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MARKET STRUCTURE FOR INSTITUTIONAL INVESTORS: COMPARING THE U.S. AND E.U. REGIMES

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ABSTRACT

In 2007, both the U.S. and the E.U. implemented sweeping reforms in the regulation of stock exchange trading and market structure, following diametrically opposed approaches. While the E.U. effort is deregulatory and decentralized, allowing investors' choices to determine how different marketplaces interact, U.S. rules are detailed and interventionist, mandating specific principles for the interaction of orders. To explore the impact of these surprising choices of regulatory design, this article focuses on institutional investors, who have come to dominate stock exchange trading in recent years. Because these investors trade in large blocks, their orders may affect stock prices to their detriment, increasing their liquidity costs. The new U.S. rules, however, limit institutional investors' flexibility in choosing a trading strategy that would reduce their liquidity costs effectively. As a result, these rules introduce unnecessary volatility in the market, and may harm the informational value of stock prices. The European framework relies instead on disclosure of quote and last sale information, and helps investors monitor market participants more successfully.

INTRODUCTION

WHILE images of aggressive brokers screaming and fighting over each other on the floor of the New York Stock Exchange (NYSE) still permeate popular media, the floor of the NYSE today is a much quieter place than in the past: it handles only six percent of the NYSE's trading,¹ down from ninety percent in 2005.² Trading activity has instead migrated to electronic trading systems that offer speedier execution, reduce the effort required to conclude a trade, and handle an ever-growing trading volume at little additional cost.³ Technological advances have lowered the costs of entry in the trading market, allowing a number of electronic trading systems with varied business models and capabilities to compete with established marketplaces. Thus, many electronic trading platforms, not necessarily

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1. Steven McNamara, *Rents and the Floor Brokers*, TRADERS MAGAZINE, Aug. 2008, available at <http://www.tradersmagazine.com/news/101848-1.html>.
 2. See Peter Chapman, *Big Board Brokers Pack for the Hybrid*, TRADERS MAGAZINE, Feb. 2005, at 40 (explaining that Direct+, then NYSE's electronic system, accounted for only ten percent of its trading volume).
 3. See LARRY HARRIS, *TRADING AND EXCHANGES: MARKET MICROSTRUCTURE FOR PRACTITIONERS*, 547–50 (2d ed. 2003).

registered with the Securities and Exchange Commission (SEC) as exchanges, have evolved into some of the most important venues for U.S. equities. The NYSE's own market share in the trading volume for its listed stocks has shrunk from eighty percent in the beginning of the decade to under thirty percent today.⁴

As investors flock to old and new trading venues, the same stock can be traded simultaneously at different prices in each marketplace. This fragmentation of order flow raises two new challenges for regulators. First, from a market structure perspective, if a buy order does not execute against the best sell order because they appeared in different marketplaces, the market will not be able to accurately assess the underlying value of the assets it trades, and market prices will become uninformative and unreliable. Second, from an individual investor's standpoint, monitoring whether a broker has secured the best possible execution for each order will be particularly cumbersome if more marketplaces offer various prices for various order sizes in parallel.

In response to these concerns, policymakers in the United States and the European Union, the two most important jurisdictions for equity trading, recently introduced dramatic changes in the rules governing stock exchange market structure. Both reforms purported to strike a fine balance by promoting integration of investor order flow without smothering competition among trading venues. United States and European Union policymakers, however, followed diametrically opposed approaches in practice. In 2005, the SEC adopted Regulation NMS ("National Market System")⁵ that introduced detailed rules regarding the interaction of orders originating in multiple trading venues in the United States. In contrast, the 2004 E.U. Directive on Markets in Financial Instruments (the "Directive" or "MiFID")⁶ does not include any order interaction rules, but allows market participants to choose the best execution strategy for their orders, and provides them with crucial information through mandatory disclosure obligations. This divergence in policy choices seems paradoxical: in many policy fields, the United States has

4. McNamara, *supra* note 1.

5. Regulation NMS; Final Rule, Exchange Act Release No. 51,808, 70 Fed. Reg. 37,496 (June 29, 2005), *reprinted in* Fed. Sec. L. Rep. (CCH) ¶ 87,414 (June 9, 2005) [hereinafter Final Release]. This paper will focus on the final form of the rule, although occasional references to previous versions will be made to highlight aspects of the rule.

6. The 2004 E.U. Directive on Markets in Financial Instruments (the "Directive" or "MiFID") is an E.U. law that creates a harmonized regulatory regime for investment services across Member States. The main objectives of the Directive are investor protection and increased competition among investment firms. *See* Markets in Financial Instruments Directive 2004/39, Preamble, 2004 O.J. (L 145) (EC) [hereinafter MiFID].

leaned towards lessening regulation, and the European Union has often been accused of devising burdensome regulatory schemes. In market structure for equity trading, U.S. regulatory choices are interventionist, and constrain investors' flexibility, while E.U. rules place greater confidence on market forces.

This surprising choice of regulatory design is the focus of this article, which compares the U.S. and the E.U. regimes so as to explore which policy can better achieve its stated goals. In particular, I examine the impact of these regulatory changes on the major contributors to equity trading volume in the last decade: institutional investors. I argue that U.S. rules result in higher liquidity costs for institutional investors and may harm the informational efficiency of U.S. markets.

Institutional investors face particular challenges when obtaining a position in a stock or unloading their holdings, because the large size of their orders may impact the supply or demand for that stock and thus affect its price. Thus, they may have to pay a higher premium than retail investors in order to obtain liquidity, lowering their ask price or raising their bid price in order to attract interest from other investors. Higher liquidity costs hurt the efficiency of the market as a whole because they increase volatility and introduce uncertainty about the underlying value of the stocks traded. Institutional investors have employed various strategies to limit their liquidity costs, such as negotiating trades directly between them outside of the retail market, or using specialized brokers or electronic trading networks to identify matching counter-orders. To ensure that information about these trades would reach the wider market, regulators established mandatory disclosure rules for post-sale data, as well as obligations to publish quotes pre-trade, for trades up to a certain size. Based on this information, investors could confirm whether their brokers had executed their orders at the best price available on the market. As long as most trades took place in a single location, the floor of the NYSE, information was immediately released to all participating brokers, and investors could rely on the NYSE's price discovery process for monitoring best execution.

The advent of electronic trading provided investors, particularly institutional ones, with innovative mechanisms for identifying liquidity, taking advantage of high execution speed, electronic connectivity, and increased software capabilities. The proliferation of marketplaces, however, challenged the previous regulatory paradigm, as order flow became fragmented in various trading venues, not all subject to the same regulatory framework. To counter

fragmentation, U.S. and European policymakers required the new trading venues to post firm quotes pre-trade and last sale data post-trade.

Yet, U.S. regulators did not rely on information alone to sort orders according to best price. Concerned that once an order was placed in one marketplace it could not be executed against a counter-order displayed in another, U.S. regulators required trading venues to establish direct electronic linkages with each other. They further mandated that if one venue displayed the best price in the market, all other trading venues had to either send the venue their counter-orders or match its price, subject to certain exceptions. The obligation to avoid “trading-through” the best displayed price would be catastrophic for institutional investors, because it would require them to release their orders to the public market and suffer the impact on the trade’s price, unless they qualified for an exception. The exceptions to the rule, however, are narrowly prescribed and cannot accommodate the various trading strategies made possible by constantly evolving technology. The most popular exception requires institutional investors to route part of their order against the best quote displayed in the public market, thus suffering delays in execution and uncertainty over the final price of their trade. Forced to tailor their trading strategies through the exceptions to the trade-through rule, institutional investors ended up paying higher liquidity costs for their orders in U.S. trading venues. Not only do these costs harm the investors themselves, they also impede the market from accurately assessing the informational signal of each trade.

European regulators, however, sought to strengthen the links between trading venues by turning to investors. Envisioning an integrated market where stocks from previously monopolistic exchanges would be traded in pan-European electronic trading systems, European rules grant market participants as much flexibility as possible in pursuing their preferred trading strategies. Instead of mandates about order interactions, the Directive requires brokers to discuss their execution strategies with investors, explain the advantages and drawbacks of available trading venues, and ensure that they understand and can fulfill their customers’ needs. Since institutional and retail investors face very different trade-offs when placing an order, they are better able to shape the execution strategy that suits them.

The article proceeds as follows. After this introduction, Part II briefly discusses the developments in the marketplace that motivated the market structure reforms in the United States and the European Union: the expansion of electronic trading systems, the emergence of dark liquidity pools, and the preponderance of institutional investors in equity participation.

Part III turns to the economics literature in market structure to outline the key interests of institutional and retail investors when placing their orders. It examines how the optimal trading strategy for each type of investor differs and how these differences impact the duty of best execution that brokers owe to their clients. Part IV offers a brief overview of the market structure reforms in the United States and Europe. Part V compares the functionally similar aspects of each framework. First, it discusses the quote and last sale transparency obligations in each regime, then it moves to the best execution framework, and finally it examines the trade-through rule in the United States. Part VI draws lessons from the comparison of U.S. and European market structure rules.

I. NEW REALITIES IN THE MARKETPLACE

A. Alternative Trading Systems and Their Regulation

As early as 1969, the first fully electronic trading system had begun operating and thus competing with traditional stock exchanges.⁷ Alternative trading systems (“ATS”) are automated screen-based trading systems that offer subscribers a variety of services that may not be available in the organized markets. Initially developed to counterbalance exchanges in the era of fixed commissions,⁸ ATSs later focused on specialized customers, such as institutional investors and financial intermediaries, and on “niche” services in equities, corporate debt securities, municipal and government instruments, or options.⁹ Although alternative trading systems have been active in the United States since the 1970s, their presence in the U.S. market structure has become more prominent in the last fifteen years, while the market-share of traditional exchanges has receded. For example, in 1999 ATSs attracted almost twenty percent of the order flow in Nasdaq stocks,¹⁰ and by 2001 their market share

7. See Ian Domowitz, *An Exchange is a Many-Splendored Thing: The Classification and Regulation of Automated Trading Systems*, in THE INDUSTRIAL ORGANIZATION AND REGULATION OF THE SECURITIES INDUSTRY 93, 93 (Andrew W. Lo ed., 1996).

8. Until 1975, the NYSE charged a fixed commission rate per stock traded, which largely disadvantaged bigger trades. The SEC ended this regime by 1975. See Norman S. Poser, *Restructuring the Stock Markets: A Critical Look at the SEC's National Market System*, 56 N.Y.U. L. REV. 883, 901 (1981).

9. See Richard G. Ketchum & Beth E. Weimer, *Market 2000 and the Nasdaq Stock Market*, 19 IOWA J. CORP. L. 559, 572 (1994).

10. See Jonathan R. Macey & Maureen O'Hara, *Regulating Exchanges and Alternative Trading Systems: A Law and Economics Perspective*, 28 J. LEGAL STUD. 17, 19 (1999).

had grown to thirty percent.¹¹ In June 2008, Nasdaq's own market-share in Nasdaq stocks amounted to just forty-two percent.¹² Similarly, the NYSE controlled about seventy-eight percent of the trading volume in its own stocks until as recently as January 2003; today, its market share has fallen to just twenty-five percent, largely because of competition by ATSs and Nasdaq.¹³

The explanations for the success of ATSs range from efficiency justifications to notorious customer inducement practices. ATSs' have reduced the level of human participation in order handling, dramatically decreasing costs. Moreover, many ATSs provide institutional investors with direct access to their trading platform without the participation of a broker, thus eliminating an additional layer of intermediation as well as further reducing fees. In addition, many ATSs specialize in professional investors wishing to trade in large blocks, thus providing a higher likelihood of matching a large order. Institutional investors also prefer ATSs that offer anonymous trading, thus avoiding the negative repercussions of releasing a large order in the retail market.¹⁴ Payment for order flow practices, which consists in the trading venue of paying a fee to the broker for orders directed to its marketplace, has also been the focus of many explanations for the success of ATSs.¹⁵ Not all ATSs follow the same business model. Some of them are exclusively oriented towards the institutional investor market, while others are more open to retail order flow and provide direct competition to large stock exchanges. With the advent of algorithmic trading, which relies on computer software to identify the most profitable trading strategy by setting the timing, prices, or order sizes, electronic trading systems solidified their advantage over manually-driven markets.

The SEC brought electronic trading systems under its supervision in 1998 by adopting Regulation ATS, which requires these systems to register with the SEC either as national securities exchanges or as broker-dealers.¹⁶ Most ATSs chose the broker-dealer option, while some merged with regional exchanges

11. See Annette L. Nazareth, *Symposium Securities Law for the Next Millennium: A Forward-Looking Statement: Remarks*, 75 ST. JOHN'S L. REV. 15, 19 (2001).

12. NASDAQ Performance Statistics, NASDAQ Continues to Lead in Matched Market Share of All U.S.-Listed Equities, *available at* <http://www.nasdaqtrader.com/trader.aspx?id=marketshare>.

13. NYSE Share Volume in NYSE-Listed Securities, *available at* <http://media.primezone.com/cache/6948/file/5876.jpg>.

14. See Macey & O'Hara, *supra* note 10, at 46.

15. See Allen Ferrell, *A Proposal for Solving the "Payment for Order Flow" Problem*, 74 S. CAL. L. REV. 1027, 1029 (2001).

16. Regulation ATS, 17 C.F.R. §§ 242.301(a)–(b) (2005).

or launched an application process for an exchange license. The SEC requires ATSs registered as broker-dealers to display to an exchange or securities association facility quotes for all stocks for which they handle an average daily trading volume of five percent or more.¹⁷ Moreover, these ATSs must provide other broker-dealers with the opportunity to access their systems and trade against their displayed quotes without charging excessive fees.¹⁸ These rules on quote transparency and mandatory access are particularly important for ATSs, because they denote the line between dark liquidity pools and public markets, as the paragraphs below explain.

In Europe, efforts to establish pan-European electronic trading platforms outside of national stock exchanges failed in the 1990s, but have recently been gaining ground. European stock exchanges automated their trading systems in the 1980s. For example, the Paris Bourse (now part of NYSE Euronext) had already introduced electronic trading systems by 1989, in the midst of a fierce competitive battle with the London Stock Exchange (LSE) for institutional order flow.¹⁹ Some brokers took advantage of stock exchange automation to give their large clients direct access to the exchange.²⁰ More importantly, off-exchange trading in Europe was subject to important regulatory and structural constraints. European Directives allowed member-states to require that all trading must take place within an organized stock exchange.²¹ In addition,

17. *Id.* at § 242.301(b)(3)(i). While Regulation ATS initially required a 20 percent threshold for triggering quote display obligations, the SEC lowered this threshold to five percent once it passed Regulation NMS. *See* Final Release, *supra* note 5, at 37,619.

18. §§ 242.301(b)(4)–(5).

19. In 1986, the LSE introduced an electronic display facility where London dealers posted mandatory bid and ask quotes for a minimum order size, covering not only stocks already listed on the LSE, but also stocks listed on other European exchanges. *See* Marco Pagano, *The Changing Microstructure of European Equity Markets*, 5–7 (Ctr. for Studies in Econ. and Fin., Working Paper No. 4, 1997), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=141048. Later that year, the Paris Bourse was the first exchange to introduce a wholly electronic trading system, CAC, based on a central limit order book model, under which the exchange holds a book where all orders are entered and then matched with one another. *See* HARRIS, *supra* note 3, at 109. By 2001, Professor Norman Poser claimed that European exchanges did not resemble traditional exchanges at all. *See* Norman S. Poser, *The Stock Exchanges of the United States and Europe: Automation, Globalization, and Consolidation*, 22 U. PA. J. INT'L ECON. L. 497, 501 (2001).

20. *See* Marco Pagano & Benn Steil, *The Evolution of European Equity Trading*, in *THE EUROPEAN EQUITY TRADING MARKETS* 14, 48 (Benn Steil ed., 1996).

21. Council Directive 93/22, art. 14(1), 1993 O.J. (L 141) 27 (EEC) [hereinafter ISD]. After heated negotiations, the final ISD rule included a provision that gave professional investors the right to opt out of the concentration rule, subject to express authorization by the member state that had enacted such a rule for its national markets. In addition, the rule applied only to investors habitually resident within that member state. France, Belgium, and six other E.U. member states have enacted legislation that prohibits the sale

most European exchanges organized their own clearing and settlement services, which ATSs could not possibly offer. With the abolition of the concentration rule under MiFID, a number of ATSs have been more successful in competing with traditional exchanges. Chi-X, a U.K.-licensed ATS and a subsidiary of a U.S. ATS,²² has managed to attract a thirteen percent market share in large LSE-listed stocks, as well as considerable order flow in certain key stocks from continental European exchanges.²³ Turquoise, an ATS backed by nine large investment banks, is expected to further erode traditional exchanges' market share.²⁴

B. Dark Liquidity Pools

Although dark liquidity is a newly minted term, it refers to a phenomenon arguably as old as stock exchanges themselves. While some traders publicly advertise their quotes to attract order flow, others will not reveal their intention to trade unless they spot an opportunity. These undisclosed trading interests that increase the market's available trading opportunities, and therefore its liquidity, are not transparent to anyone outside the counterparties until the trade is completed. Thus they are called "dark." Brokers and investors have been negotiating trades without displaying quotes in the market for a long time; institutional investors in particular have relied on dark liquidity in order to affect trades in large blocks of stock without upsetting market prices.²⁵ Dark liquidity, however, is by its very nature hard to spot. Traditionally, brokers and dealers specialized in collecting information on their clients' trading needs, and subsequently matched them with another

of listed securities outside their exchanges. See Charles Goldfinger, *ISD II Directive Debate About the Trading Venue Diversity: The Tree and the Forest*, 13 (Eur. Capital Mkts. Inst., Working Paper, 2003), available at <http://www.ecmi.es/readmore/goldfinger.htm>.

22. See Michael Chlistalla, Uwe Schweickert, & Roland Wittner, *Markets in Financial Instruments Directive—The Way Forward in European Securities Markets Integration?* 13 (Dec. 31, 2006), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=964492.
23. For example, on August 29, 2007, Chi-X handled 44 percent of trading in Philips, 30 percent of trading in ING Group, and 27 percent of trading in Royal Dutch Shell. In many instances, Chi-X was offering a better price than the main national exchanges. See Arturo Cifuentes, *Chi-X Takes on the Big Exchanges*, FIN. TIMES, Sept. 12, 2007, at 44.
24. According to some reports, Turquoise has gained a 5 percent market share in some UK stocks during the trial trading period before its formal launch. See Daisy Ku, *Turquoise Says Gaining Market Share in UK Stocks*, REUTERS UK, Aug. 29, 2008 available at <http://uk.reuters.com/article/businessNews/idUKLT36786320080829?feedType=RSS&feedName=businessNews>.
25. See *infra* pp. 12–13.

client with opposite intentions, or traded against their proprietary accounts, charging a liquidity premium.

Electronic trading platforms provided brokers and investors with an improved method to identify dark liquidity. While negotiations on stock exchange trading floors or telephone conversations require participants to reveal their identities, electronic trading platforms permit their users to express trading interests anonymously. Some large broker-dealers have organized electronic networks that allow their clients to trade with each other without revealing their identities.²⁶ Large investment banks run the most successful dark liquidity pools,²⁷ which are registered with the SEC under Regulation ATS. According to some estimates, there are about forty dark liquidity pools in the United States, which handle about twelve percent of the aggregate daily trading volume in U.S. equity markets.²⁸ Nasdaq has stated that about eighteen percent of its trading volume is routed through the dark pool it operates, up from ten percent in the previous year.²⁹ Dark pools' market share in trading volume is constantly rising, and Goldman Sachs' Sigma X pool has grown to the seventh largest trading venue in the United States.³⁰ Although dark pools have been particularly successful in the United States, they are now expanding into other countries. Many U.S. dark pools provide trading in stocks listed abroad.³¹ Turquoise, the European ATS, will be offering dark pool services along with its traditional order book.

To compete for institutional order flow, some stock exchanges in the United States and Europe have taken advantage of their trading technology and IT support to set up their own dark pools.³² Many ATSs also allow their clients to route orders to dark pools.³³ To increase their liquidity, some dark pools have announced plans to link up their trading platforms, allowing their clients to access more pools simultaneously.³⁴ Thus, market participants are

26. See Erik R. Sirri, Dir., Div. of Trading and Mkts., SEC, Keynote Speech at the SIFMA 2008 Dark Pools Symposium, available at <http://www.sec.gov/news/speech/2008/spch020108ers.htm>.

27. See Norma Cohen, *Lehman Raises Access to Dark Liquidity Pool*, FIN. TIMES, July 25, 2007, at 37.

28. See Anuj Gangahar, *It Is Time to Shine Some Light into These Dark Pools*, FIN. TIMES, July 5, 2008, at 17.

29. See Anuj Gangahar & Jeremy Grant, *Exchanges Moot Greater Links with Dark Pools of Liquidity*, FIN. TIMES, June 24, 2008, at 39.

30. See Nina Mehta, *Sigma X to Expand to Timed Crosses*, TRADERS MAGAZINE, July 2008, at 8.

31. See Gangahar & Grant, *supra* note 29, at 39. U.S. dark liquidity pools have also expanded into Asia. See Lindsay Whipp, *Lehman's Dark Pools Swell*, FIN. TIMES, May 27, 2008, at 22.

32. See Paul Davies, *NYSE Euronext in "Dark Liquidity" Plan*, FIN. TIMES, Oct. 25, 2007, at 27.

33. See Mehta, *supra* note 30.

34. See Anuj Gangahar, *Banks to Allow Dips into Liquidity Pools*, FIN. TIMES, May 20, 2008, at 45.

creating various linkages between “dark” and “light” pools of liquidity, outside of government-mandated connections.

Apart from building new linkages between trading venues, dark pools have also been the driving force behind the expansion of trading strategies that do not fit well within current regulatory constructs. Trading within the dark pools and through these market-generated linkages takes advantage of two new order types, in addition to traditional quoting mechanisms. “Immediate or cancel” (“IOC”) orders require immediate execution, and thus any unexecuted part of the order is cancelled if not fulfilled.³⁵ Thus, IOC orders do not operate as quotes because they do not invite a matching counter-order for their unexecuted portions. In contrast, a second type of order aims to gauge the possibility of finding a matching counter-order without posting a quote by signaling an “Indication of Interest” (“IOI”) to trade in a certain stock.³⁶ While some IOIs specify order size or prices, many others do not. IOIs raise particular concerns for regulators, because they may amount to full quotes, depending on the information they reveal. Thus, dark pools are contributing to the increasing sophistication of the modern trading environment.

C. Institutional Investors’ Increasing Stockholdings in Public Companies

The success of ATs and dark liquidity pools reflects an underlying development in stock ownership: institutional investors’ stockholdings in publicly traded companies are growing. According to The Conference Board, a research group, institutional investors controlled 76.4 percent of the stocks in the thousand largest U.S. corporations, or 66.3 percent of the total value of the U.S. equity markets.³⁷ As their stock portfolios expand, institutional investors gain further expertise in stock trading, and may enjoy economies of scale by increasing their sophistication in trading technology and planning. For some industry participants, the abilities of these institutional investors are virtually indistinguishable from those of their traditional agents, the brokers.³⁸ As a result, brokers feel increasing pressure to lower their commissions and

35. See HARRIS, *supra* note 3, at 83.

36. See Nina Mehta, *It’s Gray Out There*, TRADERS MAGAZINE, June 2008, at 38.

37. See Press Release, Conference Board, U.S. Institutional Investors Boost Ownership of U.S. Corporations to New Highs (Sept. 2, 2008), available at http://www.conference-board.org/utilities/pressDetail.cfm?press_ID=3466.

38. See Anuj Gangahar, *Trading Places: Fewer Platforms, Faster Trading*, FIN. TIMES, Nov. 19, 2007, at 6.

offer their clients more direct access to their liquidity pools, reducing their own participation. These developments highlight the growing importance of institutional investors for securities regulators, and the key role institutional investors will play in determining the future structure of global equity markets.

II. MARKET FRAGMENTATION AND AGENCY PROBLEMS IN TRADING

With trading venues proliferating and traditional stock exchanges forced to dismantle their monopolistic regulations, the same stocks are now traded in multiple trading venues. The availability of multiple trading locations for the same stock (“market fragmentation”) gives rise to two distinct, but ultimately interconnected, regulatory concerns. First, while new trading venues provide healthy competition to traditional exchanges, they simultaneously absorb order flow from the exchanges, and could thus impede the market’s ability to assess the underlying value of each stock. While this first concern refers to the functioning of the market as a whole, a second set of issues focuses on the individual agency relationship between an investor and a broker-dealer. With multiple trading options available, broker-dealers must now decide which one to pick, and whether to execute their clients’ orders against their own stockholdings. As broker-dealers could make choices that serve their own interests, rather than their clients’, trading venue proliferation aggravates the agency problems inherent in the relationship between broker-dealers and investors. The following paragraphs outline the theoretical debates regarding market fragmentation and the ensuing agency conflicts.

A. Traditional Debate on Competition and Fragmentation

Market fragmentation upsets securities regulators because it may prevent the market from assessing the underlying value of a stock accurately and efficiently.³⁹ In a single integrated market, incoming buy and sell orders interact with the best available sell or buy counter-orders. When these orders find their best match, the resulting trades represent the most accurate reflection of investors’ willingness to trade at that moment. In contrast, in a fragmented market, incoming orders interact only with the counter-orders

39. Market fragmentation was a key policy motivation behind the introduction of Regulation NMS. *See* Regulation NMS; Proposed Rule, Exchange Act Release No. 49,325, 69 Fed. Reg. 11,126, 11,127, 11,130 (Mar. 9, 2004), *reprinted in* Fed. Sec. L. Rep. (CCH) ¶ 87,146, at 89,140–41 (Feb. 26, 2004) [hereinafter *Proposing Release*].

that are available in a separate fragment of the market, even if a better match could have been found in another fragment of the market.⁴⁰ Therefore, fragmented markets yield trades that do not necessarily reflect investors' willingness to trade accurately, and the price discovery process is sub-optimal. As market fragmentation limits the number of orders that interact, it also reduces the possibility of an order finding a match, thus depleting the liquidity of the market. To increase their chances of finding a match, investors may offer more aggressive quotes, thus leading to higher volatility and additional imbalances in the interaction of orders, some of which may be pointing in opposite directions.⁴¹ Struggling with the combined effects of inefficient price discovery, lower liquidity, and potentially higher volatility is not a particularly appealing prospect for regulatory authorities.

Yet allowing, or even mandating, a single trading venue to dominate the market cannot address regulators' concerns either. A dominant trading venue may use its sway over investors to extract profits by raising fees and commissions. Indeed, one of the SEC's key measures upon the introduction of the NMS was the elimination of the NYSE's fixed commissions system.⁴² Moreover, a monopolistic stock exchange has little incentive to innovate in terms of upgrading its services and operating more speedily and efficiently.⁴³ Finally, as many companies now list their stocks in foreign exchanges, often in addition to their home listing, no single national regulator has full power over the order flow for such stocks. Thus, regulators not only lack the power to consolidate all order flow, but have significant incentives to foster competition between trading venues instead.

B. Multiple Trading Venues for Different Investors

Regardless of regulators' long-term policy goals, the success of multiple trading venues in attracting order flow suggests that investors are finding some value in their services.⁴⁴ Even in periods when a single stock exchange

40. Charles M. C. Lee, *Market Integration and Price Execution for NYSE-listed Securities*, 48 J. OF FIN. 1009, 1009 (1993).

41. See Ananth Madhavan, *Market Microstructure: A Practitioner's Guide*, 2002 FIN. ANALYSTS J. 28, 30 (2002).

42. See Norman S. Poser, *Restructuring the Stock Markets: A Critical Look at the SEC's National Market System*, *supra* note 8 at 897.

43. Macey and O'Hara particularly stress the role of competing trading venues in fostering innovation that ultimately benefits investors. See Macey & O'Hara, *supra* note 10, at 27.

44. See Laura Nyantung Beny, *U.S. Secondary Stock Markets: A Survey of Current Regulatory and Structural Issues and a Reform Proposal to Enhance Competition*, 2002 COLUM. BUS. L. REV. 399, 422 (2002).

monopolized the market, many trades were negotiated directly between interested parties away from the stock exchange floor. Often investors and brokers that had agreed on a deal between them in the “upstairs market” subsequently used the stock exchange’s trading facilities or the “downstairs market” to conclude the transaction. If some degree of fragmentation is inherent in the operation of the market because different investors have different needs, understanding these needs should be the basis of regulatory policy in market structure. Financial economists have long studied how investor characteristics such as desire to trade in large blocks, information asymmetries, or immediate need to liquidate positions, affect investors’ behavior in their market and their choice of trading venue. This section will examine key findings from this literature, to illustrate how investors’ different characteristics dictate their preferences for trading venues.

A key parameter that determines investors’ execution options is the size of their intended orders. Large orders can affect the supply of or demand for a stock in the market once they are announced, creating an upward or downward spike in the price of the stock. As large orders require time until they reach full execution, any movement in the stock price before the order’s full execution will negatively affect the execution price.⁴⁵ Moreover, if other investors learn about a large unexecuted order, they may seek to front-run it by trading before it, thus reinforcing its price impact.⁴⁶ In contrast, small orders rarely affect the stock price significantly, and may reach execution quicker if they are announced widely in the market.⁴⁷

Investors wishing to trade in large blocks will seek ways to minimize the price impact of their trades. Block traders would like to know whether other investors have a trading interest of comparable size, but from the opposite direction. Large investors, however, are reluctant to reveal their trading interests.⁴⁸ Traditionally, financial intermediaries in the upstairs market would

45. See Marshall E. Blume, *Competition and Fragmentation in the Equity Markets: The Effect of Regulation NMS 8*, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=959429.

46. Hendrik Bessembinder & Kumar Venkataraman, *Does an Electronic Stock Exchange Need an Upstairs Market?*, 73 J. FIN. ECON. 3, 5 (2004). See also HARRIS, *supra* note 3, at 324 (describing various front-running strategies).

47. See James J. Angel, *Consolidation in the Global Equity Market: An Historical Perspective* 7 (Georgetown Univ., Working Paper No. 19, 1998), available at [http://66.102.1.104/scholar?hl=en&lr=&client=safari&q=cache:bftTs\]WJc70MJ:faculty.msb.edu/angelj/International_Competition2.pdf+author:“Angel”+intitle:“Consolidation+in+the+global+equity+market”+](http://66.102.1.104/scholar?hl=en&lr=&client=safari&q=cache:bftTs]WJc70MJ:faculty.msb.edu/angelj/International_Competition2.pdf+author:“Angel”+intitle:“Consolidation+in+the+global+equity+market”+).

48. See HARRIS, *supra* note 3, at 323 (describing this situation as the latent demand problem). See also Nasser Arshadi, *NYSE, NASDAQ, and Alternative Trading Systems: An Evaluation of*

address this concern by collecting information from their various clients about their potential trading interests without revealing it to the market. Thus, upstairs brokers operate as “a repository of information” on customers’ trading interests.⁴⁹ Based on such information, upstairs brokers could then identify a match. On other occasions, brokers offered to operate as dealers, trading for their own account and charging a premium for the liquidity they offered to their clients.

More recently, some ATSs allowed block traders to express their interests in anonymous electronic networks, without the intervention of a broker or a specialist.⁵⁰ These trading venues are available only to block traders, offering a higher likelihood of finding a matching counter-order. Often, however, block traders will price their order more aggressively to increase its appeal, as the market for big orders is not as liquid. Alternatively, block traders can route their orders to the retail market, dividing them into smaller trades and obtaining execution gradually.⁵¹ Of course, gradual execution will suffer from any adverse price movements in the meantime. To sum up, block traders will route their orders to the upstairs market when liquidity costs are lower than the price impact and other execution costs of the retail market. Recent studies in the market microstructure literature suggest that, on average, the faster an order is executed, the lower the execution costs, including costs from adverse price movements.⁵²

Another method to minimize the price impact of large orders is to execute them as quickly as possible. If order execution is faster, the potential effect of adverse stock price movements on the order’s execution price will be more limited.⁵³ Moreover, when the execution of a large order is immediate, the window of time available to front-runners becomes smaller.⁵⁴ Immediate and low-cost execution was a key advantage of electronic trading systems, used first by ATSs in the United States, and only adopted by

the SEC’s Proposal Toward a National Market System, 7 FIN. MKTS. INSTITUTIONS & INSTRUMENTS 1, 3–4 (1998). In effect, by publishing a firm quote, an investor offers to other market participants a free option to trade; the larger the order size, the greater the value of the option. See Madhavan, *supra* note 41, at 31.

49. See Sanford J. Grossman, *The Informational Role of Upstairs and Downstairs Trading*, 65 J. BUS. 509, 510 (1992).

50. Macey & O’Hara, *supra* note 10, at 23. The most successful examples of ATSs with this business model are Instinet and POSIT.

51. See Arshadi, *supra* note 48, at 3.

52. See Ekkerhart Boehmer, *Dimensions of Execution Quality: Recent Evidence for US Equity Markets*, 78 J. FIN. ECON. 553, 557 (2005).

53. *Id.*

54. *Id.*

exchanges later. Overall, ATSs were particularly appealing to large institutional traders; their trading technology and absence of intermediaries guaranteed higher speed, lower fees, and lower risk of front-running, while other users of the ATS system were also likely to trade in large blocks.

Apart from order size, trades also differ depending on their informational content. Some investors possess information that assists them in better gauging the underlying value of the stock based on the issuer's performance, while other investors trade on the basis of other motivations, such as liquidating their stockholdings to use these funds for other purposes. On average, institutional investors are better placed than retail investors to accurately assess the underlying value of the stock, because of their superior resources, professional analytical skills, and better access to industry- and company-specific information. Because the market is aware of institutional investors' informational advantages, it takes notice of the trades that originate from these investors, and therefore moves towards the direction of the trade. Thus, even small trades from institutional investors can impact the market price if the identity of the investor becomes widely known.

To reap the full benefits of their superior information before market prices move against them, institutional investors would prefer trading environments that are anonymous and are subject to as little pre-trade transparency requirements as possible. Trading venues that are only open to other institutional investors offer such safeguards, but often involve liquidity trade-offs. If no counterparty for a large order is available, the trader must make a more aggressive offer, eventually reducing her profits. Alternatively, institutional investors may split their order into small trades and route it in a retail trading venue that offers anonymity, relying on the brokers to channel the trades in the market in a manner that minimizes adverse movements in the stock's price. As noted above, there are trade-offs between execution costs and execution speed, suggesting that the more gradual the execution of a large order in a retail market, the lower any adverse movements of the price will be. Institutional investors, however, can opt for gradual execution only when the information they possess is not particularly short-lived and will not become evident to the market soon.

Institutional investors do not always trade because of their superior information. They often seek to liquidate their positions for other reasons, such as rebalancing their stockholdings to more closely reflect an index or

meeting the cash demands of their clients.⁵⁵ In these cases, the urgency behind their trading interests suggests that they will be more willing to trade immediately against another block trader rather than routing their order to a downstairs market, where only a piecemeal and time-consuming execution can minimize the impact on the price. Potential counterparties, however, will be suspicious of institutional investors' motivations, fearful that they stand to incur losses if institutional investors' motives are informational, rather than liquidity-based.⁵⁶ As a result, liquidity-motivated institutional investors must convince their counterparties of their honest intentions in order to achieve a better price for their trade by revealing their identities and committing their reputation. As a result, anonymity might not always be preferable for institutional investors.⁵⁷

Informational asymmetries between investors add a further dimension to the debate about market fragmentation and competition. On the one hand, the operation of a separate market for block trades prevents large spikes in the demand or supply of stock in the retail market, which would lead to higher volatility and uncertainty.⁵⁸ On the other hand, institutional traders with superior information may elect to use either block trading or gradual execution strategies, depending on factors such as the order's size, the likelihood that the information they possess will soon become public, and the liquidity available in each venue at the time. Finally, investors trading in large blocks do not make their execution decisions simply on the basis of the stock price available for a small order in the retail market, but must balance many

55. The distinction between information- and liquidity-motivated traders is generally attributed to Jack Treynor, in an influential paper published under the pseudonym of Bagehot in 1971. See Madhavan, *supra* note 41, at 30.

56. See Arshadi, *supra* note 48, at 3-4.

57. See generally Boehmer, *supra* note 52 (arguing that informational asymmetries between investors can explain differences in execution costs between the NYSE and Nasdaq). Studying a large sample of trades in the two venues between 2001 and 2003, Boehmer finds that large trades execute more cheaply on Nasdaq, but faster on the NYSE. He attributes this puzzling finding to the different strategies of block traders depending on whether they are motivated by liquidity or superior information. Better informed traders prefer splitting their order in small trades and sending it to the NYSE, where they are gradually executed at superior prices against less-well informed retail traders. Instead, liquidity-motivated block traders prefer market-makers on the Nasdaq, where they can obtain immediate execution for the full size of their order by revealing their liquidity motives and their identity.

58. See generally Bessembinder & Venkataraman, *supra* note 46 (finding that total execution costs for trades routed in the upstairs market are lower than for similar trades completed in the downstairs market, and attributing this result to the higher, but unexpressed, liquidity of the market for institutional investors).

other overriding considerations so as to achieve the best possible price for their orders.⁵⁹

The brief discussion above regarding investors' order execution decisions highlights a key point with clear regulatory implications. Although financial economists continue to debate key questions in market structure, they agree that different investors have different needs, and that the various trading venues that emerged from the technological revolution of trading in the 1990s cater to these divergent needs. Regulators should allow these venues to evolve, because they can reduce investors' liquidity costs and increase markets' informational efficiency.

Orders rich in informational content, either large or small, are very important from a public policy perspective, because they assist the market in accurately estimating the underlying value of each company. Thus, from a public policy perspective, market structure should encourage investors to reduce their liquidity costs, granting them as much flexibility as possible in choosing the type of order that fits their needs. If investors face increased liquidity costs when choosing some orders over others, then the informational content of their orders is hard to disentangle. If some trading venues attract more costly orders than other trading venues, their informational efficiency is at risk.

C. Agency Conflicts Fueled by Multiple Trading Venues

The discussion above illustrates that trading venue choices may have a significant impact on the execution price. Directly, a trading venue may offer a better price in comparison to prices available elsewhere. Indirectly, a trading venue may offer services that can assist investors in achieving better prices than they could achieve otherwise, such as through access to other block traders, anonymity, or higher execution speed. Since investors themselves do not have direct access to all marketplaces, they employ brokers that, as members of these trading venues, can carry out the execution of trades as the investors' agents. As market professionals, brokers have better information than investors about the qualities of each marketplace and the liquidity available at the time of execution, and are thus well equipped to place their clients' orders in a manner that achieves the best price possible.

In choosing an execution strategy, however, brokers' own interests may diverge from the interests of their clients. Some trading venues offer brokers

59. See Maureen O'Hara, *Searching for a New Center: U.S. Securities Markets in Transition*, FED. RES. BANK ATLANTA ECON. REV. 37, 39 (2004).

various incentives to prefer them over other trading venues, including monetary rewards such as the payment of rebates for receiving higher order flow,⁶⁰ or non-monetary benefits, such as third-party research. In response to such incentives, brokers may direct their principals' order flow to their preferred trading venue, without exploring better execution options elsewhere.⁶¹ Moreover, many broker-dealers are executing their clients' orders internally, buying or selling stock against the positions they build for their proprietary accounts. With the broker-dealer acting on both ends of the transaction, the execution price may not be the best price possible for investors. Thus, the brokers' own profit-making incentives may eventually trump investors' interests.

Brokers owe fiduciary obligations to their customers, including the duty to provide them with the "best execution" for their orders, as most jurisdictions recognize.⁶² Investors' ability to monitor their agents' performance, however, is hampered by the number of available trading locations and the technical nature of order routing and execution decisions. As many quotes for the same stock are available from many different markets, establishing the best possible price is becoming a harder task. Even if investors collect accurate information about currently prevailing market prices, they may still incur losses because their orders could be executed against a quote that improves the best bid or offer, but were not. Moreover, since many trading venues and dealers do not provide information about their quotes, especially for large order sizes, investors cannot really know whether a better price was available. Monitoring execution quality is particularly problematic for retail investors, who are less familiar with the market's machinations.

D. The Dual Challenge for Regulators

Market fragmentation raises structural concerns for the smooth operation of markets, while best execution touches upon the failure of an agent to perform her contractual duties. These two policy challenges, despite their different nature, share a key attribute: both aim at providing investors with the best possible terms for trade. For market design, the main mechanism for

60. The SEC has sought to address concerns about conflicts of interest in some cases. For example, it requires broker-dealers to provide information to customers regarding any arrangements for payment for order flow. 17 C.F.R. § 240.11Ac1-3, 10b-10 (1995).

61. See Ferrell, *supra* note 15, at 1033.

62. See *infra* pp. 25–26.

integrating a fragmented market is assisting each investor in obtaining best execution. For fiduciary duties law, the standard for evaluating each broker's performance is best execution. A market where orders are executed at the best possible price will produce the most accurate information regarding the underlying stocks' value.

Regulators can increase the informational efficiency of the markets they supervise by either mandating changes at the structural level, altering the manner in which orders interact, or reforming the best execution framework so as to improve investors' ability to monitor their brokers and dealers. Structural changes require costly and heavy-handed interventions in the way markets operate. Best execution reforms, however, empower investors to set their own execution strategies and perform their monitoring role more effectively, relying on their private incentives to supervise brokers.

III. REFORMS IN THE U.S. AND EUROPE

A. Regulation NMS

The SEC trumpeted its proposal for Regulation NMS as the most important reform in the U.S. market structure regulatory framework since the establishment of the NMS in 1975.⁶³ Motivated by developments such as the growth of the Nasdaq market, the rising market share of ATSs, and innovative trading technologies,⁶⁴ the reforms are intended to counter order flow fragmentation, promote equal regulation of market centers and greater order interaction, and increase displayed depth of trading interest.⁶⁵ The trade-through rule has been the most controversial aspect of the reforms introduced by Regulation NMS.⁶⁶ A hearing and two rounds of comments by

63. See Proposing Release, *supra* note 39, at 11,127.

64. See *id.* at 11,128.

65. See *id.* at 11,127. In addition, the SEC intends to assist in updating antiquated rules and mechanisms, thus responding to criticisms about the technology used in the ITS.

66. Regulation NMS has four main prongs: the trade-through proposal, which focuses on protection of price priority among markets; the market access proposal, which aims to ensure equal access to market centers for all market participants; the sub-penny quoting proposal, which prohibits quoting in sub-penny increments; and the market data proposal, which proposes a new plan for the allocation of data fees among market centers that provide information on trading in the NMS. In addition, the Proposed Regulation NMS introduces some changes to the overall NMS regulatory framework that aim to enhance clarity and definitional uniformity in the rules.

market participants⁶⁷ on this rule prompted the SEC to re-propose the regulation.⁶⁸ The discussion below outlines the scope and rationale of the trade-through rule, focusing mostly on its final version.

B. Markets in Financial Instruments Directive (MiFID)

Following a decade of relentless changes in the stock exchange industry in Europe, the European Commission undertook the initiative, in the context of its Financial Services Action Plan, to replace the Investment Services Directive (“ISD”).⁶⁹ In its proposal, the European Commission cited as motivations for a new Directive: increasing competition among exchanges, confusion relating to allocation of regulatory powers among national authorities (such as in the case of cross-border mergers between exchanges), and an out-dated investor protection regime.⁷⁰ In addition, the European Union lacked a harmonized regime for new types of trading venues such as alternative trading systems. As these concerns imply, market structure considerations have a central role in shaping the regulatory policy of the new Directive, in comparison to their limited weight in the context of the ISD. This change of focus marks a new era for European securities regulation, which no longer seeks simply to facilitate market access for firms and investors across the European Union, but also seeks to boost cross border activity by creating a framework in which firms and investors can have greater confidence.⁷¹ This new philosophy was also associated with a reform in the regulation-producing technique through the adoption of the so-called “Lamfalussy process,” under which the role of Directives is to provide

67. The SEC requested additional comments by market participants following the hearing it held. See Regulation NMS; Proposed Rule, Exchange Act Release No. 49,749, 69 Fed. Reg. 30,142 (May 26, 2004), *reprinted in* Fed. Sec. L. Rep. (CCH) ¶ 87,214, at 80,377 (May 20, 2004).

68. Regulation NMS; Proposed Rule, Exchange Act Release No. 50,870, 69 Fed. Reg. 77,424 (Dec. 27, 2004) *reprinted in* Fed. Sec. L. Rep. (CCH) ¶ 87,320, at 81,571-22 (Dec. 16, 2004) [hereinafter Re-Proposing Release].

69. The European Union Investment Services Directive (“ISD”), adopted in 1993, allows an investment firm incorporated in a Member State to engage in investment services throughout the European Economic Area without separate authorization by the Member State in which the firm offers such services.

70. See *Commission Proposal for a Directive of the European Parliament and of the Council on Investment Services and Regulated Markets*, at 23, COM (2002) 625 final [hereinafter *Commission Proposal*].

71. See Niamh Moloney, *New Frontiers in EC Capital Markets Law: From Market Construction to Market Regulation*, 40 COMMON MKT. L. REV. 809, 824 (2003).

directions of general policy, which will then be implemented in secondary legislation by other E.U. bodies.⁷²

IV. MARKET STRUCTURE REGULATION IN THE UNITED STATES AND EUROPE

Until the mid-1990s, market structure regulation revolved around two types of legal entities: first, stock exchanges, and other organized and officially supervised marketplaces operated by national securities organizations, and second, financial intermediaries that participated in these marketplaces and were registered with regulators as broker-dealers in the United States, or investment firms in the European Union. Yet, as the amount of trades executed away from exchanges was increasing, regulators around the world focused on the two main beneficiaries of this trend: the alternative trading systems that took advantage of ever-cheaper and more sophisticated trading technologies, and the investment houses that systematically fulfilled clients' orders against stock positions they held internally. United States and European regulators enacted new rules regarding the licensing, establishment, and sound operation of these marketplaces. This paper focuses on regulation that incorporates these marketplaces into each jurisdiction's market architecture. After clarifying the terminology adopted in the two regulatory frameworks, the following paragraphs examine the obligations to make certain information regarding past trades and current quotes publicly available.

A. Terminology

Although terms in Europe and the United States differ substantially, the characteristics of regulated entities are very similar in practice. The Investment Services Directive, which preceded MiFID, had already established European-wide requirements for the cross-border operation of exchanges (in ISD terms, "regulated markets") and broker-dealers ("investment firms") in the European Union. In addition to these traditional market participants, MiFID introduced regulation for the two new players

72. This body is the Committee of European Securities Regulators (CESR). As a result of the requirements of the Lamfalussy process, the provisions of the Directive will sound less detailed than those of Regulation NMS in the United States, as the SEC formulates and implements regulatory policy on a single level. The comparability of the two regulatory instruments, however, is not affected, as they both incorporate the principles of regulatory policy in the market structure area.

that had since emerged: the alternative trading systems, and the brokers who regularly fulfilled clients' orders from their internal positions. The regulatory solutions in MiFID are very similar to the SEC's approach. In particular, MiFID allows the operators of alternative trading systems to be registered with national authorities as either exchanges or investment firms, following the example of the SEC's Regulation ATS.⁷³ Moreover, both the U.S. and the European regime establish similar parameters for identifying brokers who internalize clients' order flow and are therefore subject to distinct market transparency obligations. In the United States, Regulation NMS applies to brokers trading off-the-exchange and on their own account on a regular and continuous basis.⁷⁴ Regulation NMS refers to these brokers as "OTC market-makers." In the European Union, MiFID obligations extend to brokers whose proprietary trading activities are an important profit-making source for the firm, and are open to clients on a regular and non-discretionary basis.⁷⁵ The names of these brokers, defined by MiFID as "systematic internalizers," are available to the public through a list maintained by each member state's national authorities.⁷⁶

B. Transparency Requirements

When considering whether to make a trade, market participants presumably look into two pieces of information: first, the price of the last trade on the stock, and second, the current bid and ask quotes, as well as order sizes. The U.S. and the E.U. regimes establish specific disclosure obligations on exchanges, alternative trading systems, and over-the-counter investment houses, covering past trades as well as quotes still pending in the marketplace.

73. To describe an ATS, MiFID uses the term "multilateral trading facility," or MTF, defined as "a multilateral system, operated by an investment firm or a market operator, which brings together multiple third-party buying and selling interests in financial instruments—in the system and in accordance with non-discretionary rules—in a way that results in a contract." MiFID, *supra* note 6, art. 4(1)(15). This article follows a single terminology for all entities of the same type in both the U.S. and the European framework, and will thus use the term alternative trading systems to describe these entities in the European context too.

74. 17 C.F.R. § 242.600(b)(52) (2008).

75. MiFID, *supra* note 6, art. 4(1)(7); Commission Regulation 2006/1287, art. 21(1), 2006 O.J. (L 241) 1 (EC) [hereinafter Implementing Regulation].

76. Implementing Regulation, *supra* note 75, art. 21(4).

1. Pre-Trade Transparency Obligations for Stock Exchanges and Alternative Trading Systems

The U.S. rules establish a two-step process for collecting information on quotes currently available in the market. In particular, brokers must communicate to the exchanges or national securities associations their best quotes (bids, offers, and quotation size).⁷⁷ Under this regime, marketplaces qualifying as alternative trading systems and registered with the SEC as broker-dealers under Regulation ATS,⁷⁸ will also be communicating their quotes to an exchange or an association. Exchanges must collect this information from their members, and make the best bid, the best offer, and the aggregate quotation size publicly available.⁷⁹ Quotes communicated to the market are firm; brokers are obligated to execute the trade against any matching counter-offer.⁸⁰

In the European Union, each marketplace has a separate obligation to make its quotes available to the market, varying according to its type and trading system. Exchanges and ATSs that operate a central order book trading system, aggregating and matching orders continuously based on price, must reveal to the market the five best bids, offers, and aggregate order sizes for these prices.⁸¹ However, if an exchange or an ATS operates a quote-driven system, based on the ongoing availability of brokers willing to trade for their own account at a quoted price, it is only required to report the single best bid, offer, and aggregate quotation size.⁸² There are special rules for exchanges or ATSs that operate other types of trading systems, or that combine characteristics of both central order book trading systems and quote-driven systems.⁸³ As a result, the pre-trade disclosure requirements for exchanges and ATSs in Europe are somewhat broader in comparison to those in the United States, as in some cases they mandate that several levels of pricing be made public.

77. 17 C.F.R. § 242.602(b)(1) (2008).

78. 17 C.F.R. § 242.300(a) (2005).

79. § 242.602(a)(i)–(ii). Each exchange should cover all stocks traded in its systems, apart from stocks whose trading volume on the exchange has fallen under one percent in the past quarter, unless the exchange has specifically elected to collect information on these stocks too. Associations should only include those stocks for which one of their members acts as an OTC market maker.

80. § 242.602(b)(2).

81. MiFID, *supra* note 6, art. 44(1); Implementing Regulation, *supra* note 75, art. 17(2).

82. MiFID, *supra* note 6, art. 44(1); Implementing Regulation, *supra* note 75, art. 17(3).

83. Implementing Regulation, *supra* note 75, art. 17(4)–(5).

2. Pre-Trade Transparency Obligations for OTC market-makers

Again, the U.S. framework mandates that OTC market-makers report their quotes to an exchange or national securities association, while European rules require brokers who make a market in a stock (in MiFID terms, acting as “systematic internalizers”) to make their quotes directly available to the public through an information vendor.

In the United States, Regulation NMS extends the obligation to publish a quote to market-makers who trade in their own account for order sizes of less than 10,000 shares or \$200,000 in value.⁸⁴ This obligation covers all shares for which an OTC market-maker’s trading volume during the previous quarter amounted to one percent or more, although brokers may decide to make their quotes public even if their trading volume is lower than the one percent threshold.⁸⁵ OTC market-makers must report their quotes to a national securities association, which then makes each OTC market-maker’s quotes publicly available.⁸⁶ Once announced, these quotes are firm.⁸⁷

European requirements for OTC market-makers (“systematic internalizers”) impose an obligation to publish a firm quote on all brokers who decide to act as market-makers in a stock, independent of each broker’s success in attracting trading volume in that stock. The European requirements, however, are more flexible than the U.S. rules with regard to the size of block trades and the stocks for which a firm quote is necessary. Specifically, European market-makers must publish a quote on all liquid stocks⁸⁸ for which they make a market up to standard market size for that stock.⁸⁹ Member-state regulators determine each stock’s standard market size at least once a year, based on the average value of orders in that stock in the previous year.⁹⁰ Therefore, the block trade size for European market-makers varies for each stock, as opposed to the fixed U.S. threshold of 10,000 shares

84. § 242.600(b)(52).

85. § 242.600(b)(73)(ii)(A); § 242.602(b)(1).

86. § 242.602(a)(1)(ii).

87. § 242.602(b)(2).

88. MiFID, *supra* note 6, art. 27(1). Limiting market-makers’ pre-trade transparency obligations to liquid stocks was necessary, since they could not be issuing firm quotes on some stocks that, although listed in local European exchanges, are otherwise thinly traded. According to art. 22(1) of the Implementing Regulation, a stock is considered liquid if it has a free float of €500 million, an average daily turnover of over €2 million, and at least 500 trades per day. Implementing Regulation, *supra* note 75, art. 22(1).

89. MiFID, *supra* note 6, art. 27(1).

90. *Id.* art. 27(2). The Implementing Regulation provides a table for the calculation of standard market size. *See* Implementing Regulation, *supra* note 75, art. 23.

or \$200,000. Moreover, European brokers must provide a firm quote on all stocks for which they are making a market on a systematic basis, regardless of each broker's share of trading volume for each stock. As a result, European rules probably require more market-makers to release quotes on the market for retail-size orders, but are also more favorable to investors willing to trade in blocks, because of their varying block-trade threshold.

Finally, both the U.S. and the European regulatory frameworks contain rules that require OTC market-makers to make their clients' limit orders public if they improve the publicly available price information on the stock. In particular, Regulation NMS mandates the display of all clients' orders that improve or match the best bid and the best offer available at that moment.⁹¹ Clients may, however, avoid publication of their order in some cases, such as when the order qualifies as a block trade, or the clients specifically request that the broker not display their order.⁹² Similarly, MiFID requires investment firms to make public all orders that are not immediately executable and therefore reveal new information to the market.⁹³ Again, clients may prevent the display of their orders, if they wish to keep them confidential.

3. Obligation to Publish Last-Sale Data

Information on transactions already effected is crucial to investors' trading decisions, and is probably costless to release for the parties that participated in the trade, as opposed to the release of firm quotes. Thus, it is hardly surprising that both the U.S. and the European rules impose sweeping disclosure obligations on all types of financial intermediaries. In short, both jurisdictions require exchanges, alternative trading systems, and brokers internalizing order flow, to promptly report data on the price and volume of all their completed trades.

U.S. rules establish a two-step process for the collection and dissemination of last-sale data, similar to the quote data collection process. Exchanges must put in place a transaction reporting plan, collecting and distributing information on the price and volume of all trades on any listed stocks executed through their facilities, including block trades for which no prior obligation to publish a quote arose.⁹⁴ National securities associations must establish a similar plan, covering all off-the-exchange trades on listed

91. 17 C.F.R. § 242.604(a) (2005).

92. § 242.604(b).

93. MiFID, *supra* note 6, art. 22(2).

94. 17 C.F.R. § 242.601(a)(1) (2005).

equity by their members.⁹⁵ Exchanges and associations receive this information through the brokers, who must report all relevant data promptly, in accordance with the requirements of the plan.⁹⁶ Besides these general requirements, Regulation NMS leaves important reporting details, such as the amount of time allowed for each broker to report a trade, to be determined by each plan. As the SEC must approve all plans,⁹⁷ the regulators may press for changes in the reporting strategy of exchanges and associations.

In contrast to the U.S. approach, which defers decisions on significant issues to the negotiations with the SEC for approving reporting plans, MiFID and its implementing regulations prescribe more detailed rules for the publication of last sale data. Stock exchanges, ATSS and OTC market-makers are generally required to make public the price, volume, and time of transactions executed through their facilities as close to real-time as possible.⁹⁸ Publication of the data should generally follow within three minutes of each trade concluded within normal trading hours, regardless of whether the trade occurred within or outside an exchange's system.⁹⁹ Investment firms trading on their own account, however, may request that national regulators allow for deferred publication of transaction information in the case of very large orders.¹⁰⁰ In particular, the larger the size of the order, the greater time flexibility an investment firm enjoys.¹⁰¹ This exemption underlines the fact that the trading systems of European exchanges provide different terms for the execution of large orders.

4. Weighing Similarities and Differences in the U.S. and the E.U. Transparency Regimes

The comparison between the U.S. and European market transparency rules reveals substantial similarities, but also highlights some key differences. Both the U.S. and the European rules provide for the release of key information to the market, particularly at the pre-trade stage. Overall, the European rules appear more readily adjustable to different trading systems and order particularities that are important for institutional investors. Moreover, by allowing ATSS and market-makers to enter into direct deals

95. *Id.*

96. § 242.601(b)(2).

97. §§ 242.601(a)(2)–(3).

98. MiFID, *supra* note 6, art.28(1), 30(1), 45(1).

99. Implementing Regulation, *supra* note 75, art. 29(2), (5)(a). Trades that occurred outside normal trading hours are subject to less strict reporting timelines. *See id.* art. 29(4), (5)(b).

100. MiFID, *supra* note 6, art. 45(1).

101. Implementing Regulation, *supra* note 75, art. 28.

with information providers, European laws minimize the risk that stock exchanges will manipulate the reporting systems to their own benefit, which is inherent in the U.S. two-step publication process.

Flexibility is apparent in certain key aspects of the European regime. First, exchanges and ATSs are subject to different types of transparency requirements depending on their trading systems. Trading systems vary widely with respect to the effect of transparency in their order flow and the risk that investors undertake when their orders become public. In dealership systems, which rely on market-makers' willingness to both buy and sell in a certain stock and benefit from the bid/ask spread, greater transparency may create disincentives for the participating market-makers. As each market-maker releases data on the quotes and trades it has affected, it reveals not only the fundamental value of the stock, but also the number of stocks the announcing market-maker still holds in its inventory.¹⁰² Moreover, publication of a quote for a large order may allow investors trading in smaller increments to front-run the large order, move the market in the order's direction, and ultimately push a large buy order to a higher price or, correspondingly, a large sell order to a lower price.¹⁰³ On the other hand, central limit order book systems rely on the availability of incoming orders from investors, not market makers. As investors may not always be willing to trade, the more incoming orders such a system displays, the higher the liquidity it offers. Predictably, central limit order book systems favor wide disclosure obligations. European rules tailor transparency obligations to each trading system by mandating that central limit order book systems reveal five levels of bid and ask prices, while limiting this obligation for dealership systems and market-makers to just one level of quotes.

European rules are more flexible than U.S. rules in another important area for institutional investors: the size of the block trade exception. While Regulation NMS provides for a single threshold for all trades—10,000 stocks or \$200,000 in value—MiFID and its implementing laws determine the size of the block trade depending on the stock's average daily trading value. The U.S. rule disadvantages investors who wish to trade blocks in smaller companies, where \$200,000 represents a higher percentage of each company's share capital. In contrast, the shareholders of a large firm, for which the U.S. rules offers a lower block threshold in comparison to European rules, receive

102. See Robert Bloomfield & Maureen O'Hara, *Market Transparency: Who Wins and Who Loses?*, 12 REV. FIN. STUD. 5 (1999).

103. Kumar Venkataraman, *Automated Versus Floor Trading: An Analysis of Execution Costs on the Paris and New York Exchanges*, 45 J. FIN., 1445, 1449 (2001).

no particular benefit from this advantage, since a \$200,000 trade is less likely to affect the stock's price. Overall, an adjustable block-trade threshold is more attuned to the needs of the marketplace.

The direct involvement of ATSs and OTC market-makers in data dissemination, according to MiFID, limits any conflicts of interest that might arise when an ATS or a market-maker channels its information through its competitors, the stock exchanges, as Regulation NMS requires. As the history of the National Market System in the U.S. indicates, exchanges charged with creating a national market infrastructure have generally established sub-optimal technical systems that failed to threaten their lead over their competitors. The SEC first envisaged a system for making information on trades and quotes available following the 1975 Amendments to the 1934 Act. Resisting the SEC's initial suggestion for a system administered by a neutral body, NYSE and Amex proposed a plan that would be administered by a joint subsidiary of the two exchanges, SIAC, which would allow them to retain their profits from disseminating this information.¹⁰⁴ NYSE and Amex, however, had little incentive to establish a viable, easy to use infrastructure for their competitors, let alone modernize the infrastructure to adapt it to technological developments.¹⁰⁵ NMS infrastructure rules often disadvantaged regional exchanges and thus provoked a considerable amount of criticism.¹⁰⁶ In light of these past misgivings, Regulation NMS's two-step process for data dissemination may prove disadvantageous to some marketplaces. Instead, MiFID allows each marketplace to establish an independent relationship with information providers, preventing conflicts of interest between competing marketplaces from affecting the availability of information.

C. Best Execution

In both the United States and Europe, broker-dealers have an obligation towards their clients to seek the best possible execution for their orders. This obligation could form the key mechanism for the smooth operation of a system of interconnected markets, requiring brokers to actively consider how

104. Joel Seligman, *The Future of the National Market System*, 10 J. CORP. L. 79, 87 (1984). The Securities Industry Automation Corporation (SIAC) operated the Consolidated Tape and the Consolidated Quotation System. SIAC was a subsidiary of the NYSE, which owned two-thirds of its share capital, and Amex. Therefore, through SIAC, NYSE had a firm grip on the technological systems that brought the NMS to life.

105. See Morris Mendelson & Junius W. Peake, *Intermediaries' or Investors': Whose Market Is It Anyway?*, 19 J. CORP. L. 443, 447 (1994).

106. See Seligman, *supra* note 104, at 88.

each market would perform when executing each client's orders. Clients receiving adequate information about pre-trade quotes and post-trade prices would adequately monitor their broker's performance and hold brokers accountable for any violations of their best-execution duties. Best execution, however, is notoriously hard to define, as its parameters vary according to the characteristics of each trade (such as order size). Moreover, understanding details about order execution in multiple trading venues presents technical challenges for all but the most sophisticated market participants.

Despite these hardships, MiFID relies on the combined mechanisms of wide transparency about quotes and trades and best execution to sort out how orders should be allocated among exchanges, alternative trading systems, and dealers. MiFID allows each broker to choose which trading venues to access and allows each client to choose her broker according to the execution options it offers. Yet, while U.S. and European transparency rules are equivalent in scope, MiFID's best execution rules make significant steps toward establishing a solid best execution framework, in comparison to the United States. In particular, the Directive requires brokers to discuss their execution strategies with their clients and receive client approval prior to trading, and to formulate a threshold for assessing whether brokers have fulfilled their best execution obligations. Although best execution still depends heavily on the facts of each case, the parties' contractual agreement on execution strategies will probably assist courts faced with claims for best execution violations.

1. Best Execution in the United States

No federal securities laws or SEC rulemakings have yet to specify that broker-dealers owe their customers a duty of best execution. Consequently, judicial opinions and SEC enforcement actions dealing with best execution violations have relied on general principles of agency law or theories regarding trust relationships between broker-dealers and their customers. However, as common law in the United States falls under the jurisdiction of the states, various state courts follow somewhat different approaches. Given the vagueness of best execution standards and the inconsistencies in current case law, it is hardly surprising that many commentators express skepticism as to the role best execution should play in the structure of financial markets.¹⁰⁷

107. See Jonathan R. Macey & Maureen O'Hara, *The Law and Economics of Best Execution*, 6 J. FIN. INTERMEDIATION 188, 189 (1997).

A broker operates as an agent for a customer when she undertakes to execute an order by accessing a trading venue. Agents owe their principals duties of loyalty and care,¹⁰⁸ which require agents to act in their principals' best interests. The Third Circuit recognized the agency law origins of the duty of best execution in its *en banc* decision in *Newton v. Merrill Lynch*.¹⁰⁹ According to the court, the duty of best execution only requires brokers "to use reasonable efforts to maximize the economic benefit to the client in each transaction."¹¹⁰ Thus, a broker need not prove that she has actually obtained the best possible execution for her clients' orders, but need only establish that she has used every reasonable effort to do so. The court in *Newton*, however, found that the brokers had violated their duty of best execution when they directed their clients' trades to the main Nasdaq stock market, while they used ATSs for their own trades because of the better prices available there. Given that the brokers had access to better prices, as evidenced by their use of the ATSs, they failed to use every reasonable effort to obtain the highest gains for their clients. Although the brokers claimed that by directing client orders to Nasdaq they were merely following industry-wide practice about order execution, the court underlined that industry-wide practices could be fraudulent, too. Thus, although *Newton* clarifies the substantive content of the duty of best execution, it also offers an indication of the uncertainties that surround fulfillment of the duty for the brokers it burdens.

When a broker executes a customer's order not through a trading venue, but through her own stock inventory, the broker also acts as a principal, and an agency relationship between broker and customer is not as straightforward.¹¹¹ Some commentators have viewed the development of an alternative source of best execution duties as an attempt by the SEC to ensure that dealers also have the same best execution duties against their customers.¹¹² Since its 1939 decision in *In re Duker & Duker*,¹¹³ the SEC has established that a broker, by merely starting business and accepting clients' orders, makes an implied representation that she will deal fairly with clients. In other words, this theory, named the "shingle" theory of broker liability

108. Frederick Mark Gedicks, *Suitability Claims and Purchases of Unrecommended Securities: An Agency Theory of Broker-Dealer Liability*, 37 ARIZ. ST. L.J. 535, 551 (2005).

109. *Newton v. Merrill Lynch, Pierce, Fenner & Smith, Inc.*, 135 F.3d 266, 270 (3d Cir. 1998).

110. *Id.*

111. The SEC has taken the view that an agency relationship emerges even when the broker acts as a dealer. *See In re Allender Co.*, 9 S.E.C. 1043 (1941).

112. *See* Francis J. Facciolo, *When Deference Becomes Abdication: Immunizing Widespread Broker-Dealer Practices from Judicial Review Through the Possibility of SEC Oversight*, 73 MISS. L.J. 1, 74 (2003); *see also* Gedicks, *supra* note 108, at 552.

113. 6 S.E.C. 386 (1939).

because it seems to arise by hanging out a shingle,¹¹⁴ applies irrespective of the broker's function as an agent or a principal. Courts endorsed the shingle theory in *Charles Hughes & Co. v. SEC*.¹¹⁵ In other cases, the SEC has emphasized the special relationship of trust that develops between a broker and a client under certain circumstances, such as when the broker provides trading recommendations to the client.¹¹⁶ While these cases have suggested a narrower basis of liability, arising only when the facts point to a relationship of trust, most commentators consider that this theory has effectively merged with the "shingle" theory.¹¹⁷

These diverse approaches to broker-dealer duties, although promoted by various SEC enforcement actions, rely on common law principles of agency law and other fiduciary relationships that remain under the jurisdiction of the states.¹¹⁸ Against this mosaic of broker-dealer theories of liability, state courts have often followed divergent approaches and introduced multiple variations and constraints.¹¹⁹ Some states place emphasis on the fiduciary law aspects, recognizing best execution duties only when the facts of the case justify special trust between the broker and the customer. Other states depart even further from the shingle theory of liability, accepting that fiduciary duties arise only when customers give brokers wide discretion with their accounts, such as the flexibility to pick stocks. Thus, state case law on brokers' duties does not assist in reducing the uncertainties over their application.

2. Best Execution in the European Union

Setting uniform best execution requirements across Europe was a major legislative initiative for the Directive.¹²⁰ The new European rules direct

114. Louis Loss first articulated the theory in a seminal article. See Louis Loss, *The SEC and the Broker-Dealer*, 1 VAND. L. REV. 516, 518 (1948).

115. 139 F.2d 434, 436–37 (2d Cir. 1943).

116. See *In re Arleen W. Hughes*, 27 S.E.C. 629 (1948).

117. Gedicks, *supra* note 108, at 561–62; Randall W. Quinn, *Déjà vu All Over Again: The SEC's Return to Agency Theory in Regulating Broker-Dealers*, 1990 COLUM. BUS. L. REV. 61, 78–79; see also Roberta S. Karmel, *Is the Shingle Theory Dead?*, 52 WASH. & LEE L. REV. 1271, 1285 (1995).

118. See *Erie v. Tompkins*, 304 U.S. 64 (1938).

119. See Norman S. Poser, *Liability of Broker-Dealers for Unsuitable Recommendations to Institutional Investors*, 2001 BYU L. REV. 1493, 1555 (2001).

120. Under the ISD, investor protection regulation on an E.U.-wide basis was limited to statements of general principle that individual member states could then formulate into specific measures. See ISD, *supra* note 21, art. 11(1). Apart from a best execution obligation, the Directive's investor protection framework includes conduct of business rules, client order handling rules and rules on conflicts of interest. In setting detailed

brokers to inquire about how each client's orders can be executed in the most appropriate way, avoiding an inflexible best execution standard of general applicability. In particular, the Directive requires brokers to identify the characteristics of the trade that are important for each investor, and the trading venues that would best suit those characteristics. Moreover, brokers must explain their execution policy to clients, and receive their approval before carrying out an order. Finally, the Directive's implementing regulations require brokers to place higher emphasis on price, rather than speed or other execution aspects, when dealing with retail clients. The paragraphs below look at MiFID's best execution regime in more detail.

The Directive requires investment firms to "take all reasonable steps to obtain . . . the best possible result for their clients taking into account price, costs, speed, likelihood of execution and settlement, size, nature or any other consideration relevant to the execution of the order."¹²¹ The intention of the E.U. Commission was to avoid an "absolute best execution obligation"¹²² by mandating that investment firms and national regulators take into account a number of characteristics of the trade besides execution price, such as the needs of the client and the services each trading venue offers.¹²³ Brokers can take into account factors such as implicit costs, which would include the ability of large orders to steer the stock price upwards or downwards when released into the marketplace. These costs often drive professional investors trading in large blocks to request immediacy of execution from their broker and show preference for venues offering faster trading. Thus, price is not the single trade characteristic that investment firms must consider when routing investors' orders for execution.

The Directive does not envisage full order interaction, in contrast to Regulation NMS. It neither mandates that trading venues be interconnected, nor does it require orders to be routed to another trading venue if a better price happens to be available there. More importantly, brokers need not have access to all the trading venues that receive orders for a stock, so as to accept clients' orders for that stock. For an investment firm to comply with its best execution obligations towards its clients, it is sufficient to have access to trading venues whose features best serve the characteristics of the firm's

requirements concerning the broker-client relationship at the European level, the Directive took a step away from market access facilitation provisions toward substantive legislative initiatives.

121. MiFID, *supra* note 6, art. 21(1).

122. See *Commission Proposal*, *supra* note 70, at 20.

123. *Id.* at 26.

trades, so that these features consistently lead to the best result for clients.¹²⁴ Therefore, brokers targeting specific types of investors (for example, retail investors only) could provide access to those trading venues that are most appropriate for their client base.¹²⁵

Because an understanding between investors and their brokers is essential for the operation of the Directive's scheme, the Directive introduces a formal requirement for brokers to provide appropriate information to clients about their order execution policy and to obtain prior approval from clients.¹²⁶ Given that best execution depends on various factors, brokers must be able to demonstrate to their clients at the post-trade stage that their orders have been executed in accordance with the firm's best execution policy. According to secondary rules implementing MiFID,¹²⁷ brokers must provide information to clients about the execution venues to which the firm has direct access, the factors and criteria the firm uses to select execution venues, as well as any "inducements" to the firm in connection with the carrying out of clients' orders, such as payment for order flow.¹²⁸ Thus, investors will have substantial control of the selection of trading venues for execution of their orders.

For retail investors trading in small increments, however, best execution will typically consist of obtaining the best possible price for their order. Recognizing retail investors' priorities, European rules apply a best price standard for determining best execution for these orders. Brokers must choose the trading venue which offers the best execution price for a retail order, taking into account all execution fees, clearing and settlement costs, and their own commission for each venue.¹²⁹ In terms of the emphasis on price, the retail investor's standard for best execution under MiFID looks similar to Regulation NMS's trade-through rule. The two rules, however, are substantially different. Regulation NMS's trade-through rule applies to all orders of a certain size, regardless of whether the client is a retail or

124. Committee of European Securities Regulators, CESR's Advice on Possible Implementing Measures of the Directive 2004/39/EC on Markets in Financial Instruments 74 (June 2004), available at <http://www.cesr-eu.org/popup2.php?id=2126>.

125. For example, a Portuguese investment firm focused on a domestic retail clientele would not violate its best execution obligations by limiting the trading venues to which it has access to Euronext Lisbon.

126. MiFID, *supra* note 6, art. 21(2)–(3). The approval of investors regarding the possibility of executing the order in an MTF must be express and specific. This statement could imply that the consent of investors as to the general best execution policy need not be express.

127. *See* Commission Directive 2006/73, art. 44(1), 2006 O.J. (L 241) 26 (EC).

128. *Id.*, art. 26.

129. *Id.*, art. 44(3).

professional client. Moreover, the trade-through rule encompasses all trading venues that offer quotes for these orders, whereas European brokers do not necessarily need to consider every trading location for their order. Finally, European best execution requirements remain a creature of contract law, subject to both negotiations and consent by the brokers and their clients. Regulation NMS, however, is an object of market architecture, and applies uniformly over all market participants.

3. Evaluating U.S. and E.U. Best Execution Rules

Specifying the best execution of an order depends heavily on the parameters of each individual order, the profile and goals of the client issuing the order, and the situation prevailing in the market at the time. Yet MiFID has taken some concrete steps in reducing the uncertainties that arise from the fact-dependent character of best execution duties by ensuring that investors use their power to specify how they would like to see their orders executed. Thus, MiFID requires brokers to discuss their execution policy with their clients, therefore allowing investors to flag out any execution-related concerns early in the process. This discussion should also reveal to investors any advantages they seek from their choice of trading venue, as well as any benefits that brokers themselves may gain from choosing one venue over another. The Directive then relies on investors to assess the execution options offered by each broker and to choose their brokers accordingly. Recognizing the technical challenges that order execution choices may present for retail investors, MiFID introduces a default rule that establishes the best price as retail investors' main goal. Clearly, the uniform implementation of best execution duties across E.U. member states remains a key challenge for the Directive. Reinforcing investors' voices in determining the execution of their orders will, however, undoubtedly assist in clarifying what constitutes best execution in each individual case.

D. Price Priority in Regulation NMS

1. Trade-through Rule

When the SEC proposed the trade-through rule in 2004, it sent shock waves through the financial services industry, resulting in more than 700 letters of comment.¹³⁰ The proposal stirred a heated debate within the

130. Re-Proposing Release, *supra* note 68, at 77,430.

Commission, resulting in a famous dissent by two of its members.¹³¹ The objective of this paper is not to recount the trade-through debate, but to compare the trade-through rule with MiFID's reliance on transparency rules, focusing on the impact of the rule for large professional investors.

The trade-through rule demonstrates the importance of price for the priority of execution of orders in the new U.S. market structure regime. The rule requires trading venues to establish procedures and policies reasonably designed to prevent the purchase or sale of stocks at a price that is inferior to another market's best price.¹³² According to the transparency requirements analyzed above, stock exchanges and national securities associations collect aggregate quoted bids and offers from their members, as well as from alternative trading systems and OTC market-makers. After processing these quotations, each stock exchange or national securities association displays the best bid and best offer available through its system. This is the quote that the trade-through rule protects: it requires all trading venues that have inferior quotes to either route any incoming orders to the trading venue displaying the best bid or offer, up to the size of that quote, or match it.¹³³ This requirement applies, apart from exchanges and securities associations, to any type of trading venue, including ATSS, exchanges, or OTC market-makers, as well as to any broker or dealer executing orders internally.¹³⁴ Therefore, the rule applies equally to all firms intending to internalize order flow, even if internalization is not performed in a systematic way, and no quotes on that stock have been published. The prohibition of trade-throughs, however, is not absolute, in the sense that the SEC will not sanction a trade at a price other than the best bid or offer if persuaded that all the necessary precautions were in place and the required level of diligence was exercised.¹³⁵

131. See Final Release, *supra* note 5, at 37,632.

132. Proposing Release, *supra* note 39, at 11,129. The rule covers all "NMS stocks." While NMS stocks traditionally included NYSE- and Amex-listed stocks, Regulation NMS expanded the National Market System over Nasdaq-listed stocks as well. Many marketplaces besides Nasdaq now trade in Nasdaq stock, thus raising order fragmentation concerns.

133. § 242.600(b)(57); 17 C.F.R. § 242.611(a)(1). An apparent shortcoming of that policy is that the best quote of one of these marketplaces is protected by the rule, although it may be inferior to a quote in another trading venue in another marketplace which is not protected because it is not the best in that marketplace. For example, when marketplace A has a bid quote for \$100 and another for \$99, and marketplace B has a bid quote for \$98, the trade-through rule protects the \$100 quote and the \$98 quote, but not the \$99 one. See Letter from Ari Burstein, Assoc. Couns., Investment Co. Inst., to Jonathan G. Katz, Sec'y, SEC (Jan. 26, 2005) available at <http://www.sec.gov/rules/proposed/s71004.shtml>.

134. § 242.600(b)(78); § 242.611(a)(1).

135. Proposing Release, *supra* note 39, at 11,136.

The main objective of the trade-through rule is to eliminate cases where, because trades originate from or are routed to separate trading venues, orders at the best price remain unexecuted while orders at worse prices are being executed. In the SEC's view, such fragmentation of markets harms the interests of all investors, whether they place limit orders (i.e. orders to execute the trade only at a specifically quoted price) or market orders (i.e. orders to execute the trade at the prevailing market price). As a result, market fragmentation disturbs the price discovery process, and ultimately damages investors' confidence in the integrity of the U.S. capital markets.¹³⁶ On the other hand, stronger protection of limit orders will lead to more aggressive quoting by investors and market makers, resulting in increased liquidity in the U.S. capital markets.¹³⁷

The effect of the trade-through rule on competition between trading venues was one of the most hotly debated aspects of Regulation NMS. Since 1975, providing competition to the NYSE has been a key policy goal for the National Market System.¹³⁸ In the SEC's view, a rule that requires brokers to execute their orders against the best price available in the market, regardless of which trading venue displays this price, should bolster competition for order flow. This rule reassures investors that, by placing their order in a less liquid marketplace, they do not risk seeing their order unexecuted while inferior orders are quickly executed in a more liquid exchange. Thus, the SEC views a "price priority" rule as fundamental for protecting investors.¹³⁹ This rule, however, prohibits other trading venues from offering better quality of execution for a more expensive price. For example, a trading venue may be offering speedier execution, or may be offering an inferior price but for a much larger order size. As institutional investors are more likely to take advantage of these additional execution characteristics, they are especially hurt by a rule that requires routing orders to a particular trading venue chosen solely on the basis of price.

2. The Trade-through Rule and Electronic Trading in the United States

The Proposing Release did not contemplate a distinction between quotes originating in electronic (automated) markets and quotes originating in

136. *Id.* at 11,132.

137. The SEC, in its Re-Proposing Release, describes the cycle of liquidity, and explains how liquidity generates more liquidity. *See* Re-Proposing Release, *supra* note 68, at 77,434.

138. Securities Exchange Act of 1934 § 11A, 15 U.S.C.A. § 78k-1 (2000).

139. Proposing Release, *supra* note 39, at 11,132–33.

manual markets, thus extending trade-through protection equally to all markets.¹⁴⁰ That proposal would require automated markets, whose greater advantage is speed, to wait for human-operated markets in order to confirm the best bid or offer. At the time, the only major marketplace with a human-operated trading floor was the NYSE. The SEC proposal, supported by the NYSE, was met with almost unanimous resistance from the investment community.¹⁴¹ It was clear that the SEC would face great challenges if it decided to move forward with a proposal protecting quotes on prices reached through a slower process at the NYSE floor against quotes allowing for immediate execution in electronic trading systems. Thus, the SEC had little choice but to endorse the suggestion of respondents to the Proposing Release and limit price protection to automated quotes only, as the delays associated with manual quotes were thought incompatible with modern technology.¹⁴²

With the scope of price priority rule limited to electronic quotes, the NYSE would lose the advantage of price protection under the NMS to its automated competitors. During the NMS hearings held by the SEC, the NYSE announced its intention to design and operate a hybrid market that would combine electronic and floor trading. Almost exactly a year following the NMS hearing, NYSE announced its merger with Archipelago Holdings, a group operating an electronic trading system, which would transform the world's largest exchange into a for-profit corporation.¹⁴³ At the same time, the implementation of Regulation NMS, technically in effect since August 2005, was informally delayed by the SEC to allow marketplaces, including the NYSE, time to incorporate into their trading systems the procedures required by the trade-through rule.

3. *Exceptions from the Trade-through Rule*

Although brokers must publish quotes for orders up to block-trade size, all incoming investors' orders must comply with the trade-through rule, and will not be executed at an inferior price even if they exceed the block-trade

140. In the Proposing Release, the trade-through rule covered all quotes produced in an "order execution facility," which included manually run markets. *Id.* at 11,130.

141. In the Re-Proposing Release, the SEC points out that "[n]early all commenters believed that only automated quotations should receive protection against trade-throughs." See Re-Proposing Release, *supra* note 68, at 77,434.

142. *Id.*

143. See Press Release, NYSE & Archipelago, New York Stock Exchange and Archipelago Exchange Agree to Merge (Apr. 20, 2005), available at http://www.nyse.com/pdfs/joint_release.pdf.

size. For example, a sell order for 100,000 shares will not be executed at a price of \$100 per stock, if another trading venue displays a quote of \$99.9 per stock for just 1,000 shares. The SEC had initially proposed to provide investors with the ability to opt out of the original trade-through rule,¹⁴⁴ which offered price protection on manual quotes, i.e. quotes from brokers on slow human-operated trading floors. When the SEC decided to limit the scope of the trade-through protection on automated quotations, it also eliminated the opt-out exception, fearful that institutional investors would overuse the opt-out, and thus undermine the goal of price priority. Instead of accommodating the needs of professional investors for larger trades through an all-encompassing rule, the SEC preferred a piecemeal approach, proposing a series of exceptions from the trade-through rule targeted to specific trading strategies.¹⁴⁵ Some trade-through exceptions still require investors to trade against the NMS-protected quotes for a subset of their orders, while others dictate a very specific tactic to accommodate a wider trading strategy, and do not cover other tactics for the same trading strategy. As the SEC itself recognized, this piecemeal approach cannot produce an equivalent outcome to an opt-out.¹⁴⁶

A key exception to the trade-through rule allows large investors to use intermarket sweep orders (“ISOs”).¹⁴⁷ To qualify for the exception, a trading center (such as an OTC market-maker) seeking to execute a large order at an inferior price must also send matching orders against the NMS-protected quotes that represent the best price, covering the whole size of these quotes. In the previous example, a broker seeking to execute its clients’ orders internally, buying the 100,000 shares at \$100 per stock, must also route an order against the protected quote, buying 1,000 shares at a price of \$99.9 per stock. If more securities exchanges or associations display protected top-of-the-book quotes, the broker must send ISOs to all of them, thus delaying finalization of the orders’ price even further. These delays introduce further uncertainty in the final order price, as a better quote might arise in the meantime, or the initially targeted quote may disappear or get covered by a competing order.¹⁴⁸ Despite these costly features, ISOs offer the most

144. See Proposing Release, *supra* note 39, at 11,139.

145. One of these techniques is the “intersweep” order, which allows execution against the best quotes available at all markets at the time.

146. See Final Release, *supra* note 5, at 37,528.

147. § 242.600(b)(30); § 242.611(b)(5)–(6).

148. See SEC, Responses to Frequently Asked Questions Concerning Rule 611 and 610 of Regulation NMS (June 8, 2007), Question 3.03, available at <http://www.sec.gov/divisions/marketreg/nmsfaq610-11.htm#sec3>.

straightforward method of executing large trades in the National Market System. As a result, ISOs have become extremely popular among many brokerage houses that handle institutional investors' order flow, who use them for the majority of their orders.¹⁴⁹

Another set of exceptions from the trade-through rule refers to trading strategies geared towards specific prices. Specifically, the SEC has allowed traders that have negotiated a benchmark price for their trades regardless of the market price at the time of execution to go ahead with their trades even if these trades would violate the trade-through rule.¹⁵⁰ Investors take advantage of this exception for trades with Volume Weighted Average Prices ("VWAP"), where they agree to an average price for a large trade that they then split into smaller trades, executed either internally or against publicly displayed liquidity. For example, a broker may offer to buy a large block at a per-share price determined by the VWAP over a previously agreed upon future period.¹⁵¹ Stopped orders, on the other hand, permit investors to agree to a maximum or a minimum price for a block of stocks with their brokers or trading centers. Regulation NMS allows stopped orders to trade through, provided that at the time of the trade's completion the stopped order is inferior to the NMS-protected quotes. Moreover, the SEC requires that the stopped order is issued on behalf of a customer, and not for the broker's own account.¹⁵²

Apart from these special provisions for certain trading strategies, Regulation NMS also includes exceptions that involve trade-throughs

149. For example, Andrew Silverman, Head of Morgan Stanley's U.S. Electronic Trading Distribution Unit, has stated that his firm has switched to ISOs for "about 99 percent" of its orders since March 2007. Credit Suisse First Boston also follows a similar strategy. Other big brokers, such as Goldman Sachs, have also invested heavily in building technology that would allow them to take full advantage of ISOs. See Nina Mehta, *Smart Gets Smarter: Smart Order Routing Gets Supercharged in the New Trading World*, TRADERS MAGAZINE, May 2007, at 40.

150. § 242.611(b)(5). The exception would not cover a block trade with a price based on the VWAP for a set of trades already executed, or price based on the future VWAP plus or minus a premium.

151. See Sham M. Kakade, Michael Kearns, Yishay Mansour, & Luis E. Ortiz, *Competitive Algorithms for VWAP and Limit Order Trading*, available at <http://www.cis.upenn.edu/~mkearns/papers/vwap.pdf>. Although VWAP trades were very popular when Regulation NMS was first introduced, they are less common today, because the increased use of algorithmic trading has offered additional means of finding liquidity for large orders. See Yossi Brandes, Ian Domowitz, Brett Jiu, and Henry Yegerman, *Algorithms, Trading Costs and Order Size*, in ALGORITHMIC TRADING: A BUY-SIDE HANDBOOK 89, 89 (Ian Domowitz & Henry Yegerman, eds., 2d ed. 2007). Thus, they illustrate how quickly market structure rules can grow stale and inflexible due to today's fast-changing trading technology.

152. § 242.611(b)(9).

occurring when there are technical problems in a marketplace,¹⁵³ or under special circumstances, such as when the market is opening,¹⁵⁴ or when the best bid is higher than the best offer.¹⁵⁵ Moreover, Regulation NMS grants to the SEC the power to introduce future exemptions from the trade-through rule,¹⁵⁶ which the SEC has used in order to allow some additional trading strategies to continue without violating the trade-through rule. One of the most important exemptions granted by the SEC involves contingent trades, whereby investors agree to conclude a trade only if a prior trade is concluded subject to certain conditions.¹⁵⁷ Contingent trades often link stock exchange trading with derivatives.

This brief discussion of the exceptions from the trade-through rule illustrates the diversity of trading strategies available in an electronic trading environment, and the limitations that Regulation NMS has introduced. In its final release accompanying the adoption of the rule, the SEC discusses the comments it received from various institutional investors during the long gestation period of Regulation NMS, suggesting different or additional carve-outs.¹⁵⁸ By exempting some trading strategies under specific conditions, the SEC sought to limit the order flow that would evade the price constraints of the NMS, and direct as many orders as possible to execute against the NMS-protected quotes. The reaction of the market, however, suggests that the block traders who would like to opt out of the trade-through rule still seek to go around the NMS price-protection scheme through any routes still available, paying somewhat higher liquidity costs. With the institutional investors committed to the trade-through exceptions, the SEC's goal of market integration seems distant.

153. § 242.611(b)(1).

154. § 242.611(b)(3).

155. § 242.611(b)(4).

156. § 242.611(d).

157. Exemption for Qualified Contingent Trades, Exchange Act Release No. 54,389, 71 Fed. Reg. 65,018 (Nov. 6, 2006); modified and expanded by Exchange Act Release No. 57,620 (Apr. 4, 2008).

158. See Final Release, *supra* note 5, at 37,526–28.

V. WHAT ARE THE LESSONS FROM COMPARING REGULATION NMS AND MiFID?

U.S. and E.U. market structure laws share a common goal: integrating equity trading in their respective markets. They both follow a similar approach on the dissemination of quote information pre-trade and the release of last sale data post-trade. They choose completely opposite directions, however, with regard to how investors' orders interact once they are released in the market. Regulation NMS imposes a strict price priority rule, requiring marketplaces to prevent the execution of a trade of any size at a price inferior to a quote available elsewhere. MiFID relies on investors to select the trading venue that best suits their needs, while also reinforcing investors' monitoring capacity through the best execution framework.

This puzzling policy divergence seems particularly paradoxical in light of traditional cross-country comparisons. These studies often portray U.S. policies as deregulatory and market-oriented, while they view European policymaking initiatives as relying primarily on governments' powers and promoting state intervention to the detriment of markets. Yet, these two leading jurisdictions have reversed their positions in market structure regulation. The United States embraced direct regulation and strict order interaction rules, while the European Union discarded interventionism in favor of reliance on market forces, trusting investors to monitor the execution quality of their trades while providing them with additional disclosure regarding the tactics of market professionals. The U.S. reversal is particularly surprising because regulators around the world tend to steer clear of initiatives that affect market design, allowing the financial services industry to establish the trading systems that best suit its needs.¹⁵⁹

The critics of Regulation NMS, most notably the SEC Commissioners who dissented in its adoption, have emphasized the potential negative repercussions of the trade-through rule, such as its ability to limit competition among trading venues and stifle innovation.¹⁶⁰ The goal of this article is to evaluate the impact of Regulation NMS from the perspective of the institutional investors, who were the driving force behind the proliferation of trading venues in the last decade and have come to dominate stock trading volume since the adoption of Regulation NMS. Comparing Regulation NMS

159. See generally Stavros Gadinis & Howell Jackson, *Markets as Regulators: A Survey*, 80 S. CAL. L. REV. 1239 (2007) (providing an overview of the allocation of regulatory authority to public bodies and market participants in various key jurisdictions).

160. See Final Release, *supra* note 5, at 37,640.

with MiFID illustrates an alternative approach to market structure regulation, whose success may affect negatively the international competitiveness of U.S. markets. The following paragraphs draw some key conclusions regarding institutional investors' trading strategies and markets' informational efficiency from the discussion of the market microstructure literature in Part III above. In the light of these conclusions, this article examines the impact of Regulation NMS and MiFID on institutional investors' choices and markets' informational efficiency.

Institutional order flow is particularly important for the informational efficiency of the markets for two reasons. First, institutional investors are generally better informed than retail investors. Thus, the better integrated their order flow is with the retail markets, the higher the informational efficiency of the market. Second, institutional investors are increasingly dominating the market.

As the analysis in Part III demonstrates, the large size of institutional investors' orders may affect the price of their trades in many ways, increasing the costs institutional investors incur to access liquidity. Apart from reducing investors' profits, higher liquidity costs harm the efficiency for the market as a whole, because they do not reveal any informational signals regarding the underlying value of the stock; instead, they only reflect the availability of matching order flow at that moment. Institutional investors seek to limit their liquidity costs with various strategies that depend on the size of their order, the nature of their information, and even the abilities of their brokers. As limiting these liquidity costs would assist the overall informational efficiency of the market, regulatory policy should facilitate the execution of institutional orders. Institutional investors, however, have diverse trading needs, as Part III has made evident, and often face various trade-offs when deciding where to route their orders. To accommodate these varied needs, market structure regulation should allow institutional investors as much flexibility in order routing as possible.

Regulation NMS, in its effort to combine orders that originate in different trading venues for price priority purposes, has in fact increased the liquidity costs of institutional investors and limited their flexibility in selecting a trading venue. Under Regulation NMS, institutional investors must avoid execution at a price better than the prevailing quote in the retail market, even if their orders are much larger than the quote size, unless they take advantage of an exception. Without an exception, the execution price would suffer huge liquidity costs due to the full price impact of a large order. Moreover, any unexecuted portion of the order will be routed further by trading venue that

first received the order to the venue then displaying the best quote, increasing delays and liquidity costs even further. For block traders, the most readily available exception involves the use of intermarket sweep orders, requiring the trading venue executing an order at an inferior price to send corollary orders to the trading venue displaying the best protected quote, so as to avoid the trade through. Eventually, these orders add to the delay and liquidity costs of a block trade. Other exceptions, such as benchmark trades, impose additional constraints on institutional investors.

The widespread use of exceptions under the NMS is defeating the purpose of integrating markets through the use of price-priority rules and information technology linkages between trading venues. The order flow that evades the trade-through rule does not participate in setting the National Best Bid and Offer (“NBBO”),¹⁶¹ rendering it less informative. The absence of large orders by institutional investors may particularly hurt the informativeness of the NBBO, as these investors are likely better informed. Of course, investors will also have access to last sale data through the transparency provisions of the NMS, which will supplement the information they receive from looking at the NBBO. Yet if investors need to assess the NBBO in the NMS in the light of last sale data, its usefulness becomes doubtful.

A key question arises after comparing the SEC’s strict price priority rule with Europe’s reliance on disclosure and lack of further inter-market linkages or regulation: Is disclosure alone sufficient to bring competition between trading venues, and protect investors? After all, the trade-through rule allows a trading venue to match the best price available elsewhere, before routing the order to one of its competitors. The “meet or beat the quote” effect of the trade-through rule, which the SEC sees as order interaction, is in fact a signaling mechanism, aimed at alerting investors to the best opportunity available in the market at the time. Thus, adequate and timely disclosure that triggers the operation of market forces should lead to equivalent results.

To explain why disclosure alone cannot sufficiently protect investors when multiple trading venues offer quotes on the same stock, the SEC points to the conflicts of interest inherent in the agency relationship between financial intermediaries and their clients. In particular, the SEC fears that financial intermediaries route orders to venues that better serve their interests, while investors are not aware of the inferior execution they receive. However, rearranging the U.S. markets’ structure to address this particular conflict of

161. National Best Bid and Offer (“NBBO”) refers to the SEC requirement that brokers must guarantee investors the best available price when they are buying and selling securities.

interest between brokers and investors seems a disproportionately costly strategy. MiFID, which also recognizes the potential for conflicts of interest in choosing a trading venue, requires brokers to provide their clients with information about how they choose trading venues and whether they receive any compensation for directing order flow to a certain venue.¹⁶² Moreover, the SEC notes that approximately fifty percent of the trade-throughs actually occurring are block trades, i.e. trades by sophisticated investors, who are presumably well aware that they are receiving execution at a price other than the best price prevailing in the market at the time of the trade.

Tailoring best execution requirements to each investor's profile is the main objective of the Directive's regulatory framework, bringing it in stark contrast with Regulation NMS and the trade-through rule. Where Regulation NMS prohibits all trading at a price different than the best available price, the Directive explicitly permits such a trade and recognizes the possibility that it could represent an execution option preferable to some investors. Where Regulation NMS mandates the aggregation of all orders at a central system ensuring full interaction of investors' orders, the Directive allows investment firms to abstain from trading venues that do not serve their clients' interests. For Regulation NMS, an order's point of entry into the trading system should be irrelevant for achieving best execution, while for the Directive it is the subject of negotiation between the brokers and their clients. Therefore, in terms of defining what constitutes best execution of a client's order, the divergence between the E.U. and the U.S. regime is great.

162. See *supra* text accompanying notes 126–27.