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A National Market System: An Evolution Toward Efficiency

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Dr. R. L. Miller

Sarah: Good Morning, Mr. Whitman.

Mr. Whitman: Good Morning, Sarah . . .
So how is Unitron doing today?

Sarah: Just a second and I will find out.
(Type, type, type). . . Bid 48 1/4,
Ask 48 3/8; Last sale 48 3/8.

Mr. Whitman: Umm. . . Not a bad bid, why
don't you sell 400 shares.

Sarah: (type, type, type) sold to 1st
Investors of Atlanta. . . Anything else, sir?

Mr. Whitman: Yes, how about a fresh pot of coffee?

Sarah: I'm sorry, Mr. Whitman, I'm not sure how
to operate the new coffee machine.

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Composition

The structure of the U.S. Stock market prior to 1970 was primarily influenced by one factor -- tradition. Since that time, however, the increasing instability and fragmentation of the market have caused many to seek a more efficient system. This search has led to the plans for a computerized, centralized means of trading securities otherwise known as a National Market System (NMS). Over the last decade, much progress has been made toward the development of such a system; over the next decade, this progress should be expected and encouraged to grow.

Issues and concerns over a National Market System have been greatly debated by government officials, exchange members, and academician alike. A conceptual understanding of what an NMS entails, however, is not widespread throughout the investment community. Even among those who have conceptualized an NMS, it is unlikely to find two individuals who agree on the precise functions it entails. It is of interest to note some of the more popular descriptions of the proposed system.

The SEC, which has played a substantial role in the development of a National Market System, has defined it as:

> . . . A strong market system created to which all investors have access in which all qualified broker-dealers and existing market institutions may participate in accordance with their respective capabilities, and which is controlled not only by appropriate regulation, but also by the forces of competition.[1]

An article found in The Economist simplifies this as it describes the NMS as, "an electronic link between all share traders to create a giant market."[2] An even more concise description, one which is popular among the traditionalists, is simply put, "The black box."[3]

If the preceding definitions have not provided a clear understanding of what an NMS is, it is best to look into the two components that are involved. The first factor is a complete centralized information network. The second is easy access which is free from competitive restraints. The following paragraphs expound further upon these components.

A centralized information system must exist in order for an NMS to function properly. All securities transactions from all locations would be reported to and relayed from this central system. The best prevailing quotes of all the participants must also be included. Optimally, the central limit order book, which is now controlled by the exchange specialists, would be a part of this information system; however, this topic is still under much debate.[4]

Easy and open access among qualified market makers is an essential aspect of the NMS. All participants must be able (and possibly obligated) to respond to the best offer available. Various rules and regulations have impeded the progress of a competitive central market. These rules must be altered or eliminated. New regulations should be developed with the idea of centralized implementation in mind. The key purpose

of an NMS is to increase efficiency; in a capitalist economy this is achieved by fostering competition to its fullest extent.

Benefits

As mentioned, the goal of a National Market System is to promote efficiency. This goal is facilitated by reducing inefficiency such as market fragmentation and monopolistic advantage. Also, technological developments would play a large role in improving the quality of communications and processing. The increases in efficiency would be measured in terms of reduced transaction costs (reduced spreads), increased liquidity, and increased speed and accuracy.

Throughout the 1970's, the stock market has become increasingly fragmented. This was primarily the result of increased institutional trading, which tended to be directed off of the main exchanges to regional, third, and fourth markets. William C. Freund hypothesizes that the reason for the shift from the NYSE to other markets is "because these markets are, for the most part, less well regulated and they provide fewer trading restraints."[5] The major problem with fragmentation is that the individual markets are not exposed to each other; this results in increased price variation and decreased liquidity on the whole. The NMS resolves this problem by exposing all markets to each other and providing centralized regulation.

The elimination of the monopolistic advantage that specialists currently maintain would aid in the overall efficiency of the market. The advantage which they hold is in the form of secret information in their limit order book. The specialists contend that the privacy of this information is both necessary and efficient in the functioning of an action market. However, limit order information would have to be compared on a nationwide basis in order to identify price and time priorities. Any market in which only a few members have the opportunity to consistently make extremely high returns (150-200% on the average) seems to leave room for improvement in the area of efficiency.

The National Market System may benefit investors in many other ways. One potential benefit may be that large investors (i.e. institutions) could trade directly within the market, bypassing brokerage expense. Another possibility is linkage with major international markets to increase liquidity and to provide further investment alternatives. These and other potential developments may surface depending upon the direction and extent to which the system evolves.

History

The idea of a centralized securities market system surfaced in the early 1970's. Plans for re-shaping the stock market were proposed to remedy the inefficiency of the existing market. One of the more significant reports, due to

its potential impact on future congressional decisions, was the SEC's Institutional Investor's Study. The implications of this plan did not seem to be in the best interest of some exchanges (primarily the NYSE). In response, William M. Martin prepared an alternative study for the Board of Governors of the NYSE. The NMS ball began to roll. Since these initial debates, further studies, legislation, and trial experiments have aided in the development of a National Market System.

The Institutional Investors Study

The late 1960's marked the end of what many considered a "golden era" in stock performance. Market instability, due to volatility in corporate profit margins, increasing interest rates, and the changing position of the institutional investors, was becoming a major problem. This instability led many exchange member firms to huge financial losses, mergers, and outright failures. The investment community responded to this concern by pressing the exchanges for increased commission rates to cover their losses. (It should be noted that at this time a completely fixed commission structure existed.)[7]

During the early 1970's, the SEC did grant several across-the-board commission rate increases. At the same time, however, they began to investigate some of the causes and possible solutions to the current problems. In March of 1971, the commission published the Institutional Investor's Study, which contained "views regarding the principles that should

guide the evolution of the marketplace until a new and fundamentally changed market structure is established."[8] This clearly indicates the SEC's perception of the market's need for reform.

As mentioned earlier, the fragmentation caused by institutional trading on the third and fourth markets is detrimental to the efficient functioning of the stock market. The SEC's study indicates that the main cause of the divergence from exchanges is the fixed commission structure and the barriers of access that exist. The fixed minimum commissions, the study contends, have led to reciprocal agreements between institutions and broker-dealers. The study goes on to state the implications of such actions:

> . . . these relationships tend to aggravate potential conflicts of interest, to be anticompetitive and to impede the development of a central market system for securities trading. Elimination of fixed commission rates for institutional size transactions should go some distance toward dealing with these problems.[9]

A second key point of the Institutional Investor's study pertains to the abuses of monopolistic powers. The commission's solution to this problem was to increase the degree of competition, rather than to increase regulation as it had in the past. The SEC felt that the past reliance on rules to guard against abuses of power may have prohibited certain misconduct; however, such rules cannot be successful in motivating people to assume the risks necessary for the betterment of the stock market.[10]

The SEC's recommendations were, in fact, the fundamental elements of a National Market System in which all security trades from all locations are centrally reported. It was also emphasized that access to the system be available to all qualified market makers. It is of interest that, as of this early date, the SEC felt that the technology existed for a centralized securities market.

> Recent advances in communications and electronic data processing make such representations technically feasible if the necessary systems are developed and used. The capability for a central market system having with it a sustained capacity for innovation can assist in a successful adjustment to changing conditions.[11]

The initial response of the investment community to this study was one of "future shock." Images of an overnight transformation of the traditional exchanges into a computer-operated stock market instigated much fear. Exchange members (specialists in particular) began lobbying efforts in order to prevent such a devastating threat from becoming a reality. As a result, only a small step was taken toward the development of an NMS. This occurred later in 1971 when negotiated commission rates were allowed on all transactions of $500,000 or more.

The Martin Report

While the SEC was planning ways to combat the market inefficiencies, William McChesney Martin developed his own resolution to the situation. His study, termed "The Martin

Report," was prepared in August of 1971, upon the request of the Board of Governors of the NYSE. Thus, it is possible that the interests of the exchange would be given first priority, while public interest is portrayed to conform to this.

The viewpoint that the Martin Report held was one of regression rather than reform. The problems of market fragmentation and specialists' performance are addressed, as in the Institutional Investors Study, but the suggested solutions are far different. In Martin's report, the specialists' position and the fixed commission rates were defended, while off-board trading was highly criticized.

The Martin Report agrees with the SEC that market fragmentation is of major concern in the efficient functioning of a securities market. It also agrees with the major cause of this fragmentation, the reciprocal trading agreements made to avoid fixed commission rates. The report contends that the solution to this problem is to attempt to equalize institutional trading regulation. It mentions three major inadequacies in regard to this that need correction.

(1) The restriction of specialists from soliciting orders from financial institutions,

(2) The allowance of institutional membership on the regional exchanges, and

(3) The allowance of reciprocal commissions on regional exchanges.[12]

Martin mentioned in his report that there has been some problems relating to specialists,for instance, lack of capital adequacy and abuses in monopolist positions. He feels, though, that these problems may be reduced with further regulation. The opinion is that the specialist should still maintain his dominant position; however, he must now be accountable for his performance.

The Martin Report directly opposes some of the elements necessary for a National Market System. These include the requirement to print all executions from all exchanges on a composite type, the allowance of any exchange to trade in NYSE stacks, and the open access to all types of investors. The report does believe that a centralized stock market is a good idea, as long as this market is called the NYSE.[13]

Many of the recommendations of the Martin Report were used by the NYSE as a foundation for incorporation in 1972. These recommendations (including reorganization of the Board, increased capital requirements, and performance criteria for specialists) were positive, yet, were hardly progressive. In the short run, it was probably what the NYSE needed in order to resolve some of its problems. In the long run, though, it would not be in the best interest of the average investor. The primary benefit it has given to the public is an increased awareness that there are problems

in the current system and a stimulation of debates as to solutions.

Early Technical Developments

While various segments of the investment community were debating the direction that the stock market should go, technical progress was being made toward making individual segments of the market more efficient. The greatest developments were made in response to the problems of the institutional investor. Just as the NYSE was disturbed with problems of institution trading off-board, the institutions were disturbed by liquidity problems as their block trading increased. Two systems that attempted to lessen these problems were the NYSE's Block Automation System (BAS) and Instinct.

The Block Automation System was a communication and information network developed in the early 1970's to facilitate institutional block trading. Due to a number of technical problems though, its use was terminated in 1973. Instinct was developed at approximately the same time, however, its functions were somewhat different. In addition to providing information, this system allowed direct trading between institutions, creating what is called the "fourth market." Although systems such as Instinct benefit the institutional investors, they tend to damage the liquidity of the market as a whole.[14]

During this period, technical advances were made that

aided in the operations of the exchanges. The Securities Industry Automation Company developed a computerized system to handle the complex processing, reporting, and clearing tasks of the NYSE. Since this mainly eliminated the tedious clerical tasks, specialist had no objection to it. Other exchanges have similarly automated certain operational tasks.[15]

1975 Legislation

1975 marked a year of major legislation pertaining to a National Market System. As mentioned earlier, commissions for trades in excess of $500,000 were made negotiable in 1971. In 1972, this minimum was lowered to $300,000 in an attempt to prevent further off-exchange institutional trading. On May 1, 1975 (nicknamed Mayday) fully negotiated commission rates were enacted for all trades. The SEC felt that the profitability problems experienced earlier had improved enough so that brokerage firms could handle this sort of competition.

Much opposition to the freed commission rates existed at the time of the decision. The argument against the rule was that it would be anti-competitive in the long run because the small firms would not be able to maintain profitability and thus, would fold. The realized effect of "Mayday" proved to be quite to the contrary of this belief. Many large firms that emphasized institutional trading began to

feel a squeeze on their profits. At the same time, many small firms could increase business by providing discount service since they did not have the overhead expense of a research staff.

Shortly after the abolishment of fixed commissions, Congress passed the Securities Act Amendments of 1975. This was considered "the most fundamental and far-reaching piece of security legislation enacted since the 1930's.[16] The Act was basically a mandate from Congress to the SEC "to supervise the establishment of a National Market System to provide a more fair, orderly and efficient market to replace our existing fragmented securities markets."[17]

The Securities Acts Amendments of 1975 define the key functions of an NMS in broad terms. Section IIA(a)(1)(c) describes the basic objective:

> (1) Should assure economically efficient execution of securities transactions,
>
> (2) Should provide for fair competition among brokers and dealers, among exchange markets, and between exchange markets and markets other than exchange markets,
>
> (3) Should make information with respect to quotations for and transactions in securities equally available to brokers, dealers, and investors,
>
> (4) Should make it practical for brokers to execute investors' orders in the best market, and
>
> (5) Should assure an opportunity, consistent with points one and four above, for investors' orders to be executed without the participation of a dealer.[17]

Given these general objectives for a National Market

System, the SEC has the responsibility for developing the operational framework. Previous to this legislation, the SEC had studied the possible structure for a centralized securities market. The results are found in two reports: A statement on the Future Structure of the Securities Market (1972) and A Policy Statement on the Structure of the Central Market System (1973). The results of these studies were incorporated into a set of proposed guidelines for an N.M.S.

A major question that concerns the structure of a National Market System is whether it should be a linkage of the existing exchanges or a system of competing dealers (similar to the OTC Market). The SEC is hesitant about implementing any system that would drastically change the existing auction market. The commission believes that with increasing technology, the advantageous aspects of both systems could be incorporated into one. It is contemplated that "both broker and dealer markets would remain an integral part of the trading system."[18]

The development of a nationwide information system is among the requirements for an efficient market. The system would report trades of all qualified securities in all markets via composite tape. In addition, it would provide reportings of real-time, composite quotations from all participating market-makers. Shortly after the passage of the Securities Act Amendments of 1975, rules requiring the use

of composite tape for nationally listed stocks were put in full-scale operation. Since this time, much progress has also been made toward the development of a composite quotation system.

The SEC feels that certain existing exchange rules may tend to impede the progress toward an NMS. A target of great concern is Rule 394, which prohibits member firms from sending orders off of the NYSE. This, by definition, conflicts with the aspect of open access in an NMS. In 1977, the SEC modified that rule (renamed rule 390) to exempt agency orders directed to third market dealers from the restriction. This change helped to foster competition by the third market; however, it still falls short of the mandate for open access.[19]

Other proposed rule changes by the SEC deal with limit order protection. One of these would provide orders with "price priority protection." The rule would state that:

> Any public order entered in the system would be protected against the execution of any transaction anywhere else in the system at an inferior price without prior satisfaction of that order.[20]

A further rule change would give preferential treatment to public orders over offers of broker-dealers. This would prevent a market-maker from participating in a transaction unless his price was better than any other quote in the system.

In order to implement these price protection rules, all limit orders must be comparable nationwide. The only means

of accomplishing this task would be to establish a central limit order book (CLOB). Whether this file is kept confidential (as specialists would prefer) or made public (as speculators would prefer), it is necessary to ensure that orders are executed at the best possible price.

Ultimately, the SEC foresees a system that would handle all segments of the securities market (stocks, warrants, options, bonds, and debentures) and that would provide access to all qualified market-makers. The Securities Act Amendments of 1975 have broadened the authority of the SEC in order that it may establish the necessary foundations of a National Market System.

> The SEC is expected to use the broad powers in the Amendments in a "bold and effective manner" to facilitate the rapid development of a nationwide system for processing securities transactions.[21]

The definition of a "rapid development" may be a subjective one; nearly ten years have passed and such a national market is yet to be in full scale operation. However, the SEC has helped to establish two experimental systems. These NMS prototypes were the Intermarket Trading System (ITS) and the National Securities Trading System (The Cincinnati Experiment).

The Intermarket Trading System

In 1978, a system emerged that electronically linked existing market centers together. The intent of the system

was to increase competition in dually traded securities. It is referred to as the Intermarket Trading System (ITS) and is viewed by the exchanges to be the "cornerstone" of a National Market System.[22]

The ITS began operations on a pilot basis on April 17, 1978. At this time, the system was comprised of eleven stocks which were dually traded on the New York and Philadelphia Stock Exchanges. Later in the year, the American, Boston, Midwest, and Pacific Exchanges joined the linkage, and the list of eligible stocks grew to 300.[23]

The ITS is basically a communications network between the stock exchanges, consisting of a teletype device and a video screen. The operations of the system are quite simple. A floor broker would check the display system for prevailing quotes on other exchanges. If he finds a more favorable price on another exchange, he may send a "commitment to trade." In doing this, he specifies the number of shares and the bid or offer price that he is accepting. This information is then transmitted to a specialist on the designated exchange who may choose to fill or cancel the order.

One criticism of the ITS is that it does not contain specific rules requiring brokers to execute transactions at the best price offered. It is feared that a broker may choose to trade on his own exchange for reasons of convenience, rather than to search for the best price for his customer.

In practice, though, this situation occurred in less than one percent of the ITS trades. In 1981, most of the participating exchanges developed their own rules against such transactions.[24]

The ITS "experiment" was generally regarded as a success. In January of 1983, the SEC authorized the continuing operation of the ITS on an indefinite basis. According to the NYSE estimates, the system resulted in approximately $40 million in savings to the investor in 1981 alone. This success has stimulated growth of the ITS; volume (in shares) was increased from 42 million (1978) to well over a billion (1983). This growth is expected to continue in the near future as new plans for improvements and expansion of the ITS are implemented.

The Cincinnati Experiment

The Second Prototype of a National Market System is the National Securities Trading System (NSTS) which operates through the Cincinnati Stock Exchange (CSE). During the mid-1970's, the CSE (which is actually located in New Jersey) was nearing extinction. Struggling to survive, it developed a unique, automated trading system, which seemed to meet many of the congressional objectives of a National Market System. The president of the Cincinnati Exchange, Richard B. Niehoff, envisioned it to be "an exchange without walls with the whole country as a trading floor."[25]

On April 18, 1978 (only a day after ITS began trading), the SEC gave approval to the CSE to try the system on an experimental basis. The NSTS differs both structurally and operationally from the ITS. Instead of connecting existing exchanges, the NSTS directly links all the participating brokerage firms together. This permits CSE member firms to make a market in securities via computer terminals in their office; however, it does not allow the exposure of orders to exchange specialists. Another unique feature of the NSTS is that orders are executed automatically on the basis of price and time priorities. This characteristic assures the investor of the best possible execution price within the system.

The National Securities Trading System promises "individual investors faster transactions with fewer errors and at lower cost."[26] It would seem that this system is the answer to all the problems of the investment community. The NSTS is not, however, without its weaknesses. The SEC reported "that 30% of the time an investor gets a better price, either buying or selling on a conventional exchange."[27] The major cause of this is limited exposure; less than 20 firms are active members of the system.

The CSE took a major blow when its largest market maker, Merrill Lynch, departed from the system. Merrill Lynch was initially attracted to the CSE due to its innovative and

progressive operations. The Company, however, returned to the traditional exchanges when Cincinnati's order flow proved to be unprofitably low. Although NSTS trading volume has tripled since 1978, it is only slightly higher than the volume of an average day at the NYSE. The decision of Merrill Lynch to leave has caused many people to doubt the feasibility of a fully integrated securities market.

The public's skepticism of the system was not enhanced by ETS, a division of Control Data Corporation that owns and operated the NSTS. ETS promoted this system as "one that could put the NYSE out of business."[28] The thought of such an occurrence generated much negative response; "The time has not yet come to abandon our exchanges, which have served us so well for so many years, for the 'black box.'"[29]

Despite the low order flow and the negative public relations, the Cincinnati "experiment" has achieved enough success to be granted continuance on an indefinite basis by the SEC. The experiment has demonstrated that a completely automated, securities trading system is technologically possible. It remains to be seen whether a system of this sort will prove to be the most efficient to investors in the future.

NASDAQ

In reviewing the progress toward a National Market System, it is necessary to include the developments in the OTC

market. Prior to the 1970's, over-the-counter trading caused many problems. The most significant of these were the communications and transactions difficulties experienced due to the geographical separation of potential traders. In an attempt to lessen this problem, the National Association of Securities Dealers (NASD) developed an automated quotations system (NASDAQ), which became operational in February, 1971.

NASDAQ is a computerized network of brokers, dealers, and investors in over-the-counter stocks. It is structured on three levels. Level one displays the current media quote for each stock in the system. This is for investors who wish to periodically "check up" on their stocks' current price. Level two contains all the quotes by all the market-makers for each stock. This level is designed for investors to locate the source of the optimal bid or offer. Finally, level three offers the same service as level two but also allows access into the system to enter a bid or offer. This is tailored to meet the needs of the market-makers.

Over the last ten years, NASDAQ has provided great service to its participants. Recent technological innovations have helped new listings to increase substantially, while NYSE and AMEX have experienced slight declines in their listings. For the first time, the national exchanges have been experiencing competition for new listings from the OTC market. In the past, the OTC market has dealt primarily in

stocks that were not large enough to qualify for a national exchange. Although this sort of stock still makes up the bulk of the OTC market, a growing number of companies eligible to list with a national exchange are choosing to remain with NASDAQ.[31]

MCI is an excellent example of NASDAQ's appeal. In 1982, MCI was the most actively traded stock in the U.S. Yet MCI (along with Apple Computer, Intelevision, Pabst Brewing Co., and Nike) has decided to continue trading on NASDAQ. Gordon Macklin, president of NASD, feels that the efficient, innovative nature of the system will aid in the continuance of this trend. He explains,

> We have never, in the history of our market, had so many companies be so enthuasiastic about standing up and saying, not at all defensively, "We prefer not to list our company on an exchange. We are happy right where we are."[32]

Two primary developments contributed to NASDAQ's more recent success. The first was an improvement in the information reported on a limited number of widely traded stocks. The new sub-system that emerged was named, coincidentally, the NASDAQ National Market System. In addition to the current bids, offers, and volume figures that the original system included, this new system offered up-to-the minute reporting of all transactions in the qualified stocks.

Since its initiation in 1982, stock listings of the NASDAQ NMS have grown from 40 to approximately 1100; this number is

expected to double in the near future. A chief equities trader for a major New York bank seems very enthusiastic about the system. "Now you can find your cheapest and best executions immediately. For us this is the best thing since sliced bread."[33] The New York Stock Exchange does not share in this enthusiasm, maintaining that it has offered public disclosure of transactions since the advent of the ticker tape. The exchange is also displeased with the name designation, National Market System. "The best they are is an over-the-counter national system. They have a long way to go."[34] Despite the criticism, the NASDAQ NMS has made substantial progress from the OTC systems of years ago.

A second positive development for NASDAQ was initiated by the SEC. In April of 1979, the commission, in an effort to test the competitive advantages of free trading in exchange listed stocks, created Rule 19C-3. This experimental rule enabled companies that began listing on an exchange since that time to be exempt from off-floor trading restrictions (mainly NYSE's Rule 390). The thirty most active stocks in that category were to be traded over-the-counter via NASD's Computer Assisted Execution System (CAES). The CAES further improves the NASDAQ NMS. Instead of having to make a phone call (as before), trades may now be executed by pressing a few keys on a computer terminal.

The success of the CAES is not as overwhelming as NASD

had hoped it would be. Mr. Macklin explains:

> The SEC has limited the use of the linkage to trading in only 30 19C-3 companies, and most off-board professionals have found that trying to compete with the entrenched NYSE specialists with his many advantages, such as the limit order book and member directed order flow, has not been profitable.[35]

Due to the reasons just mentioned, most of the larger brokerage firms stopped making-markets in 19C-3 stocks. This left the exchanges to question the extent that off-board trading can really add to efficiency.

The results of this experiment might not have been so disappointing if a different set of stocks were used. The thirty stocks, taken from a pool of about 300, were chosen primarily on the basis of size and volume. Since widely-traded stocks are by nature the most efficient (in terms of quote spread and liquidity), the allowance of over-the-counter trading in these stocks will not significantly benefit the investor or the broker/dealer. Throughout the years, NASDAQ has been successful in increasing efficiency in the smaller, lower-volume stock. It should be this type of stock that comprises the set used in the CAES experimental linkage.

Until very recently, it was a common belief that the auction markets of national exchanges and the dealer markets of OTC trading could not be workably linked. The CAES demonstrates that such a system is possible. As rules are altered to limit the specialists' monopolistic advantage and

to expand the opportunities in off-exchange trading, systems such as NASDAQ will play a significant role in providing the efficient competition necessary for the mandated National Market System.

Current Developments

The CEAS, ITS, and Cincinnati Exchange have all aided in the progress toward a computerized central market. These systems are now being combined in ways that attempt to increase efficiency further. An ITS/CAES linkage has experienced some problems, as mentioned previously, due to the type of stocks involved. A merger of ITS and CSE, however, has proven to be quite beneficial. In 1983, ITS represented approximately 50% of the volume (of ITS stocks) on the Cincinnati Exchange.[36]

Other unique systems are getting underway across the country. Dallas has just launched a fully automated stock exchange, similar to the CSE. A central computer is to be located in Dallas that links terminals from all over the country. The system will process and execute transactions on a price and time priority. What makes the Dallas exchange unique is the financial instruments in which it trades, energy-related futures contracts (petroleum, heating oil, natural gas, and unleaded gasoline). This system, named the World Energy Exchange, is not regulated by the SEC, but rather, by the Commodity Futures Trading Commission (CFTC).

It will be very interesting to see whether this system is successful and, if so, whether commodities futures will be incorporated into the proposed National Market System.[37]

A striking example of what automation and innovation can do is given by the Boston Stock Exchange (BSE). As recent as 1981, the BSE processed all its trades by hand; it was losing about $130,000 per month; and its seats were selling for as little as $100. The exchange hired Charles J. Mohr, former vice-president of systems development at the NYSE, to solve its problems. His first step was to automate operations, which helped to double volume and bring the exchange out of the red. Seat prices have since risen $15,000. Mr. Mohr has not stopped there. "Now we've got everything clicking. . . we can concentrate on innovation instead of survival."[38]

Charles Mohr has two plans that he hopes will give the BSE a competitive edge against the other regional and national exchanges. The first is a request to list OTS stocks and options. In the past, NASDAQ has been the only system that listed OTCs. The SEC is currently in the process of making a decision on this subject. The second innovation (which began operation mid-September 1984) is an electronic link between the Boston and the Montreal Exchanges. This is expected to increase volume and speed and to decrease trading costs for both parties. Plans for similar linkages with

three stock exchanges in Europe are being discussed. If the innovations of the BSE prove successful, they will no doubt have a significant effect on the future direction of the U.S. securities market.

These and other developments have demonstrated the great progress that the United States as a whole has achieved in recent years. A question that may arise is, "How will other world markets respond to this American ingenuity?" The answer, which may surprise some, is "They already have." Both Canada and England have working plans for a centralized, computerized, stock market system. The United States may have initiated revolutionary ideas and created the technology to go with them. Other countries, however, are developing these ideas into actual systems which may just put the United States in the shadow in the near future.

If a U.S. National Market System is to emerge in the near future, it must have a centralized force behind it. All the necessary parts already exist in one degree or another. As mentioned previously, it is the SEC's responsibility to bring these parts together "in a bold and effective manner." Recently, though, a congressional subcommittee described the pace of the SEC's progress toward a NMS as an "arthritic gastropod on a drizzly day."[39] The policy of the SEC thus far has been to let the system evolve on its own, with limited push from the commission. However,

the progress has now reached a point in which centralized direction is necessary; the National Market System is in need of a "national" plan.

A National Plan

The determination of the optimal make-up of a National Market System is a difficult, if not impossible, task. A near infinite amount of combinations could be envisioned. Furthermore, the system must be timed properly to coincide with the current securities environment. Because of these factors, the SEC has been reluctant to make any major changes in the present system. Factors such as large risks, large capital outlays and conflicts of interests have discouraged the exchanges from progressing further. If the NMS is to continue to develop, some initiative must be taken. The following is a three-stage development plan for a National Market System. It is by no means the only logical progression; rather, it is one of many plans that offer direction as to the composition of a National Securities Market.

Stage I

The National Market System in "Stage I" will be an expansion of the Intermarket Trading System. It will link the two national and five regional exchanges in an information network (as does the current ITS). The major difference will lie in the securities included; the "Stage I" NMS will

allow any exchange to trade in any stock from any other exchange in the system. OTC stocks that qualify for NASDAQ's NMS will also be incorporated in this system.

Regulatory changes necessary to accommodate this system will include a modified Rule 390. Instead of prohibiting off-board trades, the new rule would prohibit exchanges to compete in all listed stocks and would also assure that orders flow into the system (since dealers would not be permitted to make-markets in these stocks). A further regulatory change would permit qualified OTC stocks to trade in this system.

If a stock is dually listed on two or more exchanges, a centralized file will be kept for all limit orders. Access to this file will be limited to the specialists of that stock on each exchange. This will increase limit order efficiency but will transform the specialists' monopolistic advantage into a mere oligopolistic advantage. Certain aspects (such as the specialists' position) will seem somewhat awkward due to the nature of the system. The "Stage I" NMS is a transitory stage.

Stage II

In "Stage II", the securities market will need to undergo significant structural changes. It would be similar to the National Securities Trading System of the CSE in many respects. The system includes all of the information mentioned in

"Stage I", plus provisions for automatic executions of orders. Exchanges would still exist; however, their functions would be much more specialized than they are now. Orders for each security must be compared centrally to determine time and price priorities. Therefore, each exchange would act as a central clearing place for the securities in which they specialize. For example, the NYSE could be the central market for large, active stocks, the Pacific Exchange could handle OTC type stocks, and the Midwest Stock Exchange could specialize in corporate bonds and debentures. These exchanges would be linked to a centralized computer, which could be accessed by qualified brokers and dealers through a network of computer terminals. All forms of financial instruments would be included in the "Stage II" NMS.

The role of the specialist would be much more simplified, due to the automatic execution of limit orders. He/she would be responsible for maintaining an orderly market at times when the system cannot (e.g., if a block order is too large to maintain liquidity in the security). Since such occurrences would be rare in this technically sophisticated system, a specialist could supervise eight to ten times the number of stocks he now handles. A central limit order file must exist for each security; however, this information would be kept confidential.

Strict exposure rules would be necessary for the efficient

functioning of this system. All orders would be required to pass through the system. A potential aspect of this system could be the elimination of all paper transactions. A file for each broker (dealer) that indicates all transactions that took place would allow securities to be recorded electronically instead of on certificates. A further possibility is linkage with the major financial centers of the world, as is currently being explored by the Boston Exchange. "Stage II" incorporates nearly all of the requirements for a National Market System as mandated in 1975.

Stage III

A National Market System will be in its strongest form in "Stage III." There will be no specialists nor will there be any exchanges. Technology will be sophisticated enough to handle all aspects of an NMS through one centralized computer, and access will be given to all brokers, financial institutions, and licensed investors. (Dealers would not exist due to the efficiency of the system).

Surprisingly, the "Stage III" NMS would require less regulation than "Stage II." The central limit order file may be made public. Also, exposure rules would not be necessary. This is due to the fact that such competitive, open access will produce the most optimum prices (the lowest spreads). Access may be increased further by permitting foreign investment institutions to use the system (which

would operate 24 hours a day). It is feasible in "Stage III" that this computerized securities network may become an "International Market System."

The Next Step

Progress is being made toward the "Stage I" National Market System. The pace, however, is unnecessarily slow. Technically, there is nothing preventing the market from being at that point now. The obstacles lie in the socio-political forces of special interest groups and the overly-cautious approach of the SEC. These obstacles must be overome in order to give investors the efficiency desired in a securities market.

The main force impeding the development of a NMS consists of the special interests of a very influential group of people, namely, the specialists. The specialists have much at stake concerning issues of a National Market System. This is especially true in regard to their monopolist position on limit order information. Nearly ten years ago, the SEC attempted to establish a central limit order book (CLOB) to electronically match limit orders between markets. "The exchanges fought back" and caused the SEC to abandon CLOB.[40]

The national exchanges have been successful in preventing other legislation that did not seem to be in their best interest. As early as 1977, the SEC had proposals to abolish Rule 390 (the NYSE's off-board trading restrictions). The

commission contended that an NMS could not evolve with restrictions of this sort. The NYSE, though, convinced the SEC that Rule 390 should not be abandoned until an NMS was established, complete with exposure rules to prevent internalization. This created an endless circle. Rule 19C-3 (which exempted stocks listed on the NYSE after April 1979 from Rule 390) was a compromise for the situation. However, as the SEC stated from the beginning, a true NMS will not evolve with Rule 390 intact.

The specialists (and exchanges, in general) have done their best to postpone the development of an NMS, but they are not totally to blame. They are only trying to protect their self interests. The SEC is equally to blame for not taking a firmer stance. The commission does not want to take on the risks, responsibilities and costs involved in enforcing its own plans, therefore, it is waiting for the industry to go ahead on its own. The Commission's logic is that an NMS will evolve by means of "compulsion born out of the survival instinct."[41] Due to the conflicts of interests mentioned previously, the actual "evolution" will not be that simple. Merrill Lynch summarized the problem in 1976 and the line of reasoning is still relevant:

> An American National Market would cost between $25 m. and $40 m. to set up. Because of the cost, such a system can probably be established only with the approval and backing of the stock market itself. And the members are unlikely to vote themselves out of a job.[42]

If the rapid development toward a National Market System is to occur, as Congress intended it to in 1975, the SEC must begin to take a firm stance on important decisions. Restrictions on off-board trading must be eliminated. If necessary, this decision may be accompanied by rules against internalization. In regard to stocks dually listed on exchanges (thus under the supervision of more than one specialist), rules should be enacted that would centrally combine limit orders. If these regulatory changes are made and the SEC offers a little more direction, there is no reason why a "Stage I" NMS could not exist in the very near future.

As a National Market System does come about, investors will experience the rewards of increased efficiency. These "rewards" will be in the form of a reduction in time, cost, and error and an increase in liquidity. Although a sense of apprehension may be felt as many traditional aspects of the stock market are disbanded, changes must occur, at times, in the name of progress. The progress that is offered through a National Market System is long deserved by the investors of America.

ENDNOTES

[1]Donald E. Farrar, "The Martin Report: Wall Street's Proposed 'Great Leap Backward,'" Financial Analysts Journal (September/October, 1971), p. 15.

[2]"America's National Market: Too Little, Too Late," The Economist, May 15, 1982, p. 90.

[3]"New SEC Pressure for a National Market," Business Week, October 27, 1980, p. 55.

[4]Frank K. Reilly, Investments, (Chicago: The Dryden Press, 1982) p. 93.

[5]William C. Freund, Irwin Friend, and Donald E. Weedin, "Outlook for the Securities Industry," Journal of Finance and Quantitative Analysis, (Supplement, March 1972) p. 1688.

[6]Reilly, p. 98.

[7]Albert J. Fredman and John R. Nichols, "Innovations and Change in the Nations Securities Market," Trusts and Estates, July 1979, p. 14,18.

[8]Farrar, p. 14.

[9]Ibid.

[10]Ibid., p. 15.

[11]Ibid.

[12]Freund, p. 1688.

[13]Ibid, p.

[14]Fredman, "Innovations," p. 21.

[15]Ben Weberman, "The Computer That Saved Wall Street," Forbes, January 30, 1984, p. 32.

[16]William C. Melton, "Corporate Equities and the National Market System," Federal Reserve Bank of New York Quarterly Review, (Winter, 1978-1979) p. 19.

[17]Morris Mendelson and Junius W. Peake, "The ABC's of Trading on a National Market System," Financial Analysts Journal, (September/October, 1979), p. 37-38.

[18]Melton, p. 18.

[19]Ibid., p. 20.

[20]Martin J. Feely, "Functions of a National Securities Market," Trust and Estates, June 1976, p. 387.

[21]Feely, p. 388.

[22]Albert J. Fredman, John R. Nichols, and Randal J. Moore, "The Intermarket Trading System: Cornerstone of the Nations Securities Market," Trusts and Estates, November 1983, p. 34.

[23]Ibid.

[24]Ibid.

[25]"A Little Exchange That's Thinking Big," Business Week, January 17, 1983, p. 100.

[26]Ibid.

[27]Ibid.

[28]Ibid.

[29]Fredman, "Intermarket," p. 33.

[30]Reilly, p. 70.

[31]Merrill Brown, "Stock Markets Fight Over New Listings, Names," The Los Angeles Times, August 13, 1984, Sect. IV, p. 2.

[32]Erik Ipsen, "Technology Against the Marble Hall," Euromoney, April 1983, p. 55.

[33]Ibid.

[34]Brown, p. 2.

[35]Fredman, "Intermarket," p. 36.

[36]Ibid., p. 35.

[37]"Dallas to Launch an Automated Stock Exchange," The Office, August 1983, p. 38.

[38]"The Boston Exchange: Up from Oblivion," Business Week, September 17, 1984, p. 42.

[39]"New SEC Pressure," p. 56.

[40]"America's National Market," p. 90.

[41]"New SEC Pressure," p. 56.

[42]"Black Box," The Economist, October 9, 1976, p. 22.

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