

Washington University Law Review

Volume 84 | Issue 7

2006

Wall Street Scandals: The Curative Effects of Law and Finance

William G. Christie
Vanderbilt University

Robert B. Thompson
Georgetown University Law Center

Follow this and additional works at: https://openscholarship.wustl.edu/law_lawreview



Part of the [Administrative Law Commons](#), and the [Banking and Finance Law Commons](#)

Recommended Citation

William G. Christie and Robert B. Thompson, *Wall Street Scandals: The Curative Effects of Law and Finance*, 84 WASH. U. L. REV. 1567 (2006).

Available at: https://openscholarship.wustl.edu/law_lawreview/vol84/iss7/1

This F. Hodge O'Neal Corporate and Securities Law Symposium is brought to you for free and open access by the Law School at Washington University Open Scholarship. It has been accepted for inclusion in Washington University Law Review by an authorized administrator of Washington University Open Scholarship. For more information, please contact digital@wumail.wustl.edu.

Washington University Law Review

VOLUME 84

NUMBER 7

2006

WALL STREET SCANDALS: THE CURATIVE EFFECTS OF LAW AND FINANCE

WILLIAM G. CHRISTIE*
ROBERT B. THOMPSON**

ABSTRACT

This Article studies three scandals that embroiled U.S. financial markets during the past decade or so, including the Nasdaq market-makers' use only of odd-eighths quotes, the abuse of specialist power on the New York Stock Exchange, and the mutual fund scandal. We attempt to attribute the resolution of these situations to the curative effects of markets versus regulation. We argue that the intervention of the legal system through regulation and/or litigation is often necessary to help resolve the misalignment of incentives needed for markets to accomplish their goal of maximizing value. The Article suggests that there exists an important synergy between financial markets and law that is often overlooked.

The scandals that washed over Wall Street in recent years provoked dramatic shifts in the structure of our capital markets. Some of these changes reflect shifting incentives driven by the amazing technological

* Francis Hampton Currey Professor of Finance and Professor of Law, Owen Graduate School of Management, Vanderbilt University.

** New York Alumni Chancellor's Chair in Law and Professor of Management, Vanderbilt University. Christie acknowledges the financial support of the Dean's Fund for Faculty Research at the Owen Graduate School of Management and the Financial Markets Research Center at Vanderbilt University. We benefited from comments at the F. Hodge O'Neal Workshop at Washington University and the Vanderbilt University Law & Business Workshop. All errors are the joint property of the authors.

advances of the last two decades. Others have taken place in response to a legal or regulatory stimulus from government or private litigants. This Article seeks to examine the relative corrective power of markets versus law using three well-known episodes that occurred in the financial markets in the last decade or so: the odd-eighths controversy in the Nasdaq market in the mid 1990s; the challenges to the conduct of specialists on the New York Stock Exchange (NYSE); and the abuses in mutual fund trading that flared in 2003. Law and markets frequently trade off in terms of their effectiveness in constraining such conduct. By examining these episodes, we seek to identify the characteristics that would lead us to choose one over the other as the preferred policy response to such scandals, and to understand whether a synergy exists between law and finance in unlocking value creation.

There is a natural friction between lawyers and economists visible in the different perspective each brings to respond to market frictions. In the same way, we might expect that the preferred solution of a surgeon faced with a medical condition would be to recommend surgery, a holistic doctor would recommend non-invasive approaches, while advice sought from a person of faith would emphasize the power of prayer. When the spotlight falls on our financial markets, economists are inclined to see the marvelous self-corrective power of markets; the surge of private activity in response to price signals pushes the development of the economy in ways that any regulator will have difficulty duplicating. Barring monopolies bestowed by government, economists expect markets to compete away inefficiencies. Yet, for those trained in the law, it is the market failure that will catch their eye and provoke a response that seeks to mold or overturn the failure through regulation. In turn, those market participants subject to the reach of the law are inclined to ponder whether the legal system produces a better result than the market. Do the costs of regulation (monies paid in allegedly frivolous lawsuits come readily to mind) exceed the benefits?

We approach this question from two perspectives, one of us trained in economics and the other in law, having for several years co-taught a class that includes both law and MBA students. We have found that unlocking the full power of financial markets sometimes requires the presence of legal action to break down artificial barriers or to rid the market of practices harmful to the operation of the market. In approaching these issues, we have taken the perspective that the least obtrusive pecking order is to permit markets the opportunity to resolve inefficiencies or frictions through the forces of competition. Only after markets fail to produce value-maximizing solutions will the need for regulation and/or litigation

be a viable and relevant intervention. Barriers to resolution other than a legal one could include government protection or natural monopolies that preclude competition, the existence of strong entrenched interests, norms that resist change, and the presence of hidden markets that perpetuate illegal or anti-competitive behavior. Our three examples share the common theme that our financial markets benefited from the intervention of the legal system either through government regulation or private litigation. The main goal of our Article is to better understand why markets alone were unable to unlock their full potential and how the intercession of regulation and/or litigation spurred the changes necessary to resolve the inefficiencies.

The Article is organized as follows: Part I presents our analysis of the Nasdaq odd-eighths pricing convention and ensuing market structure changes including the SEC Order Handling Rules; Part II describes the interaction between law and finance in the context of the series of events at the NYSE that began with a questionable pattern of trading by specialists and ended with the NYSE's decision to purchase Archipelago and go public; Part III explores the legal and economic resolution to the mutual fund trading scandal in 2003–2004; and Part IV offers our conclusions.

I. THE NASDAQ ODD-EIGHTHS PRICING CONVENTION

A. The Problem: Why Didn't Market Makers Use All of the Price Points in Setting Their Quotes?

Equity markets are two-sided markets in which intermediaries stand ready to either buy or sell. In such markets, which are also common for currency exchanges, used cars, and scalped tickets for sporting events, the intermediary quotes a bid (the price at which the intermediary is willing to buy) and an ask (the price at which the intermediary is willing to sell). The difference between the two is the spread. This difference is the investor's cost of a round-trip purchase/sale in the stock, and it is a common way of measuring costs of participating in a market. It is also the intermediary's return for standing ready to make a market. Economic factors can cause the bid-ask spread to be larger or smaller, depending on risk factors such as the volume and volatility of shares traded in the market, the price of

each share, and the likelihood that an intermediary will be trading against an informed insider.¹

Until recently, bid-ask prices in the United States were quoted in eighths of a dollar, reflecting a base 8 system that had been used since securities first began trading in New York in the late eighteenth century. This system used eight price points or tick sizes per dollar so that the minimum increment to a quoted bid or ask was an eighth of a dollar or \$0.125. This also implied that the spread (and the intermediary's profit) would be at least \$0.125 even if economic conditions might support a narrower spread.

Professors Christie and Schultz's 1994 paper uncovered a pricing convention among Nasdaq market makers that inflated trading costs for investors by artificially widening the quoted bid-ask spread.² Specifically, Christie and Schultz found that among seventy percent of the 100 most active Nasdaq stocks they studied in 1991, market makers (as intermediaries in that market are usually labeled) only used the four even-eighth quotes (1/4, 1/2, 3/4, and 1) when updating their bid-ask prices and avoided the use of odd-eighth quotes (1/8, 3/8, 5/8, and 7/8). As a result, the minimum bid-ask spread (and the intermediary's profit) could not fall below \$0.25 at a time when the minimum price increment was \$0.125.³ The Nasdaq pattern differed from that of stocks listed on the NYSE, where the participation of intermediaries is structured differently. In the older and larger American equity market, the same disparity between odd and even quotes did not emerge among a similar sample of actively traded NYSE issues.⁴

B. Why Didn't Markets Correct the Problem?

The ability of market makers to coordinate their quotation patterns for the purpose of earning supra-competitive rents at first seems implausible. How could as many as sixty market makers in a given stock maintain such an agreement over a period of years when the costs of entry were

1. Any of these could change the risk of a market maker's activity and under basic economic principles would lead to a broadening or narrowing of the spread to reflect such change in risk and return. See Hans R. Stoll, *The Pricing of Dealer Security Services: An Empirical Study of Nasdaq Stocks*, 33 J. FINANCE 1153 (1978).

2. William Christie & Paul Schultz, *Why Do NASDAQ Market Makers Avoid Odd-Eighth Quotes?*, 49 J. FINANCE 1813-40 (1994).

3. The actual pricing convention adopted by the market makers stipulated that odd-eighth quotes were to be avoided when the individual dealer spread was \$0.75 or wider, but that odd-eighth quotes were permissible when the individual dealer spread was less than \$0.75.

4. See Christie & Schultz, *supra* note 2, at 1819.

relatively small? Why did the market not intervene through competition to eliminate these excess profits? We will argue that the answer lies in a failure of the market to police itself through self-regulation and in the presence of anti-competitive business practices that had developed over the years on Nasdaq. Among other things, (1) Nasdaq market makers did not include public limit orders in their displayed quotes, unlike the NYSE, where public limit orders provided a source of competition with intermediaries; (2) market structures and practices insulated order flow from price competition; (3) the market makers' incentives to provide direct competition were blocked by National Association of Securities Dealers (NASD) rules and by the public nature of price quotes that made it easy for renegade market makers to be identified and disciplined by peers; and (4) the industry, through Self-Regulatory Organizations (SROs), had little incentive to change these practices because of industry domination of the organization. Thus, the market was unable to unravel the anti-competitive forces, leaving the job to both private litigation and government regulation. The remainder of this part will provide a summary of the landscape facing the markets and regulators in the mid-1990s when this anti-competitive pricing convention surfaced.

1. Exclusion of Public Limit Orders on Nasdaq

Nasdaq has traditionally been described as a dealer market, where the intermediaries are principals who stand ready to buy or sell in transactions with individual customers.⁵ Multiple dealers make markets in individual Nasdaq stocks, with the founding principle that the dealers will compete for order flow by offering better prices. Dealers with the greatest need to purchase shares are willing to pay the highest price (inside bid) and the dealers with the greatest need to sell are willing to accept the lowest price (inside ask). The quotes of the various market makers are available to those in the market, and the best prices—the inside bid and inside ask—are noted.

The NYSE has traditionally been an open outcry auction market as opposed to a dealer market.⁶ The exchange names one specialist for each stock and all trades would be funneled to that specialist who exposes the

5. This is in contrast to an auction market when intermediaries may be acting as a broker or agent for the customer in executing a trade. See generally Hans R. Stoll, *Principles of Trading Market Structure*, 6 J. FINANCE SERV. RES. 76 (1992), for an in-depth discussion of trading market structure.

6. See Joel Seligman, *The Future of the National Market System*, 10 J. CORP. L. 79, 84 (1984) (discussing securities exchanges).

offer to quotes from various parties on the specialist's book or in the "crowd" gathered in front of the specialist's post on the exchange floor. Traditionally, the NYSE differed from Nasdaq in that members of the public could provide additional competition by placing limit orders that would be included in the specialist's book. A limit order stipulates a price and quantity at which the investor is willing to transact. Investors placing a limit order to buy stock need only beat the inside bid by one price increment (12.5 cents at the time) to be at the front of the line when an incoming market order to sell arrives.⁷ Limit orders provide the public with direct access to the market and an opportunity to dictate the price at which they are willing to transact.

For virtually all of Nasdaq's history, limit orders had no standing. Nasdaq accepted the proposition that competition among market makers was sufficient to ensure competitive trading costs, and the public was not invited to the party. The exclusion of limit orders from Nasdaq may be justified in an openly competitive market where price truly dictated where orders would be executed.⁸ Unfortunately, in the case of the Nasdaq market of the mid-1990s, the market adopted a number of practices, discussed below, such as internalization, preferencing, and payment for order flow, that inhibited and discouraged price competition. Without the interjection of competition from the investing public, there was little option but to trade Nasdaq stocks at the prices dictated by the dealers.

2. Insulating Order Flow from Price Competition

Internalization, preferencing, and payment for order flow are all mechanisms for market makers to obtain order flow without posting the most competitive price. In that sense, these market participants can free-ride on those who are taking the risk to post prices and thereby contribute to price discovery. Internalization occurs when a market making firm is vertically integrated with the brokerage house that routes retail orders received from investors to the Nasdaq market.⁹ Rather than route the retail order to the bidder offering the most competitive price, the market maker

7. A market order differs from a limit order in that it specifies a willingness to buy or sell the stock at the current market price. For a discussion of trading priority rules, see ROBERT SCHWARTZ, *RESHAPING THE EQUITY MARKETS: A GUIDE FOR THE 1990S* 39 (1991).

8. "The ultimate safeguard for the integrity of interdealer markets is often said to be the factor of competition among dealers." H.R. REP. No. 88-95, pt. 2, at 661 (1963) (identifying a number of anticompetitive and manipulative practices in the over-the-counter markets of the day).

9. LARRY HARRIS, *TRADING AND EXCHANGE MARKETS MICROSTRUCTURE FOR PRACTITIONERS* 514 (2003).

internalizes the order, that is, the market maker enters into the trade as the counter-party to the customer. The practice is to use the best price currently available in the market as opposed to the market-maker's own quotes, which may well be poorer than the best bid or offer. The retail unit can assure the customer that they received the "best" price at the time of execution as required by the broker/dealer's obligation to obtain the best execution, but the market maker can obtain the order without the need to compete on the basis of price.

Preferencing is another means of insulating order flow from price competition that permits market makers to exchange orders with one another.¹⁰ Suppose that market maker A makes a market in Microsoft and market maker B makes a market in Intel (market makers choose the stocks in which they make a market and do not make a market in all stocks). When market maker A receives a customer's order to trade Intel, it routes the order not to the bidder offering the best price in the Intel market but rather to market maker B (who willingly executes the order at the best price available in the market). Conversely, market maker B will route its orders for Microsoft to market maker A for execution. This reciprocal arrangement allowed market makers to have orders routed to them without having to compete for the orders on the basis of offering the most competitive price.

Payment for order flow is a controversial practice that allows market makers to essentially purchase order flow from retail brokers.¹¹ Market makers will offer retail brokers rebates of one to two cents per share if the broker routes retail orders to them for execution. Market makers typically restrict the maximum size of any individual retail order to ensure that they are not trading against an informed investor, and they require a certain minimum number of shares per month from the broker. Through this arrangement, market makers again are able to secure order flow without having to compete for it on the basis of price.

3. *Regulation Limiting Competition*

Although many of the limitations just discussed arose from the structure of the market and the private ordering that evolved over time, other constraints reflected the impact of legal regulation. For example, the NASD created a rule that prevented market makers from posting quotes that were excessively wide relative to the inside spread. The Excess

10. *Id.* at 520.

11. *Id.* at 155.

Spread Rule prevented market makers from posting an individual dealer spread that was more than 125 percent of the width of the quotes for the average of the three dealers posting the narrowest spreads.¹² Thus if three or more dealers sought to compete by using odd-eighths quotes, thereby narrowing the spread, the Excess Spread Rule would require that all other market makers narrow their individual spreads and adopt the use of odd-eighths quotes to be in compliance with the rule. And once narrowed, it would take an extraordinary effort to move the spread back to its original width, since noncompliance by any three market makers would block the widening. The result was to create a large incentive to monitor quotes of other market makers and to put pressure on those might who deviate from the convention by offering narrower spreads.¹³

Similarly, the duty of best execution, a broker's common law obligation to get the best price for a client, regulated market makers and was reinforced by SEC decisions and a NASD rule that required each market maker to match the best price available on the market when filling orders by internalization, preferencing, and/or payment for order flow discussed above. As a result, market makers who themselves did not quote the most competitive prices were especially sensitive to an outlier who sought to provide price competition that the other market makers would be forced to use for their own trade. Suppose that the inside spread was \$0.25. If a market maker wishing to fill the next market order narrowed the spread to \$0.125, this negatively impacted the profits for all market makers engaged in internalization, preferencing, and payment for order flow since all market makers must honor the new, narrower inside spread. Since the displays used by Nasdaq market makers provided the identification of the market maker narrowing the spread, the threat existed for retaliation.¹⁴

12. See NASD Notice to Members 97-76; Nasdaq Eliminates Express Spread Rule 4 (Nov. 1997), available at http://nasd.complinet.com/file_store/Pdf/Rulebooks/nasa_9776.pdf. The Excess Spread Rule is discussed in the Appendix to the SEC's 21(a) report on NASD and the Nasdaq market in 1994. Report Pursuant to Section 21(a) of the Securities Exchange Act of 1934 Regarding the NASD and the Nasdaq Market, available at <http://www.sec.gov/litigation/investreport/nd21a-appx.txt> [hereinafter 21(a) Report Appendix].

13. See 21(a) Report Appendix, *supra* note 12, at 16 (other market makers understood that they were not supposed to break the spread).

14. See Report Pursuant to Section 21(a) of the Securities Exchange Act of 1934 Regarding the NASD and the Nasdaq Market, available at <http://www.sec.gov/litigation/investreport/nd21a-report.txt> [hereinafter 21(a) Report] ("Certain market makers also discouraged other market makers from narrowing the displayed quotes for smaller orders. Market makers that failed to follow these conventions were sometimes subject to harassment and unwillingness to trade by other market makers who were attempting to enforce compliance with this convention."). The report notes, "There was widespread awareness among market makers of the harassing telephone calls Traders testified

4. *Barriers Limiting Collective Action by Self-Regulatory Organizations*

As a Self-Regulatory Organization (SRO) as defined by the Securities Exchange Act of 1934,¹⁵ the NASD owned, operated and regulated the Nasdaq stock market, including monitoring of practices such as those described above. Collective action through that organization was possible to adjust some of the anticompetitive policies. However, both the NASD and Nasdaq were very insular, reflecting the interests of industry participants who were its members with little public representation. Effective self-regulation requires that the public have a vocal presence, if not a majority, on the board of directors of such entities. Such was not the case at either the NASD or Nasdaq. For each of the five years leading up to 1994, the Nasdaq Board contained no public representation, being totally controlled by industry members, and the board of directors of the NASD had less than thirty percent public representation.¹⁶ Thus, the corporate governance of both the parent organization and the market itself failed the public trust by excluding effective oversight of the market.

C. *Resolution*

The restoration of competition came in waves:

- First, media coverage of the results of the academic study and its implications for anti-competitive practices generated publicity that led market makers of some of the biggest stocks traded on Nasdaq to begin using odd-eighths immediately.¹⁷
- The Securities and Exchange Commission (SEC) began an investigation of the market and sought to understand how the self-regulation component of the NASD's charter was being

that the telephone calls were effective in deterring market makers from entering quotes that were inconsistent with the pricing convention and narrowed spreads." *Id.* at 18. The Appendix contains a transcript describing market broadcast messages that criticized changes in dealer spreads. 21(a) Report Appendix, *supra* note 12, at 24. One market maker, in retaliation for another market maker's narrowing the spread in Microsoft, in turn narrowed the spread in Cisco, where the second market maker was one of the largest volume traders.

15. 15 U.S.C. § 78(c)(26) (2000).

16. NASDAQ, Inc., Report of the NASD Select Committee on Structure and Governance (Sept. 15, 1995) at Appendix A [hereinafter the Rudman Report]. The Committee was appointed by the NASD Board of Governors in November 1994 in the wake of the odd-eighths scandal.

17. William Christie & Paul Schultz, *Why Did NASDAQ Market Makers Stop Avoiding Odd-Eighth Quotes?*, 49 J. FINANCE 1841, 1846–48 (1994) (charting the simultaneous collapse of effective spreads in five of the largest stocks traded on Nasdaq beginning on May 27, 1994).

discharged.¹⁸ The Rudman Committee, a NASD body charged with evaluating the organizational structure of NASD and Nasdaq in light of the investigations into the pricing convention, concluded in 1995 that the NASD should reorganize and reduce its board to eight members, five of whom would be drawn from the public sector.¹⁹ It also recommended the creation of a separate regulatory unit, NASD Regulation Inc., with a board of twenty-eight members that would be equally divided between industry and public representatives. In addition, the Nasdaq board was restructured to include sixteen members drawn equally from industry and the public. Thus, the second wave of reform came in the form of a restructuring of the corporate governance of both the parent (NASD) and the market (Nasdaq).

- The broader SEC investigation led to a Section 21(a) Report accusing the NASD of negligence in the oversight of their market.²⁰ The settlement that followed required the NASD to establish a \$100 million fund to improve the oversight of its market so that such an episode would not be repeated.²¹ More importantly, the SEC promulgated a series of Order Handling Rules (OHRs) that required public limit orders to be included in quotes made available on the Nasdaq market and also required that quotes placed in certain proprietary systems among brokers known as ECNs (Electronic Communication Networks) be made available to all public investors.²²
- The Department of Justice began investigating the antitrust aspects of the pricing convention.²³ After almost two years of investigation, the Justice Department settled with the market making firms over charges that the pricing convention was anti-competitive and had harmed investors trading Nasdaq stocks.²⁴

18. Richard S. Taylor & Warren Getler, *Nasdaq Dealers are Being Investigated in a Separate Probe Launched by SEC*, WALL ST. J., Nov. 15, 1994, at A4.

19. See the results of the Rudman Report, *supra* note 16, at Appendix A, described in the 21(a) Report, *supra* note 14, at 10–12.

20. 21(a) Report, *supra* note 14.

21. 21(a) Report, *supra* note 14. The NASD consented to the settlement and the \$100 million without either admitting or denying the allegations. *Id.* at 4.

22. 17 C.F.R. § 240.11Ac1-4 (2005).

23. Jeffrey Taylor & Warren Getler, *U.S. Examines Alleged Price-Fixing on Nasdaq*, WALL ST. J., Oct. 20, 1994, at C1.

24. Press Release, Department of Justice, Justice Department Charges 24 Major Nasdaq Securities Firms with Fixing Transaction Costs for Investors (July 17, 1996) (on file with authors).

The Justice Department forbid firms from following the pricing convention, and provided both civil and criminal penalties for traders violating the terms of the settlement.

- The largest financial settlement occurred in private class actions brought against the market makers.²⁵ The civil litigation was settled on Christmas Eve 1997, with market making firms agreeing to pay investors a total of \$1.027 billion.

In our view, markets failed to adequately police themselves due to the self-interests of the market participants and their owner/regulators. The responsibility for resolving this anti-competitive scenario, then, fell to the legal system rather than the markets. When entrenched interests are so deeply grounded in their routines, and when market participants have little or no option to bypass these interests, regulation and/or litigation can produce a value-enhancing outcome.²⁶ Indeed, the most important correction mechanism was provided by the SEC in the form of the OHRs²⁷ that allowed investors to place limit orders with their brokers that had to be reflected in the Nasdaq market quotes.²⁸ Dealers setting bid and ask quotes then were forced to compete directly with the public orders, eliminating any and all opportunities to establish or retain a pricing convention that benefited the market makers at the expense of the public.²⁹ It was a simple but profound solution. In addition, the OHRs required that more competitive prices displayed by market makers in ECNs be accessible by the public.³⁰ This action eliminated a two-tiered market where in one market, the private market used only by professionals, market makers routinely used all eight price fractions and traded at narrower spreads with each other and large institutions. In the Nasdaq

25. Professor Christie reports hearing from a leading plaintiff's law firm by mid-day on the day the report of the study was published in the Los Angeles Times in May 1994. The 21(a) Report Appendix notes that on May 27, 1994, several class action lawsuits were filed against market makers that were consolidated in fall 1994. 21(a) Report Appendix, *supra* note 12, at n.42.

26. The deeply grounded nature of the conduct is reflected in the comment on a national business television program by an editor of *Equities* magazine who explained this behavior as resulting from teaching "rookies" how not to lose money. *Marketplace* (CNBC Television Broadcast 1994) (on file with authors). See also 21(a) Report, *supra* note 14, at nn.44, 47 (quoting trader who said he adhered to custom because he wanted to be accepted and because making a quarter point on a trade allowed you to make up for a multitude of sins).

27. 17 C.F.R. § 240.11Ac1-4 (2005).

28. *Id.*

29. Lack of limit order competition distinguished the dealer markets from the auction markets, which also had payment for order flow and internalization, but did permit limit orders to be included and had lower effective spreads.

30. 17 CFR § 240.11A6(2) (2005).

market, conversely, the public was forced to transact at much wider spreads given the absence of odd-eighth quotes, thereby incurring much higher transaction costs.³¹

What do these results tell us about the relative impact of markets and law? The immediate move to odd-eighth quotes in some high-profile stocks suggests a story consistent with market self-correction.³² Consistent with this hypothesis, a 1999 empirical study found that spreads in the Nasdaq market declined by one-third between the publication of the original Christie/Schultz study and the adoption of the OHRs.³³ Publicity, in this case, opened the way for market makers to compete in a more open market. Yet the altered behavior of market makers did not occur in a vacuum. The suits themselves, or the threat of those suits, may have spurred the self-correction initially visible in the market. The weight of the investigations by the Justice Department and the SEC and the filing of over thirty class action suits were required to finally dismantle the anti-competitive pricing convention.

Publicity alone or publicity plus the threat of legal sanctions may have led market makers to use odd-eighth quotes, but it was government regulation that pushed the market to open the competition to public orders and to electronic trading that has led to even greater declines in quoted spreads. An empirical study revealed that spreads fell by another one-third after the effective date of the parts of the OHRs requiring public limit orders to be included in quotes. The evidence from that study also showed that about seventy percent of the decline in spreads could be attributed to the portion of the reform that required display of customer limit orders and the remaining thirty percent was due to the requirement of inclusion of more competitive ECN quotes.³⁴ It is an important example of how the most efficient solution to a market problem is through litigation and regulation. Not all cases work so well.

31. 21(a) Report Appendix, *supra* note 12, at 10 (discussing fact that routine use of odd-eighths by market makers in quotes on Instinet and market makers trades among themselves and sometimes with institutional investors indicates that adherence to pricing convention was not the result of natural market forces).

32. *See supra* note 17.

33. Michael Barclay, William Christie, Jeffrey Harris, Eugene Kandel & Paul Schultz, *Effects of Market Reform on the Trading Costs and Depths of Nasdaq Stocks*, 54 J. FINANCE 1 (1999).

34. *Id.* at 15 tbl. 3.

II. ALLEGATIONS OF UNFAIR TRADING PRACTICES BY NYSE SPECIALISTS

A. The Problem: Increased Possibility of Specialist Abuse of the Trading Process Following the Move to Decimalization

The traditional pattern of the NYSE has been to assign each stock to a specialist on the floor of the stock exchange and conduct an open outcry auction to obtain the best execution price for an order.³⁵ The price for a stock is determined by competition among investors submitting limit orders, liquidity provided by floor brokers, and the trading interests of the specialist. The specialist seeks to match buy and sell orders (including public limit orders) left on the specialist's order book. If the depth of the market does not permit matching, the specialist is obligated to use the specialist's own liquidity to create a market.³⁶ In addition to the competition from public limit orders, floor brokers circulate in the space in front of the specialists' posts, offering to improve offers called out by the specialist. As a result, there is often price improvement in the executed price as compared to the quoted prices in the specialist's book.³⁷

In this setting, NYSE quotes tended to be evenly distributed among all ticks and the quoted inside spreads tended to be lower than traditional dealer markets.³⁸ As the market moved to trading in one-sixteenths of dollars in 1997 (thus the minimum tick size moved to 6¼ cents from 12½ cents) and then to decimals in 2001 (one hundred ticks per dollar, so that the minimum change was now only one penny), new fissures were exposed in the specialist system.³⁹

35. See generally ROBERT A. SCHWARTZ & RETO FRANCONI, *EQUITY MARKETS IN ACTION: THE FUNDAMENTALS OF LIQUIDITY, MARKET STRUCTURE & TRADING* 14 (2004). The NYSE has now shifted much of its trading to an electronic platform. See Aaron Lucchetti, *The NYSE: Faster (and Lonelier)*, WALL ST. J., Jan. 24, 2007 at C1 (describing move to electronic trading).

36. Harris, *supra* note 9, at 496 (discussing specialists' affirmative obligation to make a market).

37. Charles M. Lee, *Market Integration and Price Execution on NYSE Listed Securities*, 48 J. FINANCE 1009, 1030 tbl. 7 (1993).

38. Hendrick Bessembinder, *Trade Execution Costs and the Market Quality after Decimalization*, 38 J. FINANCIAL AND QUANTITATIVE ANALYSIS 747 (2003); Hendrick Bessembinder, *Trade Execution Costs on Nasdaq and the NYSE: A Post-Reform Comparison*, 34 J. FINANCIAL AND QUANTITATIVE ANALYSIS 387 (1999).

39. See Bessembinder, *Trade Execution Costs on Nasdaq over NYSE: A Post Reform Comparison*, *supra* note 38, for a discussion of the comparison in trading costs between Nasdaq and the NYSE in the post-Order Handling Rules era, and Bessembinder, *Trade Execution Costs and the Market Quality after Decimalization*, *supra* note 38, for a similar comparison after the adoption of decimal trading. The role of tick size and its impact on the trading arena are studied in Lawrence Harris, *Minimum Price Variations, Discrete Bid-Ask Prices, and Quotation Sizes*, REVIEW OF FINANCIAL STUDIES 7, 149–78 (1994), and Lawrence Harris, *Stock Price Clustering and Discreteness*, REVIEW OF FINANCIAL STUDIES 4, 389–415 (1991).

First, as the markets moved to trading in sixteenths and then in penny price increments, the price improvement needed before an intermediary could step in front of existing orders to trade on its own behalf and still meet its duty of best execution declined dramatically. At the same time, the costs and benefits of sending an order to the floor of the stock exchange for the possibility of receiving price improvement via exposure to the open outcry auction system shifted dramatically. The amount of price improvement when price increase occurred in pennies versus 12.5¢ increments was much less valuable, and investor time horizons were shrinking so that the additional time necessary to send orders to the floor carried a greater cost. Nasdaq and ECNs offered something closer to immediate execution at the quotes in those markets, even if the same potential for price improvement was absent. As technology reduced investor reaction time horizons, sophisticated investors were less willing to wait the twenty-five seconds or so required for the exposure of orders on the floor of the NYSE. While traders weighed the cost/benefit analysis of this time/price improvement tradeoff, some, including Fidelity, worried that they were being taken advantage of more often by the specialist in a decimal trading system through possible abuses such as interpositioning and trading ahead.⁴⁰

A specialist's obligation is to promote a fair and orderly market and to trade for his or her account only in the absence of other public interest.⁴¹ For example, if the bid is \$20 and the ask is \$20.06, an incoming market order to buy would execute against the limit order to sell at \$20.06 and incoming market orders to sell would execute against the limit order bid placed at \$20. Specialists can intervene to produce price improvement for both sides by crossing the orders at \$20.03, with the buy and sell orders each receiving a \$.03 price improvement relative to the posted quotes. Interpositioning violations occur when two public market orders could reasonably be executed against each other without specialist intervention, yet the specialist intrudes by trading with one or both sides.⁴² In this example, interpositioning occurs when the specialist steps in to buy at \$20.01 (meaning the market sell order received \$.02 less than it would

40. John Hechinger, *Fidelity Urges NYSE to Revamp Trading Operation*, WALL ST. J., Oct. 14, 2003, at A1.

41. See Harris, *supra* note 9.

42. NYSE, Inc., Rule 476(a)(6) (forbidding conduct inconsistent with just or equitable principles of trading covers interpositioning), available at http://rules.nyse.com/nysetools/Exchangeviewer.asp?SelectedNode=chp_1_2&manual=/nyse/nyse_rules/nyse-rules/. See, e.g., NYSE, Inc., Exchange Hearing Panel Decision 04-051 (Mar. 29, 2004), <http://www.nyse.com/pdfs/04-051.pdf>.

have under the result just described) and the specialist sells at \$20.05 (meaning the market buy order paid \$.02 more).

“Trading ahead” is a parallel behavior where the specialist exercises discretion during the few seconds available to seek price improvement for the order on the floor of the exchange. In a world characterized by investors calculating times in microseconds, this window provides a significant delay that can work in the specialists’ favor. Suppose a specialist with access to the cumulative order book has observed an influx of buy orders. In the few seconds that the specialist exposed the order to price improvement on the floor of the exchange, the specialist could trade ahead of these orders, buying for the specialist’s own account at a lower price and turning around and selling to the incoming buy orders at a higher price.⁴³

B. Limits on the Ability of the Market to Respond

The privileged position awarded specialists in an auction system has long brought with it increased regulation, both by the exchange as a form of private ordering and by the SEC rule-making and congressional prohibition; for example, Section 11(b) of the Securities Exchange Act of 1934 and Rule 11b-1 promulgated by the SEC limit interpositioning.⁴⁴

Even within this legal system, much of the enforcement of these rules has been left to the Exchange as an SRO, a hybrid statutorily authorized part private, part public body.⁴⁵ The story begins to resemble the episode that was previously described in the Nasdaq market. NYSE regulation, until early 2006, was conducted within the same not-for-profit entity as other activities of the exchange, including trading and the setting of listing standards.⁴⁶ The membership of the exchange was comprised of the 1,300 seat holders who expected to profit from exchange membership that included valuable trading privileges. The members, in turn, elected the board of directors of the Exchange, who selected the chief executive officer. The regulatory portion of the business reported to this CEO.⁴⁷ The

43. See NYSE, Inc., Rule 92 (forbidding entering proprietary orders when unexecuted customer orders could be executed at the same price), available at <http://rules.nyse.com/NYSE/help/Map/rules-sys88.html>.

44. 15 U.S.C. § 78(k) (2000); 17 C.F.R. § 240.11b-1 (2006).

45. See *supra* note 15. See generally Joel Seligman, *Cautious Evolution or Perennial Irresolution: Stock Market Self-Regulation during the First Seventy Years of the Securities and Exchange Commission*, 59 BUS. LAW. 1347 (2004).

46. See NYSE, Inc., *Governance of the New York Stock Exchange, Inc.* (May 2003), <http://www.nyse.com/pdfs/governancewhitepaper.pdf>.

47. See generally Roberta S. Karmel, *Turning Seats Into Shares: Causes and Implications of*

controversy that followed disclosure of Dick Grasso's almost \$200 million compensation package triggered allegations that the regulation, or the absence thereof, of exchange specialists and other insiders was tied to attention paid to member firms whose executives were on the exchange's compensation committee.⁴⁸ With a relatively low-key enforcement regime and slow moving reform of the exchange's governance and ownership structure, a market-based solution was limited in its ability to respond to concerns about the specialists' system.

C. Resolution

Discontent on the part of institutional investors increased in late 2003. Fidelity, one of the largest institutional investors, called for an end to the specialist system.⁴⁹ Calpers, the state retirement system of California, sued specialists for abuses similar to those discussed above.⁵⁰ In 2004, the SEC brought enforcement action against the seven remaining specialist firms, which was settled with the firms paying more than \$241 million without admitting any wrongdoing.⁵¹ In April 2005, the federal government indicted fifteen specialists on charges of illegally trading ahead and interpositioning, and fined the NYSE \$20 million.⁵²

Yet those responses pale alongside the impact from a more indirect source of law mixed with technology. Legal review of Grasso's compensation, led by then New York Attorney General Eliot Spitzer, led to Grasso's resignation and a new governance regime, instituted by then NYSE Chair John Reed and new CEO John Thain, that separated regulation from other parts of the exchange operation.⁵³ At the same time,

Demutualization of Stocks and Futures Exchanges, 53 HASTINGS L.J. 367 (2002).

48. Jenny Anderson, *S.E.C. Asked Grasso if He Buoyed Stock*, N.Y. TIMES, June 15, 2006, at C1.

49. Hechinger, *supra* note 40.

50. Laura Mahoney & Kip Betz, *CalPERS Sues NYSE, Specialist Firms, Claiming Trading Practices Hurt Investors*, 35 SEC. REG. & L. REP. 2128 (Dec. 22, 2003) (alleging misuse of exclusive right to trade stock, and that NYSE knew, but took little or no action against the firms).

51. Phyllis Diamond & Kip Betz, *SEC, NYSE Specialist Firms Reach \$241M Settlement Over Trading Practices*, 36 SEC. REG. & L. REP. 602 (Apr. 5, 2004) (agreement to pay \$87 million in civil penalties and \$154 million in disgorgement).

52. Kara Scannell & Aaron Lucchetti, *Ex-Specialists Face Indictment for NYSE Deals*, WALL ST. J., Apr. 12, 2005, at C1. See Chad Bray, Aaron Lucchetti & Paul Davies, *Two Ex-Van der Moolen Specialists Are Convicted of Securities Fraud*, WALL ST. J., July 15, 2006, at A3 (reporting convictions for trading for their firm before they fulfilled customer orders). But see *Government Drops Case Against Five NYSE Specialists*, SEC. REG. L. RPTR., Nov. 22, 2006 (reporting results of fifteen indicted specialists).

53. Richard Hill, *Reed Details Proposal for Revamped Governance Structure of Embattled NYSE*, 35 SEC. REG. & L. REP. 1873 (Nov. 10, 2003); Stephen Labaton, *Different Roles and Fresh Faces Promised at Big Board*, NY TIMES, Oct. 17, 2003, at C1 (reporting overhaul of the NYSE board).

the SEC was contemplating a significant change in federal regulation of markets under what was termed Regulation NMS (for National Market System).⁵⁴ The key provision was a suggested revision to the “trade through” requirement, which until then had required traditional exchanges (but not Nasdaq, which was not then an exchange), as members of the Intermarket Trading System, to enforce price priority rules. These rules required that if the NYSE posted the best price, orders must be sent to the floor of the exchange even if that imposed potentially costly execution delays.⁵⁵

In the face of significant concern about the trade-off between price improvement and the speed of execution, the SEC put forward a trade-through rule to apply to all public U.S. markets. The SEC asked for comment on two exceptions, one that would allow individual investors to opt out and another that limited application of such a rule to “fast markets,” an ambiguous term that carried the potential to exclude the NYSE because of the time required to expose orders to potential price improvement on the floor.⁵⁶ After thousands of comment letters, the SEC promulgated final rules extending the trade-through rule to the broader markets but making it much easier for alternative markets to compete.⁵⁷

Within days of this action (to be implemented a year or more in the future), the NYSE announced a merger with Archipelago (one of the largest ECNs) that not only would move a large part of exchange trading to an electronic platform as opposed to the traditional floor-based auction system,⁵⁸ but would also convert the NYSE into a for-profit publicly owned entity, as opposed to the non-profit mutual owned by 1,300 seat holders. Nasdaq, one day after the NYSE/Archipelago announcement, announced its own merger with Instinet, one of the key players among electronic communications networks, which would improve Nasdaq’s position in electronic trading.⁵⁹

and a regulatory structure reporting to independent directors).

54. See Proposed Rule Regulation NMS Exchange Act Release No. 34-49325, 82 SEC Docket 758 (Feb. 26, 2004). Under the then-existing trade-through rule, a dealer was prevented from executing a trade with a client until that order has had the chance for price improvement at the specialist’s post on the Exchange.

55. *Id.*

56. *Id.*

57. Regulation NMS: Final Rules & Amendments to Joint Industry Plans, Exchange Act Release No. 34-51808, 85 SEC Docket 1642 (June 9, 2005).

58. Aaron Lucchetti, Susanne Craig & Dennis K. Berman, *NYSE to Acquire Electronic Trader and Go Public*, WALL ST. J., Apr. 21, 2005, at A1; See also Aaron Lucchetti, *The NYSE: Faster (and Lonelier)*, WALL ST. J., Jan. 24, 2007 at C1 (describing completion of move of much of the NYSE to electronic trading).

59. *Nasdaq to Acquire Instinet*, Apr. 22, 2005, www.nasdaq.com/investorrelations/faqs.pdf.

Could these changes have arisen from market forces alone? Certainly, the NYSE had been considering public ownership for some time.⁶⁰ In an era where other world auction markets have converted to an electronic platform and to public ownership, the likelihood of a market-induced change was certainly possible.⁶¹ Yet many of these considerations had been in place during a time when the NYSE was seemingly prospering.⁶² Securing the required two-thirds vote of the 1,300 seat holders at a time when seat prices were rising would have been a challenge.⁶³

The removal of Dick Grasso coincided with the widening impact on nonprofits like the NYSE of corporate governance reforms inspired by Sarbanes-Oxley. At the same time, the increase in electronic trading and other technological changes exposed specialists to a regulatory and economic discipline that they had never before experienced. The controversy that followed Dick Grasso's resignation and the litigation against the specialists' firms provided John Reed with the opening to radically change the structure of the exchange's governance and John Thain with the opportunity to make even larger changes in the business model of the exchange. However, we believe that the rules changes imbedded in Regulation NMS spurred the structural changes in these markets. The role of law overcame barriers that opened the way for technology and competition, so that the NYSE, just like Nasdaq a decade earlier, is now much better equipped to deal with its competition, both within the United States and on the world market.

III. ABUSES IN MUTUAL FUND MARKETS

Mutual funds provide a third recent example of scandal in our capital markets, a scandal in which markets have had a larger role responding to the problem.

60. Kip Betz, *NYSE Panel Examining Possibility of Switching to for Profit Corporate Status*, 37 SEC. REG. & L. REP. 273 (Feb. 14, 2005) (reporting CEO Thain's remark that the issue had been under discussion for some time).

61. Craig Pirrong, *A Theory of Financial Exchange Organization*, 43 J. L. & ECON. 437 (2000) (linking traditional nonprofit status to heterogeneity of suppliers of financial services which is changing with technological changes).

62. Seat prices for membership on the exchange had been at \$2 million or more during 2003 prior to the scandal but dipped to about half of that in 2004. See *NYSE Historical Seat Prices*, <http://www.nyse.com/press/1135942555006.html>.

63. Approval of a transaction such as the deal with Archipelago required a two-third vote of the members and occurred in December 2005, with the change becoming effective in early 2006. See *Big Board Archipelago Members Approve Merger to Form For-Profit NYSE Group, Inc.*, 37 SEC. REG. & L. REP. 2026 (Dec. 12, 2005).

A. The Problem: Traders Taking Advantage of Mutual Funds Via Late Trading and Stale Prices

Mutual funds provide investors a vehicle to invest in a basket of investments made in stocks of companies that themselves are publicly traded. The value of shares in a mutual fund depends on the price of the underlying portfolio investments. However, trading in shares of mutual funds operates differently from the trading in shares or the equity markets. First, all trading in mutual funds is conducted with the fund; an investor is always either buying from or selling to the fund, in contrast to equity trading where another trader is the counterparty.⁶⁴ Second, mutual fund shares are not traded continuously but are priced once a day (usually at 4:00 p.m. Eastern, the time that equity markets close).⁶⁵

These core characteristics gave rise to two abusive scandals that rocked the industry in the last three years: late trading and stale pricing. Late trading refers to a trader's ability to buy or sell shares of the fund sometime after the close, but at the 4:00 p.m. price.⁶⁶ Since the flow of information continues unabated (and may in fact increase) after the close, the mutual fund will be more or less valuable than it was at 4:00 p.m. An investor who can trade at the 4:00 p.m. price based on information released after the close can potentially earn an excess profit that will come at the expense of the remaining investors in the fund. The investor will not be able to realize the profit until the next time shares in the fund can be traded, which will be the close on the following business day, by which time subsequent events could have dissipated the trading gain. A rational investor would willingly take that risk since they have an informational advantage at the time of the initial trade.⁶⁷ The ability to place a late trade requires the assistance of an insider who will permit your late trade to be included when all of the 4:00 p.m. trades are settled, and the active or passive acquiescence of the managers of the funds who decline to prevent late trading.

Stale pricing refers to arbitrage opportunities that arise when a mutual fund's portfolio includes companies outside the United States. The mutual

64. Mercer Bullard, *The Mutual Fund as a Firm: Frequent Trading, Fund Arbitrage and the SEC's Response to the Mutual Fund Scandal*, 42 Hous. L. Rev. 1271 (2006).

65. Securities law requires that the price be set once a day at net asset value. 15 U.S.C. § 80a-22(c),(e) (2000); 17 C.F.R. § 270.22c-(1)(b) (2006).

66. See generally Eric Zitzewitz, *How Widespread is Late Trading in Mutual Funds?* (Nov. 2004) (Stanford Graduate School of Business Working Paper), available at <http://faculty-gsb.stanford.edu/zitzewitz/Research/latetrading.pdf>.

67. Bullard, *supra* note 64.

fund will typically value these investments based on the closing price of the portfolio company at the closing in the home market. For Asian markets, this can be fourteen hours before 4:00 p.m. in New York, so there is the likelihood that events happening since the close of the Asian market will have changed the value of the portfolio companies that are not reflected in the New York—4:00 p.m.—closing price of the mutual fund. Investors employing such a strategy and trading with the fund thus will profit at the expense of the remaining fund investors.

B. Limits on the Market's Ability to Respond

What made these strategies possible? Employees of mutual funds might receive sufficient incentives from traders to dominate incentives and duties from their employment relationship and lead them to permit late trading. More generally, every investor has financial incentives to take advantage of arbitrage opportunities across time zones or markets. In response, mutual funds might more closely supervise their employees or adopt pricing conventions that update stale pricing.⁶⁸ Mutual fund shareholders, whose returns are harmed by these practices, are able to elect directors of the fund and could sue to seek such changes. But the collective action problems that apply to shareholders in corporations generally are even greater in mutual funds. The losses created by late trading are dispersed among each of the fund's shareholders, so that the loss of all but the largest of trades may be hidden in the background noise created by other factors affecting value. Shareholders in mutual funds, which have no operations to supervise, are not sensitized to worry about governance issues. The monitoring role of directors in mutual funds has traditionally been even lower than in public corporations. The real control rests with the fund manager who has a contract with the board to manage the fund. These managers' incentives to address these issues may be overridden by relationships with others in the industry who benefit from late trading or stale prices.

C. Resolution

Reports of these practices generated a series of responses. On the regulatory side, the SEC and state regulators brought a series of actions that resulted in disgorgement and fines. A settlement with Putnam

68. Some mutual funds did determine the 4:00 p.m. price based on estimated prices updated since the close of markets in other time zones. Bullard, *supra* note 64, at 1288 n.69.

Investments required \$110 million to be paid to federal and state agencies, a change in top managers, and a reduction in fees.⁶⁹ A similar settlement with Strong produced a payment of \$140 million and the resignation of the founder and CEO.⁷⁰ Other settlements against Massachusetts Financial Services and Bank of America/Fleet Boston produced even larger payments.⁷¹

As a matter of prophylactic regulation, the SEC considered a number of regulatory changes. To the extent that structural barriers dulled the impact of market constraints, the agency was attuned to addressing those barriers. It sought to make the board a more active monitor of management, particularly if management's economic incentives were not aligned with shareholders. The SEC implemented a new rule requiring that the chair of a mutual fund board must be an outsider, and seventy-five percent of the board must be independent (up from the fifty percent previously required).⁷² This relatively mild reform provoked a legal firestorm after the U.S. Chamber of Commerce challenged the rule as beyond the agency's power.⁷³ A federal appellate decision held that the agency had not evaluated the costs and benefits as required by federal law and returned the rule to the agency.⁷⁴ The SEC immediately re-promulgated the rule in the last days of Chairman William Donaldson's tenure, provoking an intense political debate.⁷⁵ After a second federal appellate decision ruled that the re-promulgation lacked sufficient due process, the SEC undertook additional hearings.⁷⁶

Other regulatory changes contemplated by the Commission had even less effect. A proposal for a "hard" 4:00 p.m. close that would more intensely regulate the process by which orders for mutual funds are placed generated more than 1,000 comment letters and was abandoned.⁷⁷ Worries

69. Putnam Inv. Mgmt., LLC, Investment Advisers Act Release No. IA-2226, 82 SEC Docket 2225 (Apr. 8, 2004).

70. Strong Capital Mgmt., Inc., Exchange Act Release No. IA-2239, 82 SEC Docket 3178 (May 20, 2004).

71. Mass. Fin. Serv. Co., Investment Advisers Act Release No. IA-2224, 82 SEC Docket 2036 (Mar. 31, 2004).

72. See Investment Company Governance Investment Company Act Release No. IC-26520, 83 SEC Docket 1384 (July 27, 2004).

73. Chamber of Commerce v. SEC, 412 F.3d 133 (D.C. Cir. 2005).

74. *Id.*

75. See Rachel McTague, *Glassman Named Acting Chair of SEC*, 37 SEC. REG. & L. REP. 1141 (July 4, 2005).

76. Chamber of Commerce v. SEC, 443 F.3d 890 (D.C. Cir. 2006) (vacating rules that had been repropounded by the SEC).

77. Amendments to Rules Governing Pricing of Mutual Fund Shares, Investment Company Act Release No. 26,288, 68 Fed. Reg. 70,388 (proposed Dec. 17, 2003).

arose that pension fund beneficiaries would be disadvantaged because they had to go through another intermediary with an earlier cutoff time. Investors on the west coast were concerned about the shortening of their time window to request redemptions in order to buy or sell.

Proposals to control stale pricing were somewhat more difficult. One proposal to impose a two percent fee for short-term redemptions if shares were sold within five days of purchase generated substantial criticism and led the SEC to authorize but not mandate such a fee.⁷⁸ A more detailed disclosure about fund policies toward market timing was put in place in 2004.⁷⁹

In the face of uncertain changes in legal rules and effective regulatory relief, the market sent a more direct signal that helped resolve the scandal. Several of the mutual funds that were most directly affected suffered massive outflows of capital; in Putnam the loss was up to forty percent.⁸⁰ In funds like Strong and Putnam, the long-time CEO and, in some cases, the fund founder, was forced out of the firm, and the firm sought a merger partner with a new and unsullied name.⁸¹

An empirical study by Choi & Kahan that tracked the outflow of funds in response to this scandal found a median outflow of \$461.4 million from the funds during the first twelve months after a firm was linked to such behavior.⁸² Their comparative analysis of the outflow of mutual funds that were implicated in this scandal provides evidence that markets were acting effectively as a monitor of such behavior. Choi and Kahan found that scandal funds experienced a significantly greater outflow than other funds during the first twelve months after an initial report of late trading, stale pricing, or other misconduct. Measured by regressions and other empirical tests, they found that the outflow was greater for more severe scandals (proxied by the size of regulator settlements, the number of press articles,

78. 17 C.F.R. § 270.22c-2 (2006).

79. Disclosure Regarding Market Timing and Selective Disclosure of Portfolio Holdings, Securities Act Release No. 33-8406, Inv. Company Act Release No. 26,418, 82 SEC Docket 2357 (Apr. 16, 2004) (requiring additional disclosure in mutual funds registration statements of their policies regarding frequent trading and disclosure of portfolio holdings).

80. John Hechinger, *Putnam to Pay \$110 Million, Try to Rebound*, WALL ST. J., Apr. 9, 2004, at C1.

81. See Strong Capital Mgmt., Inc., Exchange Act Release No. 49,741, Investment Advisers Act Release No. 2,239, Investment Company Act Release No. 26,448 (May 20, 2004), available at <http://www.sec.gov/litigation/admin/34-49741.htm> (reporting settlement of enforcement action in which the company paid \$80 million in disgorgement and civil penalties and the former CEO paid \$60 million in disgorgement and civil penalties).

82. Stephen J. Choi & Marcel Kahan, *The Market Penalty for Mutual Fund Scandals* (NYU, Law and Economics Working Paper No. 06-07), available at <http://ssrn.com/abstract=877896>.

and the filing of government charges).⁸³ In comparing different kinds of scandals, they found that the outflow was greater after late trading than for scandals with a less direct impact on shareholders (such as the IPO laddering complaints that arose about the same time).⁸⁴ Choi and Kahan also reported that the outflow was greater when there was a penalized entity as compared to a penalized individual. They suggest this result was due to a greater risk that the shareholder would be hurt in the future; in addition, they found that outflow was larger for misconduct first discovered by then–New York Attorney General Eliot Spitzer as opposed to the SEC.⁸⁵

For purposes of this Article, the most interesting results derive from Choi and Kahan’s study of changes in corporate governance. Recall that the SEC required funds to separate their chair from their CEO and to raise the number of independent directors to seventy-five percent from fifty percent. Choi and Kahan compare funds that had those changes in place and found that factor had no impact on outflows. Shareholders who were more willing to withdraw funds if there was a scandal, and more willing to withdraw if the scandal was more severe, were indifferent as to whether governance rules were in place. The evidence suggests that for this scandal, unlike the previous two, market changes did not depend on governance changes.

The governance changes, as described above, were only a portion of the regulatory changes that followed the scandals. To complete the comparison of law versus markets as cures for scandal, we should also seek to compare the relative impact of the market outflow versus the fines and disgorgements. Choi and Kahan again provide some useful data. They aggregate the settlements and fees that were assessed and compare the regulatory bite to the market penalty from fund outflows. Since the fines are assessed against the fund managers, and the outflow is suffered by the fund itself, they apportion the impact that the market penalty from the fund outflows is likely to have on the manager using the manager’s anticipated fee for funds under management. Choi and Kahan find that the average allocated settlement amount for each scandal is \$22.1 million, and the average market penalty passed through to the fund’s management firm was \$3.7 million. When aggregated for fund families, the settlement or fine amount is \$96.9 million and the market penalty attributed to the fund’s management firm is \$32.3 million.

83. *Id.*

84. *Id.*

85. *Id.*

These numbers appear to suggest that the monetary disincentive to fund managers from paying the fines was higher than the loss of income related to the market penalty of withdrawal by investors. Law is important, but it is the regulatory law, more so than the corporate governance.

IV. CONCLUSIONS

These three examples from recent scandals in our capital markets highlight the interdependent impact of the incentives provided by markets and by law. Each discipline brings particular advantages that are sometimes more effective than the other. An effective policymaker will want to use both, and a knowledgeable policymaker, with a foot in both disciplines, will understand when one has a relative advantage over the other. Markets have great self-corrective power and should be left free to evolve on their own. Yet, when there are structural barriers to entry or when the governance structure prefers one group of insiders whose interests are not kept in check through the effective use of the SRO framework, changes in legal regulation can unlock the full competitive power of the markets.