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For Whom the Bell Tolls: The Demise of Exchange Trading Floors and the Growth of ECNs

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For Whom the Bell Tolls: The Demise of Exchange Trading Floors and the Growth of ECNs

by

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I INTRODUCTION

The colorful “open outcry” trading in the “pits” of the Chicago futures exchanges and the bell-ringing opening of trading on the floor of the New York Stock Exchange (“NYSE”) have long dominated the public perception of how those markets operate. Those exchanges are now in the midst of radical changes that will soon be erasing those images. Exchange trading floors are fast fading into history as trading of stocks and derivative instruments move to electronic communications networks (“ECNs”) that simply match trades by computers through algorithms.³ Competition from ECNs have already forced the NYSE and the Chicago futures exchanges to demutualize, consolidate and reduce the role of their trading floors, while expanding their own electronic execution facilities.⁴

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³ One author was calling the exchange trading floor an “anachronism” as early as 1993. Gerald T. Nowak, A Failure of Communication: An Argument for the Closing of the NYSE Floor, 26 U. Mich. J.L. Reform 485 (1993). *See also* Lewis D. Solomon & Louise Corso, The Impact of Technology on the Trading of Securities: The Emerging Global Market and the Implications for Regulation, 24 J. Marshall L. Rev. 299 (1991) (describing effect of technology on trading).

⁴ As one author has noted:

With increased competition caused by deregulation, technological advances, and globalization, the organization of stock exchanges is at a crossroads. Traditionally, stock exchanges were organized as not-for-profit organizations, founded and owned by brokers and dealers who managed ‘their’ stock exchange like an exclusive club, with high barriers for new entrants and a regional or even national monopoly, comparable to a medieval guild. Today, domestic and international competition increasingly compel stock exchanges to give up their exclusivity, undergo restructuring, and become publicly traded for-profit companies, a process referred to as demutualization.

The amazing growth of the ECNs and their displacement of the traditional exchanges has raised regulatory concerns. The Commodity Futures Trading Commission (“CFTC”) and the Securities and Exchange Commission (“SEC”) have been struggling with that issue for nearly a decade. The SEC’s burdensome regulations are driving capital away from public markets such as the NYSE and Nasdaq and into ECNs, which are more lightly regulated. Many public companies are also opting out of the public markets by going private; institutional trading markets in unregistered securities are growing; and foreign issuers are rethinking the value of listing in regulated U.S. markets. The ECNs are also encouraging U.S. investors to invest abroad. As a result, the SEC and the CFTC are experiencing the effects of regulatory arbitrages as issuers and market participants flee the excessive regulation imposed in domestic markets.

The CFTC initially tried to prevent virtually all non-exchange trading of derivatives. It then did a volte-face and decided against regulating ECNs that provide execution services only to institutional investors. The CFTC believed those entities had the wherewithal and were sophisticated enough to protect themselves. However, as the result of a number of problems in the energy markets, the CFTC is reversing course once again and is now seeking to regulate those institutional markets in much the same way that it regulates exchanges that service retail investors.

This article will describe the growth of the securities and commodity exchanges in the United States. It will show how their traditional trading floors became the center of market activity well into the last century, a dominance that was aided in no small measure by the monopoly positions allowed them by their regulators. The article will trace the

Andreas M. Fleckner, *Stock Exchanges at the Crossroads*, 74 *Fordham L. Rev.* 2541-2542 (2006). *See also* Roberta S. Karmel, *Turning Seats Into Shares: Causes and Implications of Demutualization of Stock and Futures Exchanges*, 53 *Hastings L.J.* 367 (2002) (discussing implications of exchange demutualizations).

growth of electronic competition that undermined those monopolies and will describe the responses of the exchanges to those upstarts. The article will then describe the regulatory challenges that these electronic markets are facing in an increasingly global economy and the responses of the CFTC and SEC to these developments.⁵

II EXCHANGE TRADING—SOME HISTORY.

A. *Development of Stock Exchange Trading in the United States*

Trading in stocks and commodities were first conducted in America through auctions that were the favored means for pricing goods of all descriptions in the colonial era.⁶ Securities transactions were occurring in New York as early as 1725 at a commodity and slave auction house on Wall Street.⁷ However, there were few securities to trade,

⁵ One former SEC commissioner has noted that there are forces in addition to electronic trading that is spurring the upheaval at the exchanges:

A dramatic shift in the economic and power structure of the securities industry is currently in progress. Although competition to traditional markets from electronic trading markets may be the precipitating cause of this upheaval, more than technology is driving these changes. The worldwide rise in stock exchange trading volume, global integration of the capital markets and competition for trading profits have triggered a disintermediation comparable to the unfixing of commission rates. Decimalization has cut the conventional trading increment, formerly twelve and a half cents, to a penny or less. Futures exchanges similarly have been buffeted by technological change, global competition and resulting cost pressures.

Roberta S. Karmel, *Turning Seats Into Shares: Causes and Implications of Demutualization of Stock and Futures Exchanges*, 53 *Hastings L.J.* 367 (2002).

⁶ This process seems to have begun with the auctioning of ship cargoes upon their arrival in the colonial ports. The arrival of those cargoes was often announced in the newspapers by advertisements that listed the goods to be sold. The following is an example of one such advertisement:

Just Imported in the Mary and Elizabeth, Capt. Sparks, from in the Polly and Hannah from Hull and in the last vessels from Liverpool and Bristol, and to be fold by RANDLE MITCHELL, At his Store in Water-s[t]reet, near Walnut-s[t]reet, on the [best] . . . terms, for cash, short or long creti, as may best suit the purchasers, A General Assotment of FALL GOODS in which are, Corse Wollens and Blankes or all kinds, coarse and middling, Broadcloths, Stuffs, Hosiery, Haberdafhery, Cultlery, Nails, Steel, Shot, and Gun-powder, Frying=pans, Pewter, Window-glass, Madder-Mace, Cinnamon, Cloves, Nutmegs, Pepper, &c.”

The Pennsylvania Packet and the General Advertiser, January 11, 1773. The auction system for consumer goods is by no means dead in America. eBay is still proving its worth.

⁷ George L. Leffler, *The Stock Market* 77 (1951). “Stock” in the form of government bills was also being traded in Philadelphia as early as 1754, but it was not until after the Revolution that the market became active. Peter Wyckoff, *Wall Street and the Stock Markets: A Chronology (1644-1671)* 4 (1973).

other than a limited number of bills issued by colonial governments.⁸ That situation changed after the success of the Revolution led to the issuance of tradable government obligations by the federal government, and a market in those bills soon developed. For example, in 1790, an auction was conducted at the Philadelphia Merchant's and Exchange Coffee House for the sale of \$30,000 in 6 percent "stock" of the United States.⁹

More formal organization arrived in that year with the creation of what is now the Philadelphia Stock Exchange by ten merchants calling themselves the Philadelphia "Board of Brokers." They operated out of a coffee house and traded bank stocks and government securities.¹⁰ Within a year, express coaches were speeding to Philadelphia from New York bearing news from ships docking in the New York port that might affect security prices on the Philadelphia exchange.¹¹

⁸ Jerry W. Markham, *I A Financial History of the United States, From Christopher Columbus to the Robber Barons (1492-1900)* 48-55 (2002).

⁹ *Pennsylvania Packet & Daily Advertiser*, Dec. 24, 1790, at 3.

¹⁰ Commodities had been traded out of the London Coffee House in Philadelphia since 1754. Gilbert W. Cooke, *The Stock Markets* 306, 313 (1969). However, this was the first "stock" exchange in America. Exchanges had been operating in Europe since the fifteenth century. The oldest of these exchanges, the Antwerp Bourse, merged with the Brussels Exchange in 1997. Jerry W. Markham, *I A Financial History of the United States, From Christopher Columbus to the Robber Barons (1492-1900)* 93-94 (2002). That exchange became a part of Euronext that merged with the NYSE in 2006. Jenny Anderson & Heather Timmons, *NYSE Group Reaches Deal To Acquire Euronext*, *N.Y. Times*, June 2, 2006, at C3.

¹¹ As the Philadelphia Stock Exchange has noted:

The speeding coaches that clattered from New York to Philadelphia carried speculators and stock-jobbers, agents of foreign investors, and inside traders with privileged information that could move the market, and make their fortune at the expense of the Philadelphia merchants.

Coups scored by these early commuters led a group of Philadelphia brokers to set up signal stations on high points across New Jersey. The signal men watched through telescopes as coded flashes of light brought news of stock prices, lottery numbers and other important information. Relayed from station to station, the information could move from New York to Philadelphia in as little as ten minutes, more quickly than any coach horse could run, so the system sharply narrowed the advantage of New York Speculators. It remained in use until the arrival of the telegraph until 1846.

The History of the Philadelphia Stock Exchange, <http://www.phlx.com/exchange/phlxhistory.pdf> (visited on October 18, 2007). These events evidenced the value given to the speed in which information is transmitted and presaged the interest that electronic trading would excite with quicker executions.

In New York, coffee house merchants were also dealing in securities, mostly government obligations, after the Revolution.¹² In 1791, daily auctions of government “stock” were being held on Wall Street under a set of rules agreed to by the auctioneers.¹³ More formal trading arrangements developed after concern arose that the auctions had fueled the speculation that resulted in a market panic.¹⁴ A meeting at Corre’s Hotel in March 1792¹⁵ resulted in the so-called “Buttonwood Agreement” in which a group of traders agreed to fix their commissions on sales of public stock and to give preference to each other in their dealings.¹⁶ This was an effort to centralize and monopolize trading—the model for exchange trading that would dominate American trading markets until the advent of the ECNs.¹⁷

The Buttonwood Agreement was the forerunner of the NYSE.¹⁸ That exchange was given a more formal structure in 1817 when the Buttonwood brokers sent a delegation to examine the constitution of the Philadelphia Stock Exchange. That

¹² James E. Buck, *The New York Stock Exchange: The First 200 Years* 16 (1992).

¹³ Stuart Banner, *The Origin of the New York Stock Exchange, 1791-1860* 27 *J. Legal Stud.* 113-114 (1998); Walter Werner & Steven T. Smith, *Wall Street 222*, 190-191 (1991).

¹⁴ Jerry W. Markham, *I A Financial History of the United States, From Christopher Columbus to the Robber Barons (1492-1900)* 110-118 (2002).

¹⁵ Francis L. Eames, *The New York Stock Exchange* 13-14 (1894). Corre’s Hotel was a favorite venue for taking subscriptions for stock. II Joseph Stancliffe Davis, *Essays in the Early History of American Corporations* 82 (1965).

¹⁶ J. Edward Meeker, *The Work of the Stock Exchange* 63 (1930).

¹⁷ The agreement to fix commissions would be a main stay of securities exchange trading until 1975 when the practice was banned by the SEC on “May Day.” Arthur Levitt, *The Future of Our Markets: Dynamic Markets, Timeless Principles*, 2000 *Colum. Bus. L. Rev.* 1, 4.

¹⁸ As one source notes, the redemption of the national debt by the federal government after the Revolution created a market in those securities:

The issuance of public stock as a result of this redemption created negotiable paper, and the auctioneers along Wall Street in New York began to hold daily sales. Independent agents began to appear and advertised themselves ready buy and sell the securities. The formation of the national bank and the issuance of [its] stock supplied an additional medium for trading. By March 1792, a public ‘stock exchange’ was organized with headquarters at No. 22 Wall Street. A rival organization met every day under a buttonwood tree in front of 68-70 Wall Street, an alliance which was the direct forerunner of the present New York Stock Exchange.

Robert Irving Warshow, *Alexander Hamilton* 139 (1931). For more on these events see Jerry W. Markham, *I A Financial History of the United States, From Christopher Columbus to the Robber Barons (1492-1900)* 108-118 (2002).

document became a model for the NYSE (it was then called the New York Stock and Exchange Board).¹⁹ The NYSE was a “call” market where trading was conducted by rotation,” which involved reading out the list of stocks trading on the exchange and requesting bids or offers.²⁰ Members were assigned chairs (hence the reference to exchange “seats”) and were required to be present for each session.²¹

The NYSE was not an immediate success. Average trading volume in 1821 was 300 shares, rising to 1,300 shares a day in 1824 and then declining to an average of 100 shares per day in 1827.²² However, by 1835, average daily trading volume was over 8,000 shares.²³ The price of NYSE seats reached a high of \$4,000 before falling to \$500 in 1861.²⁴ In order to restore the value of its seats, the NYSE then amended its constitution to prohibit its members from trading in listed securities outside the exchange’s trading room and continued to restrict the number of its seats.²⁵

The NYSE was already facing competition from the curb market (the precursor to Nasdaq) that was conducted on William Street in New York.²⁶ Competition heightened with the outbreak of war from a number of new exchanges, including some rather shady operations like the “Coal Hole” and more serious operations like the Open Board of

¹⁹ John R. Dos Passos, *A Treatise on the Law of Stock-Brokers and Stock-Exchanges* 10, n.3 (1882); J. Edward Meeker, *The Work of the Stock Exchange* 64 (1930).

²⁰ Edwin A. Roberts, Jr., *The Stock Market* 14 (1965).

²¹ James E. Buck, *The New York Stock Exchange: The First 200 Years* 57, 65 (1992).

²² On one day in 1827, only 14 shares were traded. Jerry W. Markham, *I A Financial History of the United States, From Christopher Columbus to the Robber Barons (1492-1900)* 187 (2002).

²³ James E. Buck, *The New York Stock Exchange: The First 200 Years* 15 (1992).

²⁴ Jerry W. Markham, *I A Financial History of the United States, From Christopher Columbus to the Robber Barons (1492-1900)* 241 (2002).

²⁵ *Id.*

²⁶ *Id.* at 242. Exchanges were also operating outside New York in Philadelphia, Boston, Chicago and San Francisco. *Id.* at 245. The NYSE sought to discourage the curb traders by denying them access to its quotations, but the curb traders secretly drilled a hole in a wall at the exchange so that they could listen to the trades on the NYSE floor. Stewart Banner, *The Origin of the New York Stock Exchange, 1791-1860*, 27 *J. Leg. Studies* 113, 128 (1998); Robert Steiner, *The Big Board’s Bicentennial, 200 Years Later, Small Investors Find Clout at America’s Premier Exchange*, *Wall St. J.*, May 13, 1992, at C1.

Stock Brokers that introduced the modern concept of continuous market making that would replace the rotation system theretofore employed by the NYSE.²⁷ Several “evening” exchanges were also operating that traded after the NYSE closed,²⁸ foreshadowing the demand for 24-hour trading in the next century that paved the way for electronic trading systems. Technology also made inroads at the NYSE during the Civil War. The telegraph replaced the express companies as the means for communicating market information rapidly,²⁹ and was in return replaced by the stock ticker and telephone by the end of the nineteenth century.³⁰

One other change occurred in that century that would complete the NYSE model that lasted throughout the next 100 years.³¹ This was the introduction of the “specialist” who makes a continuous “two-sided” market on the NYSE floor and holds the book of customer limit orders.³² This change was necessary in order to compete with the curb

²⁷ Jerry W. Markham, *I A Financial History of the United States, From Christopher Columbus to the Robber Barons (1492-1900)* 187 (2002). The NYSE merged with the Open Board of Stock Brokers and the Government Bond Department in 1869, doubling its membership. *Id.* at 288.

²⁸ *Id.* at 243.

²⁹ *Id.* at 245.

³⁰ Office of Technology Assessment, U.S. Congress, *Electronic Bulls and Bears, U.S. Securities Market and Information Technology*, 129 (Sept. 1990). Technology also had international implications. Four days after the completion of a trans-Atlantic cable in 1866, New York newspapers began publishing price quotes from the London exchanges. *Id.*

³¹ After the NYSE dropped its rotation system in 1871 and dealers in particular stocks began staking out their own portions of the trading floor so that they could be easily located. I Jerry W. Markham, *I A Financial History of the United States, From Christopher Columbus to the Robber Barons (1492-1900)* 288-289 (2002).

³² Securities & Exchange Commission, *Report on the Feasibility and Advisability of the Complete Segregation of the Functions of Dealer and Broker Pursuant to Section 11(e) of the Securities Exchange Act of 1934* 25, n. 41 (June 20, 1936). The specialists’ operations were automated in the twentieth century but remained essentially the same. As described in one court opinion:

Each security listed for trading on the NYSE is assigned to a particular Firm. To execute purchases and sales of a particular security, buyers and sellers must present their bids to buy and offers to sell to the specific Specialist Firm assigned to that security. . . . By acting as either the agent for investors or principal for itself in the sale and purchase of the individual securities to which they are each assigned, the Firms are required to make and display continuous two-sided quotations that accurately reflect prevailing market conditions in order to maintain a liquid and continuous two-sided public auction.

In re New York Specialists Securities Litigation, 2007 U.S. App. LEXIS 22212, at pp. 5-6 (2d Cir. 2007)

markets operating in the street outside the NYSE.³³ The specialists at first competed with each other in particular stocks but a single specialist was given a monopoly over market making in each stock, allowing them to reap vast benefits from that powerful position until electronic trading arrived late in the last century.³⁴

B. *Development of Futures Trading on Exchange Floors*

The futures exchanges in America trace their history to the development of centralized trading on the CBOT before the Civil War in standardized contracts calling for the delivery of grain in Chicago area warehouses.³⁵ The standardization of the contract terms allowed them to be offset with other contracts, giving rise to trading market that could

³³ NYSE Special Committee on Market Structure, Governance and Ownership, 20, n.26 (2000), <http://www.nyse.com/pdfs/marketstructure.pdf>. (visited December 17, 2007).

³⁴ Trading-Floor Changes Hurt LaBranche, N.Y. Times, July 10, 2007, at C12. In exchange for its monopoly position, specialists were forced to assume certain obligations:

Specialists are required to maintain a fair and orderly market in the stocks assigned to them. They do this by maintaining two-sided quotes for the stocks in which they specialize. Specialists have an affirmative obligation to “deal...for [their] own account when lack of price continuity, lack of depth, or disparity between supply and demand exists or is reasonably to be anticipated.” To mitigate the conflicts that may arise when specialists deal for their own accounts while simultaneously holding broker orders, specialists are also subject to a “negative” obligation not to deal unless it is “reasonably calculated to contribute to the maintenance of price continuity with reasonable depth, and to the minimizing of the effects of temporary disparity between supply and demand, immediate or reasonably to be anticipated.”

NYSE Special Committee on Market Structure, Governance and Ownership, 2-21 (2000), <http://www.nyse.com/pdfs/marketstructure.pdf> (visited December 17, 2007). *See also* Calif. Public Employees Retirement System v. NYSE, 503 F.3d 89 (2d Cir. 2007) (describing role of specialists and abuses).

³⁵ The standardized futures contract in use today was a product of the CBOT. Jerry W. Markham, History of Commodity Futures Trading and Its Regulation, 4-5 (1986). However, futures and other derivative contracts in one form or another has been traced back to 2000 B.C. Futures Industry Association, An Introduction to the Futures Market 2 (1984). Commodity exchanges were operating in Greco-Roman times. *See* BOARD OF TRADE OF THE CITY OF CHICAGO, COMMODITY TRADING MANUAL 2 (Patrick J. Catania ed., 9th ed. 1998). In Rome, over 1600 years ago, one:

way for merchants to more efficiently spread information was to work physically near each other. Knowing each other, seeing each other each day, and gossiping together would undoubtedly increase the information flow between the merchants. The Piazzale delle Corporazioni was the primary physical institution for grain information exchange in Ostia. The building is decorated with mosaics, including many depicting grain ships.

David Kessler & Peter Temin, The Organization of the Grain Trade in the Early Roman Empire, 60 Econ. Hist. Rev. 313, 329 (2007).

be used for hedging and speculation.³⁶ The clearinghouse was another important contribution to finance by the commodity exchanges. The clearinghouse acts an intermediary in each futures transaction. The clearinghouse's primary function is to guarantee the performance of all parties to a contract.³⁷

The primary purpose of the commodity exchanges in their infancy was to permit hedgers to purchase and sell cash commodities and offset risks associated with operating businesses in the underlying cash commodities,³⁸ but speculators operated in the markets as well. During these early stages, a contract's success was based upon its ability to replicate trading in the spot market.³⁹ Today, the success of a contract is largely dependent on its liquidity, i.e. the volume and open interest it attracts.⁴⁰ These measures are proxies for the

³⁶ This process is described in *Merrill Lynch, Pierce, Fenner & Smith, Inc. v. Curran*, 456 U.S. 353, 357-361 (1982). *See also* BOARD OF TRADE OF THE CITY OF CHICAGO, COMMODITY TRADING MANUAL 5 (Patrick J. Catania ed., 9th ed. 1998); Hugh Ulrich, *The Practical Grain Encyclopedia*, at 53 (1986) (defining "hedging" as the "true purpose for the existence of agricultural futures markets."). Unlike the securities markets, speculation is appreciated in the commodity markets as a source of liquidity and an aid to price discovery. This has not always been the case. In mid-sixteenth century England, for example, statutes prohibited food (grain) speculation as early as 1552. The statutory offenses were based on three common law violations; (1) forestalling, the purchase of corn outside of a market and a subsequent sale in the market, (2) regrating, the purchase and resale of corn in the same or nearby market, and (3) engrossing, the purchase of grain before harvest for the purpose of reselling [after harvest]. *See* STUART BANNER, *ANGLO-AMERICAN SECURITIES REGULATION: CULTURAL AND POLITICAL ROOTS 1690-1860*, 15 (1998). "The law's prohibition of food speculation thus rested on a solid base of popular disapproval." *Id.* at 17. Popular belief held that speculation raised prices, harmed the poor, exacerbated shortages, gave rise to deceit, and undermined the common good. *See id.*

³⁷ *See* Roberta Romano, *A Thumbnail Sketch of Derivative Securities and Their Regulation*, 55 *Md. L. Rev.* 1, 16-21 (1996) (describing this process).

³⁸ A "hedger" is a market participant who establishes positions where such "positions normally represent a substitute for transactions to be made or positions to be taken at a later time in a physical marketing channel, and where they are economically appropriate to the reduction of risks in the conduct and management of a commercial enterprise." 17 C.F.R. § 1.3(z).

³⁹ *See* Joost M.E. Pennings and Raymond M. Leuthold, *Introducing New Futures Contracts: Reinforcement Versus Cannibalism*, *J. INT'L MONEY & FIN.* 659 (2001) (summarizing research suggesting that "the success of a futures contract is heavily dependent on both its design and the characteristics of the underlying asset's spot market.").

⁴⁰ *See* Aysegul Ates & George H.K. Wang, *Information Transmission In Electronic Versus Open-Outcry Trading Systems: An Analysis Of U.S. Equity Index Futures Markets*, 25 *J. Futures Markets* 679 at 704 (2005) (suggesting that "relative operational efficiency of electronic systems is pronounced when the electronic trading system is operating in a very liquid market"). Ates and Wang also identify three elements of liquidity: time, transaction size, and price impacts. *See id.*; *see also* Melanie Burton, *Gold Record Is Distant Prospect*, *Wall St. J.*, Nov. 12, 2007 at C10 (explaining that "[o]pen interest is the number of positions outstanding in a market, and large open interest is a sign of liquidity."). "Open

contract's ability to accurately reflect cash market conditions.⁴¹ The ability of commodities markets to accurately reflect cash market conditions are limited by qualitative factors, like location, grade, or type;⁴² and quantitative factors, like deliverable supply, active and large commercial markets, and volume and open interest.⁴³

In 1873, the CBOT adopted regular trading hours for futures transactions and declared that all transactions executed by its members after regular trading were unenforceable.⁴⁴ This was an effort to confine futures trading to its trading floor. However, a competitor, the Chicago Open Board of Trade, allowed trading after hours and a curb market was operating.⁴⁵ These alternate markets were often little more than gambling dens (“bucket shops”) that allowed speculators to bet on price changes reported by the CBOT.⁴⁶ Several states passed laws prohibiting such operations,⁴⁷ and the CBOT sought to stop the

interest' is the total of all futures and/or option contracts entered into and not yet offset by a transaction, by delivery, by exercise, etc. The aggregate of all long open interest is equal to the aggregate of all short open interest.” CFTC, Comprehensive Review of the Commitments of Traders Reporting Program, 71 Fed. Reg. 35,627 at 35,628 (June 21, 2006).

⁴¹ See Ates & Wang, *supra* note 41, at 703 (identifying trading volume as “one of the most common measures of market liquidity”).

⁴² See RAYMOND M. LEUTHOLD, *ET AL.*, THE THEORY AND PRACTICE OF FUTURES MARKETS 45 (1989) (explaining the three dimensions of “basis” as time, space, and quality).

⁴³ See *id.* at 20 (listing common characteristics of traded contracts as: “(1) homogeneity of item, or at least not identified with a producer or manufacturer (i.e., fungible); (2) capable of description, including standardization and grading; (3) variable or uncertain prices; (4) active and large commercial markets; and (5) availability of public information.”). The success of an entire exchange, however, would require more. See *id.* at 113 (suggesting that the “overall performance of futures markets” requires “assessing simultaneously the efficiency of the market to transfer risks, forward price, transmit information, and firms in obtaining capital, and allocate resources and inventory”).

⁴⁴ Jerry W. Markham, *History of Commodity Futures Trading and Its Regulation* 4 (1986).

⁴⁵ *Id.*

⁴⁶ Jake, Keaveny, In Defense of Market Self-Regulation: An Analysis of the History of Futures Regulation and the Trend Toward Demutualization, 70 Brooklyn L. Rev. 1419 (2005). A bucket shop is:

an establishment, nominally for the transaction of a stock exchange business, or business of similar character, but really for the registration of bets, or wagers, usually for small accounts, on the rise or fall of the prices of stock, grain, oil, etc. There being no transfer or delivery of the stock or commodities nominally dealt in.

Gatewood v. North Carolina, 203 U.S. 531, 536 (1906). See also 1 William Harman Black, *The Law of Stock Exchanges Stock Brokers & Customers* 136 (1940) (describing origin of the term).

⁴⁷ See Lynn A. Stout, *Why the Law Hates Speculators: Regulation and Private Ordering in the Market for OTC Derivatives*, 48 Duke L. J. 701, 721-725 (1999) (describing this legislation). The Supreme Court held that transactions on the CBOT were not prohibited as gambling transactions because they created legally

bucket shops by cutting off access to its price quotations.⁴⁸ The CBOT was successful in that effort and that campaign formed the foundation for the monopoly in futures given by law to the commodity exchanges that lasted until the end of the last century.⁴⁹ The NYSE was aided by these actions. So-called “difference” trading, *i.e.*, betting on price changes in a stock, fell within the state gambling and bucket shop prohibitions.⁵⁰ The NYSE also was able to restrict access to its price quotations through court actions and restricting access to its facilities, thereby enhancing its own monopoly status.⁵¹

After the CBOT’s success was assured, commodity exchanges sprang up in several other cities.⁵² “The Chicago Butter and Egg Board was founded in 1898 and evolved into the Chicago Mercantile Exchange (now CME) in 1919.”⁵³ Another of the largest commodity exchanges with a trading floor is the New York Mercantile Exchange (“NYMEX”), which traces its history back to a butter and cheese exchange that was operating in 1872. The NYMEX is now an amalgamation of several New York commodity

enforceable delivery obligations even though most such obligations were offset with an opposing futures contract. *Board of Trade v. Christie Grain & Stock Co.*, 198 U.S. 236 (1905).

⁴⁸ Jerry W. Markham, “Confederate Bonds,” “General Custer,” and the Regulation of Derivative Financial Instruments, 25 *Seton Hall Law Review* 1, 12-14 (1994). The exchanges failed in this century to curb the growth of ECNs by cutting off access to their quotes. In *New York Mercantile Exchange, Inc., v. IntercontinentalExchange, Inc.*, Comm. Fut. L. Rep. (CCH) ¶30,597(2d. Cir 2007), the Second Circuit held that settlement prices on the New York Mercantile Exchange were not protected by copyright and that enforcing such a copyright would effectively protect the idea itself. Ideas and facts cannot be copyrighted that are part of the public domain.

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ W.C. Van Antwerp, *The Stock Exchange From Within* 149 (1913). The NYSE prohibited its members from dealing or even communicating with anyone on one notorious bucket shop operation that was the NYSE’s largest competitor, the Consolidated Exchange. M. Van Smith, *The Commodity Futures Commission and the Return of the Bucketeteers: A Lesson in Regulatory Failure*, 57 *N.D. L. Rev.* 7, 13 n.26 (1981). “The president of the New York Stock Exchange admitted that the purpose of the rule is to drive the Consolidated out of business.” Report of the Committee Appointed Pursuant to House Resolutions 429 and 504 to Investigate the Concentration of Control of Money and Credit, H.R. Rep. No. 1593, 62d Cong., 3d Sess. 37 (1913).

⁵² Jerry W. Markham, *History of Commodity Futures Trading and Its Regulation* 7-8 (1986).

⁵³ <http://www.cme.com/about/ins/caag/index.html> (visited on October 21, 2007).

exchanges, including the COMEX, which was itself a consolidation of several other exchanges.⁵⁴

Significantly, the futures exchanges were not in serious competition with the stock exchanges until the last quarter of the twentieth century. Until then, the commodity exchanges were just that—they traded only agricultural commodities—while the securities markets traded only securities. However, in 1973, the CBOT adopted commodity futures trading practices to securities when it created the Chicago Board Options Exchange Inc. (“CBOE”).⁵⁵ The CME also began trading commodity futures on precious metals and currencies. The CBOT and CME then segued into trading futures on a number of financial instruments (including government securities and stock indexes) and futures and options trading on financial instruments soon dominated their trading floors.⁵⁶

C. *The Regulatory Era*

Exchange members were the primary means by which enforcement of violations occurred.⁵⁷ Although some argue that self-regulation was non-existent at worst, or unevenly applied at best, it remained the method of enforcement for many years.⁵⁸ The commodity

⁵⁴ Jane Kagan Vitello, *Trading Through Time: The History of the New York Mercantile Exchange (1872-1997)* (1997).

⁵⁵ Jerry W. Markham & David J. Gilberg, *Stock and Commodity Options -- Two Regulatory Approaches and Their Conflicts*, 47 *Alb. L. Rev.* 741, 743-744 (1983).

⁵⁶ See Jeremy Grant, *Democrat in Move Over US Futures Regulator*, *Fin. Times* (London), Jan. 11, 2007, at 4 (the volume of financial futures now “dwarfs” that of agricultural futures on the commodity exchanges). See also Roberta Romano, *A Thumbnail Sketch of Derivative Securities and Their Regulation*, 55 *Md. L. Rev.* 1, 12 (1996) (describing the growth of these instruments).

⁵⁷ See BOARD OF TRADE OF THE CITY OF CHICAGO, *supra* note 35, at 77 (acknowledging that the “U.S. futures markets have a long history of self-regulation that dates from the mid-1800s, predating both state and federal regulation”).

⁵⁸ See Stephen C. Pirrong, *The Self-Regulation Of Commodity Exchanges: The Case Of Market Manipulation*, 38 *J.L. & Econ.* 141 at 143 (stating that “[s]elf-regulatory enforcement was virtually nonexistent during the period preceding the [Grain Futures Act]. Exchange members frequently voted down rules mandating penalties for manipulative conduct.”). The Federal Trade Commission concluded that despite the ineffectiveness of self-regulation, futures trading in grain should not be abolished but should be subject to governmental supervision. See 5 *Fed. Trade Comm’n, Report on the Grain Trade* 27, 260, 382.

exchanges were largely untouched by federal regulation until the 1920s,⁵⁹ and the stock exchanges were not regulated until 1934. This was not to suggest that there were not problems on the exchanges. The CBOT was infamous almost from the inception of futures trading for corners and other manipulative activities that adversely affected farm prices.⁶⁰ While members of Congress introduced some 200 bills calling for regulation of the futures exchanges between 1880 and 1920, none passed.⁶¹

Speculation associated with World War I led to a massive study of the grain trade and the commodity futures exchanges.⁶² Composed of seven volumes,⁶³ the study isolated manipulative activities such as “corners” and “squeezes” that disrupted markets and pricing.⁶⁴ This study led to the passage of the Future Trading Act of 1921,⁶⁵ but the Supreme Court held the Act was unconstitutional because the statute improperly relied on

⁵⁹ See G. Wright Hoffman, *Governmental Regulation of Exchanges*, 155 ANNALS AM. ACAD. POL. & SOC. SCI. 39, 46-47 (1931) (acknowledging that “[t]he laws passed by the various states relate more to the regulation of future trading than to the regulation of exchanges. Stated in another way, they relate only indirectly to organized exchanges.”).

⁶⁰ Jerry W. Markham, *The Manipulation of Commodity Futures Prices -- The Unprosecutable Crime*, 8 Yale J. Reg. 281, 288-292 (1991).

⁶¹ Note, *Federal Regulation of Commodity Futures Trading*, 60 Yale L. J. 822, 832, n. 6 (1951). One bill was passed by both houses in 1892 but could not be reconciled in the Conference Committee and failed enactment. John Rainbolt, *Regulating the Grain Gambler and His Successors*, 6 Hofstra L. Rev. 1 (1977).

⁶² Federal commodity laws originated after President Wilson requested an investigation by the Federal Trade Commission of complaints of manipulation in the grain trade. See FED. TRADE COMM’N, MEETING OF THE FED. TRADE COMM’N at *2 (July 23, 1917) (available at <http://www.ftc.gov/os/minutes/jul-aug1917.pdf>) (adopting a resolution initiating the inquiry and identifying the President’s request for an investigation). The investigation, spurred by claims of manipulation by the Minneapolis Chamber of Commerce, led to a series of reports and ultimately federal regulation. See *id.* (adopting a resolution stating that “Representatives of the [FTC] have made a report of a preliminary investigation of [allegations that the Chamber of Commerce of Minneapolis attempted to monopolize the grain trade of the Northwest] from which it appears that the charges have foundation in fact, and from which it appears that a fuller investigation of this complaint will involve the entire grain business ... and the Boards of Trade of Duluth and Chicago.”); see also FED. TRADE COMM’N, ANNUAL REPORT OF FED. TRADE COMM’N at 60 (June 30, 1926) (concluding that the “evil effect upon the market of trading in unduly large lots by wealthy individuals or daring speculators should be dealt with directly, it is indicated, through the machinery of the Grain Futures Administration of the Department of Agriculture.”); CFTC, *Revision of Federal Speculative Position Limits*, 72 Fed. Reg. at 65,484 (Nov. 21, 2007) (stating that “[s]peculative position limits have been a tool for the regulation of the U.S. futures markets since the adoption of the Commodity Exchange Act of 1936”); CFTC Reg. Part 150, 17 C.F.R. 150 et seq.

⁶³ 1-7 Federal Trade Commission, *Report on the Grain Trade* (1921).

⁶⁴ *Id.*, Vol. 5 at 322.

⁶⁵ 42 Stat. 187 (1921).

Congress's taxing power.⁶⁶ However, a market manipulation that occurred on the day after the Supreme Court's decision led Congress to pass the act again, this time under its Commerce Clause powers, and that statute, the Grain Futures Act of 1922 ("GFA"),⁶⁷ was upheld by the Court.⁶⁸ The GFA limited futures trading to "contract markets" licensed by the federal government,⁶⁹ thereby establishing the exchange trading floor's exclusivity over trading in futures contracts for decades to come.⁷⁰ Like most Congressional actions, the limitation of trading to "contract markets" was a balance of interests, promoting the dissemination of price information,⁷¹ expanding the regulation and monitoring of the marketplace,⁷² and eliminating bucket shops,⁷³ which would be most easily accomplished by granting "contract market" status exclusively to exchanges that would police themselves in order to protect their licenses.⁷⁴

⁶⁶ Hill v. Wallace, 259 U.S. 44 (1922).

⁶⁷ 42 Stat. 998 (1922).

⁶⁸ Chicago Board of Trade v. Olsen, 262 U.S. 839 (1923).

⁶⁹ 42 Stat. 302 (1922). See William L. Stein, The Exchange Trading Requirement of the Commodity Exchange Act, 41 Vand. L. Rev. 473 (1988) (describing this requirement).

⁷⁰ Jerry W. Markham, The Commodity Exchange Monopoly -- Reform is Needed, 48 Wash. and Lee L. Rev. 977, 981 (1991).

⁷¹ Indeed, the Federal Trade Commission recognized that grain exchanges performed many functions for the agricultural community. "Perhaps the most important function assumed by the exchanges, aside from providing a regulated market procedure and trading places for their members, is that of collecting, recording, and distributing quotations and market information. For these services the trade at large is almost wholly dependent on exchange organizations." FED. TRADE COMM'N, ANNUAL REPORT OF FED. TRADE COMM'N 41-42 (1921).

⁷² See Hoffman, *supra* note 59, at 53 (summarizing Section 8 of the GFA as "authoriz[ing] the Secretary of Agriculture] to make investigations, prepare materials, and publish reports upon such phases of the work of boards of trade and marketing generally as he may deem of interest to the public and of use to Congress").

⁷³ See Hoffman, *supra* note 59, at 43 (highlighting the support exchanges provided to state legislators: "[i]n the enforcement of laws prohibiting bucket shops, the various states have long had the active support of organized exchanges. In fact the exchanges have been the principal element in suppressing bucketing schemes and in advocating adequate legislation.").

⁷⁴ FED. TRADE COMM'N, ANNUAL REPORT OF FED. TRADE COMM'N 64 (1923) (summarizing the results of its inquiry into futures trading by stating that "[i]n view of the fact that futures prices have a substantial influence on cash prices (and this is insisted on by most of the proponents of futures trading) and the fact that artificial price conditions so often prevail in the futures market, it seems clear that, if this trading is permitted to continue, the Federal Government should regulate it, in order to prevent abuses."). *But see* Hoffman, *supra* note 59, at 52 (highlighting the provision of Section 4 of the GFA exempting "all forward delivery contracts in which farmers or farm interests appear as sellers").

The securities exchanges had a somewhat parallel history, but delayed federal regulation a bit longer than the commodities exchanges. The NYSE was notorious for the manipulations conducted on its floor by Robber Barons in the nineteenth century such as the “Erie Gang” composed of Daniel Drew, James Fisk and Jay Gould.⁷⁵ The “unlisted” stock trading department at the NYSE was trading highly speculative securities about which little was known because they refused to publish financial statements.⁷⁶ Despite these shortcomings, the NYSE was able to escape federal regulation until the 1930s. It did have a close call after the Panic of 1907 resulted in a Congressional investigation that generated some pointed criticism of the NYSE’s operations.⁷⁷ The NYSE escaped regulation then but did agree to abolish its unlisted trading department.⁷⁸

The NYSE was not so lucky after the Stock Market Crash of 1929 and the onslaught of the Great Depression.⁷⁹ The Securities Exchange Act of 1934 was designed to address the NYSE directly, requiring it and other stock exchanges to register as a “national securities exchange” subject to the pervasive regulation of the Securities and Exchange Commission.⁸⁰ The SEC forced the NYSE to remodel its governance

⁷⁵ John Steele, *The Scarlet Woman of Wall Street* (1988).

⁷⁶ No Unlisted Stocks After Next April, N. Y. Times, July 22, 1909, at 8.

⁷⁷ That investigation was led by Arsene Pujo, the Chairman of the House Committee on Banking and Currency (the “Pujo Committee”). He charged that the NYSE was largely a gambling operation in which many trades were offset futures style and payment made on the basis of any price differences. H.R. Rep. No. 1593, 62d Cong. 3rd Sess. (1913).

⁷⁸ No Unlisted Stocks After Next April, N. Y. Times, July 22, 1909, at 8.

⁷⁹ For a description of the background of the adoption of the federal securities laws see Joel Seligman, *The Transformation of Wall Street: A History of the Securities and Exchange Commission and Modern Corporate Finance* (1995).

⁸⁰ 15 U.S.C. §78(a) *et seq.* See generally Jonathan R. Macey and Maureen O’Hara, *Regulating Exchanges and Alternative Trading Systems: A Law and Economics Perspective*, 28 J. Legal Stud. 17 at 40 (Jan. 1999) (suggesting that NYSE’s “decline in market position [began with the adoption of] the securities laws themselves. [citations omitted] [T]he Securities Act of 1933 and the Securities Exchange Act of 1934 simply codified existing NYSE rules, customs, and practices.”).

procedures after one of its officials became involved in a scandal.⁸¹ The SEC also forced the exchange to ban floor traders. These were members trading for their own accounts on the exchange floor. The SEC thought that the time and place advantage gained by the floor traders on the floor was unfair to other traders.⁸² In contrast, the commodity exchanges encouraged floor traders because they added liquidity to the market.⁸³ Unlike the futures industry, OTC trading was regulated by the Maloney Act of 1938⁸⁴ and, therefore, sanctioned. This gave rise to the National Association of Securities Dealers Inc. (“NASD”). As described below, the NASD created its own OTC electronic quotation system in 1968—Nasdaq.⁸⁵

The NYSE sought to protect the advantages accruing to specialists and other members after the creation of the SEC. NYSE Rule 390 prohibited its members from trading listed stocks on any place other than the exchange floor.⁸⁶ This gave rise to the so-called “third” and “fourth markets” in NYSE listed stocks. The third market involved transactions in NYSE stock executed by broker-dealers that were not NYSE members

⁸¹ That individual was Richard Whitney, a former NYSE president who had vigorously led the opposition to the enactment of the federal securities laws. It was later discovered that he had been stealing from the NYSE Gratuity Fund that provided benefits for widows and children of deceased members. He also stole from the customers of his firm and from the New York Yacht Club. He was sent to Sing Sing prison for those crimes. Elisabeth Keller and Gregory A. Gehlmann, *A Historical Introduction to the Securities Act of 1933 and the Securities Exchange Act of 1934*, 49 *Ohio St. L. J.* 329, 351-352 (1988).

⁸² Joel Seligman, *The Transformation of Wall Street: A History of the Securities and Exchange Commission and Modern Corporate Finance* 228-343 (1982).

⁸³ Leo Melamed, *The Mechanics of a Commodity Futures Exchange: A critique of Automation of the Transaction Process*, 6 *Hofstra L. Rev.* 149 (1977). Floor traders (known as “locals” in the futures industry) were allowed both to trade for their own account and execute customer orders, giving rise to concerns of conflict of interest. Jerry W. Markham, *The Commodity Exchange Monopoly -- Reform is Needed*, 48 *Wash. and Lee L. Rev.* 977, 1023-1024 (1991).

⁸⁴ *See United States v. National Association of Securities Dealers, Inc.*, 422 U.S. 694, 700, n.6 (1975) (describing this legislation).

⁸⁵ II Jerry W. Markham, *A Financial History of the United States, From J.P. Morgan to the Institutional Investors (1900-1970)* 347 (2002).

⁸⁶ Charles Schumer, *A Shot Across the Trading Floor*, *Wall St. J.*, May 5, 2000, at A27 (“It may seem hard to believe, but for two centuries the New York Stock Exchange has operated mostly as a monopoly. . .”).

and, therefore, not subject to the requirements of Rule 390.⁸⁷ The fourth market involved transactions between two institutional investors directly, without exchange or broker-dealer intermediation, and it was these systems that led to the development of ECNs.⁸⁸ Another source of competition to the NYSE specialist were “block trades,” arranged “upstairs” by a NYSE member broker-dealer and crossed on the floor, thereby denying the specialist its normal bid-ask spread.⁸⁹ By 1993, the NYSE was still executing almost 70 percent of total orders and 80 percent of volume for its listed stocks, but about half of that volume was done through block trades.⁹⁰

The market also experienced some dramatic changes after World War II. Significantly, institutional traders, such as mutual funds and pension funds (and now hedge funds, private equity and sovereign wealth funds), began supplanting the individual retail investor in the securities markets.⁹¹ By 1992, institutions owned over 50

⁸⁷ See Dale A. Oesterle, Comments on the SEC's Market 2000 Report: On, Among Other Things, Deference to SROs, the Mirage of Price Improvement, the Arrogation of Property Rights in Order Flow, and SEC Incrementalism, 19 Iowa J. Corp. L. 483 (1994) (describing these markets).

⁸⁸ Eric C. Otness, Balancing the Interests of Retail and Institutional Investors: The Continued Quest for Transparency in Today's Fragmented Markets, 93 Mw. U. L. Rev. 1607, 1615 (2002).

⁸⁹ See Robert E. Rubin and Jacob Weisberg, In an Uncertain world, Tough Choices From Wall Street to Washington 71 (2003)(describing block trades); Eric C. Otness, Balancing the Interests of Retail and Institutional Investors: The Continued Quest for Transparency in Today's Fragmented Equity Markets, 96 Nw. U.L. Rev. 1607, 1614 (2002) (same). Market makers quote two-sided markets at a spread; their bids being lower than their offers. This means that, assuming no underlying change in the market, a person buying a contract and immediately reselling it will be paid less for the contract than what was paid for it, causing a loss. See Stanislav Dolgoplov, Insider Trading and the Bid-Ask Spread: A Critical Evaluation of Adverse Selection in Market Making, 33 Cap. U.L. Rev. 83, 88-89 (2004) (describing bid-ask spread).

⁹⁰ Division of Market Regulation, U.S. Securities and Exchange Commission, Market 2000, An Examination of Current Equity Market Developments 8 (Jan. 1994).

⁹¹ See generally *The Role of the Institutional Investors in Corporate Governance and Capital Markets, Hearings Before the Subcommittee on Securities of the Senate Committee on Banking, Housing, and Urban Affairs*, 101st Cong., 1st Sess. 15 (1989). Individual investors owned more than half of all stock in the 1950s. NYSE & The Wharton School, *The Policy Implications of Stock Ownership Patterns* 1 (1993). “In 1960, the total equity security holdings of institutional investors represented 12.6% of the total U.S. equity markets. The percentage grew to 19.4% in 1970, to 33.9% in 1980, to 47.2% in 1990, and to 48.5% in 1996. The total value of institutional investors holdings, which were \$672.6 billion in 1970, grew to \$ 11.1 trillion by 1996. Robert W. Hamilton, 25 Iowa J. Corp. L. 349, 354 (2000). “Defining institutional investors to include private pension funds, investment companies, life insurance companies, bank-managed trust funds, state and local retirement funds, foundations, educational endowments, and similar accounts, the total assets under their management has increased 14.1% per year, more than doubling in value, from \$

percent of all U.S. equities, up from 30 percent in 1975.⁹² Institutions were also accounting for more than 80 percent of trading volume on stock markets by 1992.⁹³ This growth had several implications, but of critical importance was the fact that the SEC and the federal securities laws were structured to protect only the small investor, not institutions and sophisticated investors who could look out for themselves.⁹⁴ This allowed the latter to operate outside much of the SEC regulatory framework.⁹⁵ The institutional traders also had the wherewithal to develop or seek out alternative trading systems that would provide more effective executions and avoid paying the specialist's spread.

The SEC conducted a study in 1971 on the growth of institutional trading.⁹⁶ It was concerned that the growth of such trading might create separately tiered markets for institutions and retail investors. The concern was that a three-tiered market was developing that was composed of (1) large institutions, (2) medium-sized institutions and wealthy individuals, and (3) small retail customers.⁹⁷ The SEC also raised concerns with market "fragmentation" that might result in disparate pricing for the same securities in different markets, which had been the justification for NYSE Rule 390.⁹⁸ The SEC

2.1 trillion in 1981 to \$ 4.46 trillion in 1987." Louis Lowenstein & Ira M. Millstein, *The American Corporation and the Institutional Investor: Are There Lessons to be Learned From Abroad?* 1988 Colum. Bus. L. Rev. 739.

⁹² Division of Market Regulation U.S. Securities and Exchange Commission, *Market 2000, An Examination of Current Equity Market Developments* 6 (Jan. 1994).

⁹³ III Jerry W. Markham, *A Financial History of the United States, From the Age of Derivatives into the New Millennium (1970-2001)* 208 (2002).

⁹⁴ See Jerry W. Markham, *Protecting the Institutional Investor -- Jungle Predator or Shorn Lamb?* 12 *Yale J. on Reg.* 345 (1995) (describing this bifurcated regulatory structure).

⁹⁵ Some critics contend that institutions should be given the protections accorded to retail investors such as protection under the "suitability" rule that prohibits broker-dealers from recommending securities that are not suitable for a customer in light of that particular customer's needs and investment goals. Norman S. Poser, *Liability of Broker-Dealers for Unsuitable Recommendations to Institutional Investors*, 2001 *B.Y.U.L. Rev.* 1493 (2001).

⁹⁶ SEC, *Institutional Study Report* 9 (1971).

⁹⁷ Office of Technology Assessment, *Electronic Bulls & Bears: U.S. Securities Markets & Information Technology* 7 (1990).

⁹⁸ Arthur Levitt, *The Future of Our Markets: Dynamic Markets; Timeless Principles*, 2000 *Colum. Bus. L. Rev.* 1, 9-11. The NYSE did not drop its Rule 390 until December 1999. Laura Nyantung Beny, *U.S.*

sought to counter these concerns with a concept it dubbed the “Central Market” System,⁹⁹ later renamed the “National Market System” in the 1975 amendments to the Securities and Exchange Act of 1934 that gave statutory recognition to this concept.¹⁰⁰ The SEC sought to prevent market fragmentation by requiring that retail customers receive the “best execution” available on any market for their trades.¹⁰¹

This entire effort turned out to be an exercise in futility. The primary survivor of the SEC’s central market program was a consolidated tape, which now seems quaint in light of other technological advances.¹⁰² In addition, an electronic link among the specialists trading the same stock on different exchanges was created and was the centerpiece of the new central market envisioned by the SEC. This Intermarket Trading System, (“ITS”) as it was dubbed had little effect on the NYSE’s domination because specialists on the regional exchanges simply traded off the NYSE specialist quotes, not wanting to compete with the more powerful NYSE market maker. A link was also created between NYSE specialists and Nasdaq market makers.¹⁰³

In 1981, ITS adopted a requirement “that changed the essential nature of the ITS system from a voluntary execution system, in which a market-maker in one market could choose to execute trades in other markets, to a mandatory execution system, in which a market maker in one market center, under some circumstances, was forced to execute

Secondary Markets : A survey of Current Regulatory and Structural Issues and a Proposal to Enhance Competition, 2002 Colum. Bus. L. Rev. 399, 414.

⁹⁹ SEC, Policy Statement of the Securities and Exchange Commission on the Structure of a Central Market System (March 29, 1973).

¹⁰⁰ Panel Discussion: Celebrating Thirty Years of Market Regulation, 9 Fordham J. Corp. & Fin. L. 301, 308 (2004).

¹⁰¹ See generally David A. Lipton, Best Execution: The National Market’s System’s Missing Ingredient, 57 Notre Dame L. Rev. 449 (1982) (discussing the role of best execution).

¹⁰² Laura Nyantung Beny, U.S. Secondary Markets : A survey of Current Regulatory and Structural Issues and a Proposal to Enhance Competition, 2002 Colum. Bus. L. Rev. 399, 415-416.

¹⁰³ Laura Nyantung Beny, U.S. Secondary Markets : A survey of Current Regulatory and Structural Issues and a Proposal to Enhance Competition, 2002 Colum. Bus. L. Rev. 399, 416-417.

trades in other markets.”¹⁰⁴ The SEC “trade through” rule required execution of orders at the best available price.¹⁰⁵ Sticking to this Central Market concept, the SEC in 1997 adopted another form of “trade through” rule that required Nasdaq market makers to inform customers off matchable limit orders from other customers at a price more favorable than the market maker’s quote and to disclose whether the market maker has traded at better prices on an ECN.¹⁰⁶

The SEC also required the NYSE to limit its Rule 390 to only those NYSE stocks listed before April 26, 1979.¹⁰⁷ Nasdaq market makers were then allowed to access the Intermarket Trading System for NYSE stocks listed after that date.¹⁰⁸ It was not until December 1999, however, that the NYSE agreed to drop Rule 390 entirely and only after much pressure from the SEC.¹⁰⁹ More successful was the Depository Trust Co. that centralized stock transfers after a “paperwork crisis” on the NYSE nearly destroyed the securities industry in the 1960s. NYSE member firms had tried to automate their operations during that crisis, but the lack of back up systems only compounded problems as errors mounted.¹¹⁰ This was a strong signal that increased trading volumes would

¹⁰⁴ Dale A. Osterle, Regulation NMS: Has the SEC Exceeded Its Congressional Mandate to Facilitate a “National Market System” in Securities? 1 N.Y.U.J.L. & Bus. 613, 640 (2005).

¹⁰⁵ *Id.*

¹⁰⁶ 62 Fed. Reg. 40,732 (1997) See Kim Bang, What’s New in the Financial Services Industry: New Initiatives, 3 Fordham Fin. Sec. & Tax L. F. 67, 68, n.3 (1998) (describing this rule).

¹⁰⁷ S.E.C. Adopts Rule to Open Up Trading in Big Board Stocks, N.Y. Times, Dec. 9, 1999, at C27.

¹⁰⁸ For a description of the Intermarket Trading System see Securities Exchange Act Release No. 34-38672, 1997 SEC LEXIS 1178 (May 23, 1997).

¹⁰⁹ Kenneth N. Gilpin, The Markets; Big Board Widens Access to Intermarket Trading System, N.Y. Times, Dec. 3, 1999, at C8.

¹¹⁰ See Securities and Exchange Commission, Study of Unsafe and Unsound Practices of Brokers and Dealers, Report and Recommendations, H.R. Doc. No. 231, 92d Cong., 1st Sess. (1971) (describing the paper work crisis). Over 100 NYSE firms failed during that crisis. James E. Buck, The New York Stock Exchange, the First 200 Years 190 (1992). See Curtis R. Reitz, Investment Securities: The New UCC Article 8 for Delaware, 1 Del. L. Rev. 47, 49-50 (1998) (describing success of the Depository Trust Company).

require automation of order flow.¹¹¹

D. Market Convergence

The CBOT did not stop with the CBOE in its efforts to introduce open outcry style pit trading into the securities markets. Soon after the CFTC was created, the CBOT introduced a futures contract on GNMA pass-through securities, a securities industry product.¹¹² That product was immediately successful, but it set off a long-running war between the CFTC and SEC over jurisdiction over these instruments.¹¹³ That fight did nothing to slow the CFTC's approval of more futures-style trading on financial instruments, including a number of very popular futures contracts on stock indexes and government securities.¹¹⁴ The CFTC and SEC settled some of their differences through the so-called Shad-Johnson Accords, an agreement between the chairmen of the two agencies that was subsequently enacted into law.¹¹⁵ That agreement confirmed the CFTC's authority to approve futures and options on futures contracts on broad-based indexes and allowed index options to be traded on the CBOE and other option exchanges regulated by the SEC.¹¹⁶ Initially, futures contracts on a single stock were prohibited, but that restriction was lifted in 2000 and a form of dual regulation was adopted allowing both the CFTC and SEC to regulate such contracts.¹¹⁷

¹¹¹ One significant improvement was immobilizing the transfer of most stock certificates. *See* Curtis R. Reitz, *Investment Securities: The New UCC Article 8 for Delaware*, 1 *Del. L. Rev.* 47, 49-50 (1998) (describing success of the Depository Trust Company).

¹¹² *See* American Regulatory Bodies; Watchdog Bites Watchdog, *The Economist*, Feb. 18, 1978 (describing Board of Trade v. SEC, 677 F.2d 1137 (7th Cir. 1982).
that controversy).

¹¹⁴ *See* Jerry W. Markham & David J. Gilberg, *Washington Watch: Stock Index Futures*, 6 *Corp. L. Rev.* 59 (1983) (describing index futures).

¹¹⁵ Comment, *Joint Regulation of Single Stock Futures: Cause or Result of Regulatory Arbitrage and Interagency Turf Wars?* 51 *Cath. U.L. Rev.* 917, 921 (2002).

¹¹⁶ *See* Gary W. Glisson, *United States Regulation of Foreign Currency Futures and Options Trading: Hedging for Business Competitiveness*, 8 *Nw. J. Int'l L. & Bus.* 405, 406, n. 9 (1987).

¹¹⁷ William J. Brodsky, *New Legislation Permitting Stock Futures: The Long and Winding Road*, 21 *Nw. J. Int'l L. & Bus.* 573 (2001).

These products resulted in a great deal of trading by institutions that had previously shunned the commodity markets and a number of new trading strategies were developed. Those strategies included “dynamic hedging,” or “portfolio insurance” that allowed portfolio managers to protect or expose their portfolios to market changes without liquidating the assets held in the portfolio.¹¹⁸ “Program trading” was quickly popular, *i.e.*, trading on the basis of trading signals generated by computer programs that seek to predict market changes by mathematical models.¹¹⁹

Concern was raised that these new financial futures might pose a danger to the markets, as where computer programs used by program traders generate sell signals in a market downturn that pushes prices down further, generating more sell signals until the market collapses in a “meltdown.”¹²⁰ That prophesy was nearly fulfilled in the Stock Market Crash of 1987 when the Dow Jones Industrial Average dropped more in absolute and relative terms than had been the case in the Stock Market Crash of 1929, paralyzing the NYSE because it simply did not have the capacity to handle that unexpected volume.¹²¹

A number of studies were conducted after the Stock Market Crash of 1987 to ascertain whether the commodity futures markets should be subject to further regulation

¹¹⁸ Lewis D. Solomon & Howard B. Dicker, *The Crash of 1987: A Legal and Public Policy Analysis*, 57 *Fordham L. Rev.* 191 (1988).

¹¹⁹ Richard A. Booth, *The Uncertain Case for Regulating Program Trading*, 1994 *Colum. Bus. L. Rev.* 1.

¹²⁰ Jerry W. Markham * Rita McCloy Stephanz, *The Stock Market Crash of 1987—The United States Looks at New Recommendations*, 76 *Geo. L. Rev.* 1993, 1994, n. 8 (1988).

¹²¹ *Id.* at 2008. This was not the first time that the NYSE experienced capacity constraints. In addition to the paperwork crisis of the 1960s, the NYSE experienced capacity constraints due to increased volume during the 1920s. In order to deal with that problem, the exchange expanded its membership. Lance E. Davis, Larry Neal, and Eugene White, *The Highest Price Ever: The Great NYSE Seat Sale of 1928-1929 and Capacity Constraints*, 67 *J. Eco. Hist.* 705 (2007).

in the form of crippling margin requirements that would curb speculation.¹²² After much back-and-forth little was done except to adopt trading collars (“circuit breakers”), borrowing from similar limitations on futures exchanges. The circuit breakers suspended trading on the NYSE when prices moved a predefined, and largely arbitrary, amount. The circuit breaker rules became effective during periods of high volatility. The exchange believed that the circuit breakers would slow electronic program trading, allow traders to respond more rationally to market events, and thus, provide the NYSE with additional time to process trades, which would lead to a more orderly market.¹²³

The circuit breakers proved to be unpopular¹²⁴ and were discarded in 2007, almost 20 years to the day from when they were first proposed.¹²⁵ They were, in all events, no longer needed to allow orderly trade processing because the NYSE had massively increased its capacity to deal with large volume trading that might trigger those limits. In 1987, the NYSE could handle only about 95 electronic messages per second, but by 2007 it was able to handle 38,000 messages per second as the result of computer enhancements.¹²⁶ Trading continued between the derivative and securities markets despite periodic market disruptions and regulatory concerns.

¹²² Jerry W. Markham & Rita McCloy Stephanz, *The Stock Market Crash of 1987—The United States Looks at New Recommendations*, 76 *Geo. L. Rev.* 1993, 2006-2021 (1988).

¹²³ David E. Sanger, *New Reliance on Computers Is Altering Investors' Tactics*, *N.Y. Times*, Dec. 15, 1987, at A1.

¹²⁴ Mark Hulbert, *The Market Crash of '87 -- Rare But Hardly Unique*, *N.Y. Times*, Oct. 19, 2003, §3, at 7.

¹²⁵ *NYSE Files to End Trading Collars*, *Wall St. J.*, Oct. 27, 2007, at B3. The circuit breakers had kicked in when the Dow Jones Industrial Average dropped 554 points on October 27, 1997, ten years after the 1987 crash, but NYSE systems had improved enough to deal with such unexpected events. See Robert E. Rubin & Jacob Weisberg, *In an Uncertain World, Tough Choices From Wall Street to Washington* 190-191 (2003).

¹²⁶ Aaron Lucchetti, *After Crash, NYSE Got the Message(s)*, *Wall St. J.*, Oct. 16, 2007, at C1.

E. *The Role of the Exchange*

The modern regulated exchange has several roles. Its transparency provides a price discovery mechanism and liquidity so that investors, speculators and hedgers can quickly create and liquidate positions at current market prices.¹²⁷ The exchanges also provide some quality control features. For example, the commodity exchanges standardize contract terms for such things as quantity, quality and delivery conditions. The exchange clearinghouses provide clearing and settlement functions that assure the smooth processing and confirmation of trades, overnight in the case of the commodity exchanges and within three days on the securities exchanges. The commodity exchange clearinghouses also provide a performance guarantee for counterparties, eliminating most concerns of counterparty default.¹²⁸

The stock exchanges and Nasdaq impose minimum listing requirements as quality control mechanisms. When developing new products to trade, exchanges often seek the input from participants in the cash market or dealers.¹²⁹ For instance, in order for a company to obtain a listing on a national securities exchange, an indication of interest from brokers, dealers, and underwriters is a virtual requirement. The commodity exchanges also decide

¹²⁷ The SEC staff has stated that “transparency -- the real-time public dissemination of trade and quote information – plays a fundamental role in the fairness of the secondary markets.” Division of Market Regulation, U.S. Securities and Exchange Commission, *Market 2000, An Examination of Current Equity Market Developments IV-1* (Jan. 1994).

¹²⁸ See *Merrill Lynch, Pierce, Fenner & Smith, Inc.*, 456 U.S. 353 (1982) (describing role of commodity exchanges and their clearing houses).

¹²⁹ Some studies suggest that the arbitrageurs and speculators and not the exchanges are the true designers of standardized contracts. See Jens Nystedt, International Monetary Fund Working Paper, *Derivative Market Competition: OTC Markets Versus Organized Derivative Exchanges* at 9 (April 2004) (citing research by Rahi, R., and J. Zigrand and paraphrasing that “[r]ather than assuming, as is common in the literature, that exchanges design the innovations/contracts, Rahi and Zigrand argue that profit seeking agents that trade on the exchanges play an important role in the ultimate design of a financial contract.”).

what products they will trade with a view toward preventing manipulation and are constantly testing for new products.¹³⁰

Market transparency allows regulators to follow market trends and adjust their regulation accordingly. To illustrate, the CFTC revised its commitment of traders report in 2006 and formally recognized a new category of trader, the “index trader.”¹³¹ The primary purpose of the report is to identify publicly the composition of participants in various commodity markets.¹³² The report provides the public with a glimpse of what some exchanges already know, trends in market participant’s positions, and something the exchanges do not know, a detailed comparison of their customer’s activity relative to other exchanges.¹³³

As a class, the index traders’ interest represents a significant minority in the markets in which they participate.¹³⁴ Of particular interest is a comparison of the index traders’

¹³⁰ Some research suggests that, if not adequately complimentary to existing contracts, the development of new contracts could reduce overall exchange volume. “The possibility of cannibalism when introducing a new futures contract exists, leading to a volume decrease for those futures contracts currently traded. This volume decrease might, in turn, lead to a decline in liquidity, which would ultimately threaten the exchange’s viability. These results gain special relevance when applied to new futures exchanges because of their smaller scale.” Joost M.E. Pennings and Raymond M. Leuthold, *Introducing New Futures Contracts: Reinforcement Versus Cannibalism*, J. INT’L MONEY & FIN. at 672.

¹³¹ “Recognize” is a little misplaced here because the CFTC did not produce a definition of “index trader”, perhaps in keeping with the principles based approach to regulation. The CFTC describes the category consisting of “mostly ... those that are seeking a more general exposure to commodity prices, typically in a long-only, unleveraged, and passively-managed manner using a standardized commodity index.” CFTC, *Commission Actions in Response to the “Comprehensive Review of the Commitments of Traders Reporting Program”* at 10 (December 10, 2006). Further clarifying the definition, the CFTC explained that:

[S]taff, having weighed all the available information, has used its best judgment to designate certain traders as Index Traders. Some traders assigned to this category are engaged in other futures activity that could not be disaggregated. As a result, the Index Traders category, which is typically made up of traders with long-only futures positions, will include some short futures positions where traders have multi-dimensional trading activities, the preponderance of which is index trading.

Id. (citations omitted).

¹³² See CFTC, *Backgrounder the Commitments of Traders Report*, available at www.cftc.gov/opa/backgrounder/opacot596.htm.

¹³³ See *id.* (See CFTC, *Backgrounder the Commitments of Traders Report*, available at www.cftc.gov/opa/backgrounder/opacot596.htm.)

¹³⁴ See CFTC, *Historical Commitments of Traders Commodity Index Trader Supplement Reports 2006 – Present*, available at www.cftc.gov/dea/history/deahist-cit.htm (last visited March 1, 2007). During the

participation in wheat contracts offered by the Kansas City Board of Trade (“KCBOT”) and the CBOT.¹³⁵ Comparing the index traders’ activity in these two markets leads to a conclusion that exchanges that promote their electronic trading system will attract more market users. In particular, the index traders’ participation in the KCBOT and the CBOT’s wheat contracts presages other participants’ preference in choosing a market. The trend in commercial traders’ participation is quite clear in this respect.¹³⁶ Commercial traders are migrating to the CBOT’s wheat contract in large numbers.¹³⁷ The migration suggests that hard red winter wheat commercial hedgers prefer to use a futures contract designed for another product type, CBOT’s wheat contract is designed for the soft red winter wheat, over the KCBOT’s futures contract, a contract specifically designed for hard red winter wheat hedging. To create a mature, liquid market, exchanges must attract participants willing to trade volume.¹³⁸

period covered by the Supplement, index traders held as much as 51% of the open interest in CBOT wheat and as little as 12% in KCBOT wheat.

¹³⁵ The CBOT contract has also seen a growing number of reportable index traders in the CBOT’s wheat contract. The total positions held by index traders has also increased in the CBOT’s wheat contract over the last year by 26,200 contracts while their positions at in the KCBOT’s wheat contract have only increased by 7,000 contracts. *See id.*, *Historical Commitments of Traders Commodity Index Trader Supplement Reports 2006 – Present*, at www.cftc.gov/dea/history/deahist-cit.htm (last visited March 1, 2007).

¹³⁶ The CFTC apparently uses multiple criteria for determining a participant’s “commercial” status. For “traders” the standard is whether the trader uses a “futures contracts that particular commodity for hedging as defined in the Commission [Rule 1.3(z)].” For a “trading entity” the standard is whether the trader files the Form 40 and affirms that it is “commercially ‘...engaged [sic] in business activities hedged by the use of the futures or option markets.’” *See Backgrounder the Commitments of Traders Report*, available at <http://www.cftc.gov/opa/backgrounder/opacot596.htm> (Jan. 2007) (last visited March 6, 2007).

¹³⁷ During the initial period covered by the Supplement, commercial participants increased their interest in the CBOT’s contract by 56% while at the same time they reduced their interest in KCBOT’s contract by 31%. On January 3, 2006, the two exchanges had nearly identical commercial participation, 103 commercial participants in the CBOT contract versus 102 in KCBOT. Since then, the number of commercial participants has increased by 67% at the CBOT and only 28% at the KCBOT.

¹³⁸ Thus, mature contracts are the result of an exchange’s effort to produce a product both of the basic types of participants, hedgers and speculators, desire. In developing this product, exchanges must consider the objective of the commercial hedger, “to pass flat price risks onto someone else,” LEUTHOLD ET AL., *supra* note 42, at 70 (discussing one of T.A. Hieronymus’s definitions of “hedging”). The exchange must design the product to promote the speculator’s role: “to provide liquidity to the market, interpret information, and bridge the gaps between outside orders that vary in time and size.” *Id.*, at 30.

One service, and revenue source, for exchanges is fulfilling the demand for market data. As intermediaries found it profitable to develop trading strategies, they demanded and paid for trade data from the exchanges.¹³⁹ The exchanges' profitability from the dissemination of trade data is large; according to some researchers, market data fees accounted for 50% of the NYSE Group's total revenues in 2006 while those same fees represented about 80% of Nasdaq's total revenue.¹⁴⁰ Exchanges have always charged for historical data, but demand for data was stoked by index traders, hedge funds and other quantitative traders. Quantitative traders, in particular, require a significant amount of data to test their programs during development. Hedge funds have also changed the information flow for the commodities in which they invest.¹⁴¹

In addition to providing a marketplace, the exchanges are a natural entity to enforce federal commodity and securities laws.¹⁴² They are uniquely qualified to act as gatekeeper for membership,¹⁴³ resolve disputes, establish codes for acceptable trading practices and implement other policies that are applicable to the industry.¹⁴⁴ These functions flow

¹³⁹ Today, exchanges customize trade data; one even offers a "Hedge Fund" package. See CBOT, *CBOT Hedge Fund Historical Data Database*, <http://cbotdataexchange.if5.com> (not available after Jan. 1, 2008). The data purchased usually includes volume, open interest, and each trade price, bid, or offer quoted throughout the trading day. See *id.*

¹⁴⁰ See Edgar Ortega, Bloomberg News, *Bats Market Doubles its Business After Cutting Trading Fees*, at *2 (Jan. 4, 2007).

¹⁴¹ See Michael S. Haigh, Jana Hranaiova and James A. Overdahl, Office of the Chief Economist U.S. Commodity Futures Trading Commission, Working Paper, *Price Dynamics, Price Discovery and Large Futures Trader Interactions in the Energy Complex* at 25 (April 2005) (explaining that hedge fund traders, money management traders, "appear to be, in econometric terms, an information sink – they do not cause any other participant to change their position in contemporaneous time (on the same day) but rather, information flows towards them rather than away.").

¹⁴² See *supra* note 57 and accompanying text.

¹⁴³ All exchanges have a method of qualifying new members. With respect to its gate keeper functions, an exchange's membership department reviews applicants' financial and personal conduct, organizes information, processes applications, and typically presents them to a membership committee for review and action.

¹⁴⁴ See CFTC Reg. 1.51; see also Stuart Banner, *The Origin of The New York Stock Exchange, 1791-1860*, 27 J. Legal Stud. 113 at 121-125 (January 1998) (identifying five benefits of membership: (i) orderly procedure for matching buyers and sellers; (ii) assurance that other members were creditworthy; (iii)

naturally to the exchange and lend themselves to revisions and knowledge base over time that leads to other functions that form the basis for the existence of exchanges. Exchanges have always performed some level of selection in qualifying members.¹⁴⁵ The very existence of a selection process conferred benefits on members that were critical to their success as brokers.¹⁴⁶

Trading errors are another important issue for the exchanges. Errors occur on a trading floor every day and usually result in someone losing money, if not jobs and clients.¹⁴⁷ Exchange rules attempt to speed the identification and resolution of errors.¹⁴⁸ Often times, members identify the trade as good, but some portion of it, price, quantity, or contract month, is identified as an error, which results in an “out trade” or the clearinghouse’s rejection of the trade.¹⁴⁹ Exchanges can easily prevent some types of errors, like trades beyond the daily price limits.¹⁵⁰ Although unpreventable, other types of errors can be easily identified and left to participants to resolve, like quantity errors. While still

reputation capital that members could use to solicit new customers; (iv) access to market information; and (v) regulation of trading, enforcement of contracts, and dispute resolution).

¹⁴⁵ See Stuart Banner, *The Origin of The New York Stock Exchange, 1791-1860*, 27 J. Legal Stud. 113 at 116 (January 1998) (citing the NYSE’s original constitution of 1817 as restricting members to those who “have been in the business for a term of one or more years.”).

¹⁴⁶ See *id.*, at 121-125 (identifying five benefits of membership).

¹⁴⁷ Stephen Foley, *Single error costs mighty Morgan Stanley \$8bn*, THE INDEPENDENT (London), Dec. 20, 2007, available at <http://news.independent.co.uk/business/news/article3266626.ece>.

¹⁴⁸ CFTC Reg. 1.35(j)(1) requires members of contract markets to collect cards for clearance not less than once every fifteen minutes. See 17 C.F.R. §1.35(j)(1).

¹⁴⁹ See KCBOT, Rule 1187.00 at 1123 (2007) (requiring all clearing members to settle their futures trades each day); see also KCBOT Clearing Corporation Sections 6.04(b), 6.05, and 6.11 at 6.2 (1999) (requiring all clearing members to deliver a report by 8:30 am for the previous business day that “shall reconcile all reported errors or discrepancies for the business day of the report” and imposing a fine for any clearing member who fails to deliver such a report and for reports that contain errors).

¹⁵⁰ Each day, for most commodity futures contracts, the exchanges establish the maximum daily high and low prices members are permitted to trade during that day’s trading session. Trades made outside of this range established before the beginning of trading every day are simply deleted, or “busted”, as if they never occurred. See e.g., CBOT, *Electronic Trading Platform Reference Manual* at 72 (2006) (stating all trades “executed outside of the daily price limits will be busted by [the exchange] irrespective of” any other circumstances.).

other types of errors, like trading through the market,¹⁵¹ which under the pressure of face-to-face transactions by members in the pits occur occasionally on the floor, can cause havoc in the electronic marketplace. Exchanges adopted the most significant revisions to error trade policies to address this last type of error.

Exchanges have always performed some dispute resolution function. The highly specialized nature of disputes and the industry norms for resolving such disputes are largely responsible for the exchanges' willingness to undertake these functions. The exchanges and their national counterparts also provide arbitration forums to resolve disputes with customers and among members. The Supreme Court's recognition of the enforceability of such contracts has led to many if not most broker-dealer/customer disputes to be settled by arbitration rather than in the courts.¹⁵² Electronic trading is unlikely to have a significant impact dispute resolution. The most significant changes in this area would relate to the nature of the dispute, the legal arguments presented, and the forms of acceptable evidence.

Most significantly, the exchanges and their counterparts, the National Futures Association and the NASD (now the Financial Industry Regulatory Authority, Inc.) have provided a self-regulatory role that supplements governmental regulations.¹⁵³ Former SEC chairman and Supreme Court justice William O. Douglas described the concept of

¹⁵¹ "Trading through the market" refers to trades made higher than the lowest current offer or lower than the highest current bid at the time of execution. *See e.g.*, CBOT, CBOT Rulebook Reg. 514.A.1 (identifying any "trade through the existing bid or offer" as a trading infraction).

¹⁵² *Shearson/American Express, Inc v. McMahon*, 482 U.S. 220 (1987); *Rodriguez De Quijas v. Shearson/American Express, Inc.*, 490 U.S. 477 (1989). *See generally*, 23A Jerry W. Markham & Thomas L. Hazen, *Broker Dealer Operations Under Securities and Commodities Law: Financial Responsibilities, Credit Regulation, and Customer Protection*, §12:33 (2d Ed. 2006) (analyzing broker-dealer arbitration decisions).

¹⁵³ *See* SEC, *Concept Release Concerning Self-Regulation*, 2004 SEC LEXIS 2684 (Nov. 18, 2004) (describing role of self-regulation); SEC, *Report of the Special Study of the Securities Markets*, Ch. XII (1963) (same); *Silver v. New York Stock Exchange*, 373 U.S. 341 (1963) (same); *see also* BOARD OF TRADE OF THE CITY OF CHICAGO, *supra* note 35, at 77 (acknowledging that the "U.S. futures markets have a long history of self-regulation that dates from the mid-1800s, predating both state and federal regulation").

self-regulation as requiring the exchanges to be the frontline regulator with the government playing only a residual role. “Government will keep the shotgun, so to speak, behind the door, loaded, well oiled, cleaned, ready for use but with the hope it would never have to be used.”¹⁵⁴ However, the SEC never fully believed in the concept and has broadly exercised its powers to regulate the markets. Today, the self-regulatory bodies have become vast bureaucracies that impose regulations that in many instances are even more intrusive than those of the SEC. However, the exchanges and other self-regulators do impose education and other requirements designed to assure competency in industry professional.¹⁵⁵

III ELECTRONIC TRADING ARRIVES

A. Automation Arrives in the Futures Industry

The futures industry had accepted computerization into its clearing processes as quickly as the technology became available because of the exchanges’ requirement that all trades to be matched and cleared before the opening of business on the next day.¹⁵⁶ There was no thought given to computerizing the futures exchange trading floor until the adoption of the Commodity Futures Trading Commission Act of 1974.¹⁵⁷ Among other things, that legislation created the CFTC and instructed it to act as the futures industry analog to the SEC in the securities industry. A long forgotten provision of that legislation

¹⁵⁴ William O. Douglas, *Democracy in Finance* 82 (1940).

¹⁵⁵ FINRA has continuing education programs for registrants and licensing series to assure competence. <http://www.finra.org/EducationPrograms/index.htm>.

¹⁵⁶ In contrast, securities transactions were cleared on a five-day cycle until 1994, when a three-day cycle (T+3) was required. III Jerry W. Markham, *A Financial History of the United States, From the Age of Derivatives Into the New Millennium* (1970-2001) 219 (2002).

¹⁵⁷ Pub. L. No. 93-463, 88 Stat. 1389. For a description of that statute see Jerry W. Markham, *The History of Commodity Futures Trading and Its Regulation* 60-73 (1986).

also required the CFTC to study how computers could aid trading in the industry.¹⁵⁸ The CFTC held a conference on that topic in 1977. Papers presented at the conference were critical of the perceived inefficiencies of the open outcry trading system.¹⁵⁹ The response by the industry to that conference was harsh.

Leo Melamed, a senior official at the CME and a leading figure in the industry,¹⁶⁰ published a detailed and passionate defense of open outcry trading in a widely read article published in the *Hofstra Law Review*.¹⁶¹ Melamed conceded that the open outcry trading system was not automated but argued that the exchanges were automating the order execution process outside the trading pits.¹⁶² However, pit executions still required the manual transmission of orders into often over crowded trading pits by written orders or hand signals and then the orders were bid or offered to the pit orally. After execution, the orders were transmitted back out of the pit manually. Melamed argued that the psychology of the trading pit generated information for price efficiency and brought liquidity to the market from the trading by locals.¹⁶³ This was the oft cited defense of

¹⁵⁸ 7 U.S.C. §22 (1975).

¹⁵⁹ Conference on Automation in the Futures Industry, June 15, 1977, Washington, D.C.

¹⁶⁰ See Leo Melamed & Bob Tamarkin, *Escape to the Futures* (1996); Bob Tamarkin, Merc, *The Emergence of a Global Powerhouse* (1993) (describing Melamed's role in the industry).

¹⁶¹ Leo Melamed, *The Mechanics of a Commodity Futures Exchange: A Critique of Automation of the Transaction Process*, 6 *Hofstra* 149 (1977)

¹⁶² Melamed stated that:

It does not take many visits to realize that futures markets utilize every available form of modern technology, and that they have done so at great expense and much more quickly than their counterparts in the securities field. From the time a futures order is placed with an account executive or registered representative anywhere in the world to the time its execution is reported back, the transaction passes through many sophisticated electronic systems. Highly advanced technology is utilized to process the order, quotation, transaction, confirmation, and to complete the back-office requirements of the brokerage firm.

Id.

¹⁶³ *Id.*

floor trading that continues even today, *i.e.*, the physiological lift from the noise and energy of the trading crowd that inspires traders to take risk.¹⁶⁴

The futures exchanges' defense of their trading floors came under increasing criticism as volume expanded. Pits trading popular financial products became overcrowded and execution times were delayed in high volume periods. The CME's computer system crashed during trading hours in 1984, causing much confusion, but capacity constraints were an even more pressing issue.¹⁶⁵ John Conheaney, chairman of Merrill Lynch Futures, then noted that: "[t]here isn't a person in the industry who wouldn't agree that the system is breaking down, but we don't see any concrete moves toward a solution, which is the most frightening aspect of the problem."¹⁶⁶ Conheaney concluded that merely adding more space on the trading floors, as the exchanges were then planning, was not the solution, but he also asserted that "black box" computer trading "lacks the vital human element that makes a market work." He asserted that "'pit psychology,' eye contact and the chemistry between traders, was often as important in determining prices as the market's technical factors and fundamentals of supply and demand."¹⁶⁷

More presciently, Gerald Tellefsen, senior vice president of the consulting firm of Booz Allen & Hamilton Inc., stated in response to Conheaney's recommendations that:

There is little chance of any progress toward any solution until their trading

¹⁶⁴ See Niko Koppel, In Chicago, a Rowdy Trading Scene Grows Quieter, N.Y. Times, Oct 29, 2007, at A10 (floor traders on the exchanges continue to make such arguments).

¹⁶⁵ H.J. Maidenberg, Futures/Options; Automation In Trading, N.Y. Times, Dec. 10, 1984, at D4.

¹⁶⁶ H.J. Maidenberg, Futures/Options; Automation In Trading, N.Y. Times, Dec. 10, 1984, at D4. Inefficiencies in order execution on exchange floors with large crowds, which can fragment when a crowd becomes so large that actors are unable to communicate effectively and efficiently. See Wayne E. Baker, *Floor Trading and Crowd Dynamics*, at 118 (19XX). Upon exceeding a critical mass, like those in financial products such as the CME's eurodollar contract or the CBOT's treasury bond contract, the effectiveness of traders to communicate with each other on the exchange-floor declines. See *id.*

¹⁶⁷ H.J. Maidenberg, Futures/Options; Automation In Trading, N.Y. Times, Dec. 10, 1984, at D4. There was some tension between the floors and firms like Merrill Lynch that handled customer orders for futures contract. They would like to internalize and match that order flow "upstairs, thereby bypassing the floor.

system falls apart; until their physical and financial pains become unbearable, which may be sooner than many of them think. While the futures industry has been and will remain the most innovative sector of the marketplace, it is also the most tradition-bound. Thus, the exchange members will not automate, for cultural reasons as well as the fear that they will lose control over their markets. . . . Eventually, futures trading will have to be automated, because their business is fast becoming global in scope. Whether or not the new innovators will, as the domestic automakers learned the hard way, come from overseas, the losers will fight it at every turn and be unprepared for its inevitable introduction.¹⁶⁸

The futures exchanges continued their ostrich like approach to automated executions, but demand was growing for extended trading hours. Trading floors were open only for a limited number of hours permitted by the stamina of the floor traders, but that left market participants stranded until the next trading day. Worldwide events with market effect often occurred after the close of trading, but traders were helpless until the opening of trading on the next day and, therefore, sought access to trade outside the regular trading hours.¹⁶⁹ Futures exchanges and securities intermediaries sought to capture the additional revenues this interest represented by extending trading hours with three basic options: offering open outcry sessions at night,¹⁷⁰ establishing exchanges in non-U.S. jurisdictions with local partners,¹⁷¹ and later developing electronic trading systems.

¹⁶⁸ H.J. Maidenberg, *Futures/Options; Automation In Trading*, N.Y. Times, Dec. 10, 1984, at D4. There was some tension between the floors and firms like Merrill Lynch that handled customer orders for futures contract. They would like to internalize and match that order flow “upstairs, thereby bypassing the floor.

¹⁶⁹ See CME Group Inc., *Click Boom: How Electronic Trading Served As A Catalyst In The Creation Of CME Group*, at 25 CME Group Magazine, Summer 2007 at 26 (stating that “CME Globex and other electronic platforms were initially intended to extend trading hours and provide overnight access to customers in different time zones”); see also Dale A. Oesterle, *The SEC’s Assault On Electronic Trading*, at 18 Regulation (vol. 21 no. 3 1998) (stating that the “NYSE, since 1991, has had an after-hours crossing system . . . with automatic execution of single-stock orders and baskets of stock.”).

¹⁷⁰ See David Roeder & Ellen Domke, *CBOT Pulls Plug On Night Session Computer Trades To Replace Evening Floor Action*, CHICAGO SUN-TIMES, Jan. 30, 1998 at 53 (describing the last night floor trading session); see also NASD Notice to members 00-07, *Trading – Extended Hours* (January 2000).

¹⁷¹ See Jonathan R. Macey and Maureen O’Hara, *Regulating Exchanges and Alternative Trading Systems: A Law and Economics Perspective*, 28 J. Legal Stud. 17 at 41 (Jan. 1999) (discussing the NYSE’s response to competition from ATSS, the SEC, and brokers and dealers).

The demand for extended trading hours led to a linkage between the CME and the Singapore International Monetary Exchange (“SIMEX”) in 1984.¹⁷² That link allowed trades to be opened on the Simex in the evening and reciprocally closed on the CME on the next day or at some other time.¹⁷³ The SIMEX link was a substitute for computerized executions, but it was limited in scope of the futures covered and still was tied to the floor trading operations of CME members.

The International Futures Exchange Ltd. (“Intex”) was created in 1984 by a former Merrill Lynch executive to operate as the first computerized commodity exchange. It was based in Bermuda in order to avoid the delay of seeking contract market status from the CFTC. Intex traded futures on gold and other commodities and cleared its trades through the London International Commodity Clearinghouse.¹⁷⁴ Intex was not particularly successful, but it signaled the future.¹⁷⁵

The demand for after hours continued to grow. In 1987, the CBOT began open out cry sessions at night, but those sessions were sparsely attended.¹⁷⁶ The CME’s response came in 1989 with its development of a computerized trading system called Globex (global exchange) with Reuters Holdings P.L.C. This system matched buy and sell orders on the basis of time and price after the trading pits closed.¹⁷⁷ The CBOT responded to Globex with an announcement that it was developing its own computerized trading system, named Aurora, that would compete with Globex and pose no threat to

¹⁷² Steve Lohr, Singapore’s Link to Chicago, N.Y. Times, Sept. 7, 1984, at D3.

¹⁷³ Steven Greenberg, At the Merc, Optimism Hedged With Caution, N.Y. Times, Sept. 7, 1984, at D1.

¹⁷⁴ H.J. Maidenberg, Futures/Options; Automation In Trading, N.Y. Times, Dec. 10, 1984, at D4.

¹⁷⁵ Office of Technology Assessment, U.S. Congress, Electronic Bulls and Bears, U.S. Securities Market and Information Technology, 136 (Sept. 1990).

¹⁷⁶ Kenneth N. Gilpin, Early Reviews Favor Chicago Night Trading, N.Y. Times, May 18, 1987, at D1.

¹⁷⁷ Eben Shapiro, Globex Trading System Delayed and Disputed, N.Y. Times, Dec. 26, 1989, at D2.

floor traders during normal trading hours.¹⁷⁸ Aurora never really got off the ground, and the CBOT joined Globex.¹⁷⁹

Globex's limitations caused it to struggle to obtain a profit,¹⁸⁰ and the CBOT withdrew from the venture in 1994.¹⁸¹ In the meantime, the CBOT and CME's share of futures and options trading also continued to plummet, dropping from about 75 percent of all futures trading in 1987 to under 50 percent in 1992. In particular, competition from new exchanges abroad was fierce. One such upstart was the London International Financial Futures Exchange ("LIFFE") that began trading in 1982. It initially modeled its trading operations after those in Chicago, utilizing open outcry pit trading for order executions, but later became an all-electronic exchange.¹⁸² More competition from Europe would follow. "The [American] exchanges have been losing ground to the approximately 50 exchanges outside the United States, about half of which have been

¹⁷⁸ Julia Flynn Siler, Board of Trade Plans Computerized Trading, N.Y. Times, Feb. 10, 1989, at D6.

¹⁷⁹ As one newspaper report noted:

The Board of Trade pursued a wide range of actions aimed at sustaining pit trading, including investing in electronic systems that would handle some of its products during hours when the pits were closed.

The most ambitious of those investments, a joint venture with the Chicago Mercantile Exchange and Reuters to start a worldwide computer-based trading system called Globex, floundered both before and after the Board of Trade dropped out in 1994.

Barnaby J. Feder, Face Lift at Board of Trade: High Tech, Say Hello to Primal Instinct, N.Y. Times, Feb. 17, 1997, §1 at 41.

¹⁸⁰ Globex Operating Proposal, N.Y. Times, Nov. 5, 1993, at D12. However, monthly volume data for trades executed on CME's Globex trading platform between 2004 through 2006 shows that "average daily order volume grew by approximately 300 percent, while the time it takes to get a trade executed decreased by more than 50 percent." *CME Globex: The World's Leading Electronic Trading Platform*.

¹⁸¹ Barnaby J. Feder, The Chicago Board of Trade Will Leave Globex Network, N.Y. Times, April 16, 1994, §1 at 35.

¹⁸² Steven Rattner, Financial Futures Set Brisk Pace in London, October 5, 1982, at D9. The most visible example of an exchange's effort to sustain its existence by developing an electronic trading system is that of the LIFFE, which transformed itself from an open out-cry based exchange to an electronic exchange exclusively. See Sun Microsystems, *Best Practices: Exchanging Electronically at Record Pace*, available at http://www.sun.com/br/ezine/index_eb.html (Jan. 2003) (describing Sun's role in the transformation of LIFFE's exchange environment from open out-cry to electronic trading via LIFFE CONNECT® in less than one-year).

founded since 1985. Off-exchange deals between banks and other institutional investors are also a rapidly growing part of the derivatives business.”¹⁸³

The CBOT opened a new trading floor in 1997 that was supposed to employ the newest technology, but it remained devoted to open outcry trading in the pits.¹⁸⁴ New innovations were added elsewhere in the industry. Floor brokers adopted “Electronic Clerk” and “Cubs” devices that allowed them to receive orders electronically in the pits, obviating the need for phone clerks and “runners” who had traditionally relayed customer orders into the pits either in writing or by “flashing” to the floor broker through hand signals. Those efforts did not succeed in meeting the competition from foreign exchanges that were becoming increasingly all electronic.¹⁸⁵ The Deutscheminebörse, now called Eurex, a joint venture of Deutsche Börse and the Swiss Stock Exchange, opened as an all electronic exchange in 1989. It took Eurex just two years to eclipse the largest futures exchange in America, the CBOT, in trading volume.¹⁸⁶ The Deutsche Börse also later bought the International Securities Exchange, an electronic exchange that was the second largest equity options market in the United States.¹⁸⁷ Ironically, futures trading was not legalized in Germany until U.S. brokers successfully advocated a change in German law that had, theretofore, treated futures contracts as prohibited illegal gambling.¹⁸⁸

Eurex was also competing with LIFFE, which operated a large trading floor and

¹⁸³ Barnaby J. Feder, *Chicago's Exchanges Look Toward an Electronic Salvation*, N.Y. Times, Nov. 29, 1992, §3 at 5.

¹⁸⁴ Barnaby J. Feder, *Face Lift at Board of Trade: High Tech, Say Hello to Primal Instinct*, N.Y. Times, Feb. 17, 1997, §1 at 41.

¹⁸⁵ For a description of the growth of foreign electronic exchanges see Securities Exchange Act Release No. 34-38672, 1997 SEC LEXIS 1178, n. 217 (May 23, 1997).

¹⁸⁶ David Barboza, *In Chicago's Trading Pits, This May Be The Final Generation*, N.Y. Times, Aug. 6, 2000, §3 at 1.

¹⁸⁷ *Deutsche Börse Agrees to Buy Options Market in New York*, N.Y. Times, May 1, 2007, at C10.

¹⁸⁸ William P. Rogers & Jerry W. Markham, *The Application of West German Statutes to United States Commodity Futures Contracts: An Unnecessary Clash of Policies*, 19 Geo. J. of L. and Policy In Int'l Bus. 273 (1987).

was the largest futures exchange in Europe until Eurex arrived. LIFFE was forced to switch from open outcry trading to electronic trading in 2000.¹⁸⁹ “In France, Matif, the derivatives exchange that is a unit of the Paris bourse, tried to offer both electronic and open-outcry trading in April 1998. A month later, most trading migrated to computers and the trading floor was shuttered.”¹⁹⁰

The Chicago exchanges only slowly awakened to this threat but by the end of the last century. Even Leo Melamed, the most ardent defender of open outcry trading, was in full retreat. He sounded the tocsin for this pull back in a May 1999 address at an industry conference in New York. Melamed faulted the regulatory structure for the erosion of U.S. market share in futures trading, but he also stated that: “[i]f the futures exchanges fail to quickly embrace current technological and competitive demands, . . . then our exchanges may well be doomed.”¹⁹¹

The Chicago exchanges were still sluggish in their response to the electronic threat. They did begin a desperate effort to link with foreign electronic markets in order to cling to their remaining businesses. The CME announced a link with the Matif in Paris that was then combined with its SIMEX program.¹⁹² The CBOT initially linked with Eurex, but then abandoned that arrangement for an electronic platform operated by LIFFE, which was then a unit of the pan-European exchange Euronext, the subsequent merger partner of the NYSE.¹⁹³ In response, Eurex announced that it was opening its own

¹⁸⁹ Alan Cowell, Liffe Goes Silent, N.Y. Times, Nov. 25, 2000, §C, at 2.

¹⁹⁰ David Barboza, In Chicago's Trading Pits, This May Be The Final Generation, N.Y. Times, Aug. 6, 2000, §3, at 1.

¹⁹¹ Leo Melamed, Futures Markets in the Digital Century, Address Before the Derivatives and Risk Expo, New York, NY, on May 11-12, 1999.

¹⁹² III Jerry W. Markham, A Financial History of the United States, From the Age of Derivatives Into the New Millennium (1970-2001) 253 (2002).

¹⁹³ Germany Moves to Start Central Stock Exchange, N.Y. Times, Oct. 8, 1992, §D at 2.

exchange in the U.S. to compete directly with the Chicago exchanges.¹⁹⁴ The Chicago exchanges then sought unsuccessfully to block Eurex from being designated as a contract market by the CFTC, which was done in 2004.¹⁹⁵

Domestic electronic futures exchanges were also appearing. FutureCom Ltd. submitted the first application to the CFTC to be designated as a contract market for Internet trading only.¹⁹⁶ BrokerTec Futures Exchange, an electronic futures market, had tried to compete with the CBOT but gave up when Eurex decided to compete directly in the U.S. with the CBOT.¹⁹⁷ The New York Cotton Exchange merged with the Coffee, Sugar and Cocoa Exchange to become the Board of Trade of New York. It entered into a joint venture with Cantor Fitzgerald, a New York government securities trader, for the creation of an electronic futures exchange, the Cantor Financial Futures Exchange (“CFFE”), that would compete with the CBOT floor traders. The CBOT quickly announced that it was opening its own electronic market in those contracts.¹⁹⁸ Neither electronic trading system did very well, but CFFE responded with a completely interactive electronic trading platform.¹⁹⁹

Several other electronic futures markets followed, including CBOE Futures Exchange, HedgeStreet, NQLX, OneChicago and U.S. Futures Exchange.²⁰⁰ The Intercontinental Exchange (“ICE”), an electronic exchange based in Atlanta, Georgia,

¹⁹⁴ Eurex to Open Exchange in U.S., N.Y. Times, Jan. 10, 2003, §C at 18.

¹⁹⁵ Jerry W. Markham, A Financial History of Modern U.S. Corporate Scandals: From Enron to Reform, 541 (2005).

¹⁹⁶ III Jerry W. Markham, A Financial History of the United States, From the Age of Derivatives Into the New Millennium (1970-2001) 274 (2002).

¹⁹⁷ Board of Trade Rival Going Out of Business, N.Y. Times, Nov. 13, 2003, at 10.

¹⁹⁸ Chicago Board Seeks To Add Contracts, N.Y. Times, Aug. 10, 1998, at D9.

¹⁹⁹ III Jerry W. Markham, A Financial History of the United States, From the Age of Derivatives Into the New Millennium (1970-2001) 274 (2002).

²⁰⁰ Jerry W. Markham, A Financial History of Modern U.S. Corporate Scandals: From Enron to Reform, 541-542 (2005).

became a major global marketplace for trading futures and over-the-counter (“OTC”) energy derivative contracts.²⁰¹ The Chicago exchanges were paralyzed by this competition and exchange politics became divided between those favoring electronic trading and those seeking to preserve open outcry trading. In a hotly contested election in 1998, one candidate was labeled by his opponent as the “President of the Flat Earth Society” for his defense of the pitch of trading desks on the floor, but the real criticism of his campaign was his desire to preserve pit trading and the value of exchange memberships that were then plunging in price.²⁰² Opponents of electronic trading narrowly won that election, unseating the incumbent who was seeking to modernize the exchange with more electronic trading.²⁰³ Compromise followed in the form of side-by-side trading of contracts electronically and in the pits.²⁰⁴ However, that was only a compromise, not a winning strategy in the new world of all electronic trading.

More pressure for electronic trading arrived in 1989 after a massive FBI sting operation on the CME and CBOT exposed widespread fraud and questionable trading activities.²⁰⁵ Those practices were made possible by archaic trading practices on the floor that involved “dual” trading floor brokers and floor traders (“locals”) and the lack of an adequate audit trail that shielded those activities.²⁰⁶ Former senator (and briefly vice presidential candidate) Thomas Eagleton made headlines by resigning from the CME

²⁰¹ See Heather Timmons, *Nymex Abandoning Plans For British Futures Market*, N.Y. Times, Jan. 24, 2007, at C4 (describing competition between ICE and the NYMEX, the leading traditional exchange for energy products).

²⁰² Caitlin Zaloom, *Out of the Pits: Traders and Technology, From Chicago to London* 68-72 (2006).

²⁰³ David Barboza, *In Upset, Chicago Board of Trade Elects New Chairman*, N.Y. Times, Dec. 11, 1998, §C, at 7.

²⁰⁴ Paul G. Barr, *U.S. Favors Open Outcry: International Electronic Derivatives Exchange Opens, Pensions and Investments*, Dec. 14, 1998, at 23.

²⁰⁵ See David Greising & Laurie Morse, *Brokers, Bagmen & Moles, Fraud & Corruption in the Chicago Futures Markets* (1991).

²⁰⁶ See Jerry W. Markham, *Prohibited Floor Trading Activities Under the Commodity Exchange Act*, 58 *Fordham Law Review* 1-52 (1989) (describing that sting operation).

board after charging that the exchange was driven with conflicts of interest. He recommended that the trading floor be replaced with an electronic trading system that would provide a better audit trail.²⁰⁷

Competition appeared from another source in the form of the OTC market in derivatives that exploded in the last part of the twentieth century. The swap became a classic in finance within ten years of its introduction in 1981.²⁰⁸ A new phenomenon also appeared—the OTC derivative.²⁰⁹ That trading began with some unfortunate boiler shop operations fraudulently selling derivative instruments on foreign currency that were disguised in nature to avoid CFTC regulation.²¹⁰ The CFTC continues to wrestle with that problem, particularly in currency trading.²¹¹ Commercial firms were also exploring OTC derivatives during the CFTC’s formative years. The CFTC resisted that effort and sought

²⁰⁷ Ted Gutierrez, Scandals in Chicago; Automate the Futures Exchanges, N.Y. Times, Dec. 31, 1989, §3, at 2.

²⁰⁸ See generally Brian Eales & Moorad Choudry, *Derivative Instruments: A Guide to Theory and Practice* (2003) (describing some of these products). See Desmond MacRae, *The Future Of Futures Two Big Steps To A Level Playing Field*, MAR Update at *1 (December 1999) (quoting Leo Melamed’s estimate that “two-thirds of [the total financial derivative market in 1999 consisted of \$80 trillion in outstanding contracts], mostly swaps, are [executed outside the] exchanges.”).

²⁰⁹ See David J. Gilberg, Regulation of New Financial Instruments Under the Federal Securities and Commodities laws, 39 Vand. L. Rev. 1599 (1986) (describing the growth of those instruments).

²¹⁰ See Jerry W. Markham, "Confederate Bonds," General Custer," and the Regulation of Derivative Financial Instruments, 25 Seton Hall L. Rev. 1 (1994) (describing those problems).

²¹¹ The CFTC had sought to regulate the OTC currency market by deeming it to be a “board of trade” within its jurisdiction. Trading in Foreign Currencies for Future Delivery, 50 Fed. Reg. 42983 (Oct. 23, 1985). See Thomas A. Tormey, A Derivatives Dilemma: The Treasury Amendment Controversy and the Regulatory Status of Foreign Currency Options, 65 Ford. L. Rev. 2313 (1997) (describing that effort); Camden R. Webb, *Salomon Forex, Inc. v. Tauber—The “Sophisticated Trader” and Foreign Currency Derivatives Under the Commodity Exchange Act*, 19 N.C. J. Int’l & Comm. Reg. 579 (1994) (same). However, the Supreme Court ruled that the CFTC had gone too far in that effort. *Dunn v. CFTC*, 519 U.S. 465 (1997). The CFTC then sought and obtained corrective legislation that requires OTC currency trading to be conducted through regulated financial institutions or between institutional participants. See *CFTC v. Gibraltar Money Corp.*, Comm. Fut. L. Rep. (CCH) ¶30253 (S.D. Fl. 2006) (describing that legislation) However, the CFTC suffered another setback after the Seventh Circuit ruled that speculative transactions in foreign currency were “spot” transactions that were outside the CFTC’s derivative instrument jurisdiction. *CFTC v. Zelener*, 373 F.3d 861 (7th Cir. 2004).

to regulate these then designated “hybrid” instruments if their options or futures elements outweighed their securities elements.²¹²

The CFTC was reluctant to create a commercial trader exception that would allow OTC derivatives to be traded by institutions or sophisticated traders,²¹³ such as that employed by the SEC under the federal securities laws for “accredited investors.”²¹⁴ However, the swaps market expanded so quickly that the Congress and the CFTC adopted such an exemption for swaps. Exemption was also granted for the Brent oil market that had been handicapped by a district court ruling that it was a futures exchange, which would have required it to register as a contract market and destroy its viability in the United States.²¹⁵ The OTC derivative market continued to expand even after a series of large losses by numerous institutions,²¹⁶ including the destruction of the venerable Barings Bank by a rogue trader.²¹⁷

The open outcry trading system was on the futures exchanges were clearly being overwhelmed as the new century began.²¹⁸ Responding to those competitive threats, the CME and CBOT merged their clearing operations in 2003, and both the CME (in 2002)

²¹² See Jerry W. Markham, Regulation of Hybrid Instruments Under the Commodity Exchange Act - Alternatives Are Needed, 1990 Colum. Bus. L. Rev. 1 (1990) (describing that process).

²¹³ The CFTC had, early on, created an exception from its suspension of OTC options trading after retail market abuses became rampant. Jerry W. Markham, The History of Commodity Futures Trading and Its Regulation, 196 (1986). However, it rejected a petition from Merrill Lynch seeking an accredited investor exception for OTC currency trading. See Letter to the Office of the CFTC Secretariat from Merrill Lynch & Co. Inc., dated Dec. 23, 1985 (on file with the authors). See *Salomon Forex, Inc. v. Tauber*, 8 F.3d 966 (4th Cir. 1993), cert. denied, 511 U.S. 1031 (1994) (rejecting the CFTC position).

²¹⁴ 17 C.F.R. §230.501.

²¹⁵ *Transnor (Bermuda) Ltd. v. BP North America Petroleum*, Comm. Fut. L. Rep. (CCH) ¶24,829 (S.D.N.Y. 1990). See Eric C. Bettelheim & Jerry W. Markham, The Transnor Decision And Its Aftermath, 8 Oil & Gas L. & Tax. Rev. 76 (1990) and More on Transnor, 8 Oil Gas L. & Tax. Rev. 223-27, Oxford England (1991) (describing that decision and CFTC action).

²¹⁶ See Jerry W. Markham, Protecting the Institutional Investor -- Jungle Predator or Shorn Lamb? 12 Yale J. on Reg. 345, 358-363 (1995) (describing those losses).

²¹⁷ See Judith H. Rawsley, Total Risk, Nick Leeson & The Fall of Barings Bank (1995) (describing that debacle).

²¹⁸ David Barboza, In Chicago's Trading Pits, This May be the Final Generation, N.Y. Times, Aug. 6, 2000, ¶3, at 1.

and the CBOT (in 2005) demutualized and became public companies.²¹⁹ Still, the percentage of open outcry trades declined between 2000 and 2007 from 90 percent to 22 percent.²²⁰ Recognizing that the end was near the CBOT and CME merged all of their operations in 2007.²²¹ That merger was nearly spoiled by a competing bid from ICE for the CBOT in the amount of \$11.9 billion, but in the end ICE lost out to the CME.²²² After their merger, the CME and CBOT announced that they were consolidating their trading floors and would be shifting several contracts to their electronic trading platform (Globex), including agricultural products such as the once very popular frozen pork belly futures contract.²²³

Resistance on the floor to electronic trading remained. One trader vowed not “to go down without a fight,” and that “[t]hey’re going to have to turn the lights out to get us to trade electronically.”²²⁴ Their resistance was aided by no less a personage than former Federal Reserve Board chairman Alan Greenspan. In March 2007, Greenspan asserted at a futures industry conference that the open outcry system of trading is still “the optimum model” because, while computers are useful, humans beings always prefer personal interactions and that, therefore, open outcry markets will always be around.²²⁵ However,

²¹⁹ Doug Cameron, Trading Rivalry Goes Back 100 Years, *Fin Times* (London), October 18, 2006.

²²⁰ Niko Koppel, In Chicago, a Rowdy Trading Scene Grows Quieter, *N.Y. Times*, Oct 29, 2007, at A10.

²²¹ Shareholders Approve Merc’s Buyout of CBOT, *N.Y. Times*, July 10, 2007, at C2.

²²² ICE to Buy Grain Trader, *Int’l Herald Tribune*, June 25, 2007, at 13.

²²³ Pit Trading to End for Pork Bellies And Selected Products in Chicago, *N.Y. Times*, Aug. 29, 2007, at C7. The CME website now notes that:

The CME open outcry platform and trading floor systems are linked to the CME® Globex® electronic trading platform, which allows market participants to buy and sell whether they're sitting at trading booths on our Chicago trading floors, working at offices or homes thousands of miles away, or making trades during and after regular trading hours. At CME, some traders prefer face-to-face interaction on the CME trading floors while an increasing number prefer to trade electronically.

<http://www.cme.com/about/ins/caag/index.html> (visited on Oct. 21, 2007).

²²⁴ Niko Koppel, In Chicago, a Rowdy Trading Scene Grows Quieter, *N.Y. Times*, Oct 29, 2007, at A10.

²²⁵ Alan Greenspan, Remarks before the Futures Industry Annual Conference, Boca Raton Florida March 14, 2007, reported in *Comm. Fut. L. Rep. No. 782*, March 23, 2007.

the growth of electronic trading is calling that claim into question in both the securities and commodity futures industries.²²⁶

Smaller commodity exchanges were also struggling. For example, the Kansas City Board of Trade (“KCBOT”) began offering electronic trading of agricultural products alongside floor based trading in August 2006.²²⁷ The KCBOT’s volume increased, but relative to other major exchanges and similar products, it failed to keep pace. Crop size alone suggests that the KCBOT is under achieving. Although the index trader is trading KCBOT wheat,²²⁸ it is doing so far less than it is at other exchanges. The U.S. Department of Agriculture calculated that the U.S. produced 930 million bushels of hard red winter wheat (“HRW”) for the 2005-06 crop-year and 309 million bushels of soft red winter wheat (“SRW”) for the same period.²²⁹ Converting these numbers, the U.S. production of HRW translates into an open interest of 185,000 contracts. Despite the fact that the U.S. produced roughly 300% more HRW than SRW for the 05/06 crop year, open interest in the CBOT’s wheat contract exceeded the KCBOT’s contract by 325%.²³⁰

²²⁶ Former chairman Greenspan was less sanguine on the future of open outcry in his autobiography There he stated that:

. . . the never-ending jockeying for advantage among traders is continuously rebalancing supply and demand at a pace too fast for human comprehension. The trades, of necessity, are thus becoming increasingly computerized, and traditional “outcry” trading on the floors of stock and commodity exchanges is rapidly being replaced by computer algorithms.

Alan Greenspan, *The Age of Turbulence, Adventures in a New World* 350 (2007).

²²⁷ The KCBOT, CBOT and Minneapolis Grain Exchange all share the same electronic platform trading service provider, LIFFE Connect. Each exchange began offering electronic trading in agricultural products on a side-by-side basis the same month, August 2006. The exchanges, however, charge their customers different rates for trades executed electronically and on the floor of the respective exchange.

²²⁸ See CFTC Office of External Affairs, *Backgrounder the Commitments of Traders Report*, available at www.cftc.gov/opa/backgrounder/opacot596.htm (Jan. 2007) (last visited March 6, 2007).

²²⁹ USDA National Agricultural Statistics Service, *Crop Production 2006 Summary* at 16 (Jan. 2007).

²³⁰ See CFTC, *Commitments of Traders Reports – January 17, 2006*, and *Commitments of Traders Reports – August 8, 2006* at www.cftc.gov/cftc/cftchistoricalcot.htm (last visited March 7, 2007) (identifying January 17, 2006 as the high in CBOT wheat and August 8, 2006 as the low in KCBOT wheat).

Moreover, the CBOT's open interest in wheat has increased by 57% during that period while the KCBOT's open interest in wheat has declined by 9%.²³¹

B. *Automation Arrives in the Securities Industry*

The securities industry appeared in some ways to more receptive than the futures industry to accept technological changes. Although often accused of being hidebound, the NYSE was not oblivious to the need to adopt new technology into its operations. That exchange spent over \$1 billion on technology between 1982 and 1995, allowing it cut order execution time dramatically.²³² Those improvements allowed the NYSE to handle daily order flows in excess of 1.4 billion shares as the market surged at the end of the last century.²³³ That was in stark contrast to the 10 million share trading days that almost destroyed the NYSE during the 1960s "paperwork crisis"²³⁴ and the 600 million share days that shut down the trading floor in October 1987.²³⁵

Tom Russo, a senior executive at Lehman Brothers with experience in both the futures and securities industries, has noted that, "[w]hile no futures exchange had yet taken major steps in the field of automation, the New York Stock Exchange was making some progress. In 1976, it launched the DOT (Designed Order Turnaround) system, followed by the Super-DOT system in 1984."²³⁶ Super-DOT allowed the transmission of orders to buy and sell to the specialist electronically. "The orders appear on a special

²³¹ See *id.*; see also CFTC, *Commitments of Traders Reports – December 26, 2006* available at www.cftc.gov/cftc/cftchistoricalcot.htm (last visited March 7, 2007).

²³² III Jerry W. Markham, *A Financial History of the United States, From the Age of Derivatives Into the New Millennium (1970-2001)* 209 (2002).

²³³ Robert D. Hershey, *The Markets: Stocks and Bonds, Dow Comes Back From Plunge But Ends Below 10,000*, N.Y. Times, October 19, 2000, §C, at 10.

²³⁴ Kurt Eichenwald, *Robert William Haack, 75, Dies; Led Stock Exchange During Crisis*, N.HY. Times, June 16, 1992, §B, at 8.

²³⁵ Alison Leigh Cowan, *Exchange Employees Begin Strike*, N.Y. Times, Nov. 11, 1987, §D, at 1.

²³⁶ A Tribute to Leo Melamed In Honor of the Presentation of the 2005 CME Fred Arditti Innovation Award on April 20, 2006 by Thomas A. Russo Vice Chairman and Chief Legal Officer Lehman Brothers, <http://www.leomelamed.com/currentevents/06-ArdittiRussoRemarks.htm> (visited on October 29, 2007).

electronic workstation often referred to as the ‘display book.’ Each Specialist Firm has a computerized ‘display book’ at its trading post that permits the Firm to execute orders for the market.”²³⁷ “The Super-DOT system was handling some 80 percent of NYSE volume by 1992,²³⁸ reaching 90 percent of volume in 2000,²³⁹ but large trades were still manually walked to the specialist post by a floor broker for execution.”²⁴⁰

Other electronic improvements in the securities industry included automated systems for broker-dealer back-office processing of securities transactions and improved screen-based information services provided to broker-dealers by private vendors such as Reuters, Quotron Systems, Telerate, Automatic Data Processing, Knight-Ridder and Bloomberg.²⁴¹ However, these improvements did not create an electronic exchange, rather it was called “computer assisted trading” (“CAT”), to signify that the specialist was merely being aided by technology and not replaced.²⁴² Signifying that distinction, a special edition of Life Magazine published in 1992 to celebrate the bicentennial of the founding of the NYSE contained an article decrying the growth of electronic trading and defending the trading floor. Mimicking Melamed’s defense of open outcry trading in the futures industry, the article stated that:

²³⁷ In re New York Specialists Securities Litigation, 2007 U.S. App. LEXIS 22212, at pp. 5-6 (2d Cir. 2007)

²³⁸ David M. Schizer, Benign Restraint: The SEC’s Regulation of Execution Systems, 101 Yale L.J. 1551, 1556 (1992).

²³⁹ NYSE Special Committee on Market Structure, Governance and Ownership, 24 (2000), <http://www.nyse.com/pdfs/marketstructure.pdf>.

²⁴⁰ See Mark Borrelli, Market Making in the Electronic Age, 32 Loy. U. Chi. L.J. 815, 823 (2001) (describing role of floor broker on NYSE).

²⁴¹ Office of Technology Assessment, U.S. Congress, Electronic Bulls and Bears, U.S. Securities Market and Information Technology, 130-133 (Sept. 1990). For a description of the Bloomberg information system see Michael Bloomberg, Bloomberg by Bloomberg (1997).

²⁴² III Jerry W. Markham, A Financial History of the United States, From the Age of Derivatives Into the New Millennium (1970-2001) 218 (2002). For a description of those trading support systems see Office of Technology Assessment, U.S. Congress, Electronic Bulls and Bears, U.S. Securities Market and Information Technology, 130 (Sept. 1990).

This, it seems to me, is the biggest problem with electronic trading and what it portends . . . Do we advance business by making it more faceless and impersonal? Such a world not only threatens to overwhelm us with market choices, time zones and currencies, it likewise cuts us out of the deal as social creatures. It only further distances us from the rich and varied human affairs that are as much the soul of business as they are the essence of the social and inner life.²⁴³

However, a warning had already been sounded by a Congressional staff study in 1990, which noted that “financial information vendors may move toward offering transactional services using automated execution systems.”²⁴⁴ One such effort, GEMCO, had failed but the Instinet Corp. was more successful. Created in 1969 as the Institutional Network Corporation,²⁴⁵ Instinet was later acquired by Reuters and began offering an electronic securities trading system that was executing an average of 13 million shares a day in NYSE and Nasdaq stocks as the 1990s began.²⁴⁶ Instinet allowed broker-dealers and institutional traders to indicate their interest in purchasing or selling NYSE or Nasdaq securities. Participants could then respond to those indications of interest by making bids or offers. Instinet would then process and report executions.²⁴⁷ Orders were not publicly disclosed, protecting the identity of the institution in the trade.²⁴⁸ Instinet

²⁴³ Bruce Duffy, *The Human Element, One Man’s Opinion: I trust a Market When I Can Hear it Breathing*, *Life Magazine*, Spring 1992 (Collector’s Ed.), at 17, 18. For a countervailing view see Gerald T. Nowak, *A Failure of Communication: An Argument for the Closing of the NYSE Floor*, 26 *U. Mich. J. L. Reform* 485 (1993).

²⁴⁴ Office of Technology Assessment, U.S. Congress, *Electronic Bulls and Bears*, U.S. Securities Market and Information Technology, 136 (Sept. 1990).

²⁴⁵ Sid Mitra, *Inside Wall Street* 224 (1971).

²⁴⁶ *Id.* Instinet’s ECN operations were later purchased by Nasdaq. Its remaining business was sold to a private equity group, Silver Lake Partners, which flipped it shortly after acquisition by selling it to Nomura Holdings Inc., the giant Japanese brokerage company. Peter Edmonston, *Private Firm Sells Broker And Makes Quick Profit*, *N.Y. Times*, Nov. 3, 2006, at C3.

²⁴⁷ Jan De Bel, *"Automated Trading Systems and the Concept of an "Exchange" in an International Context Proprietary Systems: A Regulatory Headache!"* 14 *U. Pa. J. Int'l Bus. L.* 173-174 (1993).

²⁴⁸ Chris Welles, *The Last Days of the Club* 59 (1975).

was processing 170 million shares per day at the end of the century. Twenty million of those trades were executed after traditional trading hours.²⁴⁹

Automation was seemingly more prevalent in the OTC market. Nasdaq was itself an electronic “quotation” system that was developed in the 1960s after a Special Study of the Securities Markets by the SEC staff suggested the desirability of such an automated system to replace the manual printing of quotes circulated to broker-dealers through the “Pink Sheets.”²⁵⁰ Nasdaq employed competing market makers, rather than a specialist auction system.²⁵¹ Nasdaq was broken down into tiers—the National Market System (“NMS”) for larger companies, a “SmallCap Market for small and medium size companies and a Bulletin Board for illiquid securities.²⁵²

Nasdaq did not initially provide for the automated execution of orders. Rather, a broker observing a quote on a computer screen for a stock posted on Nasdaq would contact the posting broker and negotiate the trade. Nasdaq did develop a Small Order Execution System (“SOES”) for the automatic execution of small customer orders, but large trades still were negotiated orally with the market makers.²⁵³ Another improvement was SelectNet, a screen-based trading system that allowed NASD members to enter and negotiate the terms of trades through that computer system.²⁵⁴ The Nasdaq market became successful. By 1992, Nasdaq volume was accounting for some 42 percent of total

²⁴⁹ Rebecca Buckman, “Plan by Chicago Exchange to Offer Extended Trading Is Sign of the Times,” *Wall St. J.*, Aug. 23, 1999, at C11.

²⁵⁰ See Michael J. Simon and Robert L.D. Colby, *The National Market System for Over-the-Counter Stocks*, 55 *Geo. Wash. L. Rev.* 17 (1986) (describing development of Nasdaq).

²⁵¹ Daniel M. Gallagher, *Move Over Tickertape, Here Comes the Cyber-Exchange: The Rise of Internet-Based Securities Trading Systems*, 47 *Cath. L. Rev.* 1009, 1025 (1998).

²⁵² See Richard G. Ketchum & Beth E. Weimer, *Market 2000 and the Nasdaq Stock Market*, 19 *Iowa J. Corp. L.* 559 (1994) (describing the Nasdaq market).

²⁵³ Division of Market Regulation, U.S. Securities and Exchange Commission, *Market 2000, An Examination of Current Equity Market Developments* 10, IV-7 (Jan. 1994).

²⁵⁴ Division of Market Regulation, U.S. Securities and Exchange Commission, *Market 2000, An Examination of Current Equity Market Developments* 19 (Jan. 1994).

share volume on all U.S markets.²⁵⁵ Nasdaq volume was sometimes in excess of 2.5 billion shares a day in 2000, which was sometimes a billion more shares than were traded on the NYSE.²⁵⁶

Scandals

Like the futures exchanges, both Nasdaq and the NYSE encountered scandals in their market making operations. After Nasdaq market makers fled to avoid their market making responsibilities during the Stock Market Crash of 1987, the NASD required all market makers to participate in its automated small order execution system (“SOES”) and increased penalties for unexcused withdrawals. This gave rise to the so-called “SOES Bandits” who entered orders in response to market movements before the Nasdaq market makers were able to update their SOES quotes.²⁵⁷ This was made possible by the development of Internet trading by retail customers.²⁵⁸

The NASD tried to help the Nasdaq market makers by barring “professional” traders from using SOES, but a court of appeals held that the rule was too vague.²⁵⁹ Other efforts by the NASD also failed to deter the SOES bandits, so the market makers began taking their own actions to stop their attacks. The effect of the market makers’ response

²⁵⁵ Division of Market Regulation, U.S. Securities and Exchange Commission, Market 2000, An Examination of Current Equity Market Developments 9 (Jan. 1994).

²⁵⁶ Robert D. Hershey, The Markets: Stocks and Bonds, Dow Comes Back From Plunge But Ends Below 10,000, N.Y. Times, October 19, 2000, §C, at 10.

²⁵⁷ The SOES bandits operated as follows:

The [SOES] traders would ... monitor news developments constantly and use the instantaneous execution feature of the SOES to purchase shares before the market makers -- who frequently handle many stocks -- could adjust their quotations to reflect the new information. By executing within a few seconds as many as five orders for up to 1,000 shares each and liquidating the position shortly afterward at the new market price, a trader could profit handsomely at the expense of the market maker.

Timpinaro v. SEC, 2 F.3d 453 (D.C. Cir. 1993).

²⁵⁸ Although large broker-dealers were developing ECNs to compete with the exchanges, many of those same broker-dealers had fiercely resisted Internet trading for their own customers. As a result discount brokers were able to grab much of that business. III Jerry W. Markham, A Financial History of the United States, From the Age of Derivatives into the New Millennium (1970-2001) 294-297 (2002).

²⁵⁹ Timpinaro v. SEC, 2 F.3d 453 (D.C. Cir. 1993).

was revealed in an economic study published in 1994. It found that the spreads quoted by Nasdaq market makers were extraordinarily wide and suggested that they were the result of collusion among market makers.²⁶⁰ The Justice Department then brought an antitrust action against the market makers.²⁶¹ The SEC also investigated and found a number of improper practices on the part of those market makers.²⁶² Among other things, the SEC found that bids and offers displayed by market makers on Instinet and another ECN were almost always better than those they posted publicly on Nasdaq.²⁶³ This meant that the market makers had created a two-tiered market in retail customers using SOES were receiving less competitive prices than the institutional traders that could access ECNs.

As a result of this scandal, the NASD was censured by the SEC and agreed to spend \$100 million to improve its self-regulatory program.²⁶⁴ The NASD was also reorganized to obviate any conflicts between its role as the promoter of Nasdaq and its self-regulatory responsibilities. A separate subsidiary was given primary responsibility for regulatory matters. Another subsidiary was given responsibility over Nasdaq.²⁶⁵ Numerous Nasdaq market makers were also sanctioned for their role in this scandal.²⁶⁶

²⁶⁰ William G. Christie & Paul H. Schultz, *Why Do NASDAQ Market Makers Avoid Odd-Eighth Quotes*, 49 J. Fin. 1813 (1994).

²⁶¹ Report Pursuant to Section 21(a) of the Securities Exchange Act of 1934 Regarding the NASD and the NASDAQ Market, 1996 SEC LEXIS 2123, at 8, n.7 (Aug. 8, 1996).

²⁶² Report Pursuant to Section 21(a) of the Securities Exchange Act of 1934 Regarding the NASD and the NASDAQ Market, 1996 SEC LEXIS 2123 (Aug. 8, 1996). *See* 23A Jerry W. Markham & Thomas L. Hazen, *Broker Dealer Operations Under Securities and Commodities Law: Financial Responsibilities, Credit Regulation, and Customer Protection*, §9.1 (2d Ed. 2006) (describing those practices).

²⁶³ Report Pursuant to Section 21(a) of the Securities Exchange Act of 1934 Regarding the NASD and the NASDAQ Market, 1996 SEC LEXIS 2123 (Aug. 8, 1996).

²⁶⁴ Floyd Norris, *Tough Crackdown on Nasdaq Market Announced by U.S.*, N.Y. Times, Aug. 8, 1996, at A1. A "monitor" was appointed to assure compliance with this settlement. *Nasdaq Gets a Monitor*, N.Y. Times, Oct. 28, 1996, §D, at 2. Private suits that were brought against the Nasdaq market makers resulted in a settlement of about \$1 billion. Deborah Lohse, *Settlement of NASDAQ Suit Now Includes '96*, Wall St. J., Jan. 5, 1998, at C17; "What's News," Wall St. J., Dec. 19, 1997, at A1.

²⁶⁵ This reorganization was the result of an NASD internal study headed by former Senator Warren B. Rudman. Floyd Norris, *Investors to Get Bigger Role in Running Nasdaq Market*, N.Y. Times, Sept. 20, 1995, at D1.

²⁶⁶ Michael Schroeder, *Nasdaq Probe Leads to Fines, Suspensions*, Wall St. J., Jan. 12, 1999, at B6.

Scandal also arrived on the floor of the NYSE. Floor brokers on the NYSE were engaged in “flipping” and “trading for eighths,” a practice that the NYSE was aware of at the time but did not stop.²⁶⁷ These practices involved the execution of opposite customer orders against a third party account, allowing them to obtain a bid ask spread profit on the trades as well as commissions.²⁶⁸ Several floor brokers and their clerks pleaded guilty to criminal charges for that conduct.²⁶⁹ An even larger scandal arose over conduct by NYSE specialists. An SEC investigation discovered that NYSE specialists were trading ahead of customer orders and engaging in other misconduct such as front running and “interpositioning” themselves between matchable customer orders in order to create and profit from a spread.²⁷⁰ Several NYSE specialist firms agreed to pay over \$250 million to settle SEC charges over that misconduct.²⁷¹ The SEC also brought an action against the NYSE that was settled by the exchange.²⁷² The NYSE agreed to require all of its directors be independent directors, create a new office of Chief Regulatory Officer and to hire an independent monitor to oversee its supervision of the floor at a cost of \$20 million. The NYSE also agreed to film and tape record the specialists’ operations on the floor during the trading day.²⁷³ Several employees of the specialist firms were indicted for their role in

²⁶⁷ *MFS Sec. Corp. v. SEC*, 380 F.3d 611, 613-614 (2d Cir. 2004).

²⁶⁸ *Ibid.*

²⁶⁹ 2 Ex-Brokers Get One-Week Jail Terms, *N.Y. Times*, Jan. 20, 2000, at C14. Despite their guilty pleas, two of those brokers sued the NYSE claiming that it was aware of and permitted those trading practices on its floor. *Convicted Brokers Sue Exchange*, *N.Y. Times*, June 28, 2000, at B8.

²⁷⁰ *See In the Matter of Finnerty*, 2007 SEC LEXIS 1083 (S.E.C. 2007) (describing these practices); *Calif. Public Employees Retirement System v. NYSE*, 503 F.3d 89 (2d Cir. 2007) (same).

²⁷¹ Jerry W. Markham, *A Financial History of Modern U.S. Corporate Scandals: From Enron to Reform*, 502 (2005). For examples of those settlements see *In the Matter of Spear, Leeds & Kellogg Specialists, LLC*, 2004 WL 626567 (S.E.C. 2004); *In the Matter of Van Der Moolen, Specialists USA, LLC*, 2004 WL 626564 (S.E.C. 2004).

²⁷² *In the Matter of NYSE*, 2005 SEC LEXIS 814 (S.E.C. 2005).

²⁷³ Jerry W. Markham, *A Financial History of Modern U.S. Corporate Scandals: From Enron to Reform*, 502 (2005).

this scandal.²⁷⁴ The SEC also brought actions against three regional exchanges for allowing their specialists to engage in similar conduct.²⁷⁵

C. *The ECNs Arrive*

The ECNs arrived in force in the financial markets beginning in the early 1990s in the form of automated trading systems for institutional traders in the third market.²⁷⁶ In some ways they were actually a creation of the exchanges efforts to automate. “Electronic trading”²⁷⁷ encompasses a wide range of systems that facilitate the entry and execution of orders electronically by algorithms.²⁷⁸ The exchanges had employed algorithms for their own trading activities, using different algorithms for different contracts,²⁷⁹ often based on a contract’s liquidity. They include a first-in first-out

²⁷⁴ See e.g., *United States v. Hunt*, 2006 WL 2613754 (S.D.N.Y. 2006); *United States v. Bongiorno*, Fed. Sec. L. Rep. (CCH) ¶93, 861 (S.D.N.Y. 2006). However, the conviction of one of these employees was set aside because it was not shown that the customers were not misled. *United States v. Finnerty*, 474 F. Supp. 2d 530 (S.D.N.Y. 2007).

²⁷⁵ Jerry W. Markham, *A Financial History of Modern U.S. Corporate Scandals: From Enron to Reform*, 503 (2005).

²⁷⁶ See generally Paul D. Cohen, *Securities Trading Via the Internet*, 4 *Stan. J. L. Bus. & Fin.* 1 (1999) (describing various forms of ECNs).

²⁷⁷ See Group of Ten, *Implications of Electronic Trading on the Financial Markets* at 3 (2001) (Bank for International Settlements editor). The broad scope of this definition includes a system that “provides some or all of the following services: electronic order routing (the delivery of orders from users to the execution system), automated trade execution (the transformation of orders into trades) and electronic dissemination of pre-trade (bid/offer quotes and depth) and post-trade information (transaction price and volume data).” *Id.*

²⁷⁸ For a description of algorithmic trading in the futures industry see Will Acworth, *Algorithmic Trading, Seeking an Edge*, *Futures Industry Magazine*, July-Aug., at 24. An algorithm has been defined as follows:

1. A fixed step-by-step procedure for accomplishing a given result; usually a simplified procedure for solving a complex problem, also a full statement of a finite number of steps. 2. A defined process or set of rules that leads [*sic*] and assures development of a desired output from a given input. A sequence of formulas and/or algebraic/logical steps to calculate or determine a given task; processing rules.” Brief for Petitioner in *Diamond v. Bradley*, O. T. 1980, No. 79-855, p. 6, n. 12, quoting C. Sippl & R. Sippl, *Computer Dictionary and Handbook* 23 (2d ed. 1972).

Diamond v. Diehr, 450 U.S. 175, 186, n.9 (1981) (quoting above definition but applying a more narrow definition to patent claims). See also Karl Finders, *Computerweekly.com, The Evolution Of Stock Market Technology* at *2 (Nov. 2, 2007) (defining algorithmic trading as computer systems that “buy shares automatically when predefined market conditions are met”).

²⁷⁹ Exchanges typically employ a series of algorithms to address all of the different order issues the exchange may receive. For instance, the algorithms for recognizing user names or uncrossing orders can be applied to all markets exchange wide.

allocation system for trade matching, a pro-rata system,²⁸⁰ or a system that combines some elements of each of the above.²⁸¹ Without the creation of trade-matching algorithms by exchanges, the development of electronic trading systems in the remainder of the financial services industry would have likely stalled.

Some commentators view the development of trade-matching algorithms as the democratization of the financial markets in that it replaces the “privileged market access,”²⁸² and it allows them to differentiate between orders, let alone members and non-members.²⁸³ The exchanges were, initially, unwilling to use algorithms to replace their trading floor functions. However, where established exchanges did not willingly venture, many “new kids on the block” began filling the void.²⁸⁴ Participants in these new

²⁸⁰ In pro-rata systems, larger sized orders receive priority over smaller sized orders, regardless of when the exchange accepted the order relative to other orders. *See e.g.*, CBOT, Electronic Trading Platform Reference Manual at 59 (version 2.2) (2006) (describing the nine steps in matching trades for its pro-rata algorithm).

²⁸¹ See CFTC Release No. 4831-03, CFTC Recognizes New Exchange, at 1 (Aug., 7, 2003) (announcing the approval of the CBOE Futures Exchange and commenting that its “trading system will match orders based anonymously either on a price-time priority or a pro-rata trade-matching algorithm, each similar to those employed by other automated trading systems at various existing futures exchanges.”).

²⁸² See CFTC, Technical Advisory Committee, *Best Practices for Organized Electronic Markets* at 5 (Apr. 2002) (defining privilege market access as “any rule, policy or processing convention of organized markets that discriminates among classes of market participants when providing any of their services, access to their services or access to market critical information”).

²⁸³ *See e.g.*, CME, *Top Order Matching* available at <http://www.cme.com/trading/get/abt/functionality/edo.html> (last visited Oct. 17, 2007) (explaining circumstances where an order in the CME Eurodollar algorithm designates an order with “TOP order status when it betters the current bid (or ask) price and its quantity is at least 50 contracts.”). For intermediaries who receive special treatment see CME Lead Market Maker (“LMM”) Algorithm, available at <http://www.cme.com/trading/get/abt/functionality/lmm.html> (last visited Oct. 17, 2007) (explaining that the “LMM designation is given to those individuals chosen by CME to make a two-sided market in an assigned contract. LMMs enjoy the benefit of LMM matching privileges (a guaranteed allocation percentage of incoming orders, as specified below) and associated pricing concessions in return for meeting CME-determined LMM market obligations.”); see also Euronext Liffe, *Functional Overview of LIFFE CONNECT® Market-Making Functionalities* at 5 (Oct. 31, 2006) (ver. 0.2) (explaining that only user names “that are registered to submit [market making orders] in a contract will be allowed to do so. These [user names] will not be allowed to submit any other order type into that contract.”).

²⁸⁴ The appearance of new financial intermediaries is particularly visible in the securities industry where broker-dealers are just as likely than exchanges to develop trade-matching systems. See Dale A. Oesterle, *The SEC’s Assault On Electronic Trading*, at 18 Regulation (vol. 21 no. 3 1998) (stating that “an additional 140 broker-dealers operate some type of limited internal computer trading system for their own traders or customers”). Independent companies created networks for brokers and dealers to execute trades

ventures soon learned the benefits of electronic trading systems and order matching algorithms.²⁸⁵ These benefits include the reduction in costs and trading errors, enhancement of operational efficiencies, and benefits associated with risk management.²⁸⁶

All of the major algorithms share some common characteristics. In particular, they provide for the anonymity of market users, something that was not always universal. Algorithms that survive the development and consolidation phase will balance each of these fundamental qualities: anonymity, speed, capacity and stability. Like any software program, however, these algorithms require regular maintenance and a certain level of revision over time.²⁸⁷

electronically soon developed after established national exchanges merged. *See* Ivy Schmerken, *New ATSS Arise to Fill a Void*, WALL STREET AND TECHNOLOGY, at *1 (September 23, 2005).

²⁸⁵ ECNs found fertile ground in trading equities because the federal securities laws permit intermediaries to match orders, cross orders, and take other measures with customer orders that are strictly prohibited by the Commodity Exchange Act. *See e.g.*, NYSE Rule 104. Often, an intermediary only realizes measurable profits after identifying trading strategies and establishing large positions. Intermediaries regularly saw a reduction in profits, often due to “slippage” in execution and piggybacking of the trading desks through which they execute their orders. Because their strategies require large positions the amount of time and slippage when executing the orders to establish or liquidate these large positions is magnified.

²⁸⁶ *See* Ates and Wang, *supra* note 40, at 683 (observing that “fast execution reduces execution risk. Thus, electronic trading reduces the order processing cost and the overall cost of trading.”) (citation omitted); *see also* CME GROUP, CME GLOBEX: THE WORLD’S LEADING ELECTRONIC TRADING PLATFORM 9 (2007) (stating that monthly volume data for trades executed on CME’s Globex trading platform between 2004 through 2006 shows that “average daily order volume grew by approximately 300 percent, while the time it takes to get a trade executed decreased by more than 50 percent.”).

²⁸⁷ *See e.g.*, US Futures Exchange, LLC, CFTC Release No. dcm037f, *CFTC Technical Questionnaire* at 2 (September 2003) (stating that “Eurex continuously upgrades its trading software, releasing and installing significantly upgraded versions about every fifteen months.”).

Non-exchange intermediaries, however, design their algorithms²⁸⁸ to manage risk²⁸⁹ and profit from market making functions in the exchanges' electronic environment.²⁹⁰ Non-exchange intermediaries developed algorithms to earn profits by purchasing or selling the standardized exchange's products as quickly, efficiently, and anonymously as possible. Non-exchange intermediaries experienced "excessive" costs when executing large orders.²⁹¹ One reason intermediaries encouraged exchanges to adopt electronic trade-matching systems was to reduce these external costs through their ability to execute smaller sized orders and eliminate slippage and piggybacking.²⁹²

An exchange's trade-matching algorithm is limited to execution functions. The trade-matching system's purpose is to provide a central trading environment and predictable methodology for matching buyers and sellers. A critical component of the predictability is

²⁸⁸ A non-exchange intermediary's algorithms differs from an exchange's algorithm primarily in that the non-exchange algorithm will take a position in the market, long or short, for some period of time. See Karl Finders, Computerweekly.com, *The Evolution of Stock Market Technology* at *2 (Nov. 2, 2007) (defining algorithmic trading as computer systems that "buy shares automatically when predefined market conditions are met").

²⁸⁹ See Bert Scholtens and Dick van Wensveen, *The Theory of Financial Intermediation: An Essay on What It Does (Not) Explain*, The European Money and Finance Forum at 35 (Vienna 2003) (concluding that "risk transformation, not dealing with information and agency problems, is at the heart of financial intermediation"). In this sense, "risk" applies to its most expansive definition, "maturity risk, counterparty risk, market risk (interest rate and stock prices), life expectancy, income expectancy risk etc."). *Id.* at 34.

²⁹⁰ Market makers never take "long-term views on where stock prices were heading. Instead, [they] aim[] to profit off tiny differences between what investors were willing to pay for heavily traded stocks and what others were willing to sell them for [sic]." Aaron Lucchetti, *Fast Lane Firms Seek Edge Through Speed As Computer Trading Expands Tradebot Moves Its Machines Into Exchange Buildings; Competitors Follow Suit 100 Million Shares in a Day*, W.S.J. Page 1 (December 15, 2006).

²⁹¹ Another strategy employed by intermediaries requires them to establish large positions. Often, an intermediary's profits are less than anticipated due to slippage in execution:

the effective spread statistics for large, electronically-received market orders in NYSE stocks show significant 'slippage' - the amount by which orders are executed at prices inferior to the national best bid or offer . . . at the time of order receipt. Slippage often results in effective spreads for large orders that are many times wider than the effective spreads for small orders in the same NYSE stocks.

U.S. Securities and Exchange Commission, Regulation NMS Part II, 70 Fed. Reg. 37,496 at 37,513 (June 29, 2005).

²⁹² "[T]here are two components in the cost of trading a stock: brokerage commissions and 'friction' (i.e., slippage, market impact, liquidity cost, and dealer spread). [F]riction results from the current market structure and averages about ten cents per share for a basket of stocks contained in the S&P 500." Division of Market Regulation, U.S. Securities and Exchange Commission, Market 2000, Summary of Comments at A VI-6 (Jan. 1994) (comments of Jeffrey P. Ricker).

the execution of orders on a time and price paradigm. Unlike exchanges, intermediaries could realize profits from the exchanges' trade-matching systems and their own order routing systems and trading strategy algorithms. Thus, while the exchanges developed electronic trade-matching systems, intermediaries developed or purchased order routing systems.²⁹³ These systems are either developed by intermediaries or third parties focused on supplying information technology services.²⁹⁴ In addition to these services, the third parties also introduced the patent process, and concomitant litigation, to the commodity futures industry.²⁹⁵

The ECNs were screen based and were initially regulated as broker-dealers in the securities industry. The SEC did not require them to register as a national securities exchange like the NYSE because they were not making a continuous market in securities.²⁹⁶ Registration as an exchange would have imposed self-regulatory and other requirements that those broker-dealers could not have met.²⁹⁷ By 1994, those proprietary

²⁹³ The term "order routing system" originated from the system's process of directing an order to the applicable pit for execution. Order routing is also commonly referred to as order flow. See CFA Magazine, Nancy Opiela, *Why Is It so Quiet in the Trading Room? Change in order flow characteristics is likely culprit* at 46 (Jan-Feb 2004).

²⁹⁴ See CFA Magazine, Nancy Opiela, *Why Is It so Quiet in the Trading Room? Change In Order Flow Characteristics Is Likely Culprit* at 46-47 (quoting Dennis Dick, CFA, Bright Trading, LLC, as saying that "through the course of reducing the number of stocks that they [Charles Schwab] make markets in, they shifted a lot of the handling of order flow to automated systems. This allowed them to ramp back up again with about a 70 percent reduction in personnel." And that Dick sees "the NYSE slowly turning into a NADAQ [sic]-oriented market where you have everything trading on an automated system.").

²⁹⁵ See generally Will Acworth, Intellectual Property Roundtable, Futures Industry Magazine, Nov./Dec 2007, at 56 (discussing these issues); *Trading Technologies International, Inc. v. eSpeed, Inc.*, 507 F. Supp.2d 883 (N.D. Ill. 2007) (massive patent litigation over ECN related patent).

²⁹⁶ Division of Market Regulation, U.S. Securities and Exchange Commission, Market 2000, An Examination of Current Equity Market Developments 26 (Jan. 1994). See generally Therese H. Maynard, What is an "Exchange?" - Proprietary Electronic Securities Trading Systems and the Statutory Definition of an Exchange, 49 Wash. & Lee L. Rev. 833 (1992) (examining regulation of ECNs as exchanges under the Securities Act of 1934).

²⁹⁷ The SEC did propose a rule in 1989 that would have imposed exchange like regulation on those proprietary trading systems but backed off from that proposal. Division of Market Regulation, U.S. Securities and Exchange Commission, Market 2000, An Examination of Current Equity Market Developments 27 (Jan. 1994). For a description of the role of self-regulation see Steven A. Cleveland, The NYSE as State Actor?: Rational Actors, Behavioral Insights & Joint Investigations, 55 Am. U. L. Rev. 1

systems were executing about 13 percent of Nasdaq volume but only about 1.4 percent of NYSE volume.²⁹⁸

Broker-dealers were also operating automated systems that matched customer orders internally, but NYSE Rule 390 required orders for stocks subject to that rule to be executed on the NYSE until it was repealed.²⁹⁹ In preserving market share, the NYSE was also reporting record profits in 1993.³⁰⁰ However, the battle with the ECNs was already joined at Nasdaq where market share would be greatly eroded by their trading. Instinet Corp. was processing some 170 million shares a day at the end of the last century. It partnered with several online brokers that were permitting their customers to enter orders through the Internet.³⁰¹ In August 1999, Instinet also joined with several large brokerage firms, including Merrill Lynch, Goldman Sachs and Morgan Stanley, to form Primex, Trading N.A., an electronic platform for institutional traders in NYSE stocks, a project Nasdaq also joined.³⁰² Other ECNs included Wit Capital, OptiMark, and Easdaq, POSIT, TONTO, the TONTO System, which became Archipelago, Bloomberg Tradebook, the Attain System, MarketXT, the BRUT System, GFINet System, Bridge Trader, the Strike System, and the Trading System.³⁰³

(2005) (securities industry); Jake Keaveny, In Defense of Market Self-Regulation, An Analysis of the History of Futures Regulation and the Trend toward Demutualization, 70 *Brook. L. Rev.* 1419 (2005) (futures industry).

²⁹⁸ Division of Market Regulation, U.S. Securities and Exchange Commission, *Market 2000, An Examination of Current Equity Market Developments* 10 (Jan. 1994).

²⁹⁹ Division of Market Regulation U.S. Securities and Exchange Commission, *Market 2000, An Examination of Current Equity Market Developments* 6 (Jan. 1994).

³⁰⁰ Division of Market Regulation, U.S. Securities and Exchange Commission, *Market 2000, An Examination of Current Equity Market Developments* 12 (Jan. 1994).

³⁰¹ *Id.* at 335.

³⁰² *Id.* at 335.

³⁰³ 23A Jerry W. Markham & Thomas L. Hazen, *Broker Dealer Operations Under Securities and Commodities Law: Financial Responsibilities, Credit Regulation, and Customer Protection*, §14.2 (2d Ed. 2006). *See also* Jonathan R. Macey and Maureen O'Hara, *Regulating Exchanges and Alternative Trading Systems: A Law and Economics Perspective*, 28 *J. Legal Stud.* 17, 19 (1999) (describing some of these systems).

Charles Schwab, Fidelity Investments, DLJdirect, and Spear, Leeds & Kellogg, a NYSE specialist firm, developed MarketXT, Inc. to trade the 200 largest stocks on the NYSE and Nasdaq.³⁰⁴ Bloomberg's TradeBook system was an ECN that represented its customers on Nasdaq.³⁰⁵ The BRASS Utility System was an ECN that provided automatic execution, clearance and settlement of trades in Nasdaq National Market System and Small-Cap stocks.³⁰⁶ Spear, Leeds & Kellogg was also operating an ECN called the REDI System that matched mixed-lot orders.³⁰⁷ The BRUT System was a computer-based proprietary system that allowed participants to match orders in Nasdaq National Market and Small-Cap securities on an anonymous basis.³⁰⁸

Some ECNs grew so big that they sought registration as an exchange in order to compete directly with the traditional markets through their electronic facilities.³⁰⁹ Archipelago Holdings LLC became a stock exchange through an arrangement with the Pacific Exchange. Island ECN was a leading ECN at one point. It applied to the SEC to become a stock exchange, and the CFTC approved the designation of Island Futures Exchange, LLP as a contract market in February of 2002.³¹⁰ The Cincinnati Stock

³⁰⁴ 23A Jerry W. Markham & Thomas L. Hazen, *Broker Dealer Operations Under Securities and Commodities Law: Financial Responsibilities, Credit Regulation, and Customer Protection*, §14.2 (2d Ed. 2006).

³⁰⁵ Kim Bang, *What's New in the Financial Services Industry: New Initiatives*, 3 *Fordham Fin. Sec. & Tax L. F.* 67, 68 (1998).

³⁰⁶ 23A Jerry W. Markham & Thomas L. Hazen, *Broker Dealer Operations Under Securities and Commodities Law: Financial Responsibilities, Credit Regulation, and Customer Protection*, §14.2 (2d Ed. 2006).

³⁰⁷ *Id.*

³⁰⁸ *Id.*

³⁰⁹ *See e.g.*, Shanny Bashir, *Bats Trading Files for Exchange Status*, *Financial News Online* available at <http://www.financialnews-us.com/index.cfm?page=ushome&contentid=2349117265&printview=true> Nov. 6, 2007 (quoting Joe Ratterman, chief executive of Bats, as saying: "Our motivation to become an exchange stems from our desire to participate directly in the national market system. We also desire to be on the same regulatory playing field as our primary competitors, Nasdaq and the New York Stock Exchange.")

³¹⁰ 23A Jerry W. Markham & Thomas L. Hazen, *Broker Dealer Operations Under Securities and Commodities Law: Financial Responsibilities, Credit Regulation, and Customer Protection*, §14.2 (2d Ed. 2006).

Exchange, an electronic stock exchange that was trading Nasdaq stocks entered into a linkage agreement with Island ECN, the largest electronic communications network.³¹¹ Reuters PLC, the owner of the Instinet Group, Inc., bought Island ECN.³¹² Those two firms accounted for about 22 percent of Nasdaq listed stocks.

More competition was added when the SEC allowed a London ECN to operate in the United States without requiring it to register as a national securities exchange under the Securities Exchange Act of 1934.³¹³ This led the NYSE and Nasdaq to seek linkages to markets in London, Paris, Tokyo, Mexico, Sao Paulo, Amsterdam, and elsewhere.³¹⁴ Globalization was ripe for exploitation by foreign ECNs because they had the ability to overcome the “home bias” that had caused American investors to favor domestic exchanges.³¹⁵ This was because the ECNs were simply mathematical models that were pretty much unaffected by government intervention or uncertain rule interpretations. “In electronic systems, the algorithm that matches orders or trades constitutes the trading and execution rules that govern the priority and manner of trading. This leaves no room for disputes as to the applicability of the trading rules contained in the system. . . . This eliminates disputes about the validity of, or uncertainty as to the legality of, that

³¹¹ *Id.*

³¹² *Id.*

³¹³ Elizabeth M. McCarroll, Regulation of Electronic Communications Networks: An Examination of Tradepoint Financial Network's SEC Approval to Become the First Non-American Exchange to Operate in the United States, 33 Cornell Int'l L.J. 211 (2000).

³¹⁴ Charles C. Cox & Douglas C. Michael, The Market for Markets: Development of International Securities and Commodities Trading, 36 Cath. U. L. Rev. 833, 840-841 (1987); III Jerry W. Markham, A Financial History of the United States, From the Age of Derivatives to the Internet (1970-2001), 252 (2002); Terzah Ewing, NASD Presents Details of its Plan for Nasdaq Europe, Wall St. J., Nov. 5, 1999, at C12.

³¹⁵ “Home bias is the parochial tendency of investors to invest their savings in their home country, even though this means passing up more profitable foreign opportunities.” Alan Greenspan, The Age of Turbulence, Adventures in a New World 350 (2007).

interest.”³¹⁶

D. *Nasdaq and NYSE Responses*

In 2000, SEC Chairman Arthur Levitt noted that ECNs “have provided investors with greater choices, and have driven execution costs down to a fraction of a penny. As a result, these networks present serious competitive challenges to the established market centers.”³¹⁷ Some regional exchanges in the United States adopted electronic trading in whole or part in response to this competition. The Midwest Stock Exchange changed its name to the Chicago Stock Exchange and became an all-electronic exchange trading Nasdaq, NYSE and AMEX stocks through the Internet.³¹⁸ The options exchanges also experienced the effects of ECN competition. The Boston Options Exchange was all-electronic and the AMEX began electronic trading in its options in 2004. A proposed merger between the CBOE and the Pacific Exchange had to be called off because of Justice Department antitrust concerns.³¹⁹

Nasdaq was reeling from ECN competition.³²⁰ In 2002, ECNs accounted for some 70 percent of Nasdaq volume.³²¹ Nasdaq demutalized in order to gain access to a larger capital base. Nasdaq sold a portion of itself in private placements and then made a public

³¹⁶ Andrea M. Corcoran, *The Uses of New Capital Markets: Electronic Commerce and the Rules of the Game in an International Marketplace*, 49 *Am. U. L. Rev.* 581, 588 (2000).

³¹⁷ Arthur Levitt, *The Future of Our Markets: Dynamic Markets, Timeless Principles*, 2000 *Colum. Bus. L. Rev.* 1, 5.

³¹⁸ III Jerry W. Markham, *A Financial History of the United States, From the Age of Derivatives to the Internet (1970-2001)*, 331 (2002).

³¹⁹ *Id.* at 252.

³²⁰ See generally Mark Ingebretsen, *Nasdaq: A History of the Market That Changed the World* (2002) (describing growth of Nasdaq and ECN competition). See Dale A. Oesterle, *The SEC's Assault On Electronic Trading*, at 18 *Regulation* (vol. 21 no. 3 1998) (stating that “still young electronic exchanges [Instinet, Island, Posit, and Arizona Stock Exchange] now handle over one and one-half times the trading volume of the Amex and all the regional exchanges combined.”).

³²¹ J. Alex Tarquinio, *Investing; Electronic Trading Networks Look Toward the Big Board*, *N.Y. Times*, Decd. 29, 2002, §3, at 7.

offering.³²² Nasdaq began competing with the ECNs through its own SuperMontage electronic trading program developed over the objections of competitors and at a cost of over \$100 million.³²³ Nasdaq subsequently went a step further and bought Instinet's ECN operations for about \$1.9 billion in April 2005, after the NYSE announced its merger with another ECN, Archipelago Holdings Inc.³²⁴ Nasdaq also tried to stem its loss of market share by mergers, first with the AMEX in 1998. A merger with the Philadelphia Stock Exchange ("PHLX") initially fell through, but Nasdaq did later acquire it, the nation's first stock exchange,³²⁵ as well as the Boston Stock Exchange.³²⁶

More competition emerged from abroad. The London and Frankfurt stock exchanges merged, and they entered into a linkage with the Paris Bourse and Nasdaq.³²⁷ The Canadian exchanges Montreal, Vancouver, Toronto and Alberta reorganized into a pan-Canadian exchange.³²⁸ Nasdaq responded by acquiring control of OMX, a Nordic market operator, in a joint venture with Borse Dubai for almost \$5 billion.³²⁹ However, Nasdaq failed in its efforts to gain control of the London Stock Exchange.³³⁰ Nasdaq sold its 28 percent ownership interest in that exchange to Dubai World, a sovereign investment fund in that country, as well as a 20 percent stake in Nasdaq itself.³³¹

The NYSE had successfully resisted competition from the ECNs until a scandal

³²² Desmond MacRae, A Bad Bet For Public Exchanges? Demutualization Is Not the Only Answer, *Traders Magazine*, Feb. 1, 2003.

³²³ Stephen Labaton, Nasdaq Wins Battle at S.E.C. On New System For Trading, *N.Y. Times*, August 29, 2002, at C5.

³²⁴ Peter Edmonston, Private Firm Sells Broker And Makes Quick Profit, *N.Y. Times*, Nov. 3, 2006, at C3.

³²⁵ Nasdaq to Add An Exchange, *N.Y. Times*, Nov. 8, 2007, at C7.

³²⁶ *Id.*

³²⁷ Charles Schumer, A Shot Across the Trading Floor, *Wall St. J.*, May 5, 2000, at A27; Alan Cowell, 2 Stock Exchanges in Europe To Merge, With Nasdaq Link, *Wall St. J.*, May 4, 2000, at A1.

³²⁸ III Jerry W. Markham, A Financial History of the United States, From the Age of Derivatives to the Internet (1970-2001), 331 (2002).

³²⁹ *Id.*

³³⁰ Daniel Gross, The Capital of Capital No More, *N.Y. Times*, Oct. 14, 2007, §6, at 62.

³³¹ Heather Timmons & Julia Werdigier, For Abu Dhabi and Citi Credit Crisis Drove Deal, *N.Y. Times*, Nov. 28, 2007, at c1, c2.

arose concerning the \$187 million retirement package given to its chief executive officer, Richard Grasso in 2003.³³² Under Grasso, NYSE volume had exploded, the exchange was still executing 85 percent of transactions in its listed stocks, the price of NYSE seats had doubled and the exchange had total profits of over \$2 billion between 1995-2000.³³³ He valiantly kept the NYSE competitive by constantly updating its technology.³³⁴ The NYSE spent over \$2 billion during the 1990s on technology and was spending \$350 million per year on technology as the new century began.³³⁵ However, Grasso was forced from office after the scandal involving his salary, and his successors gave up the franchise. Although the NYSE had resisted electronic trading competition for many years, it threw in the towel in 2005, merging with Archipelago Holdings, a Chicago based ECN³³⁶ that was then executing about 500 million shares a day, mostly in Nasdaq

³³² This scandal was exploited by then New York attorney general Eliot Spitzer in order to grab headlines and aid his gubernatorial campaign. Jerry W. Markham, *A Financial History of Modern U.S. Corporate Scandals: From Enron to Reform*, 498-500 (2005). Spitzer lost some crucial aspects of the litigation he brought to recover Grasso's payout. *People of State of New York v. Grasso*, 836 N.Y.S.2d 40 1st Dept. N.Y. App. 2007).

³³³ Jerry W. Markham, *A Financial History of Modern U.S. Corporate Scandals: From Enron to Reform*, 500 (2005). *But see* Gretchen Morgenson, *Big Board Ready to Open the E-Gates*, N.Y. Times, Nov. 28, 1999, §3, at 1 (arguing that Grasso had opened the door to ECN competition by giving in to pressure from the SEC to eliminate NYSE Rule 390).

³³⁴ The NYSE also created a less than successful after-hours trading program where trades could be crosses after the close of trading on the floor. Division of Market Regulation, U.S. Securities and Exchange Commission, *Market 2000, An Examination of Current Equity Market Developments VII-5-6* (Jan. 1994). Nasdaq also introduced after hours trading. *Id.* at VII-7.

³³⁵ NYSE Special Committee on Market Structure, *Governance and Ownership*, 23 (2000), <http://www.nyse.com/pdfs/marketstructure.pdf>.

³³⁶ Grasso's biographer discovered that his dismissal by the NYSE board of directors ouster was spearheaded by Henry Paulson an NYSE board member and CEO of Goldman Sachs. Paulson had led an earlier effort to undermine the NYSE trading floor through a central limit order book ("CLOB"), *see infra* nn. --, describing CLOB. At the time, Goldman Sachs was an investor in Archipelago Holdings. Grasso believed that Paulson was then trying to destroy the NYSE trading floor and resisted Paulson's efforts strongly. Paulson is now Secretary of the U.S. Treasury Department. Charles Gasparino, *King of the Club: Richard Grasso and the Survival of the New York Stock Exchange* 143-144 (2007). *See also* Jerry W. Markham, *Regulating Excess Executive Compensation—Why Bother?* 2 U. Md.J. Bus. & Tech. L. 277, 317 (2007) (describing this scandal).

stocks.³³⁷ As a part of this merger, the NYSE gave up its not-for-profit status, demutalized and became a public company, changing its name to NYSE Group Inc.³³⁸

In 2006, the NYSE merged with Euronext,³³⁹ an amalgamation of European exchanges that trade principally electronically.³⁴⁰ The NYSE agreed to give up American control of the merged entity, NYSE-Euronext, sharing control of the board of the merged company with its European counterpart.³⁴¹ Euronext was also given the right to withdraw from the combined operation in the event that the SEC tried to regulate its European operations.³⁴² The NYSE continued its global expansion by entering into an alliance with three foreign exchanges, one of which was the Tokyo Stock Exchange.³⁴³

NYSE market share plunged after these mergers. In September 2007, the NYSE “executed only 56.1 per cent of trades involving NYSE-listed stocks, down from 69.3 per cent a year earlier, and 78.6 per cent in September 2005.”³⁴⁴ The NYSE-Euronext merger was followed by the dismantling of a considerable portion of the NYSE floor,³⁴⁵ and

³³⁷ Jenny Anderson, *Big Board Deal May Tip World Of Floor Trades*, N.Y. Times, April 21, 2005, at A1. *See Hyman v. NYSE*, 2007 N.Y. Misc. LEXIS 143 (Sup. Ct. N.Y. 2007) (describing this merger and background).

³³⁸ Jenny Anderson & Landon Thomas Jr., *Merrill Lynch to Hire Chief of Big Board*, N.Y. Times, Nov. 15, 2007, at A1.

³³⁹ Jenny Anderson & Martin Fackler, *NYSE Makes Alliance With Tokyo Exchange*, N.Y. Times, Feb. 1, 2007, at C3.

³⁴⁰ Michael J. de la Merced, *Big Board, Moving Toward Electronic Trading, to Lay Off 500*, N.Y. Times, Nov. 9, 2006, at C3. As a condition for that merger, the NYSE agreed to split management and board control of the new entity evenly with the European exchanges, thus giving up domestic control of one of America’s oldest financial institutions. James Kanter, *Trans-Atlantic Exchange to Be Listed Today*, N.Y. Times, April 4, 2007, at C2.

³⁴¹ Gaston F. Ceron, *NYSE to Split Board Evenly With Euronext*, Wall St. J., Jan. 24, 2007, at C1.

³⁴² Ian Bickerton & Norma Cohen, *Dutch Seek Control of NYSE Body*, Financial Times (London), Dec. 19, 2006, at 24. This was providing a mechanism for U.S. firms to list their stocks on Euronext and avoid expensive SEC regulation. *Europe Wins Another*, Wall St. J., Nov. 24-25, 2007, at A10.

³⁴³ Diana B. Henriques, *Failed Bid Is Setback For Growth At Nasdaq*, N.Y. Times, Feb. 12, 2007, at C1.

³⁴⁴ John Authers, *Nationalism Bites the Dust*, Financial Times (London), Nov. 19, 2007, at 1. The percentage of NYSE executions dropped a further two percent in October 2007. Andrew Dowell, *NYSE’s Floor Suffers Pair of Defections*, Wall St. J., Nov. 16, 2007, at C2.

³⁴⁵ Patrick McGeehan, *Next to Downsize On Wall Street? The Exchange Floor*, N.Y. Times, Sept. 23, 2007, §1 at 37; *Trading-Floor Changes Hurt LaBranche*, N.Y. Times, July 10, 2007, at C12; Aaron Lucchetti, *The NYSE: Faster (and Lonelier)*, Wall St. J., Jan. 24, 2007, C1.

resulted in the layoff of hundreds of NYSE employees.³⁴⁶ The number of employees employed by specialists on the NYSE floor was cut in half and the number of specialist firms was reduced to seven, down from 40 in the 1990s.³⁴⁷ The specialist lost its icon status. The NYSE was even considering a name change for them such as market maker or “liquidity provider.”³⁴⁸ Those were all blows the NYSE’s historical role, but its merger program was appearing to be a success. The NYSE’s own stock was up 355 percent³⁴⁹ as revenues and earnings soared in the first months after the merger.³⁵⁰

The NYSE-Euronext merger also had some other wide-ranging effects. In 2007, NASD Regulation merged with the NYSE Regulation to become the Financial Industry Regulatory Authority, Inc. (“FINRA”), thereby creating a single self-regulator and eliminating much overlap and redundancy.³⁵¹ The NYSE and NASD additionally merged their arbitration programs.³⁵²

IV REGULATING THE ECNs

Securities Industry

The growth of ECNs gave rise to the question of how they were to be regulated. If ECNs were viewed to be securities exchanges, they would have to register with the SEC

³⁴⁶ Michael J. de la Merced, Big Board, Moving Toward Electronic Trading, to Lay Off 500, N.Y. Times, Nov. 9, 2006, at C3.

³⁴⁷ Aaron Lucchetti, Niederauer’s First Challenge: NYSE Floor Traders’ Future, Wall St. J., Nov. 21, 2007, at C1.

³⁴⁸ “Since these traders emerged in the 1870s, specialists -- named because they each specialize in the trading of just a few stocks -- have amassed profits and critics alike for their privileged role in putting together buyers and sellers of NYSE stocks.” Aaron Lucchetti, Hi, ‘Designated Market Makers’, Wall St. J., Nov. 30, 2007, at C14.

³⁴⁹ Specialists Wane, Wall St. J., Nov. 17-18, 2007, at B4.

³⁵⁰ NYSE Euronext, Wall St. J., Nov. 3, 2007.

³⁵¹ Brooke Masters, US investors gain ‘top cop’ to police brokers, Financial Times (London), July 31, 2007, at 4.

³⁵² Lynnley Browning, Decoding the Markets 101, For the Soon-to-Retire, N.Y. Times, Nov. 12, 2007, at C8.

as a national securities exchange under the Securities Exchange Act of 1934.³⁵³ It would have been difficult for most ECNs to operate as registered exchanges, which have self-regulatory responsibilities and, traditionally, no profit motive for itself.³⁵⁴ Imposing such requirements would have nipped the growth of ECNs in the bud. Instead, the SEC chose to regulate most ECNs as broker-dealers under the Securities Exchange Act.³⁵⁵ Initially, the SEC staff applied this interpretation through the issuance of no-action letters.³⁵⁶ The SEC later adopted Rule 11Ac1-1 under the Securities Exchange Act to regulate ECNs that were matching customer orders with those of an exchange specialist or an over-the-counter market maker.³⁵⁷ This rule excluded from its reach ECNs that crossed multiple orders at a single price set by the ECN by an algorithm or any derivative pricing mechanism and did not allow orders to be crossed or executed against orders or participants outside of such terms.³⁵⁸

In 1997, the SEC issued a massive “concept release” in which the agency announced that it was “reevaluating its approach to the regulation of exchanges and other markets in light of technological advances and the corresponding growth of alternative trading systems and cross-border trading opportunities.”³⁵⁹ The SEC subsequently

³⁵³ 15 U.S.C. §78s.

³⁵⁴ See Board of Trade of the City of Chicago, 923 F.2d 1270 (7th Cir. 1991) (describing these difficulties).

³⁵⁵ 15 U.S.C. §78o. See generally Mark Borrelli, Market Making in the Electronic Age, 32 Loy. U. Chi. L.J. 815 (2001) (describing the SEC’s regulatory approach towards ECNs).

³⁵⁶ See e.g., EJV Partners LP, SEC No-Action Letter (June 8, 1992); Instinet Real-Time trading Service, SEC No-Action Letter (Jan. 21, 1997).

³⁵⁷ 17 C.F.R. §240.11Ac1. See generally Polly Nyquist, Failure to Engage: The Regulation of Proprietary Trading Systems, 13 Yale L. & Pol’y Rev. 281, 325-326 (1995) (describing the background of this regulation).

³⁵⁸ See generally Alexis L. Collins, Regulation of Alternative Trading Systems: Evolving Regulatory Models and Prospects for Increased Regulatory Coordination and Convergence, 33 Law & Pol’y Int’l Bus. 481 (2002) (describing regulatory issue associated with ECNs).

³⁵⁹ Securities Exchange Act Release No. 34-38672, 1997 SEC LEXIS 1178 (May 23, 1997). This concept release was not entirely gratuitous. The National Securities Markets Improvement Act of 1996 1034 Pub. L. 290, 110 Stat. 3416, §510) required the SEC to report to Congress on the effect of technology in the securities markets.

decided to throw a wider net over ECNs with a new Regulation ATS (the SEC liked the moniker Alternate Trading Systems (“ATS”), rather than ECNs) that allowed ECNs to choose whether they want to register as national securities exchanges or as broker-dealers.³⁶⁰ However, an ECN is required to register as an exchange when it exceeds certain volume levels.³⁶¹ The SEC adopted Rule 11Ac1-1 under the Securities Exchange Act³⁶² to define an ATS as any electronic system that widely disseminates to third parties orders entered by an exchange market maker or an over-the-counter market maker and permits such orders to be executed against each other in whole or in part. This rule excluded any system that crossed orders only at prices set by an algorithm or any derivative pricing mechanism.

Regulation ATS requires an ECN that has 20 percent or more of the average daily volume of a stock during four of the preceding six months to establish written standards for granting access to trading on its system and must not unreasonably limit access to its trading facilities. The SEC was concerned that the private nature of ECN trades provided institutional traders with an advantage, i.e., more favorable trading opportunities were

³⁶⁰ 17 C.F.R. §242.300. The SEC noted that ECNs have characteristics of both exchanges and broker-dealers. “Like traditional exchanges, alternative trading systems centralize orders and give participants control over the interaction of their orders. Like traditional broker-dealers, alternative trading systems are proprietary and, in some cases, maintain trading desks that facilitate participant trading.” Securities Exchange Act Release No. 34-38672, 1997 SEC LEXIS 1178 (May 23, 1997). *See generally* Gabriel Matus, *The Regulation of Alternative Trading Systems: Market Fragmentation and the New Market Structure*, 44 N.Y.L. Sch. L. Rev. 583 (2001) (describing Regulation ATS); Mark Klock, *The SEC’s New Regulation ATS: Placing the Myth of Market Fragmentation Ahead of Economic Theory and Evidence*, 51 Fla. L. Rev. 753 (1999) (same). In *In the Matter of INET ATS, Inc.*, Securities Exchange Act Release No. 34-53631 (S.E.C. April 12, 2006) the SEC stated that:

An ATS is any organization, association, person, group of persons, or system: (a) that constitutes, maintains, or provides a market place or facilities for bringing together purchasers and sellers of securities or for otherwise performing with respect to securities the functions commonly performed by a stock exchange within the meaning of Exchange Act Rule 3b-16; and (b) that does not: (i) set rules governing the conduct of subscribers other than the conduct of such subscribers’ trading on such organization, association, person, group of persons, or system; or (ii) discipline subscribers other than by exclusion from trading.

³⁶¹ The SEC subsequently required ECNs to publish reports on the quality of their trade executions and to disclose information concerning their trading relationships. 17 C.F.R. §§240.11Ac1-5 and 11Ac1-6.

³⁶² 17 C.F.R. §240.11Ac1.

often available to institutional traders through ECNs. The SEC, therefore, required market makers and specialists to make publicly available superior prices that it privately offered through ECNs. This rule required market makers and specialists who were using ECNs to change their quotes on public quotation systems to reflect orders placed in the ECNs or to be sure that any ECN to which they sent an order was itself able to reflect that order on the public quotation system.³⁶³

A proposal surfaced from large broker-dealers that envisioned a centralized electronic trading system with a central limit order book (“CLOB”).³⁶⁴ This raised concerns that those broker-dealers were seeking to internalize their order flow, keeping it from the exchanges.³⁶⁵ The NYSE claimed that such internalization would fragment

³⁶³ 17 C.F.R. §240.11Ac1-1(c).

³⁶⁴ Michael Schroeder & Randall Smith, Sweeping Change in Market Structure Sought, Wall St. J., Feb. 29, 2000, at C1. An NYSE report described CLOB as follows:

A CLOB, sometimes described as a Super-ECN or a Super National Market System (“Super-NMS”), would aggregate all limit orders in NYSE-listed stocks from originators industry-wide and subject them to automatic execution against matching orders based strictly upon price and time priority.

NYSE Special Committee on Market Structure, Governance and Ownership, 10 (2000), <http://www.nyse.com/pdfs/marketstructure.pdf> (visited December 17, 2007).

³⁶⁵ Matthew Andersen, Don’t CLOBber ECNs, Wall St. J., March 27, 2007, at A48. *See generally* Mark Borrelli, Market Making in the Electronic Age, 32 Loy. U. Chi. L.J. 815, 894-895 (2001) (discussing CLOB controversy); David M. Schizer, Benign Restraint: The SEC’s Regulation of Execution Systems, 101 Yale L.J. 1551, 1566 (1992) (describing market problems raised by a CLOB). An SEC chairman responded with a proposal that would have created a CLOB across all markets, but it too proved too controversial to adopt. Roberta S. Karmel, Turning Seats Into Shares: Causes and Implications of Demutualization of Stock and Futures Exchanges, 53 Hastings L.J. 367, 390-391 (2002). An NYSE report described that exchanges concern with internalized order flows as follows:

The broker-dealers generate revenue by buying stocks from their customers at or near the bid quote and selling stocks to their customers at or near the ask quote, keeping all or part of the spread as profit. Some internalize orders for NYSE-listed stocks are executed at the so-called “national best bid or offer” (“NBBO”), and are given no opportunity for the price improvement that is frequently available on the NYSE floor. In other cases, internalizing broker-dealers will offer a degree of price improvement determined by the broker-dealer’s internalization algorithms or its assessment of primary market conditions (for example, if the NYSE reports a series of trades at the bid quote, the internalizing broker-dealer may execute the next buy order it receives at or near the bid quote rather than at the ask quote). In each case, the broker-dealer offers a degree of price improvement that is to some degree artificially constrained and that may not reflect the full amount of price improvement available through order exposure in a central market. Since internalized orders are not exposed on the NYSE floor, they do not form part of the central market pool of liquidity, and thus do not contribute to optimum price discovery.

markets, impair liquidity and have other adverse effects.³⁶⁶ The SEC did not adopt this proposal, but did expand its trade through rule in a controversial Regulation NMS.³⁶⁷ The former trade through rule had applied only to exchanges and had help shield the exchanges from ECN competition. There was no such rule for Nasdaq stocks so ECNs were better able to compete for Nasdaq volume.³⁶⁸ Regulation NMS expanded the trade through rule to Nasdaq, but that change came too late to stop the loss of market share from Nasdaq.

B. *Derivatives Industry*

The CFTC ceded much of its jurisdiction to the ECNs in 2000. Ironically, that action came after a jurisdictional battle over the SEC's creation of a broker dealer "Lite" registration program for broker-dealers that were also acting as derivatives dealers.³⁶⁹ The CFTC viewed that action as an encroachment on its turf, and it responded with a proposal to explore the expansion of its jurisdiction over the burgeoning OTC derivatives market, a proposal that was met first by industry and then by congressional opposition.³⁷⁰ After a

NYSE Special Committee on Market Structure, Governance and Ownership, 10 (2000), <http://www.nyse.com/pdfs/marketstructure.pdf>.

³⁶⁶ NYSE Special Committee on Market Structure, Governance and Ownership, 28-29 (2000), <http://www.nyse.com/pdfs/marketstructure.pdf>. The SEC staff has also noted market fragmentation concerns:

. . . markets can fragment to the point where price discovery is impaired and maintenance of fair and orderly markets is difficult. . . . [T]he more fragmented a market becomes, the more difficult is it to adhere to time priority principles. . . ., reducing the incentive to place limit orders. . . . [and] increase dealer intervention in the handling of customer orders.

Division of Market Regulation, U.S. Securities and Exchange Commission, Market 2000, An Examination of Current Equity Market Developments III-2 (Jan. 1994).

³⁶⁷ Regulation NMS, Securities Exchange Act Release No. 34-51808 (June 9, 2005). *See* Troy A. Paredes, On the Decision to Regulate Hedge Funds: The SEC's Regulatory Philosophy, Style, and Mission, 2006 U. Ill. L. Rev. 975, 1027 (2006) (describing the trade through rule).

³⁶⁸ Dale A. Osterle, Regulation NMS: Has the SEC Exceeded Its Congressional Mandate to Facilitate a "National Market System" in Securities? 1 N.Y.U.J.L. & Bus. 613, 642 (2005).

³⁶⁹ *See* Willa E. Gibson, Are Swap Agreements Securities or Futures?: The Inadequacies of Applying the Traditional Regulatory Approach to OTC Derivatives Transactions, 24 Iowa J. Corp. L. 379, 390, 413 (1999) (Describing the broker-dealer Lite rule).

³⁷⁰ The CFTC was "blasted" by Robert Rubin, the Secretary of the Treasury, Alan Greenspan, Chairman of the Federal Reserve Board, and Arthur Levitt, Chairman of the SEC, for the CFTC's effort to seek

change in leadership at the CFTC, that agency executed a volte-face and adopted rules that implemented an almost complete deregulation of the OTC derivatives market for institutional participants.³⁷¹ That action was subsequently enacted into law in the form of the Commodity Futures Modernization Act of 2000 (“CFMA”),³⁷² which created a principles based regulatory scheme. Among other instructions, Congress charged the CFTC with reviewing and adopting rules to implement a new regime based on regulatory principles.³⁷³ Although the majority of the principles did not directly touch on electronic trading,³⁷⁴ their implementation would speed up the CFTC’s response to rule changes and the explosive growth associated with electronic trading systems.³⁷⁵

The CFMA created a multi-tiered derivatives market in which “[e]ach tier is subject to a varying level of oversight, based primarily on the commodity traded, the type of trading, and the nature of the participants in the market.”³⁷⁶ The most regulated tier are designated contract markets where retail traders are prevalent, but the nature of the regulation was changed to a principles based regimen that allows the exchanges to have more control over their operations.³⁷⁷ Nevertheless, that legislation left the traditional contract markets saddled with cumbersome regulatory requirements while upstart electronic execution facilities were left virtually unregulated. The CFMA separately

additional regulation of OTC derivatives. Congress then acted to prevent the CFTC from imposing unilateral regulation. David Barboza & Jeff Gerth, “Who’s in Charge? Agency Infighting and Regulatory Uncertainty,” N.Y. Times, Dec. 15, 1998, at C14.

³⁷¹ 13A Jerry W. Markham, *Commodities Regulation: Fraud, Manipulation & Other Claims*, §27:12.1 at 27-86 (2007).

³⁷² Pub. L. No. 106-544, 114 Stat. 2763

³⁷³ See CFMA § 125.

³⁷⁴ *But see* CFMA §§ 103 and 104.

³⁷⁵ See CFTC, *Written Testimony of Reuben Jeffery III, Chairman Commodity Futures Trading Commission Before the United States Senate Subcommittee on Financial Services and General Government Committee on Appropriations* (March 9, 2007).

³⁷⁶ Statement of Terry S. Arbit, CFTC General Counsel, Hearing Before the CFTC to Examine Trading on Regulated Exchanges and Exempt Commercial Markets on Sept. 18, 2007, Comm. Fut. L. Rep. (CCH) ¶30,618.

³⁷⁷ *Id.*

regulates what it calls derivatives transaction execution facilities (“DTEFs”) that may be either a “retail” or a “commercial” DTEF. These operations are regulated more lightly than a contract market, but no trading platforms have yet been created that would fall within this category.³⁷⁸

The CFMA additionally created an exemption and exclusions from most regulation for electronic trading facilities used by institutional traders that are called exempt commercial markets (“ECMs”) under the CFMA.³⁷⁹ The ECM exclusion is often referred to as the “Enron loophole” because it was inserted into the CFMA at the last minute through the lobbying efforts of the Enron Corp.³⁸⁰ At that time, Enron was operating a popular electronic trading platform called Enron Online. After Enron imploded in scandal, this exemption became suspect. Nevertheless, this exemption was exploited by other trading operations to create a viable OTC institutional trading market.

ECMs must restrict trading through their electronic facilities to principal-to-principal transactions between “eligible commercial entities.”³⁸¹ These are large institutional traders, including hedge funds that trade “exempt” commodities, which

³⁷⁸ The CFTC General Counsel has noted that:

Both DTEF categories have fewer regulatory requirements than a contract market, but are subject to differing limitations on eligible traders and the commodities that may be traded. Although subject to a “lighter” regulatory regime, this alternative exchange must have compliance and surveillance programs, and must undertake significant self-regulatory responsibilities. These include a requirement to establish and enforce rules to deter trading abuses and to monitor trading to ensure orderly trading.

Id.

³⁷⁹ The CFTC general counsel has also noted that:

Exempt Commercial Markets are electronic trading facilities that restrict trading to principal-to-principal transactions between “eligible commercial entities.” The term “eligible commercial entities,” like the name “Exempt Commercial Markets,” connotes a purely commercial marketplace among entities that can make or take delivery of the underlying commodity. But that also is not quite right. Under the statutory definitions of the CFMA, pooled investment vehicles such as hedge funds qualify as “eligible commercial entities,” and their participation on certain Exempt Commercial Markets has become both active and significant.

Id.

³⁸⁰ Staff Report, Senate Permanent Subcommittee on Investigations of the Committee on Homeland Security and Governmental Affairs, *Excessive Speculation in the Natural Gas Market* 41-42 (2007).

³⁸¹ 7 U.S.C. §2.

include energy products, metals, chemicals, and emission allowances.³⁸² “These exclusions and exemptions reflect the view, consistent with various Congressional and Commission actions during the preceding decade, that off-exchange transactions between sophisticated counterparties do not necessarily require the full weight of the protections that the CEA provides for contract markets and DTEFs.”³⁸³ The CFTC imposes registration and reporting requirements on ECMs, including a requirement that transactions be reported to the CFTC.³⁸⁴ ECMs that are serving as a price discovery mechanism for the market must also publicly disseminate execution reports and volume.³⁸⁵

Another source of competition for domestic exchanges was located abroad. The CFTC approved a broad range of foreign futures contracts for trading in the United States, many of which are traded on electronic exchanges abroad.³⁸⁶ The CFTC exempted foreign brokers from registration, provided that they limit their client base to persons located outside the United States and trade through a U.S. FCM on an omnibus basis.³⁸⁷ Foreign futures exchanges, many of which were electronic, were also allowed to place terminals in the United States, adding another layer of competition to the traditional pit

³⁸² 7 U.S.C. §1a(11).

³⁸³ Statement of Terry S. Arbit, CFTC General Counsel, Hearing Before the CFTC to Examine Trading on Regulated Exchanges and Exempt Commercial Markets on Sept. 18, 2007, Comm. Fut. L. Rep. (CCH) ¶30,618. The CFTC’s general counsel has also noted that:

It is sometimes said that Exempt Commercial Markets are unregulated. But this is not quite right. Although largely exempt from Commission oversight authority under the CEA, Congress did subject Exempt Commercial Markets to a limited set of regulatory requirements under . . . the statute. The Commission has implemented these requirements in its Rule [17 C.F.R. §] 36.3.

Id. There is some concern over whether the CFTC’s principal anti-fraud provision applies to transactions on an ECM that are not “inter-mediated” through a broker. The CFTC is seeking legislation to fill that gap. *Id.*

³⁸⁴ 17 C.F.R. §36.3.

³⁸⁵ 17 C.F.R. §36.3(c).

³⁸⁶ CFTC Foreign Instrument Approval and Exemptions, 2005 CFTC Ltr. LEXIS 27 (Nov. 28, 2005).

³⁸⁷ CFTC Adopts Rules Exempting Most Foreign Brokers From Registration, 39 Sec. Reg. & L. Rep. 1798 (Nov. 19, 2007).

traders.³⁸⁸ Since 2000, the number of foreign customers trading on U.S. exchanges has more than tripled, while the number of U.S. customers trading on foreign exchanges more than quintupled.³⁸⁹ The Chicago exchanges also began a desperate quest for linkages with foreign exchanges, such as Matif and even Eurex, in order to retain their market and “supplement” the open outcry market by allowing access to after hours trading systems abroad.³⁹⁰

V Regulatory Challenges--Post Trading Floor

A. *Derivative Markets*

The ECNs have revolutionized trading markets, but they also pose some regulatory challenges. As a senior CFTC staff member has noted, trading on ECMs “has grown substantially, due in no small measure to the regulatory environment created by the CFMA.”³⁹¹ The CFTC has also encountered a number of problems from its deregulation under the CFMA that has caused the agency and Congress to review whether more regulation should be imposed on those entities. The bankruptcy of the Enron Corp. resulted in a broad ranging scandal that grew to include EnronOnline, Enron’s proprietary ECN. Before its bankruptcy EnronOnline was the world’s largest

³⁸⁸ See e.g., Commodity Futures Trading Commission Market Oversight Letter No. 06-24 (Sept. 29, 2006) (allowing the Parisbourse (SBF) SA to place terminals in the U.S. that access that exchange’s electronic trading and order matching system without registration as a contract market).

³⁸⁹ CFTC Fiscal Year 2006 Report, Com. Fut. L. Rep. (CCH) ¶ 30,413 (2006). Competition from Europe just got harder. The European Union’s (“EU”) Market in Financial Instruments Directive (“MiFID”) is now effective and is removing virtually all cross-border barriers to the offering of financial services within the EU. Allistair MacDonald, New Rules to Cut Hassle, Expense of Trades in EU, Wall St. J., Oct. 29, 2007, at C1.

³⁹⁰ Eric Berg, 2 Big Futures Exchanges in a Race, N.Y. Times, April 11, 1989, §D, at 2.

³⁹¹ Statement of Terry S. Arbit, CFTC General Counsel, Hearing Before the CFTC to Examine Trading on Regulated Exchanges and Exempt Commercial Markets on Sept. 18, 2007, Comm. Fut. L. Rep. (CCH) ¶30,618.

online energy trading platform.³⁹² In *CFTC v. Enron Corp.*,³⁹³ the CFTC complaint charged that Enron had sought to manipulate natural gas prices by rapidly purchasing a massive amount of natural gas through its electronic trading platform. The CFTC also charged that Enron's ECN was either an illegal futures exchange that should have been registered with the CFTC or that the CFTC should have been notified that the platform was exempt from registration. The district court entered a consent order of permanent injunction in that case and imposed a \$35 million civil monetary penalty.

That incident was only the tip of a very large iceberg. Enron had also massively "gamed" the California electricity market in 2000-2001, a period where the state was experiencing an electricity shortage caused by an incredibly inept attempt by the state to deregulate the wholesale electricity market.³⁹⁴ The California Power Exchange ("PX") was to be the center of that reform. It established an auction market for wholesale hourly, "day ahead" and "day of" electricity deliveries. California also created the Independent System Operator ("ISO") to deal with imbalances after the PX closed for the day. Enron was able to game this system to the tune of over \$1.3 billion through transactions it dubbed such things as "Fat Boy," "Death Star," and "Get Shorty."³⁹⁵ Enron traders

³⁹² In re Enron Corp., 274 B.R. 327, 334 (Bankr. S.D.N.Y. 2002).

³⁹³ *CFTC v. Enron Corp.*, Comm. Fut. L. Rep. (CCH) ¶ 29,811 (S.D. Tex. 2004).

³⁹⁴ See Jerry W. Markham & Lawrence H. Jr., *The California Energy Crisis—Enron's Gaming of Governor Gray's Imperfect Market*, 24 *Futures and Derivatives Law Report* 1 (2004) (describing these problems).

³⁹⁵ One court described these transactions as follows:

Enron allegedly gamed the California markets with impunity, using manipulative corporate strategies, such as those nicknamed "Fat Boy," "Get Shorty," and "Death Star." Under the "Death Star" strategy, Enron allegedly sought to be paid for moving energy to relieve congestion without actually moving any energy or relieving any congestion. All of the demand was created artificially and fraudulently, creating the appearance of congestion, and then satisfied artificially, without the company providing any energy. "Fat Boy" refers to a strategy through which Enron allegedly withheld previously agreed-to deliveries of power to the forward market so that it could sell the energy at a higher price on the spot market. The company would over-schedule its load; supply only enough power to cover the inflated schedule, and thus, leave extra supply in the market, for which Cal-ISO would pay the company. Via the "Get Shorty" strategy, traders were able to

involved in those transactions pleaded guilty to criminal charges.³⁹⁶ The California Governor Gray Davis was also recalled by voters and replaced by the actor, Arnold Schwarzenegger.³⁹⁷

Enron and other traders' activities in the natural gas market were also the subject of scrutiny. During the California electricity crisis, the Federal Energy Regulatory Commission ("FERC") concluded that natural gas prices also rose to "extraordinary" levels and facilitated the increased electricity prices. Those increases in natural gas prices were found to have been the "result of dysfunctions in the natural gas market [that] stemmed from efforts to manipulate price indices compiled by trade organizations, including reporting of false data and wash trading."³⁹⁸ This was a reference to so-called "round trip" trades or "bragawatts," in the vernacular of the trade. These transactions involved offsetting purchases and sales by the same traders in order to boost their trading volumes so that it would appear to other market participants that they were large traders with liquidity. These trades were then reported to industry publications such as *Inside FERC's Gas Market Report*, the *Gas Daily* and *Natural Gas Intelligence*.³⁹⁹ The FERC

fabricate and sell operating reserves to Cal-ISO, receive payment, then cancel the schedules and cover their commitments by purchasing through a cheaper market closer to the time of delivery. Public Utilities Commission of Calif. V. Federal Energy Regulatory Commission, 456 F.3d 1025, 1038 (9th Cir. 2006).

³⁹⁶ See Jerry W. Markham & Lawrence H. Jr., *The California Energy Crisis—Enron's Gaming of Governor Gray's Imperfect Market*, 24 *Futures and Derivatives Law Report* 1, 4 (2004). Electronic trading caused other problems in the electricity market. A trader at Reliant Energy Services, Inc. was accused by the Federal Regulatory Commission ("FERC") of using the Bloomberg electronic trading platform to manipulate electricity prices in order to assist a client, BP Energy, to in boosting its financial results. In the Matter of Reliant Energy Services, Inc., FERC Doc. No. EL03-59-000 (2003). The CFTC also charged various traders and entities with manipulative activities in electricity futures on a regulated exchange. See e.g., In the Matter of Avista Energy, Inc., *Comm. Fut. L. Rep. (CCH) ¶28,623 (C.F.T.C. 2001)*; In the Matter of Taylor, *Comm. Fut. L. Rep. (CCH) ¶29,594 (C.F.T.C. 2003)*; In the Matter of DiPlacido *Comm. Fut. L. Rep. (CCH) ¶29,153 (C.F.T.C. 2002)*.

³⁹⁷ Allan Sloan, *Varied Scripts for Schwarzenegger*, *Wash. Post*, Oct. 14, 2003, at EO3.

³⁹⁸ In re Western States Wholesale Natural Gas Litigation, 408 F. Supp.2d 1055, 1057 (D. Nev. 2005), *reversed and remanded on other grounds*, 2007 U.S. App. LEXIS 22760 (89th Cir. 2007).

³⁹⁹ See e.g., In the Matter of Mirant Americas Energy Marketing, LP, *Comm. Fut. L. Rep. (CCH) ¶29,925 (C.F.T.C. 2004)*.

staff found that such "false reporting became epidemic."⁴⁰⁰ Traders were also charged with using round trip trades to set artificial prices that could be used to justify charging more favorable prices on actual contracts.⁴⁰¹

This intrusion into the energy market aroused the ire of regulators and Congress.⁴⁰² The CFTC brought dozens of cases charging that round trip trades and false reports of trading to industry publications constituted attempted manipulation and violated the prohibition in the Commodity Exchange Act on false price reports. The CFTC collected several hundred million dollars in civil penalties in settling those cases.⁴⁰³ Criminal prosecutors made similar charges.⁴⁰⁴ FERC brought a number of actions under its power to regulate natural gas and electricity.⁴⁰⁵ The SEC jumped in with actions charging that round rip trades had distorted the balance sheets of the public companies engaging in such activities.⁴⁰⁶ Congress also responded with the Energy

⁴⁰⁰ FERC Staff Report, "Price Manipulation in Western Markets," Doc. No. PA02-2-000, at ES-6 (March 26, 2003).

⁴⁰¹ *Id.* See also e.g., In the Matter of Enserco Energy, Inc., Comm. Fut. L. Rep. (CCH) ¶29,554 (C.F.T.C. 2003). One Company, Reliant, was accused of "churning," which was the rapid high volume purchase and sale of energy products at ever increasing price levels. Reliant and others were also charged with "withholding" supplies from the market in order to raise prices. Jacqueline Lang Weaver, Can Energy Markets be Trusted? The Effect of the Rise and Fall of Enron on Energy Markets, 4 Hou. Bus. & Tax L.J. 1, 72-73 (2004).

⁴⁰² See generally Alexia Brunet & Meredith Shafe, Beyond Enron: Regulation in Energy Derivatives Trading, 27 Nw. J. Int'l L. & Bus. 665 (2007) (describing that response).

⁴⁰³ A spike in energy prices over the last few years has placed increased political pressure on the CFTC to attack traders profiting from those increases. The CFTC responded with gusto. For a description of CFTC cases involving energy market enforcement actions and the amounts of civil monetary penalties collected see commodities futures trading commission energy markets enforcements results, Comm. Fut. L. Rep. (CCH) ¶30,598 (C.F.T.C. 2007).

⁴⁰⁴ See United States v. Valencia, 394 F.3d 352 (5th Cir 2004) (describing elements of false reporting charges under Commodity Exchange Act); United States v. Reliant Energy Services, Inc., 420 F. Supp.2d 1043 (N.D. Cal. 2006) (same).

⁴⁰⁵ See Allan Horwich, Warnings to the Unwary: Multi-Jurisdictional Federal Enforcement of Manipulation and Deception in he Energy Markets After the Energy Policy Act of 2005, 27 Energy L.J. 363 (2006) (describing those actions).

⁴⁰⁶ In the Matter of Dynegy, Inc., Securities Exchange Act Release No. 34-46537 (S.E.C. 2002); In the Matter of Reliant Resources, Securities Exchange Act Release No. 34-47828 (S.E.C. 2003). The basis for the SEC's concern has been described as follows:

In addition to producing energy, Dynegy also conducted energy trades through its online trading platform, DynegyDirect. On November 15, 2001, Dynegy contracted with another energy trading

Policy Act of 2005⁴⁰⁷ that expanded FERC's powers to attack energy price manipulations.⁴⁰⁸ In implementing the provisions of the energy policy act of 2005, FERC rules prohibit natural gas sales or resales that are without a legitimate business purpose and that are intended to or could foreseeably manipulate market prices, market conditions, or market rules for natural gas.⁴⁰⁹

A pending issue is whether FERC jurisdiction extends to transactions on the commodity futures market where the CFTC has had traditional exclusive jurisdiction over manipulation claims. In October 2005, the CFTC and FERC entered into a memorandum of understanding to address their respective roles where futures contracts are involved in energy price manipulations.⁴¹⁰ According to this memorandum, each agency is to refer to the other potential violations that are within the jurisdiction of the other agency. FERC was also given access to information from commodity exchanges if needed in connection with its investigation. What this really meant was double jeopardy

firm to conduct two large energy trades. Each company would send the other the same amount of energy, at the same time, and at the same price. Therefore, neither company would have to report any income from the trade, yet they would be able to report a large increase in overall trading volume. These trades are known as "round-trip" or "wash" trades. The resulting trading volume and operating cash flow was reported by Dynegy on its financial statements filed with the SEC. The increased trading volume was reflected in press releases from corporate headquarters as well as to employees who were being offered Dynegy shares. All of these statements combined to artificially create an increase in the value of Dynegy stock.

Katrina M. Miltich, *A Slap on the Wrist: Dynegy, Inc. v. Securities and Exchange Commission*, 28 N.C.J. Int'l L. & Com. Reg. 983, 985-86 (2003) (footnotes omitted).

⁴⁰⁷ Pub. L. No. 109-58, 119 Stat. 594 (2005).

⁴⁰⁸ See Allan Horwich, *Warnings to the Unwary: Multi-Jurisdictional Federal Enforcement of Manipulation and Deception in the Energy Markets After the Energy Policy Act of 2005*, 27 Energy L.J. 363 (2006) (describing this legislation). A house bill had also proposed a specific prohibition on round trip trades. Energy Policy Act of 2005, S. Rep. No. 109-215 (pt. 1), 109th Cong., 1st Sess 135 (2005).

⁴⁰⁹ 18 C.F.R. Part 1c (2006), amending FERC Market Behavior Rule No. 2, 18 C.F.R. § 284.403(a)(2005). Under the FERC rule all participants in the energy market are subject to this prohibition. FERC For a description of the FERC regulatory systems see Allan Horwich, *Warnings To The Unwary: Multi-Jurisdictional Federal Enforcement of Manipulation and Deception in the Energy Market After the Energy Policy Act of 2005*, 27 Energy L.J. 363 (2006).

⁴¹⁰ For a description of this memorandum of understanding and the overlap in jurisdiction of the two agencies see Catherine Krupka & Athena Velie, *There's a New Sheriff in Town: Energy Derivatives and Ferc*, Futures Industry Magazine 19 (July-August 2007).

from agency regulatory actions. Thus, in simultaneous actions filed by both the CFTC and FERC, Energy Transfer Partners L.P. was charged with violating the anti-manipulation statutory provisions administered by both agencies as a result of its trading in physical natural gas.⁴¹¹

A subsequent case involving a large hedge fund resulted in jurisdictional conflict concern between the CFTC and FERC. A hedge fund, Amaranth Advisors, lost over \$6 billion in a single week during 2006 from its trades in energy products.⁴¹² Interest in that loss was heightened by the fact that Amaranth had created its energy trading department by hiring several former traders from the Enron Corp, after that company collapsed in a massive scandal.⁴¹³ The energy trading group at Amaranth had some initial spectacular successes making large profits from deep out-of-the-money options on natural gas that became profitable after hurricanes Katrina and Rita.⁴¹⁴ The company also gained large profits from natural gas energy swaps in 2005.⁴¹⁵ However, Amaranth switched its outlook in 2006 from bullish to strongly bearish. That change in views was its undoing. In implementing its short strategy, Amaranth acquired almost 70 percent of the open interest in the January 2007 NYMEX natural gas futures contract.⁴¹⁶ At one point it held more than 100,000 natural gas futures contracts. A move of just one cent would cause a loss of \$10 million on such a position.⁴¹⁷

⁴¹¹ CFTC v. Energy Transfer Partners, L.P., CIV. NO. 07 CV1301-K (N.D. Tex. 2007); In the Matter of Energy Transfer Partners, L.P., Doc. No. IN06-3-002 (F.E.R.C. 2007).

⁴¹² Michael J. de la Merced, Citadel Throws E*Trade A \$2.55 Billion Lifeline, N.Y. Times, Nov. 30, 2007, at C3.

⁴¹³ Staff Report, Senate Permanent Subcommittee on Investigations of the Committee on Homeland Security and Governmental Affairs, Excessive Speculation in the Natural Gas Market 58 (2007).

⁴¹⁴ *Id.* at 60.

⁴¹⁵ *Id.*

⁴¹⁶ *Id.* at 62.

⁴¹⁷ *Id.* at 63.

At first, Amaranth's short strategy was successful, resulting in a \$1 billion profit in April 2006.⁴¹⁸ However, the market subsequently turned against the company, resulting in losses and its large positions were attracting the attention of regulators. NYMEX forced Amaranth to reduce its positions on that exchange, but Amaranth, using a regulatory arbitrage, simply shifted its position to the unregulated market on ICE.⁴¹⁹ ICE, a leading energy market, was the creation of Jeffrey Sprecher who founded ICE in 2000 as an electronic marketplace for energy derivatives. It experienced rapid success, becoming a substitute for EnronOnline after Enron collapsed.⁴²⁰ ICE was backed by several large energy companies and financial institutions, including Royal/Dutch Shell and Goldman Sachs.⁴²¹

ICE, a publicly traded company on Nasdaq, grew rapidly. It acquired the International Petroleum Exchange in London, which was a leading open outcry market for petroleum products that was then converted into an electronic market.⁴²² ICE also acquired the Board of Trade of the City of New York ("NYBOT") in 2007 for \$1.8 billion.⁴²³ NYBOT had previously acquired the New York Futures Exchange, a failed venture of the NYSE to enter the futures markets, the New York Cotton Exchange, Finex and the Coffee, Sugar & Cocoa Exchange.⁴²⁴ ICE announced that it was shuttering most of the floor trading on those exchanges in 2008,⁴²⁵ causing a sharp rise in ICE stock and

⁴¹⁸ *Id.* at 64.

⁴¹⁹ *Id.* at 88.

⁴²⁰ Mary Chung, Nymex and ICE in Talks, *Fin. Times* (London), Feb. 11, 2002, at 28.

⁴²¹ Mary Chung, Nymex and ICE in Talks, *Fin. Times* (London), Feb. 11, 2002, at 28.

⁴²² Adrienne Roberts, ICE Launch for UK Gas Platform, *Fin. Times* (London), Dec. 3, 2001, at 31.

⁴²³ ICE to Buy Grain Trader, *Int'l Herald Tribune*, June 25, 2007, at 13.

⁴²⁴ Peter A. McKay and Enza Tedesco, Klein Sues NYBOT for \$100 Million, Blaming Exchange for Firm's Collapse, *Wall St. J.*, July 31, 2000, at C21; Ben Marlow, Nybot in Talks for Merger with ICE; Bankers say Tie-Up Would Produce Big Synergies, *The Sunday Business Group*, July 23, 2006.

⁴²⁵ ICE was continuing floor trading on options on futures, at least until it starts electronic trading in those products. Aaron Lucchetti, Intercontinental to End Futures Floor Trading, *Wall St. J.*, Dec. 14, 2007, at C6.

placing additional pressure on competitors to shut down their floors.⁴²⁶ ICE also acquired the Winnipeg Commodity Exchange.⁴²⁷

ICE operated its OTC electronic trading platform for institutional traders in the United States as an ECM, which is, at least for the moment, largely unregulated. That was the platform used by Amaranth to shift its positions from NYMEX. An ICE affiliate, ICE Futures U.S., Inc. is a designated contract market under the Commodity Exchange Act and, therefore, can also conduct a retail business.⁴²⁸ ICE uses that market for its soft commodity, foreign exchange and equity index trading.⁴²⁹ Another affiliate, ICE Futures Europe is a Recognized Investment Exchange regulated by the Financial Services Authority (“FSA”) in London. ICE Markets in London conducts sales and marketing activities and is also regulated by the FSA.⁴³⁰ ICE Futures Europe “trades nearly half of the world’s global crude futures in its markets.”⁴³¹ Volume on other foreign commodity exchanges was also outpacing those in the United States.⁴³²

The Amaranth regulatory arbitrage did not work to its benefit. The market continued to turn against Amaranth and it was unable to trade its way out of its large position.⁴³³ It closed its positions in September 2006 and recognized its massive loss.⁴³⁴

⁴²⁶ Matt Chambers, ICE’s Decision to Halt Futures Trading on the Floor Sits Well With Investors, Wall St. J., Dec.15-16, 2007, at B5.

⁴²⁷ <https://www.theice.com/history.jhtml>.

⁴²⁸ <https://www.theice.com/profile.jhtml>.

⁴²⁹ <http://ir.theice.com/>

⁴³⁰ <https://www.theice.com/profile.jhtml>.

⁴³¹ <http://ir.theice.com/>

⁴³² See Galen Burghardt, Futures Industry Association, *Annual Volume Survey - 9,899,780,283 Contracts Traded* 16 at 18 (March 2006) (identifying volume growth in the top five exchanges in between 1999 and 2005 as having experienced the following growth rates: 2570% (Korea Exchange), 443% (CME), 230% (Eurex), 165% (CBOT), and 156% (Euronext)). Nevertheless, “volume [in notional dollar amounts] volume on U.S. futures exchanges has quintupled” during the past ten years). CFTC, *Written Testimony of Reuben Jeffery III, Chairman Commodity Futures Trading Commission Before the United States Senate Subcommittee on Financial Services and General Government Committee on Appropriations* at 1 (March 9, 2007)

⁴³³ *Id.* at 99.

The CFTC and FERC then brought separate cases against Amaranth and two of its traders charging manipulation.⁴³⁵ As the district court in the CFTC action noted: “Hence, Amaranth is being pursued by two federal regulatory agencies in two separate proceedings in two different jurisdictions, based on the same alleged conduct.”⁴³⁶ The defendant claimed that the CFTC had exclusive jurisdiction over manipulative activities in the futures markets, but the FERC claimed that its new jurisdictional mandate under the Energy Policy Act of 2005⁴³⁷ was not so limited.⁴³⁸ The district court refused to enjoin the FERC action even though he had some sympathy for the defendant’s plight.⁴³⁹

The run up in energy prices between 2002 and 2006 was phenomenal, raising concerns on the part of conspiracy theorists that some evil force was causing those increases. The CFTC was on the frontline of the agencies attacking market participants and imposed record-breaking levels of civil penalties in the process.⁴⁴⁰ Despite that effort, Congress concluded that the CFTC could not do the job alone and gave FERC power to sanction manipulators and regulate traders in the energy markets through the Energy Policy Act of 2005.⁴⁴¹ That grant of additional power to FERC still did not alleviate

⁴³⁴ *Id.* at 114.

⁴³⁵ Energy Regulator Seeks \$291 Million From Traders and Failed Fund, N.Y. Times, July 27, 2007 on the Web.

⁴³⁶ CFTC v. Amaranth Advisors, LLC, 2007 U.S. Dist. LEXIS 80978 (S.D.N.Y. 2007).

⁴³⁷ Pub. L. No. 109-58, 119 Stat. 594 (2005).

⁴³⁸ Tina Seeley & Matthew Leising, \$1 million fines sought for futures violations; Agency requests greater penalty in manipulation cases, Houston Chronicle, Oct. 25, 2007, at Bus. 3.

⁴³⁹ CFTC v. Amaranth Advisors, LLC, 2007 U.S. Dist. LEXIS 80978 (S.D.N.Y. 2007).

⁴⁴⁰ CFTC Says It Was Awarded Record \$540 Million in Sanctions in FY 2007, 39 Sec. Reg. & L. Rep. 1554 (Oct. 8, 2007). In 2007, the President’s Corporate Fraud Task Force also announced the imposition of over \$2.3 billion in sanctions for futures related manipulation and fraud in the prior five years. Fraud Task Force Has Levied More Than \$2.3B in Sanctions in 5 Years, 39 Sec. Reg. & L. Rep. 1717 (Nov. 5, 2007).

⁴⁴¹ Pub. L. No. 109-58, 119 Stat. 594 (2005). See Catherine Krupa and Athena Velie, There’s a New Sheriff in Town: Energy Derivatives and FERC, Futures Industry Magazine, July/Aug. 2007, at 18 (describing this legislation). Oddly, the anti-manipulative authority given to FERC by this legislation incorporates the language of Section 10(b) of the Securities Exchange Act of 1934, 15 U.S. C. §78j(b). See 16 U.S.C. §824v. This may be due to the difficulty experienced by the CFTC in proving manipulation under the onerous standards required by the Commodity Exchange Act. See Jerry W. Markham, The Manipulation of

Congressional concerns that more regulation was needed. A GAO report in 2007 on derivative trading in the energy markets questioned the CFTC' oversight ability.⁴⁴² The CFTC tried to defend itself with its an extensive study of trading in the energy market,⁴⁴³ and the CFTC asked Congress for more regulatory authority over ECMs.⁴⁴⁴ It also expanded its reporting requirements over ECMs.⁴⁴⁵ The ECMs were of particular interest because of their growing role in the high profile energy markets.⁴⁴⁶ The lack of regulation of those markets made them suspicious to many. However, the imposition additional

Commodity Futures Prices -- The Unprosecutable Crime, 8 Yale J. on Reg. 281 (1991) (describing those difficulties). However, the standards for manipulation may not be all that much different under the federal securities laws. *See* 23A Jerry W. Markham & Thomas Lee Hazen, *Broker Dealer Operations Under Securities and Commodities Law: Financial Responsibilities, Credit Regulation, and Customer Protection*, ch. 9 (2006) (discussing those standards). *See also* *Santa Fe Industries v. Green*, 430 U.S. 462 (1977) (manipulation is "virtually a term of art" under Section 10(b), including wash trades and rigged prices that are intended to mislead by artificial market activity).

Unlike the Commodity Exchange Act's explicit provision for a private right of action on the part of traders directly injured by manipulative actions (7 U.S.C. §25) and the broad implied private right of action under the Section 10(b) of the Securities Exchange Act of 1934 (see e.g., *Basic Inc. v. Levinson*, 485 U.S. 224 (1988)), the Energy Policy Act of 2005 denied the availability of such actions under the new FERC anti-manipulation authority. 16 U.S.C. §824v(b).

⁴⁴² GAO, *Commodity Futures Trading Commission: Trends in Energy Derivatives Markets Raise Questions About CFTC's Oversight* (Oct. 19, 2007).

⁴⁴³ *Market Growth Trader Participation and Pricing in Energy Futures Markets*, Com. Fut. L. Rep. (CCH) ¶30,451 (CFTC 2007).

⁴⁴⁴ Tina Seeley & Matthew Leising, \$1 million fines sought for futures violations; Agency requests greater penalty in manipulation cases, *Houston Chronicle*, Oct. 25, 2007, at Bus. 3. For a description of the additional regulatory authority sought by the CFTC (which includes self-regulatory obligations) see CFTC Release No. 5403-07 (October 24, 2007).

⁴⁴⁵ *CFTC To Require Traders to Report Details From Exempt Markets*, 39 Sec. Reg. & L. Rep. 1672 (Oct. 29, 2007).

⁴⁴⁶ A GAO Report noted that:

Since 2001, 17 facilities have notified CFTC that they had begun operating as exempt commercial markets According to CFTC officials, 11 of these markets currently offer, or had offered, transactions in energy products, with 8 now operational. Some of these markets have become important players in the trading of energy products. ICE, in addition to the exempt swap contracts it trades in its capacity as an exempt commercial market, is the trading platform for physical commodities, including spot and forward contracts, which routinely involve delivery. According to CFTC officials, some in the industry assert that ICE is the trading platform for an estimated 70 percent of the spot trading for natural gas.⁴⁸ Another exempt commercial market, ChemConnect, advertises that data and news providers, such as Bloomberg and Dow Jones Energy Services, rely on it to provide accurate, timely information on energy products. Furthermore, the Web site for the HoustonStreet Exchange indicates that it serves as an electronic trading facility for crude oil and refined products also traded on NYMEX.

GAO, *Commodity Futures Trading Commission: Trends in Energy Derivatives Markets Raise Questions About CFTC's Oversight* (Oct. 19, 2007).

regulation is expected to drive these markets offshore.⁴⁴⁷ For example, it would take little effort for ICE to move its present U.S. ECM institutional trading operations to London as well and subject itself to FSA regulation, which has a much less burdensome regulatory regime than that of the CFTC for regulated market participants.⁴⁴⁸

ECNs posed other regulatory problems. In *In the Matter of Lui*,⁴⁴⁹ the CFTC, by consent, imposed sanctions against a respondent for knowingly prearranging trades on the Globex electronic trading platform at the CME. The respondent was trading several of his accounts against each other, resulting in profits for the customers on one side of the trades and losses to customers on the other.

B. *Securities Markets*

The securities markets were also encountering some regulatory challenges from ECNs. In one instance, the SEC found that a large number of wash and matched trades had been executed on MarketXT, an ECN.⁴⁵⁰ Those trades had been arranged in order to increase income from payments from vendors of trade data.⁴⁵¹ That ECN also had net capital deficiencies and its registration as a broker-dealer was revoked.⁴⁵² In another case, respondents were found to have used an ECN to engage in wash trades for tax

⁴⁴⁷ Jeremy Grant, Watchdogs Signal Clampdown on Over-The-Counter Trading, *Fin. Times* (London), Oct. 25, 2007, at 1.

⁴⁴⁸ For a comparison of U.S. and English financial services regulation see Jerry W. Markham, Super-Regulator: A Comparative Analysis of Securities and Derivatives Regulation in the United States, Great Britain & Japan, 28 *Brook. J. Intl. Law* 319 (2003).

⁴⁴⁹ *In the Matter of Lui*, *Comm. Fut. L. Rep.* (CCH) ¶30,491 (C.F.T.C. 2007).

⁴⁵⁰ Securities Exchange Act Release No. 34-51163 (Feb. 9, 2005).

⁴⁵¹ *Id.* The AMEX had experienced a problem with “trade shredding” that involved splitting orders in order to increase revenues from the market data vendors. 71 *Fed. Reg.* 18789 (April 12, 2006).

⁴⁵² Securities Exchange Act Release No. 34-51163 (Feb. 9, 2005).

purposes.⁴⁵³ Another case involved an ECN's failure to provide equal access to market information by subscribers.⁴⁵⁴

These regulatory problems paled in relation to the concerns raised by structural changes that were occurring in the securities markets. The value of companies going private trebled between 2004 and 2006. Over 2100 private equity buyouts were consummated in the first ten months of 2006 at \$583 billion, up \$138 billion from the prior 12 months.⁴⁵⁵ The total buyouts in 2006 reached \$709.8 billion by year-end.⁴⁵⁶ "NYSE delistings reached \$38.8 billion in 2006 and Nasdaq withdrawals totaled \$11 billion."⁴⁵⁷ The value of initial public offerings in the United States in 2006 was less than one half that of the public companies that went private.⁴⁵⁸ More capital was going into private equity funds than net flows into mutual funds.⁴⁵⁹ Venture capital funds traditionally "used the IPO market as their exit strategy . . . Today, however, nearly 90 percent of those venture-capital-backed startups are sold to strategic buyers in private transactions."⁴⁶⁰

Private equity pools include the Blackstone Group with \$71 billion under management; the Carlyle Group with \$47 billion; Bain Capital--\$40 billion; Kohlberg Kravis Roberts--\$30 billion—Texas Pacific Group--\$30 billion and Cerberus Capital

⁴⁵³ In the Matter of Rathi, 2003 WL 21757255 (S.E.C. July 31, 2003) (judgment by consent).

⁴⁵⁴ In the Matter of INET ATS, Securities Exchange Act Release No. 34-53631 (April 12, 2006).

⁴⁵⁵ Erin White & Gregory Zuckerman, "The Private Equity CEO," Wall St. J., Nov. 6, 2006, at B1. Even some giant public companies were being targeted for private acquisition. Eric Pfanner & Andrew Ross Sorkin, "Vivendi's Talk With Kohlberg Suggest Even the Biggest Are Fair Game," N.Y. Times, Nov. 6, 2006 at C1.

⁴⁵⁶ Ben White, "Megabucks Deals for an Elite Few," Fin. Times (London), Jan. 3, 2007, at 15.

⁴⁵⁷ Peter Smith & Norma Cohen, "Record \$150bn of Delistings," Fin. Times (London), Jan. 2, 2007, at 1.

⁴⁵⁸ *Id.*

⁴⁵⁹ Interim Report of the Committee on Capital Markets Regulation x (Nov. 30, 2006). Interestingly, a couple of the private equity funds decided to themselves make a public offering of their own stock, but that effort was not a success. Private Equity's New World, Wall St. J., July 28, 2007, at B14.

⁴⁶⁰ "Capital Flight," Wall St.J., Dec. 2-3, 2006, at A8. *See also* Kit Roane, "The New Face of Capitalism," U.S. News & World Rep., Dec. 4, 2006, at 49 (describing the private equity buying binge).

Management--\$24 billion.⁴⁶¹ They have been joined in recent months by the so-called sovereign-wealth funds (“SWFs”) operated by governments of oil exporting nations and countries such as China that have large export surpluses. The oil exporting countries were estimated to have \$ trillion to invest in 2007, an amount that was growing rapidly as oil prices approached \$100 per barrel.⁴⁶² The SWFs were making some high profile investments in financial firms wounded by the subprime crisis in 2007.⁴⁶³ They included a \$5 billion investment by the China Investment Corp. in Morgan Stanley⁴⁶⁴ and a \$7.5 billion investment in Citigroup by Abu Dhabi, which joined a Saudi Arabian prince as the largest shareholders in that bank.⁴⁶⁵ The Abu Dhabi fund was estimated to hold some \$875 billion in assets,⁴⁶⁶ and the Dubai stock exchange was entering into a joint venture with Nasdaq.⁴⁶⁷ The Singapore SWF took a \$5 billion investment in Merrill Lynch in December 2007. That cash inflow was needed to staunch heavy losses from subprime investments.⁴⁶⁸

These private equity pools were supplemented by equally private hedge funds and institutional investors such as pension funds, all of which were seeking alternative investments outside the public exchanges.⁴⁶⁹ This burgeoning alternative market gave rise to the development of private equity ECNs by several broker-dealers.⁴⁷⁰ However, they

⁴⁶¹ Charles Duhigg, “Can Private Equity Build a Public Face?” N.Y. Times, Dec. 24, 2006, §3, at 1, 4.

⁴⁶² Steven R. Weisman, Oil Producers See the World and Buy it Up, N.Y. Times, Nov. 28, 2007, at A1.

⁴⁶³ SWF investments in financial services firms reached \$37 billion by November 2007. Peter Thai Larsen, Sovereign Funds Upbeat on Growth of Financials, Fin. Times (London), Nov. 28, 2007, at 1.

⁴⁶⁴ Bob Davis, Wanted: SWFs’ Money Sans Politics, Wall St. J., Dec. 20, 2007, at C1.

⁴⁶⁵ Steven R. Weisman, Oil Producers See the World And Buy It Up, N.Y. Times, Nov. 28, 2007, at A1.

⁴⁶⁶ Sovereign Impunity, Wall St. J., Dec. 1-2, 2007, at A12.

⁴⁶⁷ Steven R. Weisman, Oil Producers See the World and Buy it Up, N.Y. Times, Nov. 28, 2007, at A1.

⁴⁶⁸ Eric Dash, Merrill Lynch Sells a \$5 billion Stake to a Singapore Firm, N.Y. Times, December 25, 2007, at C1.

⁴⁶⁹ Mary Williams Walsh, Calpers Tells What It Paid High-Risk Investment Funds, N.Y. Times, Dec. 8, 2008, at C6.

⁴⁷⁰ 12 Firms Unite for Trading in Unregistered Securities, N.Y. Times, Nov. 13, 2007, at C6.

abandoned that effort in favor of using the Nasdaq Portal system.⁴⁷¹ Portal operates under SEC Rule 144A that allows institutions to trade in unregistered securities.⁴⁷²

Another ongoing concern is the migration of financial services abroad.⁴⁷³ Only five percent of the top 20 global initial public offerings in 2006 were listed in the United States, down from 60 percent five years earlier.⁴⁷⁴ The United States raised only 28 percent of global equity in 2006, down from 41 percent in 1995.⁴⁷⁵ As one commentator noted:

Between 1996 and 2001, the New York Stock Exchange averaged 50 new non-U.S. listings annually; in 2005, it was 19. In the same year, the London Stock Exchange, including its small company affiliate, the Alternative Investment Market, gained 139 new listings while Nasdaq attracted 19. Since the end of 2004, 30 foreign companies have left the NYSE and Nasdaq. Financial capital--the kind that finances mergers, acquisitions and new business formation--is also increasingly finding a more comfortable home abroad. Large offerings by Chinese, Korean and Russian companies--involving billions of dollars--have occurred in Hong Kong and London; meanwhile, large new foreign offerings this year by Russian aluminum producers and Kazakhstan oil and copper companies are planning to list in London.⁴⁷⁶

The number of foreign delistings increased to 56 in 2007, almost double that of the year before and nearly twelve times the amount in 1997.⁴⁷⁷ Foreign issuers seeking capital were increasingly turning to private offerings under SEC Rule 144A.⁴⁷⁸ More alarming, almost ten percent of all public offerings by U.S. firms in 2007 were done through a foreign listing; only three such listings occurred between 1996 and 2001.⁴⁷⁹

⁴⁷¹ Lynn Cowan, Banks to Share Platform for 144a Trades, Wall St. J., Nov. 12, 2007, at C3.

⁴⁷² 17 C.F.R. §230.144A. See Stephen J. Choi, Company Registration: Toward a Status-Based Antifraud Regime, 64 U. Chi. L. Rev. 567, 638-643 (1997) (describing Rule 144A)

⁴⁷³ Interim Report of the Committee on Capital Markets Regulation (Nov. 30, 2006).

⁴⁷⁴ "Is Wall Street Losing Its Competitive Edge?" Wall St. J., Dec. 2-3, 2006, at A6.

⁴⁷⁵ *Id.*

⁴⁷⁶ Peter J. Wallison, "Capital Punishment," Wall St. J., Nov. 4, 2006 at A7.

⁴⁷⁷ The Other Market Crisis, Wall St. J., Dec. 10, 2007, at A18.

⁴⁷⁸ *Id.* 17 C.F.R. §230.144A.

⁴⁷⁹ *Id.*

A report by a blue ribbon Committee on Capital Markets concluded that excessive regulation in the United States was making foreign markets more competitive.⁴⁸⁰ That shift is likely to increase since financial service firms such as ICE can elect to operate in London where regulation is much less intense and expensive. That location can then be used to offer services throughout the European Union under the “passport” provisions of the EU Market in Financial Instruments Directive that became effective on November 1, 2007.⁴⁸¹

C. *Regulatory Challenges*

Regulators have had the difficult task of balancing different policy issues presented by electronic exchanges,⁴⁸² encouraging the development of electronic systems throughout the industry while maintaining the present supremacy of the U.S. marketplace.⁴⁸³ One of the primary functions of regulators, however, is to guard against customer abuse.⁴⁸⁴ Although analysis of traditional fraud concepts remains valid because the use of computers little altered fundamental aspects of most fraud schemes,⁴⁸⁵ regulatory investigations must change

⁴⁸⁰ Greg Ip, Kara Scannell & Deborah Solomon, “Report Finds Rules Structure Hurting Markets,” Wall St. J., Nov. 30, 2006, at C1. Much of this expense has been attributed to the Sarbanes-Oxley Corporate Reform Act of 2002, 107 Pub. L. 204, 116 Stat. 745 (2002). Interim Report of the Committee on Capital Markets Regulation (Nov. 30, 2006). However, there are other impediments to capital raising efforts in the United States. Settlements in class action lawsuits brought in the United States claimed \$9.1 billion (including a whopping \$6.1 billion from the WorldCom litigation) in corporate funds in 2005 up from \$150 million in 1995. Interim Report of the Committee on Capital Markets Regulation 5 (Nov. 30, 2006). In courts abroad, such settlements totaled \$00.000. “Capital Flight,” Wall St.J., Dec. 2-3, 2006, at A8.

⁴⁸¹ Robert Finney & Emma Radmore, MiFid: How Have Firms Coped? Futures Industry Magazine, Nov/Dec. 2007, at 34.

⁴⁸² SEC, Regulation NMS Part II, 70 Fed. Reg. 37,496 at 37,498 (June 29, 2005) (recognizing that “the equity markets have experienced sweeping changes, ranging from new technologies to new types of markets to the initiation of trading in penny increments” and these changes “required the Commission to grapple with many difficult and contentious issues that have lingered unresolved for many years.”).

⁴⁸³ See Dale A. Oesterle, *The SEC’s Assault On Electronic Trading*, at 18 (vol. 21 no. 3 1998).

⁴⁸⁴ See *supra* note 556 (identifying the protection of the investing public as a role for each of the SEC and CFTC).

⁴⁸⁵ See DONN B. PARKER, FIGHTING COMPUTER CRIME: A NEW FRAMEWORK FOR PROTECTING INFORMATION, 157 (1998).

as the trading host changes.⁴⁸⁶ Regulators recognize that their surveillance of order execution on the exchanges must incorporate a review of electronic trade-matching algorithms.⁴⁸⁷ The adoption of electronic trading provides them with a mountain of detailed trade data.⁴⁸⁸ As the importance of algorithms have grown, regulators understandably, have taken the position that any changes to an exchange's algorithm carries the force of a rule change and the accompanying regulatory oversight.⁴⁸⁹ Unfortunately, circumstances suggest that some of the federal regulators have been unable to keep pace.⁴⁹⁰

That being said, some regulation is inevitable. Surveillance of these systems should be limited, but must encompass the spectrum of their functionality. Those measures include the system, hardiness, communication with the ECN and other qualities. Inevitably, the focus of regulators' market surveillance activities has changed as part of the "cat and

⁴⁸⁶ See Richard J. Hillman, *Congressional Testimony: Securities Fraud on the Internet* (Mar. 22, 1999); see also Kenneth Raisler comments before CFTC Technical Advisory Committee at 30 (Oct. 13, 2004) (opining that "issues of recording [telephone lines] certainly would be relevant to that market [the existing trading environment] as well" in response to the possibility that the CFTC would impose telephone recording requirements on terminal operators to fill in the "last gap" because the electronic order routing audit trail lacks this information).

⁴⁸⁷ See generally CFTC Technical Advisory Committee at 15-58 (Oct. 13, 2004) (discussing "the implications of the recent dramatic growth in electronic trading in the U.S. for the [CFTC's] trade practice surveillance program and the manner in which that surveillance is conducted.").

⁴⁸⁸ CFTC Regulation 1.35(g) requires exchanges to report trades in increments of no more than one minute, it also requires the "actual time" a trade is executed. See 17 C.F.R. § 1.35(g). Analyzing this data, regulators are "going to need an awful big system to handle all the data that's going to be thrown at it when [they] automate [their] review of trading data. [They] need all the bids and offers, of course, as well as the trade data." John Foyle testimony before CFTC Technical Advisory Committee at 48 (Oct. 13, 2004).

⁴⁸⁹ See generally CFTC *Notice of Revision of Commission Policy Regarding the Listing of New Futures and Option Contracts by Foreign Boards of Trade That Have Received Staff No-Action Relief to Provide Direct Access to Their Automated Trading Systems From Locations in the United States*, 71 Fed. Reg. 19,877 at 19,878 (identifying the terms and conditions for approval of a foreign board of trade's access to U.S. customers *via* electronic trading devices as "requirement that the foreign board of trade promptly provide the Division with written notice of any material change in the structure, operation or regulation of the foreign board of trade or its trading system").

⁴⁹⁰ In comparison to the explosive growth in the commodity markets, the CFTC's funding and allocation to upgrading systems seems paltry. See CFTC, *Written Testimony of Reuben Jeffery III, Chairman Commodity Futures Trading Commission Before the United States Senate Subcommittee on Financial Services and General Government Committee on Appropriations* at 8 (March 9, 2007) (stating that "Budgetary constraints have required the Commission over several years to put new systems development initiatives and hardware and software purchases on hold, as indicated in Figure 6 [depicting a decline in "Technology Investment as a Percentage of the CFTC Annual Appropriation" from 10% in fiscal year 2001 to 7% in fiscal year 2006].").

mouse” games among the regulators and some of the regulated. The adoption of electronic trade-matching systems, also inevitably, has rendered some of these games obsolete. Many regulators report that customer abuses, in particular, have declined.⁴⁹¹ However, new forms of trading lead to new types of abuses that require the attention of regulators.⁴⁹² One of the more significant changes has been the regulators’ allocation of resources away from floor activities towards order entry points, like the terminal operator’s activities, short-term manipulations and other activities in illiquid markets, side-by-side trading products, and inter-market transactions.⁴⁹³

Additional regulatory changes are necessary in light of the ease with which intermediaries’ and exchanges’ interests cross jurisdictional borders. Cooperation among the regulatory bodies, inside and outside the U.S., is vital in monitoring the industry.⁴⁹⁴ In the international arena, cooperation among regulators has evolved from bilateral agreements to multi-lateral agreements to participation in international organizations. Information sharing in this arena often relates to the most fundamental of market information, identifying market participants and the positions they hold.⁴⁹⁵ Requests often occur when a participant

⁴⁹¹ See Steve Braverman testimony before CFTC Technical Advisory Committee at 26 (Oct. 13, 2004) (summarizing the results of CFTC interviews with self-regulatory organizations in which the CFTC found that “[a]ll the U.S. SROs that we interviewed stated that electronic trading appears to have reduced customer abuses, that they were getting fewer hits in the their electronic surveillance system.”).

⁴⁹² See Randall Smith, *NYSE Moves to Prevent Abuses in Odd-Lot Trades: Specialist Firms Complained Some Traders Took Advantage of Program for Small Investors*, Wall St. J., Nov. 14, 2007, at C5 (suggesting that the abuse of the odd-lot rules has “gained more prominence with the advent of faster, electronic trading”).

⁴⁹³ See Steve Braverman testimony before CFTC Technical Advisory Committee at 19-22 (Oct. 13, 2004).

⁴⁹⁴ See Text of Speech by CFTC Commissioner Walt Lukken, *The Derivatives World is Flat*, ISDA Energy, Commodities and Developing Products Conference at *4 (June 14, 2006) available at <http://www.cftc.gov/newsroom/speechestestimony/opalukken-20.html>.

⁴⁹⁵ The International Enforcement Act of 1990 authorized the SEC to share information with international regulators and maintaining the confidentiality of information shared with and by international regulators. See SEC Richard Y. Roberts Commissioner, *SEC Progress Towards Internationalization* (March 22, 1991).

engages in market activities in different countries, which is much easier with the advent of electronic trading.⁴⁹⁶

Another critical challenge is the government's maintenance of surveillance over the foreign exchanges in some form. The CFTC acknowledged this in its grant of a no-action letter to the ICE Futures.⁴⁹⁷ The grant of access to U.S. customers without registering under the CEA is dependent upon the CFTC's ability to obtain information about a contract's salient details and positions held by participants.⁴⁹⁸ Both the CFTC and the SEC seek trade data from the ECNs. Those demands can be readily met in an electronic format, but one of the issues that ECNs had to address after developing their trade-matching systems was the desire for all participants to receive "real time" trade information.

Intermediaries developed order routing and strategy algorithms that required information on sub-second basis.⁴⁹⁹ This led to an ever-increasing demand for information from the ECNs' servers about the current market,⁵⁰⁰ and could be the cause for some

⁴⁹⁶ See Steve Braverman testimony before CFTC Technical Advisory Committee at 23 (Oct. 13, 2004) (describing the ease with which traders can access "multiple exchanges on a single screen simultaneously around the world").

⁴⁹⁷ See ICE No action Letter. See Lukken at 3-4 (acknowledging that the CFTC and the UK's FSA began sharing information in 2006 that allows the agencies to "effectively monitor the entirety of the WTI market.").

⁴⁹⁸ See Lukken at 3; see also CFTC, Policy Statement Regarding Foreign Boards of Trade, 71 Fed. Reg. 64,443 at 64,471 (Nov. 2, 2006) (reaffirming the CFTC's current approach, the no-action process, to "facilitat[ing] direct access to the electronic trading system of a foreign board of trade by its U.S. members or authorized participants" because the staff "also reviews the adequacy of information sharing with the Commission by the market and its regulator.").

⁴⁹⁹ See Aaron Lucchetti, Fast Lane Firms Seek Edge Through Speed As Computer Trading Expands Tradebot Moves Its Machines Into Exchange Buildings; Competitors Follow Suit 100 Million Shares in a Day, Wall St. J., Dec. 15, 2006, at 1 (explaining the difference for a Kansas City based broker that moved its servers closer to the New York exchanges and the resulting time delay that "now takes ... about 1/1000 of a second to trade a stock, compared with 20/1000 before the move").

⁵⁰⁰ The order routing and trading strategy systems that traders and intermediaries create send "messages" with information about their orders to an exchange's server housing a trade-matching algorithm for each product in which they intend to trade. The servers receive information and respond with information about the market and whether the order has been received, accepted, executed in full or in part, and price and time information.

interruptions in trading operations early in their development.⁵⁰¹ To combat this unrelenting need for messages transmitted by market participants, exchange operated ECNs developed rules and policies to regulate the contact intermediaries may have with their servers.⁵⁰² The ECNs limit the entities that may “write” to the servers and deliver messages to those who own trading rights, memberships, or satisfy their application program interface requirements. Exchange operated ECNs then fine those permitted entities that send too many messages.⁵⁰³ Because the exchanges want to encourage trading, these fines are relatively light, do not appear on regulatory records, and have a high minimum threshold. Ultimately, intermediaries that are fined any amount will have violated the rule on a sustained and egregious level.

There is also a national security element at play with the growth of ECNs. A significant concern that has developed is the question of when an exchange may close its doors due to external factors. As a result of the tragic events on September 11, 2001, all exchanges and intermediaries store critical documents, systems and procedures at a back up location. In the event of a disaster, the back-up location shall become the fully functioning headquarters. The advent of electronic trading, however, brings new meaning to what is sufficient for an exchange to close. Before electronic trading became wide spread, if members were unable to reach the exchange physically, the exchange staff and pit committee members would determine whether opening was unattainable. Now, with the majority of exchange trading happening through electronic matching systems, local failures

⁵⁰¹ See e.g., CME Messaging Policy for the Globex® Platform at 3 (Ver. 3.0) (Feb. 17, 2007) (recognizing that “[i]nefficient messaging slows system performance, negatively impacts other market participants and increases capacity requirements and costs.”).

⁵⁰² See e.g., NYSE Rule 104(b)(i).

⁵⁰³ See e.g., CME Messaging Policy for the Globex® Platform at 3-4 (Ver. 3.0) (Feb. 17, 2007) (identifying classes of members not subject to aspects of the messaging policy and other exceptions to the policy’s application, like only applying it to messages during normal trading hours).

will certainly not prevent a majority of participants from accessing the system. Absent a local failure in Chicago or New York, this will virtually guarantee that exchanges to remain open under most circumstances.

D. *ECNs Pros and Cons*

As access to information becomes available to more investors through electronic communications and access is eased through ECNs, the herd impact will increase its influence in both the securities and commodities industries.⁵⁰⁴ The effect on capital formation should make it easier to raise capital under most market circumstances and blur the lines between grades of risk.⁵⁰⁵ In the commodities markets, it may well impair markets from accomplishing their original functions: price discovery and risk allocation.

Exchange consolidation and adoption of electronic trading is expected to reduce costs,⁵⁰⁶ but their demutualization raises some interesting issues. The roles and motivations of members and shareholders are different.⁵⁰⁷ Historically, exchanges limited membership to establish minimum financial standards and other industry standards and bolster the

⁵⁰⁴ For example, an analysis of noncommercial market participants in crude oil suggests that: 1) they systematically shift their contract holdings between energy futures markets and Treasury bond markets, and 2) they follow price trends, rather than cause them. See Energy Information Administration, *Noncommercial Trading in the Energy Futures Market*, Petroleum Marketing Monthly at XX (1996).

⁵⁰⁵ The “speed of information dissemination via improved technology, and greater reliance by [large U.S. banks] on capital markets for risk management and funding ... are contributing factors to strong and sometime late-emerging forces of market discipline by creditors and counterparties.” Group of Ten, *Report on Consolidation in the Financial Sector*, 135 (January 2001) (Bank for International Settlements eds.).

⁵⁰⁶ CME Group Inc., *A Conversation with President Phupinder Gill and COO Bryan Durkin*, CME Group Magazine, Summer 2007 at 15 (interview with Bryan Durkin and Phupinder Gill stating that “consolidation of the CBOT and CME operations will result in annual cost savings to customers of \$125 million.”); NYSE Group, Inc., *Prospectus of NYSE Euronext, Inc.*, at 87 (estimating annual cost savings after the first three years of combined operations at \$455 million).

⁵⁰⁷ See Text of Speech by CFTC Commissioner Walt Lukken, *The Derivatives World is Flat*, ISDA Energy, Commodities and Developing Products Conference at *2 (June 14, 2006) available at <http://www.cftc.gov/newsroom/speechestestimony/opalukken-20.html> (acknowledging that the “public listing of exchanges is significant ... because exchanges can more quickly and effectively make competitive decisions than before in their member-driven organization.”).

exchanges' financial integrity and prominence.⁵⁰⁸ Although often in synchronicity, members could hold divergent views on the best course of action for the exchange.⁵⁰⁹ Shareholders, conversely, provide capital for the operation of a venture with profit seeking motivating their actions.⁵¹⁰

Many exchanges acknowledged these differences by extracting the trading rights from the ownership rights.⁵¹¹ These differences are likely to become more pronounced over time.⁵¹² Thus, exchanges are likely to face increasing pressures from shareholders to become more profitable, possibly at the expense of their regulatory requirements.⁵¹³ This conflict of interest, however, is already present at every other level throughout the financial service industry: the brokerage firm, the broker, and the analyst. Exchanges are the only

⁵⁰⁸ See Stuart Banner, *The Origin of The New York Stock Exchange, 1791-1860*, 27 J. Legal Stud. 113 at 120 (January 1998) (discussing the benefits accruing to members of the NYSE).

⁵⁰⁹ See Stephen C. Pirrong, *The Self-Regulation Of Commodity Exchanges: The Case Of Market Manipulation*, 38 J. Law & Econ. at 157 (noting that “exchanges are coalitions of individual members with divergent interests”). Some of the most significant decisions an exchange can make relate to the enforcement actions they take, or elect not to take. In this respect, the exchange members’ interests are most starkly divided because inevitably, an enforcement action imparts a cost on some members, possibly to the benefit of other members. *See id.* at 159-160 (citations omitted) (stating that “exchange rule enforcers may not use their discretionary authority to stop manipulations because their decisions are intended to balance the interests of parties contending for [economic] rents, rather than to maximize efficiency. In the context of this analysis, an exchange’s decision makers do not make decisions that maximize the wealth of its members. Instead, they trade off support from longs and shorts and settle on some intermediate outcome. Thus, one would not expect exchange directors to impose an efficient, competitive allocation.”)

⁵¹⁰ See Text of Speech by CFTC Commissioner Walt Lukken, *The Derivatives World is Flat*, ISDA Energy, Commodities and Developing Products Conference at *2 (June 14, 2006) available at <http://www.cftc.gov/newsroom/speechestestimony/opalukken-20.html> (citing the NYSE’s merger announcement with Euronext within weeks of its public offering as an example of a transaction that a member driven exchange would not have taken that a profit motivated public company would undertake).

⁵¹¹ See e.g., CFTC, Memorandum Regarding The Chicago Mercantile Exchange’s Demutualization Plan at 7 available at http://www.cftc.gov/tm/tmcme_demutualization_memo.htm (last visited October 22, 2007).

⁵¹² See CFTC, Memorandum Regarding The Chicago Mercantile Exchange’s Demutualization Plan at 8 (last visited October 22, 2007) (forecasting that “under a demutualization plan, over time the percentage of shareholders that are also market users may, and probably will, decrease”).

⁵¹³ See CFTC, Memorandum Regarding The Chicago Mercantile Exchange’s Demutualization Plan at 8 (last visited October 22, 2007) (qualifying its acknowledgement that “[i]t is possible that a for-profit exchange, interested in reducing expenses to enhance stockholder value, might consider reducing self-regulatory programs or dedicate insufficient resources to its existing programs” by suggesting that “this risk is also inherent for a mutual exchange whose members may also be interested in cutting costs to themselves.”).

intermediary in this list that are quasi-governmental.⁵¹⁴ They are responsible for providing a forum to resolve conflicts among their members and their clients. Historically, even conflicts that effected oversight were more difficult to detect because the exchanges were private organizations.⁵¹⁵ Thus, the fundamental changes, which are already taking place, are changed relationships between intermediaries and their customers and the intermediaries and their regulators.

Many believe that the reorganization of exchanges into for-profit, public companies was fundamental to their continued growth. As the exchanges began to focus on profitability, to most,⁵¹⁶ an obvious conflict surfaced when attempting to regulate their customers from whom they derive their income.⁵¹⁷ The exchanges rely on several alternatives to minimize the conflict,⁵¹⁸ outsourcing their regulatory functions⁵¹⁹ or

⁵¹⁴ See SEC, Market 2000 Report, at VI-3 (1994) (acknowledging that the “[Securities and] Exchange Act [of 1934] requires SROs to act as quasi-governmental bodies implementing the federal securities laws as well as their own rules”); see also The World Bank, *Conflicts of Interest In Self-Regulation: Can Demutualized Exchanges Successfully Manage Them?* World Bank Policy Research Working Paper 3183 at 3 (John W. Carson, December 2003) (acknowledging exchanges perform public service functions).

⁵¹⁵ See CFTC, Memorandum Regarding The Chicago Mercantile Exchange’s Demutualization Plan at 7 (last visited October 22, 2007) (identifying insufficient funding for regulatory obligations as one of the regulatory issues with demutualization).

⁵¹⁶ *But see* Dale A. Oesterle, *The SEC’s Assault On Electronic Trading*, at 20 (vol. 21 no. 3 1998) (suggesting that “the new electronic exchanges, alternative trading systems should not be regulated like the traditional exchange”).

⁵¹⁷ See CFTC Div. of Trading and Markets, *Memorandum Regarding The Chicago Mercantile Exchange’s Proposed Demutualization Plan* available at http://www.cftc.gov/tm/tmcme_demutualization_memo.htm#p297_40421 (2000) (last visited October 22, 2007) (stating that “for-profit exchanges must consider shareholder interests, perhaps at the expense of the interests of market users”).

⁵¹⁸ See The World Bank, *Conflicts of Interest In Self-Regulation: Can Demutualized Exchanges Successfully Manage Them?* World Bank Policy Research Working Paper 3183 at 3 (John W. Carson, December 2003) (categorizing exchanges’ efforts to manage conflicts of interest as the following: 1) enhancing corporate governance requirements; 2) imposing ownership restrictions; 3) reinforcing exchange’s public interest mandate; 4) upgrading supervision by regulator; 5) strengthening exchange internal controls and management processes; 6) transferring regulatory functions to an independent SRO; and 7) transferring regulatory functions to a public regulator).

⁵¹⁹ See e.g., SEC, Exchange Act Release No. 34-56145 (July 26, 2007) (approving rule changes to “to implement governance and related changes to accommodate the consolidation of the member firm regulatory functions of NASD and NYSE Regulation, Inc.”). Although outsourcing these functions to national associations or private companies may be viable options, apparently direct federal oversight is out of the question. According to the SEC, direct oversight of intermediaries by the federal government failed

establishing prominent roles for independent directors in the regulatory and oversight areas of exchange governance are most common.⁵²⁰

Independence requirements for public companies have already undergone recent revisions.⁵²¹ Some studies suggest that the more independent directors, the less likely a company will engage in fraud.⁵²² Exchanges that adopted this approach for the oversight of their regulatory functions have taken the “more is better” philosophy and point to it as a perceived extra layer of caution. There is no indication, however, whether these minimal requirements lead to the same conclusions of effective independent directors in exchanges.⁵²³ Ultimately, however, this philosophical roadblock must face the reality that most public companies’ select their independent directors after approval by the chief

because it was inefficient (probably the first time the federal government extricated itself from a regulatory role because of inefficiency), “weak links in the program regarding rulemaking and data collection” which could not be improved, and a capitulation that the “SROs are better able to offer the required degree of expertise to handle day-to-day industry problems expeditiously.” SEC, Market 2000 Report at VI-6 (1994).

⁵²⁰ Results of recent studies “indicate that board composition and the structure of its oversight committees are significantly related to the incidence of corporate fraud.” Hatice Uzun, Samuel H. Szewczyk, and Raj Varma, *Financial Analysts Journal*, *Board Composition and Corporate Fraud* 33 at 41 (May 2004).

⁵²¹ “The scandals at numerous high-profile companies have led to public perception of a crisis in corporate governance, to subsequent passage of the Sarbanes–Oxley Act, and to establishment by the NYSE and Nasdaq of strengthened governance requirements, including enhanced oversight by independent company directors.” Hatice Uzun, Samuel H. Szewczyk, and Raj Varma, *Financial Analysts Journal*, *Board Composition and Corporate Fraud* 33 at 41 (May 2004).

⁵²² See Hatice Uzun, Samuel H. Szewczyk, and Raj Varma, *Financial Analysts Journal*, *Board Composition and Corporate Fraud* 33 at 41 (finding “that a higher proportion of independent outside directors is associated with less likelihood of corporate wrongdoing”).

⁵²³ Although some commentators suggest that conflicts are less concerning with futures exchanges:

Concerns about conflicts of interest are generally lower in futures markets because the markets are not as regulated as securities markets. Futures markets participants are mainly professionals and made up of sophisticated players. Retail investor participation is small. Also, the regulatory framework is different because futures exchanges have no capital formation role, and the contracts are a product created by the exchanges. The difference in approach is more evident in the U.S. where futures exchanges are governed by a separate regulatory regime. Elsewhere one regulator prevails, and securities and futures exchanges are merging, leading to a harmonized approach to the two market segments.

The World Bank, *Conflicts of Interest In Self-Regulation: Can Demutualized Exchanges Successfully Manage Them?* Working Paper 3183 at 7 (John W. Carson, December 2003).

executive officer.⁵²⁴ As existing exchanges transform into for-profit entities, they will look to achieve efficiencies in all aspects of their operations, regulatory consolidations being one of them.⁵²⁵ New exchanges may also consider outsourcing regulatory functions because, as a business decision, it reduces, or at least quantifies, a significant expense that the exchange will face. National industry associations, which already perform regulatory functions that overlap with would likely satisfy federal regulators and speed up the approval process.⁵²⁶ Other acceptable third parties could include affiliated or wholly owned existing exchanges that already provide existing support.⁵²⁷

E. *Financial Market Fees*

ECNs provide the benefits of straight-through-processing for market users.⁵²⁸ That advantage is compelling to large money managers and hedge funds. Market users who established large positions were the most likely to suffer from information delays, primarily hedge funds and money managers. These customers are not new to the commodities markets, but the recent increase in the size of their positions is noticeably more significant

⁵²⁴ See e.g., Benjamin E. Hermalin, Michael S. Weisbach, Endogenously Chosen Boards of Directors and Their Monitoring of the CEO, 88 *The Am. Econ. R.* 96 (Mar., 1998) (analyzing possible explanations for the apparent conflict between the selection process of directors, their approval by CEOs, and board oversight of CEOs).

⁵²⁵ See Ron Hersch testimony before CFTC Technical Advisory Committee at 43 (Oct. 13, 2004); Leo Melamed, *The Future of Futures in the Twenty-first Century*, *Futures Industry Magazine* at 45 (March-April 2006) (predicting that “technology will take us to another level of sophistication, the consolidation of markets”).

⁵²⁶ See e.g., NFA’s oversight of US futures exchange.

⁵²⁷ See e.g., CBOE futures exchange.

⁵²⁸ See Sun Microsystem Inc., *Best Practices: Exchanging Electronically at Record Pace*, available at http://www.sun.com/br/ezine/index_eb.html (Jan. 2003) (identifying one of the key demands the system Sun developed for LIFFE had to meet was its ability to “provide a high level of integration for the front-, middle-, and back-office of [exchange] members reducing their cost and risk exposure”). See also Bank for International Settlements, *Implications of Electronic Trading on the Financial Markets* at 10 (2001) (identifying straight through processing as a primary benefit to adoption of electronic trading).

than in recent times.⁵²⁹ Moreover, the hedge funds' affection for electronic trading platforms and a likely factor in the exchanges' development of their trade-matching systems.⁵³⁰

The intermediaries' new role, in particular the ECN's new role, is reflected in the services they provide and the fees they charge.⁵³¹ "Market participants have incorporated technology into their businesses to provide investors with an increasing array of services, and to furnish these services more efficiently, and often at lower prices."⁵³² As competition among the intermediaries increases, their business margins continue to thin and they left with the choice to consolidate or close.⁵³³ To some, it is no surprise that shrinking margins are responsible for the decline in intermediaries.⁵³⁴

Many pundits suggest that electronic trading will also reduce trading fees.⁵³⁵ Indeed, some fees will likely be reduced or eliminated.⁵³⁶ The more significant consequence,

⁵²⁹ The significance of hedge funds in commodity trading has grown significantly since 1994. See Bank for International Settlements, BIS Quarterly Review, *Implications of Electronic Trading on the Financial Markets* at 58 (March 2007). "Assets under management by commodity trading advisers rose from about \$20 billion in 2002 to about \$75 billion by end-2005." *Id.* (citation omitted).

⁵³⁰ See Bank for International Settlements, BIS Quarterly Review, *Implications of Electronic Trading on the Financial Markets* at 59 (March 2007).

⁵³¹ See William Plasencia, *Clearing Firms Gain New Clout by Supplying Investment Services that can Provide Edge*, THE AMERICAN BANKER, July 20, 1995, at 14 (identifying financial advantages banks and brokerage firms receive if they employ clearing houses with automated functions and services). See also CME Group Inc., *Click Boom: How Electronic Trading Served As A Catalyst In The Creation Of CME Group*, at 25 (attributing the success of electronic trading to a shift in "customer values from personal relationships to a focus on the highest value").

⁵³² SEC, Exchange Act Release No. 34-40760; Regulation of Exchanges and Alternative Trading Systems, 63 Fed. Reg. 70,844 at 70,845 (December 22, 1998).

⁵³³ See Ivy Schmerken, *New ATs Arise to Fill a Void*, WALL STREET AND TECHNOLOGY, at *2 (September 23, 2005) (describing the cause of consolidation: "the ECN population plummeting from a dozen or so in the late 1990s to a handful today and the equity markets approaching a duopoly").

⁵³⁴ Patrick Arbor, Testimony before the Risk Management and Specialty Crops Subcommittee of the U.S. House Agriculture Committee, April 15, 1997 ("In 10 years the number of registered professionals have shrunk by about 8 percent. Even more telling, the number of FCMs has contracted by 39 percent. Today only 233 FCMs are sending orders to the seven unaffiliated exchanges, now actively trading future contracts down from nine in 1987."). See also Group of Ten, Report on Consolidation in the Financial Sector at 81 (2001) (predicting that "we can expect to see increasing concentration in the [US] financial services sector in the future.").

⁵³⁵ See Dale A. Oesterle, *The SEC's Assault On Electronic Trading*, at 19 Regulation (vol. 21 no. 3 1998) (identifying two of the advantages that electronic trading systems have over traditional exchanges as lower rates due to the elimination of fees and commissions to floor brokers and specialists and increased certainty in trade execution).

however, is who will receive the lion's share of fees. Electronically executed trades push the fees up the food chain. Exchanges that charged fees under floor based system were part of a series of fees associated with the execution of the order, which included an introducing broker, exchange floor member, clearing member, and the exchange itself. With direct access to trade-matching systems through proprietary or third party order routing or front-end systems, more intermediaries, including exchanges, are taking on customers directly.⁵³⁷ An electronically processed trade could reduce that list to the clearing member and the exchange itself, providing these two entities with the opportunity to collect a larger piece of the fee pie.

The fee battles are as much about services as they are about fees, with intermediaries continuously adding more offerings and sophistication to their list.⁵³⁸ One common service the security and commodity industries both provide is the dissemination of news. Imperfect information across markets and investors is a common arbitrage from which intermediaries profit.⁵³⁹ One reason asymmetrical information exists is the high level of complexity of the

⁵³⁶ See Thomas W. Sexton, Letter Dated Nov. 20, 2007, National Futures Association: Reduction to NFA's Assessment Fees - Proposed Amendments to Bylaw 1301 at Explanation of Proposals (attributing a fee reduction to the "sustained strong growth in public trading volume"); see also Edgar Ortega, Bloomberg News, Bats Market Doubles its Business After Cutting Trading Fees, at *1 (Jan. 4, 2007) (describing a BATS promotional event where the ATS charged 20 cents per 100 lot orders for the month of February 2007 and anticipating a doubling of its average daily volume); Ivy Schmerken, New ATSS Arise to Fill a Void, WALL STREET AND TECHNOLOGY, at *1 (September 23, 2005) (citing a Track ECN press release describing recent changes in "which [Track] recently revamped its pricing structure to offer the highest rebates and lowest access fees in the industry").

⁵³⁷ See e.g., HedgeStreet, Inc. Rules, Rule 3.1 at 14 (rev. Jul. 7, 2007) (identifying the requirements for individuals to become a member as: U.S. residency; "old enough to enter into a legally enforceable contract"; maintain a bank account; complete an application; and fund the trading account with an initial deposit of \$100 to HedgeStreet's "customer segregated funds account").

⁵³⁸ "Financial intermediaries perform gradually more sophisticated functions in the modern - more and more complex - economy." B. Scholtens, D. van Wensveen, A Critique on the Theory of Financial Intermediation 24 J. of Banking & Finance 1243 at 1247 (2000).

⁵³⁹ Interestingly, the existence of asymmetric information may lead to disintermediation, which is one of the reasons intermediaries reduce fees, but it is also at the heart of many other issues they face, like consolidation of the intermediaries and regulators

Financial intermediaries ... make do with the market imperfections that mainly stem from informational asymmetries. They may reduce the information and transaction costs

products financial intermediaries offer.⁵⁴⁰ Financial intermediaries are particularly aware of the risks associated with asymmetric information.⁵⁴¹ Large intermediaries absorb risk by disseminating information internally through devices like squawk boxes and research reports.⁵⁴² Some analysts suggest that the federal securities laws were drafted to account for the likelihood that investors will not understand these complex instruments by imposing obligations on intermediaries to distribute and explain the instruments.⁵⁴³ In the security and commodity markets' "[c]omplexity heightens ambiguity, which in turn ... allows people to

within the economy [motivating them to pass along these savings by reducing fees], but they still have to make do with agency problems and with moral hazard and adverse selection. In all, the financial intermediary is a more or less passive agent who intermediates between ultimate savers and investors. The process of disintermediation threatens the agent, as public financial markets promote a more efficient and transparent handling of the allocation of scarce resources in the economy, thanks to deregulation and information technology.

Id. at 1250.

⁵⁴⁰ Intermediaries survive and profit from fragmented markets, where most investors have little or no knowledge of what the asset is, let alone its value. See Ruth Simon, *We Put Investors To The Test – And Boy Did They Ever Flunk*, MONEY, Mar. 1998, at 37-8 (finding that mutual fund investors did not correctly respond to “basic questions about investment risks and strategies.”). Thus, any device that increases transparency will increase competition among intermediaries. A counter-intuitive conclusion drawn in some studies suggests that purchasers of securities originated by financial intermediaries may be more informed as to their value than the intermediaries themselves. See Janet Mitchell, National Bank of Belgium, *Financial Intermediation Theory and the Sources of Value in Structured Finance Markets* at 3 (identifying a type of asymmetric information problem unique to financial intermediaries). According to this theory:

[I]ntermediaries originating loans may be less informed about the ultimate market value of their assets than are investment banks which may serve as arrangers; i.e., who purchase the assets, repackage them by pooling them with assets originated by other intermediaries, and sell the repackaged assets or securities backed by them. Arrangers will have better information about market values of assets when their pricing models are better than those used by the originators. Also, whereas each originator may have good knowledge of the cash flows from its own assets or asset pools, it does not generally possess data on the cash flows from other originators' pools, in contrast to arrangers, who may have access to such information.

Id.

⁵⁴¹ Indeed, “dealing with risk is - and always has been - the bread and butter of financial intermediaries. By specializing in information production and processing, and by diversifying individual credit and term risks, they have been able to absorb risk.” B. Scholtens, D. van Wensveen, *A Critique on the Theory of Financial Intermediation* 24 J. of Banking & Finance at 1248.

⁵⁴² “As US banks have grown in size and complexity, many of the largest have begun to develop increasingly sophisticated internal systems for rating the credit risk of assets.” Group of Ten, Report on Consolidation in the Financial Sector 146 (January 2001) (citation omitted).

⁵⁴³ See Steven L. Schwarcz, *Rethinking The Disclosure Paradigm In A World of Complexity*, 2004 U. Ill. L. Rev. 1 at 16 (2004) (stating that same point).

see what they are already inclined to believe.”⁵⁴⁴ Some intermediaries attempt to fill the void and replicate the squawk box to the public.⁵⁴⁵ News dissemination alone, however, may not be sufficient to balance the asymmetry of information distribution.⁵⁴⁶ Electronic trading may increase the flow and possibly the access to information, but it will not, *ceteris paribus*, decrease its complexity or the costs associated with its simplification.⁵⁴⁷

The battle over fees and services is really a battle over customers. Some intermediaries have grown so large that the possibility of owning their own exchange and ultimately capturing fees paid to exchanges for themselves is a reality.⁵⁴⁸ As this new

⁵⁴⁴ Steven L. Schwarcz, *Rethinking The Disclosure Paradigm In A World of Complexity*, 2004 U. Ill. L. Rev. 1 at 16 (2004).

⁵⁴⁵ See Trade The News, *About Us* available at <http://www.tradethenews.com/about-company-history.asp> (describing its service as “a pioneer in the completely on-demand and independent research model built around a voice “hoot” network geared towards professional traders that require instant answers”).

⁵⁴⁶ Steven L. Schwarcz, *Rethinking The Disclosure Paradigm In A World of Complexity*, 2004 U. Ill. L. Rev. 1 at 36 (concluding that the current information disclosure paradigm promotes asymmetry between issuers of public securities and their investors because “complexity of structured transactions undermines the long-held disclosure paradigm”).

⁵⁴⁷ In addition to the velocity of information, however, intermediaries need to be empowered, “disciplined,” and insist on information from their counterparties. Incorporating this information into their risk management systems will increase the costs of managing the information, whereas developing information technology systems and consolidation will reduce these costs:

As US financial institutions and markets have evolved, and especially as banking organizations have become larger, more complex, and more involved in both domestic and international financial markets, interest in using market discipline as a supplement to government supervision and regulation has increased. Indeed, market discipline has been enshrined as one of the “three pillars” for controlling bank risk-taking by United States and other G10 bank supervisors. Because market discipline can only be effective if market participants are well-informed, government authorities have expressed considerable interest in improved disclosure. If initiatives in this area proceed and are successful, financial consolidation can, at least from this perspective, be said to have stimulated market discipline.

Group of Ten, Report on Consolidation in the Financial Sector 143 (January 2001) (citations omitted).

⁵⁴⁸ Exchange ownership by intermediaries is nothing new in either of the security or commodity industries. Prior to demutualization, clearing members were required to own a certain number of seats in each category of membership. Most clearing members purchased the minimum required and did nothing more. Others, however, purchased additional seats for various reasons, but these additional purchases increased the number of votes come election time without much more. In the months leading up to demutualization, however, more intermediaries are purchasing significant percentages in existing or new exchanges. In the security industry, these purchases were more obvious at the regional level and the investment in ECNs and ATSS. Many commodity firms do not have the same incentives, nor did they have the financing necessary to purchase such large stakes. A notable exception is Man Group, Plc’s purchase of seventy percent (70%) of the US Futures Exchange’s outstanding shares. See U.S. Futures Exchange, LLC, *Man Group Closes Transaction on U.S. Futures Exchange* at 1 (October 3, 2006).

business model ripples through the industry, eventually, more exchanges will have “members” that look like retail customers,⁵⁴⁹ thus competing directly with intermediaries for the same customers, “direct access customers.”⁵⁵⁰ Fees will fluctuate during this transition period, and after the consolidation phase ends, they will probably increase.

F. *Effects on Regulators*

After outsourcing the rather mundane regulatory functions, exchanges are likely to narrow their regulatory focus to areas in which they are clearly experts.⁵⁵¹ While these changes tend to limit an exchange’s oversight ability, the intermediaries they are overseeing are broadening their reach. Additional regulatory changes are necessary in light of the ease with which intermediaries’ and exchanges’ interests cross jurisdictional borders. For these reasons, federal regulators and self-regulatory organizations have called upon each other to enter into information sharing agreements.⁵⁵²

Information sharing agreements and memoranda of understanding are the initial steps in this direction. Cooperation among the regulatory bodies, inside and outside the U.S., is vital in monitoring the industry.⁵⁵³ In the international arena, cooperation among regulators has evolved from bilateral agreements to multi-lateral agreements in the form of participation in international organizations. When the need for information sharing in this arena becomes apparent, it often relates to the most fundamental of market information,

⁵⁴⁹ See e.g., Hedgestreet, Inc. Rules, Rule 3.1 at 14; *see also* Leo Melamed, *The Future of Futures in the Twenty-first Century*, *Futures Industry Magazine* at 45 (March April 2006) (describing the futures industry’s opportunity to democratize finance by devising instruments that protect risks facing individuals from every day walks of life).

⁵⁵⁰ See Futures Industry Association, *Profile of Exchange and FCM Risk Management Practices for Direct Access Customers* at 1 (December 3, 2007) (summarizing risk management practices for clients with direct access to an exchange’s trading system among specified exchanges and futures commission merchants generally).

⁵⁵¹ “From a business standpoint, these regulatory functions can also create unnecessary friction in customer relationships which can be avoided if the functions are transferred to another regulator. As a result, these types of functions are migrating from exchanges to government authorities in many countries. Exchanges are increasingly focusing on core regulatory roles that are directly tied to business operations, such as trading supervision.” The World Bank, *Conflicts of Interest In Self-Regulation: Can Demutualized Exchanges Successfully Manage Them?* World Bank Policy Research Working Paper 3183 at 8 (John W. Carson, December 2003).

⁵⁵² See John Foyle testimony before CFTC Technical Advisory Committee at 47-48 (Oct. 13, 2004); (identifying that intermediaries “dealing on umpteen other markets ... is not something which can be tackled by one market” and concluding that risk assessment will become more important role for regulators and that “[n]o one exchange can do that”).

⁵⁵³ See Lukken at 4.

identifying market participants and the positions they hold.⁵⁵⁴ These often occur when a participant engages in market activities in different countries, which is much easier with the advent of electronic trading.

The solution of a unified regulator for the U.S. financial industry has been long debated.⁵⁵⁵ The first hurdle to clear down the path towards a single regulator for the security and commodity industries is identifying their roles and missions and determining whether they are compatible.⁵⁵⁶ The next step is their acknowledgement that no one regulator has access to all the necessary information in satisfying those missions.⁵⁵⁷ Another intermediary step is to assess the effects such a change would have on the industry.⁵⁵⁸ The ability of the

⁵⁵⁴ The International Enforcement Act of 1990 authorized the SEC to share information with international regulators and maintaining the confidentiality of information shared with and by international regulators. See SEC Commissioner Richard Y. Roberts, SEC Progress Towards Internationalization (March 22, 1991).

⁵⁵⁵ See William Brodsky, Commentary: A Real Regulatory Redundancy, Wall Street Journal Page A19 (October 19, 2007) (suggesting that combining the SEC and CFTC “has been a much-needed fix for the past 20 years”); Jerry W. Markham, Super-Regulator: A Comparative Analysis of Securities and Derivatives Regulation in the United States, Great Britain & Japan, 28 Brooklyn J. Intl. Law 319 (2003) (comparing roles of single regulators abroad and discussing pros and cons of consolidation).

⁵⁵⁶ According to CFTC Chairman Jeffery, “the mission of the [CFTC] is very clear: 1.) to protect the public and market users from manipulation, fraud, and abusive practices and 2.) to promote open, competitive and financially sound markets for commodity futures.” CFTC, *Written Testimony of Reuben Jeffery III, Chairman Commodity Futures Trading Commission Before the United States Senate Subcommittee on Financial Services and General Government Committee on Appropriations* at 2 (March 9, 2007). Whereas, Chairman Cox suggested that the SEC “has acquired three explicit goals: protecting investors; maintaining fair and orderly markets; and promoting capital formation.” SEC, *Speech by SEC Chairman: 'The Role of Government in Markets' Keynote Address and Robert R. Glauber Lecture at the John F. Kennedy School of Government* (available at <http://www.sec.gov/news/speech/spch111105cc.htm>) (October 24, 2007).

⁵⁵⁷ Both the SEC and CFTC are members of International Organization of Securities Commissioners (“IOSCO”) and signatories to the 2003 Memorandum of Understanding. See SEC Release No. 2003-145, *SEC announces IOSCO Unveiling of Multilateral Agreement on Enforcement Cooperation* available at <http://www.sec.gov/news/press/2003-145.htm> (Oct. 31, 2003) (quoting Chairman William Donaldson “The SEC has long recognized that international cooperation is vital to an effective enforcement program.”); see also CFTC Release No. 4851-03, *U.S. Commodity Futures Trading Commission Announces Participation In IOSCO Multilateral Enforcement MOU* available at <http://www.cftc.gov/opa/press03/opa4851-03.htm> (Oct. 16, 2003).

⁵⁵⁸ Indeed, some financial services regulators believe “it is important to continue to evaluate our regulatory structure and consider ways to improve efficiency, reduce overlap, strengthen consumer and investor protection, and ensure that financial institutions have the ability to adapt to evolving market dynamics” Department of the Treasury, Review by the Treasury Department of the Regulatory Structure Associated With Financial Institutions, 72 C.F.R. at 58,939 (Wednesday, October 17, 2007).

U.S. government to apply the principles based regulatory regime to other financial service regulators will ultimately determine whether the unified regulator is a success or a theory.⁵⁵⁹

VI CONCLUSION

The securities industry provides a good example of where the commodities industry will move in the coming years. The exchanges' focus on electronic trading highlights the change in their best customer; from smaller volume commercial hedgers and locals, to large volume special investment vehicles. These customers demand greater electronic access to the marketplace, trade-matching algorithms that are efficient, volume centered, and preserve anonymity, and they thrive in a marketplace where market news is decentralized. These forces can increase the likelihood that contracts will diverge from a price discovery function.

These changes and the increasing use of regulatory arbitrages raise a number of other policy concerns. Additional regulation will only cause further erosion in the comparative advantage in financial services once enjoyed by the United States. The diversion of trading abroad and into ECNs is undercutting the self-regulatory role of the NFA and FINRA. The CFTC and the SEC need to rethink their entire regulatory structure, including whether a single regulator is needed for financial services in order to compete with the FSA in London.

⁵⁵⁹ *See id.* at 58,941 (asking “Would it be useful to apply some of the principles of the Commodity Futures Modernization Act of 2000 to the securities regulatory regime?”).