucial to maximizing investor participation," the interests of members of an SRO and owners of a market center "are aligned with those of investors."[301] Since investors and their agents "are most interested in sending their orders for trade to markets where information is current, accurate, and readily available," SROs and market centers have incentives to disseminate high quality information.[302] Informed investors will be aware of low quality market data and minimally informed investors can rely on the best execution obligations of brokers to provide quality control feedback through order routing. Arbitragers will further serve to prevent quality discrepancies.[303]

Objection 2: Several Anti-competitive Tendencies

The Seligman Report argues that consolidation requirements increase competition among market centers. Without the consolidated display rule, new marketplaces will likely face "a nearly insurmountable barrier to entry" and non-primary markets "may also suffer competitively

[299] Dudley, "Mercatus Center Comment on Concept Release on Market Information," 13.
[300] Ibid., 13.
[301] Ibid., 6
[302] Ibid., 5.
[303] Ibid., 13.

if vendors and broker-dealers elect not to distribute their data."[304] Consequently, the Seligman Report recommended retention of the consolidated display rule with system of competing consolidators. However, the rise of ECNs, which did not participate in consolidated displays until Reg ATS mandated disclosure on Nasdaq, argues against "insurmountable barriers." These market centers emerged to take over 20% of Nasdaq trade volume without participating in the Plans. The consolidated display rule had little role in their success. Second, the Seligman Report is mistaken in thinking that a consolidated display rule lowers barriers to entry. Markets with inferior prices are not helped by consolidated display. They do not receive orders if they have inferior prices, so awareness of an inferior market does little to financially support that market other than provide a regulatory subsidy of data fees at the expense of markets with superior prices and market data consumers who must pay higher fees. Furthermore, the retention of the display rule in a competitive system guarantees monopoly power to all of the SROs. The SEC burden for oversight of data fees would continue with no benefits.

The SEC argues that the "second serious drawback" of the competitive model "is the problem of market power." [305] A dominant securities market, such as the NYSE, "can charge monopoly-like fees for its information" to such an extent that their fees "could prompt calls for active rate regulation."[306] However, three factors limit the monopoly power of SROs: user ownership, benefits of information dissemination, and contestability.[307] First, the members must approve through SRO governing boards the data distribution contracts that vendors use to provide the same members with data. Consequently, "monopoly overcharges reaped by [SROs]

[304] SEC, "Seligman Report," 45.
[305] SEC, "Reg NMS," Sec. VI A 1
[306] Ibid.
[307] Dudley, "Mercatus Center Comment on Concept Release on Market Information," 4-6, 14.

come at the expense of the SRO members."[308] The creation of for-profit exchanges may decrease the shareholder ownership monopoly constraint because it will make the link between data seller and data buyer more indirect.[309] But, a second restraint on monopoly power exists: the SRO members or owners profit by commissions charged to investors and trading spreads. If market data fees are too high, investors will be priced out of the market and member firms or shareholders in a for-profit entity will lose profits.[310]

Finally, the contestability of securities markets constrains monopoly pricing power in a way similar to other contestable markets.[311] The futures markets provide an example of the constraining power of potential competition despite proprietary ownership of market data. The London Financial Futures & Options Exchange (LIFFE) lost its place as the dominant market for trading German bonds within months because Deutsche Terminboerse (now Eurex) introduced electronic trading.[312] The rise of ECNs such as Island, which captured 20% of the market in Nasdaq securities, confirms the applicability of the futures example to the U.S. equity markets. If a powerful securities market seeks monopoly rents for its data, then other existing or new market centers, such as Instinet and ArcaEx, will capture the powerful market's trading volume by undercutting its data fees. Consequently, the powerful market will have to keep data fees competitive in order to discourage competition in its securities.[313]

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[308] Ibid., 4.
[309] At the very least, shareholders buy shares through brokers who must pay for data and may, as market participants, serve on the board of directors directly as an institutional representative or indirectly as a voting shareholder.
[310] Ibid., 5
[311] Ibid., 14.
[312] Ibid.
[313] The SEC notes in its Concept Release on SROs that world equity markets derive larger amounts of revenue from market data, "despite having significantly less volume and market cap than NYSE or Nasdaq." (Figure 2 in the Appendix summarizes the data.) This suggests that overall data fees will increase without the Plans. However, London, Deutsche Bourse, Euronext, and Tokyo enjoy less competition than NYSE and Nasdaq. For example, Deutsche Bourse represents 95% of German equity trading volume. In contrast, the NYSE retains approximately 90% of trading in only NYSE-listed securities. U.S. Securities and Exchange Commission, "Concept Release

Opponents of the competitive model also argue that the securities market cannot support multiple information processors. The 1999 SEC Concept Release assumes that "the provision of consolidated information for each security is and will remain a natural monopoly" and Reg NMS argues that "switching to a competing consolidators networks could lead to an increase in processing costs caused by having many consolidators perform tasks that currently are performed by a single processor."[314] Because investors cannot "use up" market information, consolidated information contains economies of scale that usually lead to a natural monopoly.[315] However, other costs such as marketing and customized processing, the increased demand for customized data, and the decreased cost of technology undermine the natural monopoly.[316] U.S. experience in the telecommunications, electricity, and natural gas industries argues for caution in assuming natural monopolies and in assuming that regulation reduces rather than increases the costs of monopolies.[317]

Final Objections: Congressional Requirements and Transition

Critics of the competitive model put forth two final arguments. First, the SEC believes that consolidated information is the "single most important tool for unifying the securities markets into a national market system" and consequently the SEC must continue the current

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Concerning Self-Regulation," Release No. 3450700, 18 November 2004, <http://www.sec.gov/rules/concept/34-50700.htm> (1 December 2004), Sec. IV D 2d and International Federation of Exchanges, "Notes," 2.

[314] SEC, "Reg NMS," Sec. VI A 2, and Dudley, "Mercatus Center Comment on Concept Release on Market Information, 15."

[315] Dudley, "Mercatus Center Comment on Concept Release on Market Information, 15."

[316] Ibid

[317] Dudley, "Mercatus Center Comment on Reg NMS," 3, compiled a lengthy list. The more interesting of the list include Thomas W. Hazlett, "Competition vs. Franchise Monopoly in Cable Television," *Contemporary Policy Issues 4*, April 1986; Robert Poole, *Unnatural Monopolies*, (Lexington: D.C. Heath, 1985); Harry G. Broadman and Joseph Kalt, "How Natural is Monopoly? The Case of Bypass in Natural Gas Distribution Markets," *Yale Journal on Regulation*, 1989; Walter M. Primeaux, Jr., *Direct Electric Utility Competition,* Westport, CT: Praeger, 1986, Richard T. Shin and John S. Ying, "Unnatural Monopolies in Local Telephone," *Rand Journal of Economics* 23:2, Summer 1992; and John E. Kwoka, Jr., *Power Structure: Ownership, Integration, and Competition in the U.S. Electricity Industry*, Kluwer Academic Publishers, 1996.

system to fulfill its mandate.[318] Schwab approved a direct cost-based approach because it is "the only way to meet the statutory requirements of fair, reasonable and non-discriminatory fees."[319] However, the 1975 Amendments only mandated that the SEC facilitate a National Market System. The SEC freely admits in its release on SROs that "Congress did not specifically mandate the creation of a consolidated market data processor system."[320] The SEC does not need to mandate consolidated information distribution in order to encourage a part of the NMS that can arise on its own.[321]

Second, SEC officials argue that the process of transitioning to a competitive model will at the very least harm investors until the new system becomes established.[322] As Amex summarizes, "there seems little reason to change a system that has worked smoothly and with only minor disputes for 24 years."[323] However, this argument takes a deterministic view to government regulation that carried to its logical end invalidates all revisions of government regulation regardless of the reason. A more reasonable stance dictates the consideration of transition factors in the development of a gradual strategy for implementing policy change. One such gradual strategy would be to introduce competition in stages while monitoring information availability. First, the SEC could allow competing consolidators with a consolidated display requirement and regulate all the market centers as monopolies. Then, the SEC could eliminate the consolidated display requirement, legally require market centers to publicly display

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[318] SEC, "Reg NMS, Sec. VI A, and SEC, "Concept Release on Market Information," 7.
[319] Pottruck, "Schwab Comments on SEC Concept Release on Market Information, 4.
[320] SEC, "Concept Release on Self-Regulation," Ftnte. 229.
[321] The claim is not that consolidated information will exist in a market-based system, but rather that it can exist with twenty-first century technologies and can be demanded by twenty-first century sophisticated investors if it truly is the "heart" of the securities markets. In fact, Datek online already provides a consolidated quote of ECNs, Nasdaq, and NYSE. Furthermore, in the reproposed rules, the SEC asserts that market forces can handle the distribution of all information except NBBO and last sale data, information it previously called "vital." Therefore, even the SEC asserts that market forces can handle distribution of vital data. They have provided no reason why the NBBO is any different from other information so that it necessitates mandates. SEC, "Reproposed Reg NMS," 166, 145.
[322] Nazareth, Annette. Interview with JP Task Force. 13 October 2004.
[323] American Stock Exchange, "Amex Comments on Concept Release on Market Information," 3.

information, and regulate market centers that appeared to be natural monopolies if necessary. Finally, the SEC could eliminate public display requirement to arrive at the market-based approach. Throughout the process the SEC could measure the availability of information through the public comment process, opinion polls, and market trends. Success would entail the availability of information that enables investors to make informed decisions within the U.S. securities markets.

Conclusion

The original data distribution system, which continues with minor adaptations to the present day, succeeded in its goal of developing the American securities market. Yet, its very success argues against its continuance: the investor demand for consolidated information and market data stimulated by the original consolidation requirements can now supply enough pressure through competitive markets to ensure adequate supply of market data. When combined with technological developments that remove the natural monopoly of securities information processors, the reasons for the original anti-competitive system no longer justify SEC intervention. The time has come for the SEC to get out of the business of securities data markets micro-structuring and to bask in the glory of its success.

IV. MARKET ACCESS FEES

Overview of the Current System

Investors also desire accuracy in the available market information.[324] Yet, the current system of quotation display does not guarantee accuracy because it displays few of the fees that

[324] Ameritrade commissioned a Gallup poll that found that 97% of investors (defined as individuals with at least $10,000 in non-fund investments) desire to pay the price they see. While the question conflates execution speed with accuracy, it is nonetheless instructive as to the demands of investors. John S. Markle, "Ameritrade Supplemental Comment on Proposed Regulation NMS," 13 October 2004, <http://www.sec.gov/rules/proposed/s71004.shtml> (1 October 2004), 2.

investors incur when trading. Since investors execute transactions through intermediaries, such as brokers and market centers, they must pay fees, such as brokerage commissions, exchange transaction fees, communications and systems charges, and the bid-ask spread, in order to trade. In particular, current SEC regulation allows ECNs and other ATSs to charge per share "access fees" of less than 9/10 of one cent to market participants for executing against, or accessing, a price quote for a security.[325] Other market participants, such as market makers, cannot charge access fees. ATSs with a certain trading share are required to display their quotes through an SRO.[326] Many ECNs comply by displaying their quotes alongside the quotes of market makers on the Nasdaq system. Consequently, an ECN quote and a market maker quote posted at the same price are not equivalent if the ECN charges a non-displayed access fee. Furthermore, Nasdaq charges its own access fees and the exchanges and Nasdaq also charge a variety of transaction fees. As the SEC summarizes, "published quotes today do not reliably indicate the true prices that are actually available to investors."[327]

ATSs charge access fees for two principal reasons. First, access fees fund the liquidity rebates that ATSs use to encourage the placement of limit orders. Access fees thus indirectly help to increase the liquidity of market centers. Many ECNs and Nasdaq utilize liquidity rebates. Second, access fees are an integral part of the business models of ATSs, in particular ECNs, because the market centers capture the difference between access fees and liquidity rebates as revenue. In fact, many ATSs rely on access fees because, as non-exchange market centers, they cannot sell market information or charge listing fees.

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[325] U.S. Securities and Exchange Commission, "Regulation of Exchanges and Alternative Trading Systems," Release no. 4760. 8 December 1998, <http://www.sec.gov/rules/final/34-40760.txt> (1 October 2004) and U.S. Securities and Exchange Commission, "No-action letters: ECNs ("Electronic Communications Networks")," 1 February 2002- 2 April 2004, <http://www.sec.gov/divisions/marketreg/mr-noaction.htm#ecns> (27 December 2004).
[326] SEC, "Reg ATS."
[327] SEC, "Reg NMS," Sec. IV A 3.

Despite the useful effects of encouraging liquidity and financing competitive market centers, the discrepancy between published quotations and actual prices creates several problems. First, brokers under best execution obligations may be forced to send a customer's order to an ECN when the ECN's true price, including fees, is not the NBBO. For example, suppose that both Market maker A and ECN B post a bid for Stock Z on the Nasdaq System at $10.00 a share for 100 shares. If ECN B posted first then Market maker C should send a customer order to ECN B. But, if ECN B charges a 9/10 access fee, then its true price is $10.009 a share. If Market maker C routes the order to the ECN, he must assume and indirectly pass on or directly pass on the access fee to the customer.

Second, the SEC believes that "the dramatic rise in locked and crossed markets in recent years can be traced to the proliferation of access fees, charges, and liquidity rebates offered by ECNs and Nasdaq."[328] A locked market occurs when the bid price equals the ask price. Because of access fees, market participants have a greater incentive to post limit orders that lock the market and then wait to receive a liquidity rebate when accessed, instead of executing against an already-existing limit order and paying the access fee. According to the SEC, locked markets "raise concerns about the orderliness and efficiency of the markets" because they "cause confusion regarding the reliability of the displayed quote, and create difficulty for market participants seeking best execution for customer orders."[329]

Reproposed Regulation NMS

The SEC attempts to address the deficiencies of the current access fee framework in Reg NMS. After evaluating and dismissing regulatory actions such as reflecting fees in the displayed quote, rounding access fees to penny increments, and banning access fees, the Commission

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[328] Ibid.
[329] SEC, "Reg NMS," Sec. IV B 4.

proposes a *de minimis* fee standard. In order to "promote a common quoting convention that would harmonize quotations and facilitate the ready comparison of quotes across the NMS," the SEC proposes capping access fees charged by a market participant to a maximum accumulation of 3/10 of one cent in fees per share.[330] Under the reproposed regulations, all quoting market centers, market participants, and broker-dealers that display attributable quotes through SROs can charge access fees. The SROs must impose limits on the market participants that display quotations in their facilities so that total fees per share do not exceed 3/10 of one cent. According to the Commission, "limiting access fees to a *de minimis* amount will promote intermarket access, the standardization of quotations, and the Commission's goals for the NMS."[331] In particular, the cap fulfills the NMS objective of equal regulation of markets and broker-dealers because "a single accumulated fee cap would apply equally to all types of trading centers and all types of market participants."[332]

However, the *de minimis* fee standard fails to satisfactorily resolve the issue of market access fees for several reasons. First, "the historical record all-too-clearly indicates that government-imposed price controls are simply bad public policy," especially when "competition among market centers has been effective in ensuring that market access fees to do not impose any unnecessary burdens on investors' ability to access quotations displayed by NMS markets."[333] The 80% decline in market access fees calls into question the necessity of the intrusion of price caps.[334] Furthermore, even if price caps were suitable for protecting investors from unnecessary burdens, the SEC's goal is not to remedy the market's failure to arrive at

[330] SEC, "Reproposed Reg NMS," 104.
[331] Ibid., 104.
[332] Ibid.
[333] Nicoll, "Instinet Comment on Reg NMS," 23-24.
[334] Ibid., 24.

competitive prices.[335] Rather, the SEC desires to "promote a common quoting convention that would harmonize quotations and facilitate the ready comparison of quotes." [336] If access fees drop below the maximum 3/10 of a cent per share price cap, which is likely given the current intensity of competition, then the SEC proposal did nothing to improve price transparency.[337] For example, under the SEC price cap, market participants will not be able to discern the difference between ECN A's 3/10 of a cent per share access fee and ECN B's 1/100 of a cent per share access fee. Brokers may continue to be forced to route orders to inferior priced quotes.

Second, the maximum fee standard contradicts the Congressional goal of "promot[ing] fair competition among different types of marketplaces" in the NMS because "it would advantage dealer markets over agency markets."[338] Dealer revenues obtained from the bid-ask spread, a significant portion of the revenue of the dealer business model, are not regulated by the SEC while one of the main sources of ECN revenue, access fees, are subject to a maximum price cap.[339] Furthermore, the potential for unintended consequences of a price cap warrants caution. In addition to benefiting broker-dealers and harming ATSs, the price cap will facilitate internalization. To "replenish inventory or lay off risk" internalizing dealers take positions by "accessing trade interest on agency markets [ATSs]."[340] Therefore, a cap on access fees artificially lowers the cost of business for internalizers by means of regulatory subsidy. Because internalization creates disincentives for customer limit orders and limit orders contribute to price discovery, the cap ultimately harms the price discovery process.[341]

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[335] Joel Hasbrouck and Bruce L. Lehmann, "Reg NMS Study Group Comments on Proposed Regulation NMS," 23 May 2004, <http://www.sec.gov/rules/proposed/s71004.shtml> (1 October 2004), 11.
[336] SEC, "Reg NMS," Sec. IV B 3 iii
[337] Hasbrouck, "Reg NMS Study Group Comment on Reg NMS," 11.
[338] Nicoll, "Instinet Comment on Reg NMS," 28 and Securities Exchange Act of 1934, 15 USC § 78, <http://www.law.uc.edu/CCL/34Act> (27 December 2004), Sec. 11Aa1Cii.
[339] Nicoll, "Instinet Comment on Reg NMS," 28.
[340] Ibid.
[341] Ibid., 29.

Finally, Congress did not give the SEC rate-making authority for access fees.[342] Section 15 of the Exchange Act includes no mention of Commission authority over the fees and charges of broker-dealers.[343] This absence of authorizing language contrasts strongly with the express granting of ratemaking authority in the Public Utility Holding Company Act of 1935 to price interassociate sales of goods "at cost, fairly, and equitably allocated among companies."[344] Nor do the 1975 Amendments provide the necessary authority to limit or restrict broker-dealer and SRO fees. The only reference to fees concerns the contractual interaction of exclusive securities data information processors and competing processors, broker-dealers, and individuals.[345] On the contrary, as ArcaEx points out, the 1975 Amendments seem to disfavor rate-making because they eliminated fixed commissions.[346]

A New Disclosure-based Approach

The criticisms of the SEC *de minimis* fee standard point to a different approach: the disclosure of access fees in the posted price.[347] Instead of limiting the fees of market participants, SROs, or market centers, prices should include all of the fees incurred by every trader. ECNs and SROs should be able to charge any access, transaction, or communications fee they deem necessary, but must display all fees in the posted prices. The inclusion of all fees will create a system of quotations that represent the true prices of securities. Because competition has driven access fees to the subpenny level and transaction fees also are usually in subpennies per share, this disclosure rule will likely result in sub-penny quotations for many securities.[348]

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[342] Notably, Nicoll, "Instinet Comment on Reg NMS," 30, and O'Hara, "Archipelago Comment on Reg NMS, 11.
[343] Exchange Act of 1934, Sec. 15.
[344] Nicoll, "Instinet Comment on Reg NMS," 30, and Public Utility Holding Company Act of 1935, 15 USC §79, <http://www.aspenpublishers.com/SECRULES/publicut.pdf> (27 December 2004), Sec. 13b.
[345] Nicoll, "Instinet Comment on Reg NMS," 31.
[346] O'Hara, "Archipelago Comment on Reg NMS," 11.
[347] Hasbrouck, "Reg NMS Study Group Comment on Reg NMS," 11.
[348] However, it will be up to the individual market center whether to display all subpenny quotations, whether to use software, whether to round to whole pennies, and/or whether to set minimum price change increments. Ibid., 12.

Objection 1: Numerous Fees

Several criticisms may be advanced against this system of access fee disclosure. First, ECNs argue that different market access fees are not the only obstacle to a "uniform quoting convention."[349] As Instinet points out, clearing charges, NASD regulatory fees, Commission Section 31 fees, and brokerage commissions are all charged to investors but not included in the public quotation.[350] Archipelago adds that SEC access fee rate-setting for the purposes of displaying "true prices" begins the fall down a slippery slope that logically leads to caps for such varied fees as retail brokerage commissions, market maker spreads, and investment banking fees. Similarly, it may be argued that brokerage commissions and investment banking fees should also be included in quoted prices.[351]

However, the distinction between trader-specific fees and universally applied fees resolves the question of which fees to disclose.[352] Quotations should reflect the prices that all participants must pay but should not include the trader-specific charges imposed by brokers. Brokerage commissions are trader-specific while access fees and network and communication charges are universal. Accurate prices should reflect access fees and other universal transaction fees, including NYSE and Nasdaq transaction fees, but not brokerage commissions.

In a similar vein, Instinet argues that the disclosure of access fees is not necessary to establish uniformity because "market participants in fact are readily aware of the various market access fees charged by various marketplaces."[353] But, if market participants already know fees of market centers,[354] then ECNs experience no unjustifiable harm from the inclusion of the fees

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[349] O'Hara, "Archipelago Comment on Reg NMS," 11, and Nicoll, "Instinet Comment on Reg NMS," 26.
[350] Nicoll, "Instinet Comment on Reg NMS," 26.
[351] The bid-ask spread is already displayed in prices. O'Hara, "Archipelago Comment on Reg NMS," 11.
[352] Hasbrouck, "Reg NMS Study Group Comment on Reg NMS," 11.
[353] Nicoll, "Instinet Comment on Reg NMS," 26.
[354] It is unlikely that retail investors are as aware as institutional investors.

in the price. Furthermore, this argument misses the true problem: a best execution obligation based on displayed prices currently forces brokers to access quotes that do not represent the best prices including fees.[355]

Objection 2: Sub-penny Quoting

The SEC argues that the sub-penny quoting required by access fee disclosure will harm the marketplace. According to the Commission sub-penny trading "would further reduce the depth of liquidity available to investors at any particular price" caused by decimalization.[356] Furthermore, sub-penny trading "could very likely exacerbate 'stepping ahead' practices" by reducing the real economic costs of penny-jumping.[357] Consequently, traders would experience a reduced incentive to place limit orders.[358] Finally, the move to sub-pennies could increase the instances of "flickering quotes" that change so frequently that they "engender confusion among investors and complicate the efforts of broker-dealers to comply with regulatory obligations, including the duty of best execution." [359]

However, the SEC overestimates the costs of subpenny quoting. The problem of the increased fragmentation of orders across prices, which leaves less depth at each individual price, will only occur for those securities in which subpenny pricing is necessary. The SEC should be

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[355] It may be argued that the SEC should simply change best execution expectations. However, best execution is defined by common law and is beyond the scope of all but a federal law. But, the difficulty in defining best execution generally precludes a general statement of expectations in a law. Furthermore, it would be counterintuitive to effectively disempower investors and entrust brokers with the task of quote evaluation for fees by mandate when investors can easily perform the task themselves with disclosure. Macey, "Law and Economics of Best Execution," 192.
[356] SEC, "Reg NMS," Sec. IV B 3 ii.
[357] Ibid
[358] Ibid
[359] Ibid. It may also be argued that the non-standard units of subpenny quotations will negatively affect decisions that must be made visually. For example, manual market centers, such as the NYSE, rely on specialists to manually match visually displayed quotes and verbal orders. However, computer software can aid individuals in determining the significance of price differences between quotes. Software could group orders around significant liquidity points or standardize units by visually rounding quotes with insignificant price differences.

wary of restricting market flexibility.[360] Furthermore, "stepping ahead" often represents price competition, not front running, given the lack of depth at the inside quote in the current decimalized environment.[361] To prevent the last-mover advantage of market makers the SEC would do better to mandate that market makers improve prices quoted in the book by a minimum increment instead of requiring a minimum tick size because front-running practices are "really about how much price improvement a market maker or dealer must offer when stepping ahead."[362] Finally, the problem of "flickering quotes" can be solved technologically by updating quotes only after significant changes or by aggregating liquidity at different price levels.[363] Given the current length of quote exposure, the best execution obligations of brokers are complicated by flickering quotes no more than they were by decimalization.

Objection 3: SRO fees

Finally, exchanges that charge transaction fees object to the equation of transaction fees and access fees.[364] While ECNs charge access fees to non-subscribers, SROs only charge transaction fees to members. Consequently, according to the American Stock Exchange, the two types of fees "are fundamentally different" because members and subscribers consent to transaction fees.[365] However, the exchanges ignore two facts. First, ECN access fees are

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[360] Instinet argues that some securities lend themselves to subpenny trading. For example, INET allows subpenny trading in Nasdaq-100 Trust (QQQ) because subpenny quotes are spread evenly across all price points and not grouped around the 1/10 and 9/10 of a one cent points, which would indicate subpenny jumping. The average spread in QQQ is 3/10 of one cent. Instinet estimates that investors would save $150 million a year if all markets traded QQQ in subpennies. Also, INET lost market share to Brut ECN in SIRIUS Satellite Radio when it prohibited subpennies and Brut still allowed them. Instinet concludes that low-priced, widely-held securities "may well be more efficiently quoted and traded in subpennies." Nicoll, "Instinet Comment on Reg NMS," 47.
[361] Hasbrouck, "Reg NMS Study Group Comment on Reg NMS," 10.
[362] Ibid.
[363] For example, market centers may decide to mandate minimum price increments if subpennies create flickering quotes in their markets. Ibid., 8.
[364] Darla C. Stuckey, "New York Stock Exchange Comments on Proposed Regulation NMS," 2 July 2004, <http://www.sec.gov/rules/proposed/s71004.shtml> (1 December 2004), 8, and Salvatore F. Sodano, "American Stock Exchange Comments on Proposed Regulation NMS," 30 June 2004, <http://www.sec.gov/rules/proposed/s71004.shtml> (1 October 2004), 7.
[365] Sodano, "Amex Comment on Reg NMS," 7.

charged without discrimination to both non-subscribers and subscribers who remove liquidity.[366] Second, the SRO model charges its own access fees in the form of transaction fees and brokerage commissions.[367] While investors who want to trade on ECNs pay only the access fee and a brokerage commission, investors who want to trade on the exchanges pay only the transaction fee and brokerage commission. The two different business models simply call fees to trade by different names.

The current market access fee system inadequately informs investors of the fees associated with trading. Access fees and transaction fees that all investors pay to trade should be disclosed in the public quotations. While complete disclosure may require sub-penny prices, the benefits of disclosure clearly outweigh any potential costs of sub-penny quotation practices. The time has come for the SEC to fulfill its fundamental role: protect investors from hidden fees by mandating non-intrusive disclosure.

V. CONCLUSION

Investors demand access to accurate market information. The developments in the markets in the last quarter of a century have created a self-sustaining demand for the market data that the SEC originally felt obliged to provide out of necessity. Technological improvements have enabled the competitive markets to fulfill the information processing demands of a twenty-first century marketplace. The SEC needs to reduce regulation in order to allow the data distribution system to improve according to the dictates of the marketplace. At the same time,

[366] Nicoll, "Instinet Comment on Reg NMS," 27. However, liquidity rebates can only go to subscribers, who can post limit orders.

[367] NYSE asserts that exchanges do not charge access fees or brokerage commissions to outsiders to access their quotes via automated systems. However, they do charge transaction fees and under this recommendation they will be allowed to charge access fees as well, leveling the playing field. Currently, ECNs make money through access fees and exchanges earn profits through transaction fees. The similar motivation behind the differently-named fees suggests that they are not "fundamentally different."

developments in the markets have created disparities in undisclosed transaction fees that undermine the comparability of quotes across trading venues. Intermarket access requires common quoting standards. The SEC needs to increase the disclosure regulations in order to facilitate a true national market system.

The success of the securities markets depends on the availability of accurate market information. Consequently, the American securities markets paradoxically require both a contraction of SEC data distribution regulation and an increase in SEC disclosure regulation. The time has come for a redefinition of the role of the SEC in American securities regulation. A twenty-first century marketplace cannot succeed with a 1970s regulatory framework. Ironically, the very successes of the 1970s framework have created the need for a different system. The demand for market data stimulated by the SEC-sponsored provision of consolidated information stream and the technological innovation in information processing stimulated by the ready availability of a source of data makes SEC mandates for consolidated information unnecessary. The competition among exchanges, Nasdaq, and ECNs allowed, and in some cases encouraged, by the National Market System regulations calls for new disclosure requirements for access fees. The SEC must reevaluate its role in the securities market given the success of the last quarter century. A twenty-first century marketplace will only be constrained and distorted by the mandates of a twentieth century regulatory Commission.

VI. Appendix

Figure 1: Regulation NMS Market Data Allocation Formula

$$
MDR_I = \sum_{i=1}^{I} \left[\begin{array}{l}
\left\{ \min\left(.5 \times MDR \times \frac{\sqrt{DV_i}}{\sum_{i=1}^{I} \sqrt{DV_i}},\ .2 \times QT_i \right) \times \left(.5 \times \frac{DV_{ij}}{\sum_{j=1}^{J} DV_{ij}} + .5 \times \frac{QT_{ij}}{\sum_{j=1}^{J} QT_{ij}} \right) \right\} \\
+ \left\{ \left(.35 \times MDR \times \frac{\sqrt{DV_i}}{\sum_{i=1}^{I} \sqrt{DV_i}} + \max\left(.5 \times MDR \times \frac{\sqrt{DV_i}}{\sum_{i=1}^{I} \sqrt{DV_i}} - 2 \times QT_i, 0 \right) \right) \times \frac{\sum_{n=1}^{N} QSec_{nj} \times QSize_{nj}}{\sum_{j=1}^{J} \sum_{n=1}^{N} QSec_{nj} \times QSize_{nj}} \right\} \\
+ \left\{ .15 \times MDR \times \frac{\sqrt{DV_i}}{\sum_{i=1}^{I} \sqrt{DV_i}} \times \frac{\sum_{m=1}^{M} (QQ5sec_{mj} \times QQsize_{mj}) + \sum_{p=1}^{P} QQTsize_{pj}}{\sum_{j=1}^{J} \left| \sum_{m=1}^{M} (QQ5sec_{mj} \times QQsize_{mj}) + \sum_{p=1}^{P} QQTsize_{pj} \right|} \right\}
\end{array} \right]
$$

Figure 2: World Equity Markets Data Revenue, Trading Volume, and Market Cap			
Market	Data Revenues (millions)	Trading Volume (trillions)	Market Capitalization (trillions)
London	$180	$3.6	$2.5
NYSE	$172	$9.7	$11.3
Nasdaq	$147	$7.1	$2.8
Deutsche Bourse	$146	$1.3	$1.1
Euronext	$109	$1.9	$2.1
Tokyo	$60	$2.1	$3.0

VII. Bibliography

American Stock Exchange. “American Stock Exchange Comments on SEC Concept Release on Market Information.” 16 May 2000. <http://www.sec.gov/rules/concept/s72899/amex1.htm> (1 October 2004).

Britz, Robert. “Statement on Market Data.” 14 March 2001. Available <http://www.nyse.com/press/1043881801453.html> (1 October 2004).

Brodsky, William J. “Chicago Board Options Exchange, Inc. Comments on Proposed Regulation NMS.” 1 July 2004. <http://www.sec.gov/rules/proposed/s71004.shtml> (27 December 2004).

Buck, James E. “New York Stock Exchange Comments on SEC Concept Release on Market Information.” 10 April 2000. <http://www.sec/gov/rules/concept/s72899/buck1.html> (1 October 2004).

Buck, James E. “New York Stock Exchange Response to Charles Schwab & Co. Comments on SEC Concept Release on Market Information.” 24 May 2000. <http://www.sec.gov/rules/concept/s72899/buck9.htm> (1 October 2004).

Callcott, W. Hardy. “Charles Schwab & Co Response to New York Stock Exchange Response to Charles Schwab & Co. Comments on SEC Concept Release on Market Information.” 10 July 2000. <http://www.sec.gov/rules/concept/s72899/callcott1.htm> (1 October 2004).

Cohn, Gary. “Goldman Sachs Comments on Proposed Regulation NMS.” 19 July 2004. <http://www.sec.gov/rules/proposed/s71004.shtml> (1 October 2004).

Congressional Conference Report. H.R. Report no. 944-229. 94th Congress. 1st Session. 1975. Washington, D.C.: GPO, 1975.

Dorsey, Michael T. “Knight/Trimark Group, Inc. Comments on SEC Concept Release on Market Information.” 18 April 2000. <http://www.sec.gov/rules/concept/s72899/dorsey1.htm> (1 October 2004).

Dowd, Brendan R., Daniel W. Tandy, and Ronald Zdrojeski, “Alliance of Floor Brokers Comments on Proposed Regulation NMS.” 24 June 2004. <http://www.sec.gov/rules/proposed/s71004.shtml> (27 December 2004).

Dudley, Susan E. and Wendy L. Gramm. “Regulatory Studies Program of the Mercatus Center at George Mason University Comments on SEC Concept Release on Market Information.” 31 March 2000. <http://www.sec.gov/rules/concept/s72899/gramm1.htm> (1 October 2004).

Dwyer, Carrie. “Recommendation of Charles Schwab & Co. to SEC Advisory Committee on Market Information for an Alternative Model of Data Distribution.” 16 February 2001. <http://www.sec.gov/divisions/marketreg/marketinfo/schwabmi.htm> (15 October 2004).

Eccleston, Lou. “Bloomberg Comments on SEC Concept Release on Market Information.” 11 April 2000. <http://www.sec.gov/rules/concept/s72899/ecclest1.htm> (1 October 2004).

Freeman, David F., Eunice K. Kang, and Kevin A. Zambrowicz. “The SEC’s Proposed Regulation NMS.” *Banking & Financial Services Policy Report*. 23, no. 6. (June 2004).

Hasbrouck, Joel and Bruce L. Lehmann. “Reg NMS Study Group Comments on Proposed Regulation NMS.” 23 May 2004. <http://www.sec.gov/rules/proposed/s71004.shtml> (1 October 2004.)

Herron, David A. “Chicago Stock Exchange Comments on Proposed Regulation NMS.” 30 June 2004. <http://www.sec.gov/rules/proposed/s71004.shtml> (27 December 2004).

Hunt v. New York. 205 US 322 (1907).

International Federation of Stock Exchanges. “Notes on FIBV Workshop on Data Management & Vending.” 8 October 2001. <http://www.world-exchanges.org/WFE/home.asp?menu=11&document=980> (27 December 2004).

Ip, Gregg. “NYSE Tells Regulators It Wants to Quit Stock-Data Distribution Organization.” *Wall Street Journal*.12 April 2000. <http://gateway.proquest.com/openurl?url_ver=Z39.88-2044&res_dat=sri:pqd&rft_val_fmt+info:ofi/fmt:kev:mtx:journal&genre=article&rft_dat=xri:pqd:did=000000052563122&svc_dat-xri:pqil:fmt-text&req_dat=xri:pqil:pq_clntid=17210> (28 October 2004).

Knight, Edward S. “Nasdaq Stock Market, Inc. Comments on Proposed Regulation NMS.” 2 July 2004. < http://www.sec.gov/rules/proposed/s71004.shtml> (1 October 2004).

Lackritz, Marc E. “Securities Industry Association Comments on SEC Concept Release on Market Information.” 11 April 2000. <http://www.sec.gov/rules/concept/s72899lackrit1.thm> (1 October 2004).

Macey, Jonathan R. and Maureen O’Hara. “The Law and Economics of Best Execution.” *Journal of Financial Intermediation*. 6 (1997): 188-223.

Markle, John S. “Ameritrade Supplemental Comment on Proposed Regulation NMS.” 13 October 2004. <http://www.sec.gov/rules/proposed/s71004.shtml> (1 October 2004).

NASD v. SEC, 801 F. 2d 1415 (CDC. Cir. 1986).

Nazareth, Annette. Interview with JP Task Force. 13 October 2004.

Nazareth, Annette. “Remarks before the SIA Market Structure Conference.” 21 May 2004. <http://www.sec.gov/news/speech/spch052104aln.htm> (1 October 2004).

New York Stock Exchange. “Written Testimony of John A. Thain, NYSE Chief Executive Officer and Robert G. Britz, NYSE President and Chief Operating Officer, before the U.S. Securities and Exchange Commission Hearing on Proposed Regulation NMS.” 21 April 2004. <http://www.nyse.com/events/1082972326269.html> (1 October 2004).

Nicoll, Edward J. “Instinet Group Comments on Proposed Regulation NMS.” 30 June 2004. <http://www.sec.gov/rules/proposed/s71004.shtml> (1 October 2004).

O’Brien, William. “Brut Comments on Proposed Regulation NMS.” 29 July 2004. <http://www.sec.gov/rules/proposed/s71004.shtml> (27 December 2004).

Oesterle, Dale. “Congress’s Directions to the SEC for the Creation of a National Market System: Is the SEC Operating Outside its Mandate?” <http://ssrn.com/abstract=539723> (1 October 2004).

O’Hara, Kevin J.P. “Archipelago Holdings, Inc. Comments on Proposed Regulation NMS.” 24 September 2004. <http://www.sec.gov/rules/proposed/s71004.shtml> (1 October 2004).

Pottruck, David S. “Charles Schwab & Co. Comments on SEC Concept Release on Market Information.” 14 March 2000. <http://www.sec.gov/rules/concept/s72899/pottruc1.htm> (1 October 2004).

Public Utility Holding Company Act of 1935. 15 USC §79. <http://www.aspenpublishers.com/SECRULES/publicut.pdf> (27 December 2004).

Roiter, Eric D. “Fidelity Investments Comments on SEC Concept Release on Market Information.” 12 April 2000. <http://www.sec.gov/rules/concept/s72899/roiter1.htm> (1 October 2004).

Schaible, John M. “NexTrade Holdings, Inc. Comments on SEC Concept Release on Market Information.” 7 April 2000. <http://www.sec.gov/rules/concept/s72899/schaibl1.htm> (1 October 2004).

Schwartz, Robert A., and Robert A. Wood. “Best Execution.” *Journal of Portfolio Management*. 29, no. 4. (Summer 2003).

Securities Exchange Act of 1934. 15 USC § 78. <http://www.law.uc.edu/CCL/34Act> (27 December 2004).

Security Traders Association. “STA Calls for Immediate End to Access Fees.” 16 April 2003. <http://www.securitytraders.org/news-releases.html> (28 October 2004).

Simon, Michael J. “International Securities Exchange Comments on Proposed Regulation NMS.” 30 June 2004. <http://www.sec.gov/rules/proposed/s71004.shtml> (27 December 2004).

Sodano, Salvatore F. “American Stock Exchange Comments on Proposed Regulation NMS.” 30 June 2004. <http://www.sec.gov/rules/proposed/s71004.shtml> (1 October 2004).

Spirer, Kenneth S. “Merrill Lynch Comments on SEC Concept Release on Market Information.” 31 March 2000. <http://www.sec.gov/rules/concept/s72899/spirer1.htm> (1 October 2004).

Stuckey, Darla C. “New York Stock Exchange Comments on Proposed Regulation NMS.” 2 July 2004. <http://www.sec.gov/rules/proposed/s71004.shtml> (1 December 2004).

Vitalone, James W. and Rittenhouse, Linda L. “U.S. Advocacy Committee of Chartered Financial Analyst Institute on Proposed Regulation NMS.” 22 September 2004. <http://www.sec.gov/rules/proposed/s71004.shtml> (1 October 2004).

U.S. Securities and Exchange Commission. “Concept Release Concerning Self-Regulation.” Release No. 3450700. 18 November 2004. <http://www.sec.gov/rules/concept/34-50700.htm> (1 December 2004).

U.S. Securities and Exchange Commission. “Instinet Order.” Release no. 20974. 17 April 1984. 49 FR 17640. Washington, D.C.: GPO, 1984.

U.S. Securities and Exchange Commission. “Institutional Investor Study Report.” H.R. Doc. No. 92-64. 92nd Congress. 1st Session. 1971. Washington, D.C.: GPO, 1972.

U.S. Securities and Exchange Commission. “No-action letters: ECNs (“Electronic Communications Networks”).” 1 February 2002- 2 April 2004. <http://www.sec.gov/divisions/marketreg/mr-noaction.htm#ecns> (27 December 2004).

U.S. Securities and Exchange Commission. “Regulation NMS.” Release No. 34-49325. 20 May 2004. <http://www.sec.gov/rules/proposed/34-49749.htm> (1 October 2004).

U.S. Securities and Exchange Commission. “Regulation of Exchanges and Alternative Trading Systems.” Release no. 4760. 8 December 1998. <http://www.sec.gov/rules/final/34-40760.txt> (1 October 2004).

U.S. Securities and Exchange Commission. “Report of the Advisory Committee on Market Information: A Blueprint for Responsible Change.” 14 September 2001. <http://www.sec.gov/divisions/marketreginfo/finalreport.htm> (1 October 2004).

U.S. Securities and Exchange Commission. “Reproposed Regulation NMS.” Release No. 34-50870. 16 December 2004. <http://www.sec.gov/rules/proposed.shtml> (27 December 2004).

U.S. Securities and Exchange Commission. “SEC Concept Release: Regulation of Market Information Fees and Revenues.” Release no. 34-42208. <http://www.sec.gov/rules/concept/34-42208.htm> (1 October 2004).

U.S. Securities and Exchange Commission. “SEC Votes to Publish Reproposed Regulation NMS for Public Comments and to Adopt Asset-Backed Securities Rule Proposal.” 15 December 2004. <http://www.sec.gov/news/press/2004-171.htm> (27 December 2004).

U.S. Securities and Exchange Commission. “Self-Regulatory Organizations; Order Approving Proposed Rule Change and Amendment Nos. 1, 2, and 3 Thereto by the National Association of Securities Dealers, Inc. Relating to the Establishment of a Maximum ECN Access Fee in SuperMontage and the Elimination of SuperMontage’s Price/Time with Fee Consideration and Price/Size Execution Algorithm.” Release No. 34-49220. 11 February 2004. <http://www.sec.gov/rules/sro/34-49220.htm> (1 October 2004).

U.S. Securities and Exchange Commission. “Statement of the Securities and Exchange Commission on the Future Structure of the Securities Markets.” 2 February 1972. 37 FR 3286. Washington, D.C.: GPO, 1973.

U.S. Securities and Exchange Commission. “Testimony of Mr. Thomas M. Joyce, CEO & President of Knight Trading Group, Inc. Concerning Proposed Regulation NMS Before the U.S. Securities and Exchange Commission.” 12 April 2004. <http://www.sec.gov/rules/proposed/s71004/testimony/tjoyce042104.pdf> (1 October 2004).

Wenig, Devin. “Reuters America Comments on SEC Concept Release on Market Information.” 5 April 2000. <http://www.sec.gov/rules/concept/s72899/wenig1.htm> (1 October 2004).

Who Should Regulate:
State Government, Federal Government, or Self-Regulatory Organizations

Adam Ludwig

"Why not let the market structure result from competition rather than mandates from on high?" [368]

—Steve Wunsch, President, Arizona Stock Exchange

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[368] Wunsch, Steve. "SEC Is Practicing Divine Intervention" Letter to the *Wall Street Journal*. Oct 29 1999

I. EXECUTIVE SUMMARY

An ideal regulatory framework for securities markets should not be exclusively dictated by state, federal, or current self-regulatory organizations, but instead should arise from two forms of competition: competitive federalism among the states in governance issues, and competition for business among profit-seeking exchanges with the freedom to determine their own sets of trading rules.

States should be granted sole authority in governance issues but their regulatory power over securities trading should be preempted by federal legislation. Regulatory competition among the states in governance issues would maintain a relatively uniform regulatory system for governance as states converge upon an optimal level of regulation, or exchanges gravitate toward those states that have produced such a level.

Federal authority should be reduced to minimal disclosure laws and the policing of fraud and anti-competitive practices. Since the passage of the original 1934 Exchange Act, the SEC has become increasingly involved in regulating the operational mechanics and market structure of the exchanges through regulations such as the recently proposed Regulation NMS. This preoccupation with market structure has deflected resources from its policing activity, and the SEC in turn has relied on SROs to bear much of the policing costs. The reverse should be the case. The SEC should limit its efforts to policing fraud and anti-competitive practices. But they needn't any special legislation or directive from Congress. Existing fraud and anti-trust law will suffice.

Federal disclosure laws should still address company finances and insider trades, but should address the disclosure of exchange mechanics and compliance systems as well. This will allow issuers and traders to select the exchange and rule system that they find most suitable, just as investors may invest in the companies whose prospects they find most appealing.

Self Regulatory Organization's quasi-public status should be eliminated. In its current form, the SRO system is dominated by SEC intervention and control. The SEC's recent concept release concerning self-regulation proposes several models that will strengthen that control, including direct SEC regulation. Typical objections to self-regulation such as conflict-of-interest and suppression of competition are better dealt with by verification and measures to improve transparency rather than full-blown government regulation. Therefore, the competitive position of each trading system in the market will solely depend upon its products and services, not its regulatory status. If exchanges' quasi-public SRO obligations were eliminated from the current regulatory structure, they would be free—and forced by market pressure—to compete more efficiently with other markets.

The federal government itself may best achieve such a reduction in federal control through a presidential commission formed to identify inefficient or burdensome SEC rules and regulation. The President's Working Group on Financial Markets would be well suited for this task.

II. INTRODUCTION

In recent years, securities markets have suffered numerous scandals and setbacks. Among the most familiar are the notorious accounting scandals that precipitated the collapse of Enron and WorldCom and led many other corporations to issue earnings restatements; New York Attorney General Eliot Spitzer's investigations of stock analysts and mutual funds; and the questionable practices of the NYSE under former CEO Richard Grasso.[369] These scandals have led to major regulatory reforms in areas such as corporate governance and market

[369] Spitzer's exposure of conflicts of interest between investment bankers and research analysts resulted in a $1.4 billion settlement between regulators and banking houses in 2003 (O'Brien 71) In March 2004, Spitzer settled for $675 million with Bank of America and FleetBoston, which had been linked to illegal trading practices in the mutual find industry

oversight,[370] and more reforms—this time concerning specific trading practices—may be on the way. [371] There has been much debate over the content of such newly implemented and recently proposed regulation.[372] However, it is also important to consider the sources of these regulations and determine which entities are best suited to develop the most effective regulation at the least cost.

This paper argues that an ideal regulatory framework should not be exclusively dictated by state, federal, or current self-regulatory organizations, but instead should arise from two forms of competition: competitive federalism among the states in governance issues, and competition for business among profit-seeking exchanges with the freedom to determine their own sets of trading rules.

The paper first establishes the purpose of securities markets and lays out the fundamental goals of securities market regulation. The paper then identifies the criteria necessary to evaluate a regulatory entity's potential success. After assessing the suitability of State, Federal, and Self-Regulatory Organization regulation according to those criteria, a model for change is proposed. The paper concludes that state regulation should be limited to governance, federal authority reduced to fraud and anti-competitive practices while preempting state regulation of trading, and SROs freed from their current status as quasi-public institutions.

III. GOALS AND PURPOSES OF MARKETS AND REGULATION

Function of Securities Markets

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[370] Two of the most notable reforms have been the Public Company Accounting Reform and Investor Protection Act of 2002, commonly known as the Sarbanes-Oxley Act, and the restructuring of NYSE board in 2003

[371] Regulation NMS, proposed by the SEC in Februrary 2004, seeks to redesign the existing national market system and to enhance and modernize the regulatory structure of the U.S. equity markets (NMS Proposal). Most recently, the SEC has also issued a SRO Governance and Transparency Proposal, seeking to modify SRO governance and increase federal oversight

[372] See David F. Freeman Jr., Kevin A. Zmbrowicz, and Eunice Y. Kang, The SEC's Proposed Regulation NMS, 23 Banking and Financial Services Policy Report 1 (June 2004)
Testimony of John A. Thain, NYSE CEO and Robert G. Britz, NYSE President and Chief Operating Officer, before the SEC Hearing on Proposed Regulation NMS, May 21, 2004, www.NYSE.com/events/1082972326269.html

The purpose of securities markets is two-fold: to provide information in the form of prices, and to efficiently allocate capital. Because the information delivered in the form of securities prices is necessary to make allocative decisions, these two purposes are tied inextricably together.

Goals and Purpose of Regulation

Adhering to the strict definition of "regulation," which simply means to "make regular," the sole purpose and effect of securities market regulation should be correction of market failures, so that competitive markets can function freely and openly. Competitive markets are not only most able to respond to changing social and market conditions, but also have the greatest incentive to do so in order to sustain themselves. Therefore, competition between markets for trading volume should produce an optimum level of regulation.[373]

Informational asymmetries are the primary market failures that may occur in securities markets. Inadequate information may exist in securities markets because corporations bearing the costs of disclosure cannot appropriate all the benefits, and because markets do not fully protect investors from price manipulation and fraud.[374] As the Securities Industry Association notes, "bolstering public trust and confidence is essential to the future success of our Nation's capital markets, especially in light of the pressure that recent events have placed on investor confidence."[375] By establishing transparent and trust-worthy markets, minimal regulation can correct informational asymmetries.

[373] If investors do not display such a preference for optimum regulation, then is investor confidence—a primary justification for securities market regulation in the first place—still an important consideration?
[374] Romano, Roberta. The Advantages of Competitive Federalism for Securities Regulation. Washington, D.C: American Enterprise Institute for Public Policy Research, 2002 p.12
[375] **"**Reinventing Self-Regulation**"** White Paper for the Securities Industry Association. January 5, 2000. Updated by SIA Staff, October 14, 2003

In working toward this goal of transparency, regulation should strive to minimize costs and remain least intrusive to the free and competitive operation of securities markets, dealers, brokers, and exchanges.

Criteria for Evaluating Regulators

Which institution or combination of institutions is best suited to uphold these purposes of securities regulation? In answering this key question, we must consider regulators' incentives to create and enforce quality regulation, then evaluate which regulatory system most naturally matches the regulator's interests with the public interest. In light of public choice theory[376] and the personal goals and biases of regulators acting in their own self-interest, we must consider the likely motives of regulators at the state, federal, and SRO levels. In addition to regulators' incentives, we must also evaluate their respective abilities to create and enforce successful regulation. This ability hinges upon regulators' aptitude to make informed decision as well as to carry out those decisions.

Finally, we must consider both direct and indirect costs to the regulators as well as the regulated entities. Direct costs are the more straightforward of the two types, and consist of the operational costs of rule implementation, surveillance, and enforcement. Indirect costs occur whenever regulations "create a political risk for businesses, make them develop non-productive activities, compel them to give up certain transactions (opportunity costs), or slow innovation." [377]

[376] Public Choice Theory views regulation as the product of the political-economic marketplace, in which groups and individuals seek regulation that will benefit them, usually at the expense of others. This process often results in concentrated interests obtaining regulation costs that are diffuse but greater than the total benefits. See Peltzman, Sam. "Toward a More General Theory of Regulation." *Journal of Law and Economics*. Vol. 19 August 1976.
[377] Zuffery, Jean-Bapiste and Margaret Tschanz-Norton. *Regulation of Trading Systems on Financial Markets*. London: Kluwer Law International 1997 p.243

III. EVALUATION OF STATE REGULATION

Incentives

The original incentives for the creation of state securities laws in the two decades prior to the crash of 1929 were the expansion of state banking regulators' regulatory turf, and the financial interests of the banks under their supervision.[378] In matters of corporate regulation, the state also has an incentive to attract corporate charters in order to gain greater tax revenue. Some argue that this competition among states creates a "race to the bottom,"[379] in which managers are drawn to state regulatory systems that allow them to exploit shareholders rather than build value. According to those critics, the clear winner of this "race" is Delaware.[380] However, it is noteworthy that the two companies most notorious for shareholder exploitation, Enron and WorldCom, were not incorporated in Delaware, but rather in Oregon and Georgia.[381]

A more convincing argument is that under the current system of regulatory competition among states, informed shareholders discipline corporate choices of jurisdictions. Because corporations are constantly in search of investment capital to fuel growth and lead to greater future profits, they have a very strong incentive to select a jurisdiction that is agreeable to investors. Investors, on the other hand, have a vast array of choices, all of which are suitable uses for their capital; they may select from among many corporations located in different states, not to mention other forms of investment entirely, such as real estate or commodities. Informed investors will therefore place a premium on shares of companies incorporated in investor-friendly states, while discounting shares of companies incorporated in states that give significant leverage to management.[382]

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[378] Cox, James D., Robert W. Hillman, and Donald Langevoort. *Securities Regulation*. . 2004, p.14
[379] Cary, William L. "Federalism and Corporate Law: Reflections Upon Delaware." *Yale Law Journal.* Vol. 83 1974
[380] See Cary
[381] Bainbridge, Stephen. "The Creeping Federalization of Corporate Law." *Regulation*. Spring 2003
[382] Daines, Robert. "Does Delaware Law Improve Firm Values?" *Journal of Financial Economics*. Vol. 62 2001

Noting the success of such regulatory competition among the states in corporate governance issues, a similar model for exchange governance would be worth considering. Under a system of competitive federalism, each state would be free to adopt its own set of rules determining exchange governance, and each exchange would be free to register with whichever state that adopts regulation most beneficial to that exchange. [383] This system would also maintain a relatively uniform regulatory system as states converge upon an optimal level of regulation, or exchanges gravitate toward those states that have produced such a level.

Ability

Due to federal preemptive power stemming from the federal government's ability to regulate interstate commerce, states generally have little ability to regulate securities transactions occurring outside of their territory.[384] Although the Supreme Court has consistently upheld states' ability to regulate corporations,[385] federal preemption has recently crept into corporate governance with the passage of the Sarbanes-Oxley Act. The NYSE, a self-regulatory organization, has also effectively preempted state corporate law by adopting new listing standards requiring that independent directors comprise a majority of any list corporation's board of directors.[386]

Nevertheless, competitive federalism may permit experimentation with purely private regulatory arrangements for exchange governance while retaining a mechanism to easily reverse the course by allowing migration to states that that do not adopt such an approach.[387]

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[383] Harvard Law Professor Lucian Bebchuk does make a convincing argument that in the case of corporate law, competitive federalism neglects any externalities imposed upon non-shareholder constituencies. However, so long as the public interest is aligned with the interest of markets and their participants, externalities should not be a significant concern in exchange governance.
[384] The most powerful form of securities trading regulation that some states may exercise exists through specific prosecutorial powers granted to some state attorneys general through state anti-fraud legislation. One very notable instance is New York, which is discussed below.
[385] See 1987 ruling *CTS Corp. v. Dynamics Corp*
[386] Bainbridge 29
[387] Romano, Roberta. *The Advantages of Competitive Federalism for Securities Regulation*. Washington, D.C: American Enterprise Institute for Public Policy Research, 2002 p.11

Furthermore, such regulatory competition among the states encourages responsiveness within the states. Looking once again to the most successful competitor in the example of corporate law, if Delaware is not the pioneer of a corporate law innovation, it is among the first to imitate.[388]

Costs and Concerns

Some may argue that state regulation of securities trading, as opposed to exchange governance, is burdensome because state requirements are not uniform, and regulators have no incentive to pursue the most efficient regulation as they do with corporate governance issues, and would with exchange governance issues as well. This lack of incentive exists because state jurisdiction over securities transactions is determined by the home state of an investor, rather than the home state of the exchange or the corporation in which that investment is made. As the argument goes, securities markets and investors operating in those markets need uniform, reliable rules. Differing state regulations would lead to "regulatory balkanization" and markets would be subjected to burdensome, duplicative state regulations." [389] Under current state securities law, this is a valid argument. If applicable state securities laws depend on each investor's home state, then states have no realistic incentive to develop quality trading regulation in order to attract business.

Spitzer as De Facto Securities Regulator

New York Attorney General Eliot Spitzer's aggressive prosecution of firms and individuals that also fall under federal jurisdiction has raised questions about the federal government's preemptive authority, and created a kind of regulatory competition between the New York Attorney General's Office and the SEC. However, the kind of competition the exists between Spitzer and the SEC is fundamentally different from the kind of regulatory competition

[388] Romano, Roberta. *The Genius of American Corporate Law*. Washington, D.C: American Enterprise Institute for Public Policy Research, 2002 p.9
[389] Greve, Michael. "Free Eliot Spitzer!" *American Enterprise Institute Online*. May 1, 2002.

between the states that currently exists in corporate governance—and could exist in exchange governance—and provides companies a choice of regulatory structures. Spitzer focuses his prosecution efforts on areas that he feels have been neglected or overlooked by the SEC and SRO enforcement arms, creating a 'race to regulate' as he seeks to "send a signal about what is and is not permissible."[390] Through such signals, Spitzer seems to have the objective of restructuring the nation's financial markets.[391]

Is such regulation by prosecution in the markets' best interest? Even Spitzer himself acknowledges that "you don't want the government determining what's legal by who gets caught."[392] Doing so leads to selective prosecution as enforcement officials must decide which issues and cases are the best use of limited resources. Selective prosecution in turn creates uncertainty about what trading practices will or will not be prosecuted, even if precedents created by previous cases offer some guidance. Furthermore, regulatory competition between national[393] regulators is frequently a battle fueled by politics. [394]

According to Spitzer, what interested him most in the practices of investment bank analysts was what he perceived to be the lack of federal oversight of the securities industry, with no serious effort by regulators to address the issue. His investigation, he says, "is a consequence of federalism. The whole new federalism approach vaunted by the Bush administration and the Reagan administration was designed to empower state securities regulators. That's what I'm doing."[395]

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[390] O' Brien, Louise. "How to Restore the Fiduciary Relationship: An Interview with Eliot Spitzer." *Harvard Business Review*. May 2004. p.76

[391] *See* Greve

[392] O'Brien 70

[393] Although Eliot Spitzer receives his authority from the state of New York, the argument could be made that he has placed himself in the position of a national regulator by policing behavior on a national market.

[394] Roberta S. Karmel, "Appropriateness of Regulation at the Federal or State Level: Reconciling Federal and State Interests in Securities Regulation in the United States and Europe," 28 Brooklyn J. Int'l Law 495 (2003). P.544

[395] Gasparino , Charles. "Wall Street Has an Unlikely New Cop: Spitzer," *Wall Street Journal.,* April 25, 2002.

However, “the notion that a state attorney general should push the national government into action perverts federalism.” The United States system of checks and balances is intentionally designed to impede federal action. Yet Spitzer’s involvement leaves Congress and the SEC no choice but to intervene, “lest the securities markets be regulated into the ground by fifty ambitious state attorneys general whose agendas conflict in all respects but one—headline hunting.” A state official's power to drive national regulation in this fashion is a power to preempt the national government. It is “federalism upside-down.”[396]

Spitzer derives such prosecutorial power from New York’s Martin Act, which was passed in 1921 and grants the attorney general the power to investigate fraudulent, deceitful, or unlawful conduct by a broker or dealer in connection with securities transactions. Because the act is considered anti-fraud legislation, it is not preempted by federal law designed to limit state securities regulation.[397]

What makes the Martin Act such a powerful tool is that unlike federal securities law, prosecutors don't need to prove intent but only that investors suffered losses as a result of false or misleading advice. John Coffee, professor of securities law at Columbia University, notes that Spitzer’s actions as a de facto state securities regulator are unusual. According to Coffee says, state regulators have made some noise in the past about enacting reforms that would encroach on the SEC territory, but no one has gone as far as Spitzer.[398]

The existence of broad state legislation such as New York’s Martin Act unchecked by federal preemption creates the potential for overzealous state prosecutors to shape securities trading through de facto regulation by prosecution. This type of state regulation often overlaps with federal regulation. For instance, in his investigations of Richard Grasso’s actions as NYSE

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[396] See Greve
[397] McTamaney, Robert A. “New York’s Martin Act: Expanding Enforcement in an Era of Federal Securities Regulation.” *The Legal Backgrounder*. Vol 18 No. 5
[398] [398] See Gasparino.

chairman and of NYSE specialists' trading practices, Spitzer reached into issues already being investigated by the SEC.

Unlike competitive federalism, this regulatory competition between state prosecutors and federal regulators does not offer markets or participants a choice among regulatory systems, but instead encourages aggression on behalf of regulators and is unlikely to lead to optimal regulation, as it may cause short-sighted and politically motivated attempts by both state prosecutors and federal regulators to out-regulate each other.

IV. EVALUATION OF FEDERAL REGULATION

Incentives

Under federal securities regulation, policy is made at a political level. As former SEC Commissioner Roberta Karmel acknowledges, "the agency too often fails to distinguish adequately between the public interest and its institutional self interest." [399]

A variety of political pressures influence federal regulators. First, there is the tendency toward power accumulation through expansion of its regulatory turf and hesitancy to clearly define and codify what is and is not acceptable according to some of its ambiguous regulations. The SEC's stated reason for such opposition to "bright-line rules" is that they would be a "blue-print for fraud."[400] Avoiding clarity therefore gives the SEC broad discretion to sanction conduct after the fact, keeping a similarly broad group of markets, institutions, and investors under its thumb.

A second result of political pressure on federal regulators is crisis-driven regulation and the ratchet effect. During quiet periods and bull markets, the SEC "tends to be lazy and

[399] Karmel, Roberta S. *Regulation by Prosecution*. New York, NY: Simon and Schuster, 1982. p.17
[400] Cox, James D., Robert W. Hillman, and Donald Langevoort. *Securities Regulation*. . 2004, p.14

complacent," but "when a scandal breaks there is embarrassment and hand wringing."[401] Such embarrassment and hand wringing result in higher levels of regulation as the SEC responds the specific behaviors that it deems to be the root cause of recent scandals and abuses. Yet so long as the incentive structure of regulation is based on such face-saving rather than the true success of the markets, there will always be unforeseen opportunities to exploit markets operated under an increasingly complex set of rules and regulations.

Third, lobbyists and other rent-seekers are a prime example of public choice theory in action, as they attempt to gain advantages and larger profits by influencing political decision-making. For example, AICPA (American Institute of Certified Public Accountants) lobbyists successfully opposed SEC separation of accounting firms' consulting and auditing arms, and the ICI (Investment Company Institute) thwarted federal attempts at mutual fund reform.[402] Even the exchanges themselves need and use the SEC to ratify and enforce any anti-competitive rules that have "bite and effect."[403]

In addition to these direct political pressures, Down's "Law of Increasing Conservatism" posits that lawyers have a natural bias toward complex, extensive regulation because such regulation is in their economic self interest. Because high level SEC staffers and commissioners are attorneys, greater regulation ensues.[404] Similarly, many argue that the SEC chairman too often allows the interests of his previous employers to influence his policy making. For instance, in 2001 after the collapse of tech stocks that analysts had disingenuously touted, SEC chairman Harvey Pitt—a former corporate lawyer with close ties to his former clients in the regulated industries—did next to nothing, "except to mumble vaguely about the need for more informative

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[401] Oesterle, Dale Arthur. "Securities Market Regulation: Time to Move to a More Market-Based Approach." *Policy Analysis*. June 21, 2000. p.4

[402] [402] O' Brien, Louise. "How to Restore the Fiduciary Relationship: An Interview with Eliot Spitzer." *Harvard Business Review*. May 2004. p.75

[403] See Oesterle p.8

[404] See Cox p.14

disclosure statements."[405] Most recently when questioning the SEC's leniency toward the New York Stock Exchange and lack of scrutiny of its hybrid market proposal, Fidelity Investments' General Council has noted that current SEC Chairman, William Donaldson, was formerly the Chairman and CEO of the NYSE.[406]

Ability

The federal government, acting through congressional legislation and the SEC, lacks the foresight to create a market system that would be superior to one created by the competitive process. The legislative process is slow, cumbersome, and fraught with political conflict, and if the SEC itself were to attempt create technically detailed or broadly applied regulation, it would find itself "constantly tinkering with the market structure in a struggle to keep up to date and eliminate past regulatory blunders." The SEC itself has even acknowledged that is was unable to carry out the detailed responsibilities of the former SECO program, which had required direct SEC supervision of over-the-counter broker-dealer activity.[407] Nevertheless, the SEC is currently engaged in exactly such a struggle as it attempts to micro-manage market structure.[408]

The SEC's recently proposed Regulation National Market Structure is a glaring example of such micro-management, as it attempts to address specific issues but will likely create inefficient regulation by doing so. Former SEC Commissioner Roberta Karmel expressed "grave doubts" about the necessity and efficiency of the SEC's efforts to establish a National Market System after 1975, stating that "conscientious, continued implementation of this legislation will necessarily put the SEC in the position of choosing between competing technological systems for the trading of securities."[409] Her doubts would be particularly well-founded today, as the SEC

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[405] See Greve.
[406] Roiter, Eric. Meeting with class, November 3, 2004.
[407] *SEC Concept Release Concerning Self-Regulation.* Release No. 34-50700. November 18, 2004.
[408] See Oesterle p.12
[409] See Karmel p.103

attempts to grapple with the emergence of ECNs[410] and the designation of exchanges as "fast" or "slow" markets is a critical element of Reg NMS.

Additionally, a federal regulator's selection of a market system through regulation would also lead to path dependency and unintended consequences. This is because once regulation is adopted, markets, traders, investors must make changes to conform to that regulation, and once they have incurred the costs of those changes, they will be inclined to resist any drastic future changes not only because they do not want to incur further adjustment costs, but also because the most successful and influential institutions have likely derived a competitive advantage from the current regulation, and will fight for the continuation of the advantage. Individuals and institutions acting under any given regulatory system will also behave in ways that may distort the market, but that were unanticipated by regulators. For instance, Instinet's Cameron Smith has commented on how regulation begets regulation, noting that payment for order flow, an issue which the SEC has expressed concern over, is the direct result of regulated data distribution fees; exchanges receive revenue from pooled market data that is in proportion to the number of trades that they report, and they therefore have an incentive to pay brokers to place orders on them, even if they do not have superior prices or execution times.[411]

The federal government's greatest ability to establish an effective "national market system" stems from its power to preempt state trading and filing laws. Congress exercised that power with the Private Securities Litigation Reform Act, banning states from some forms of class action litigation against publicly traded companies accused of withholding information from share holders, and that preemption was extended in 1998 by precluding any state litigation "in connection with the purchase or sale" of a security.

[410] Electronic communications networks, which are often used to trade securities from other exchanges and have been regulated under a different set of rules than those that govern other markets, specifically Regulation Automated Trading Systems (Reg ATS).
[411] Smith, Cameron. Meeting with Class. October 6, 2004.

However, Eliot Spitzer's aggressive prosecutorial campaign against the securities industry began after those laws had taken effect, and could therefore be considered a failure of federal preemption over state fraud litigation.[412]

Cost

As a bureaucratic federal agency employing thousands of staffers, federal regulation through the SEC comes at a significant cost, costs that are imposed both directly upon taxpayers and indirectly upon the regulated securities industry.

Furthermore, the SEC's concern with guarding their turf and "maximizing support for their regulatory programs" has resulted in "regulation insensitive to the costs of programs and to an evaluation of their effectiveness."[413] Bureaucratic tendencies, the principle-agent problem inherent in dealings with public funds, and federal regulators' hand to mouth annual budgets would exacerbate the problem of "slow and rigid regulation of business conduct by law."[414] And in its current form, with large portions of its budget diverted into cumbersome market design, the SEC may be short of the resources necessary to adequately police the market.[415] Yet despite inadequate resources, the SEC's heavy handed regulation is a disincentive for diligent self-regulation.[416]

V. EVALUATION OF SRO REGULATION

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[412] A major loophole in current federal preemption is that companies and investment banks may be accused of fraudulently inducing investors to *hold* a security, and that conduct is not connected to its sale.
See Ratner, Joshua D. "Stockholders' Holding Claim Class Actions under State Law after the Uniform Standards Act of 1998." *University of Chicago Law Review.* Vol. 68 2001. p. 1035

[413] Phillips, Susan M. and J. Richard Zecher. *The SEC and the Public Interest.* Cambridge, MA: MIT Press, 1981. p.111

[414] S. Rep. No. 1455, 75th Cong., 3d Sess. 3 1938

[415] [415] Wunsch, Steve. "SEC Is Practicing Divine Intervention" Letter to the *Wall Street Journal.* Oct 29 1999

[416] See Oesterle p.4

Incentives

"The genius of self-regulation is that it puts regulatory decisions in the hands of people intimately familiar with the relevant facts"[417] Because SROs are not only charged with regulating markets and exchanges but also often with running them as well, they are in the best position to identify and meet changing regulatory needs. Additionally, these self-regulators have the incentive to revise or eliminate obsolete and burdensome regulation, because such regulation harms themselves.

Because self-regulators' success is measured by the success of the market, SROs, unlike government regulators, are also less inclined to strive to build a power base. However, SROs should still be expected to act out of pure self-interest, rather than the enlightened "self-interest" for which current federal SRO requirements seem to strive.[418] In fact, conflicts do exist between the best interests of a trading market and the best interest of its individual members under the current quasi-public SRO structure, a fact which has thus far hindered, for example, the NYSE from developing a substantial electronic trading platform.[419]

Some critics may also argue that self-regulators have a strong incentive to advertise a set of rules that is very attractive to investors, but to operate under a set of informal rules that provides further benefits to members at the expense of investors. The late trading and front running practices that were revealed to have been occurring on the NYSE exemplify this discrepancy.

Under "stiff market competition," such a deviation between rules and practice can disappear.[420] This increased conformity would result from markets increasing operational

[417] Reinventing Self-Regulation: White Paper for the Securities Industry Association. October 14, 2003.
[418] Cox, James D., Robert W. Hillman, and Donald Langevoort. *Securities Regulation*. . 2004, p.989
[419] The NYSE does allow for automatic execution on orders of 1000 or fewer shares through NYSE Direct and has proposed a hybrid model
[420] See Oesterle p.6

transparency in an effort to prove that they have the most efficient markets, and thus a better deal.

Ability

When compared with government regulation at both the state and federal levels, self-regulation allows for more flexibility and regulatory specificity. Such flexibility and specificity come from the involvement and input of the regulated themselves, and have proven to be particularly important and new forms of trading and even new forms of markets have emerged with new technology. For instance, exchanges and ECNs may have different regulatory needs, and the self-regulatory system is more adept at responding to those needs. Therefore, there is no 'regulatory lag' or delay of innovation as markets develop.[421]

Former NYSE chairman Richard Grasso even argued that the market's intricacies put market regulation beyond the expertise of government officials. Grasso also claimed that "our securities regulatory system is the envy of the world, and self-regulation lies at the center of it."[422] However, many of the current SRO's systems' flaws have been exposed since Grasso's statement—including flaws that Grasso himself had taken advantage of as NYSE chairman—making our securities regulatory system more likely the object of jokes than envy.

In light of those flaws, the SEC has recently proposed a series of rule changes that would modify SRO governance and increase federal oversight. Along with the proposed rule changes, the SEC has also issued a concept release concerning self-regulation. The SEC's concept release addresses new considerations that have arisen as a result of increased market competition and changes in the ownership and operation of exchanges, and suggests several possible new

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[421] **"**Reinventing Self-Regulation**"** White Paper for the Securities Industry Association. January 5, 2000. Updated by SIA Staff, October 14, 2003
[422] See Oesterle p.6

regulatory approaches ranging from small increases in SRO oversight to the complete abolition of the SRO system and direct SEC regulation.

The SEC's concept release focuses on what it perceives to be a few major weaknesses in the current SRO system: conflicts of interest among regulatory and operational arms of exchanges; regulatory redundancies across different markets; and funding shortages as revenues fall due to competition or costs are cut due to demutualization. However, none of these perceived weaknesses should be a major concern. If SROs were freed of restrictive SEC control, they should have strong incentives to provide an adequate and efficient level of regulation in order to attract listings and trading activity. As the SEC acknowledges in the concept release, "obtaining a listing on a prominent SRO market provides issuers with enhanced visibility and prestige in the eyes of investors, as well as the appearance of a well-operated and well-regulated market for their securities."[423] Interests of regulatory and operational arms should therefore be aligned, and self-interested exchanges are unlikely to cut regulatory funding to a dangerously low level. They would avoid redundant regulation if possible, and any redundancies that occur among truly self-regulated markets would be preferable to greater inefficiencies caused by regulators who are removed from the markets themselves.

Costs

The costs of self-regulation are ultimately borne by investors participating in the self-regulated market, who pay exchange fees or the commissions of intermediaries in order to trade. Because these costs are direct, the markets have the incentive to keep them at a level justified by the amount and quality of self-regulation. If they do not, investors may trade else ware.

[423] *SEC Concept Release Concerning Self-Regulation.* Release No. 34-50700. November 18, 2004.

Some argue that if prices and revenues are driven to the competitive level, there will then be no profits from which to pay regulatory costs.[424] Provided that the naturally monopolistic nature of exchanges gives way to a more open and competitive market system, such as the vision of competition used to inform the national market system idea, it is true that competition will drive out profits. However, the establishment and maintenance of a regulatory structure that ensures information transparency and promotes investor confidence is necessary for markets to attract issuers and trading, and would therefore be integrated into the costs of all competing firms, as the exchanges would compete with one another not only to offer the lowest fees, but also to offer the most efficient, honest trading system. "Stock exchanges with the best rules will have a competitive advantage and attract more listings, more traders, and more capital."[425] This competition based not only on price but also on quality is a familiar feature of any service, from dining to health care; trading markets should be no different.

Current SROs as an extension of the SEC

We must acknowledge "the SRO system has steadily evolved away from the pure form rooted in the 1934 act toward a system of more overt SEC intervention."[426] This evolution has been driven by the ratcheting effect discussed above, as periodic public scandals serve as the ostensible causes of that evolution .

The tendency toward greater SEC control of SROs has also been furthered by a 1975 Congressional amendment to the 1934 act requiring explicit SEC approval for all new SRO rules, and the power to "abrogate, add to and delete from any SRO rules "as the Commission deems necessary or appropriate." And with its proposed changes to SRO governance and the

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[424] Kitch, Edmund W. *Hard Thinking About Inevitable Developments.* 2000 Columbia Business Law Rev. 37
[425] See Oesterle p.6
[426] See Oesterle p.3

alternative regulatory approaches proposed in its concept release, the SEC is taking more control from the SROs.

By driving self-regulatory systems into a single format, this SEC control over the current SRO system hinders quality-based competition among markets, while continued reliance on SROs to ostensibly carry out much of the rule making and policing efforts also makes the SEC to less accountable for any wrong doing.

VI. A MODEL FOR CHANGE

What regulatory authority should be granted to the states, federal government, or SROs, and what should be left to the market?

States should be granted sole authority in governance issues but their regulatory power over securities trading should be preempted by federal legislation. Regulatory competition among the states in governance issues would maintain a relatively uniform regulatory system for governance as states converge upon an optimal level of regulation, or exchanges gravitate toward those states that have produced such a level.

Federal authority should be reduced to minimal disclosure laws and the policing of fraud and anti-competitive practices. Since the passage of the original 1934 Exchange Act, the SEC has become increasingly involved in regulating the operational mechanics and market structure of the exchanges through regulations such as the recently proposed Regulation NMS. This preoccupation with market structure has deflected resources from its policing activity, and the SEC in turn has relied on SROs to bear much of the policing costs. The reverse should be the case. The SEC should limit its efforts to policing fraud and anti-competitive practices. But they needn't any special legislation or directive from Congress. Existing fraud and anti-trust law will suffice.

Federal disclosure laws should still address company finances and insider trades, but should address the disclosure of exchange mechanics and compliance systems as well. This will allow issuers and traders to select the exchange and rule system that they find most suitable, just as investors may invest in the companies whose prospects they find most appealing.

Self-regulatory Organization's quasi-public status should be eliminated. Typical objections to self-regulation such as conflict-of-interest and suppression of competition, are better dealt with by measures to improve transparency rather than full-blown government regulation.[427] As the SIA notes, "stripping an exchange of its self-regulatory obligations makes it equivalent to an ATS. Therefore, the competitive position of each trading system in the market will solely depend upon its products and services, not its regulatory status."[428] If exchanges' quasi-public SRO *obligations* were eliminated from the current regulatory structure, they would be free—and forced by market pressure—to compete more efficiently with other markets.

The federal government itself may best achieve such a reduction in federal control through a presidential commission formed to identify inefficient or burdensome SEC rules and regulation. The President's Working Group on Financial Markets would be well suited for this task.

SOURCES

Bainbridge, Stephen. "The Creeping Federalization of Corporate Law." *Regulation*. Spring 2003.

Bebchuk, Lucian. "Federalism and the Corporation: The Desirable Limits on State Competition in Corporate Law." *Harvard Law Review*. Vol. 105 1992.

---

[427] Pritchard, Adam C. "Self-Regulation and Securities Markets." *Regulation*. Spring 2003.
[428] **"**Reinventing Self-Regulation**"** White Paper for the Securities Industry Association. January 5, 2000. Updated by SIA Staff, October 14, 2003

Cary, William L. "Federalism and Corporate Law: Reflections Upon Delaware." *Yale Law Journal.* Vol. 83 1974.

Cox, James D., Robert W. Hillman, and Donald Langevoort. *Securities Regulation.* 2004.

Daines, Robert. "Does Delaware Law Improve Firm Values?" *Journal of Financial Economics*. Vol. 62 2001.

David F. Freeman Jr., Kevin A. Zambrowicz, and Eunice Y. Kang, The SEC's Proposed Regulation NMS, 23 Banking and Financial Services Policy Report 1. June 2004.

Gasparino , Charles. "Wall Street Has an Unlikely New Cop: Spitzer," *Wall Street Journal.* April 25, 2002.

Greve, Michael. "Free Eliot Spitzer!" *American Enterprise Institute Online*. May 1, 2002.

Karmel, Roberta S. *Regulation by Prosecution*. New York, NY: Simon and Schuster, 1982.

Kitch, Edmund W. "Hard Thinking About Inevitable Developments." *Columbia Business Law Review*. Vol. 37 2000.

McTamaney, Robert A. "New York's Martin Act: Expanding Enforcement in an Era of Federal Securities Regulation." *The Legal Backgrounder*. Vol. 18 No. 5.

O' Brien, Louise. "How to Restore the Fiduciary Relationship: An Interview with Eliot Spitzer." *Harvard Business Review*. May 2004.

Oesterle, Dale Arthur. "Securities Market Regulation: Time to Move to a More Market-Based Approach." *Policy Analysis*. June 21, 2000.

Peltzman, Sam. "Toward a More General Theory of Regulation." *Journal of Law and Economics*. Vol. 19 August 1976.

Phillips, Susan M. and J. Richard Zecher. *The SEC and the Public Interest*. Cambridge, MA: MIT Press, 1981.

Pritchard, Adam C. "Self-Regulation and Securities Markets." *Regulation*. Spring 2003

Ratner, Joshua D. "Stockholders' Holding Claim Class Actions under State Law after the Uniform Standards Act of 1998." *University of Chicago Law Review.* Vol. 68 2001.

SIA Staff. "Reinventing Self-Regulation: White Paper for the Securities Industry Association." October 14, 2003.

Roberta S. Karmel, “Appropriateness of Regulation at the Federal or State Level: Reconciling Federal and State Interests in Securities Regulation in the United States and Europe,” *Brooklyn Journal of International Law* 2003.

Roiter, Eric. Meeting with class, November 3, 2004.

Romano, Roberta. *The Advantages of Competitive Federalism for Securities Regulation.* Washington, D.C: American Enterprise Institute for Public Policy Research, 2002.

Romano, Roberta. *The Genius of American Corporate Law*. Washington, D.C: American Enterprise Institute for Public Policy Research, 1992.

S. Rep. No. 1455, 75th Cong., 3d Sess. 3 1938

SEC Concept Release Concerning Self-Regulation. Release No. 34-50700. November 18, 2004.

SEC Proposed Regulation NMS. Release No. 34-49325. February 26, 2004.

SEC Release 34-50699. November 18, 2004.

Smith, Cameron. Meeting with Class. October 6, 2004.

Thain, John. Testimony before the SEC Hearing on Proposed Regulation NMS, May 21, 2004.

Wunsch, Steve. “SEC Is Practicing Divine Intervention” Letter to *Wall Street Journal.* October 29, 1999.

Zuffery, Jean-Bapiste and Margaret Tschanz-Norton. *Regulation of Trading Systems on Financial Markets*. London: Kluwer Law International 1997.