

DECIMALIZATION: THE FIRST THREE MONTHS

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INTRODUCTION

The long anticipated move by major exchanges to quote stock prices in decimals began on August 28, 2000. Shares of twelve companies (thirteen stocks) began trading in smaller increments as part of a pilot program designed to end Wall Street's 208-year history of trading in fractions. The first phase of the pilot program included seven stocks on the New York Stock Exchange (NYSE) and six stocks on the American Stock Exchange (ASE). On September 25, 2000, in the next phase, another group of stocks began trading in decimals on the NYSE, including heavily traded issues like AOL and Compaq, along with a second group of stocks on the ASE. The stocks comprising both phases that were introduced during the first three months are available by request from this author. The NASD will begin its pilot program in March 2001. Full implementation of decimal quoting for equities and options will be completed by April 9, 2001, the date mandated by the Securities and Exchange Commission for all stocks and options to be traded in decimals.

Many interested parties have closely monitored the change to dollar and one-cent increments. Major foreign stock markets already use decimals; therefore, it will be easier to compare prices. The objective of this paper is to analyze the first three months of the changeover including the initial impetus and expected benefits as well as expected problem areas such as how shrinking spreads might affect volume.

EXPECTED BENEFITS AND PROBLEMS

According to Ip [6], the use of fractions goes back to the founding of the NYSE in 1792. Shares were quoted in eighths of a dollar, which reflected that the United States currency at that time was derived from the Spanish "pieces of eight." All markets agreed to move towards decimalization in 1997 under the pressure from Congress which felt that customers would not only benefit from savings on spreads, the difference between the price bid for a stock and the price asked for it, but also on the theory that it would make stock prices easier for investors to understand. Both assumptions potentially open the markets to better competition, especially on the global level because trading in pennies is expected to increase the volume of quotes and trades.

The major plus for investors is savings. Most investors expect to benefit from narrower bid/ask spreads. For example, if a dealer was bidding \$10 and offering \$10.0625 ($\$10 \frac{1}{16}$) for a stock, it would typically cost an investor \$6.25 to buy then sell 100 shares. On the other hand, if the stock was bid at \$10 and offered at \$10.01, the same trade of 100 shares would cost only \$1. The difference or spread goes to the dealers who quoted the bid and asked prices.

Critics to this assumption, according to Ip [7], argue that savings are more relevant to NASDAQ or regional stock exchanges because buyers and sellers

typically trade with a dealer. Participants on the NYSE or AME usually trade without a dealer; i.e., a buyer trades directly with a seller, so the same penny or \$1 on 100 shares saved comes out of the other's pocket. Even if the investor trades with a specialist, it is normally on one, but not both sides of the market. In addition, Ip [7] further suggests that when spreads shrink, so does the amount of stock available at any given price.

Another potential problem to investor savings with a switch to decimalization is that for as little as one cent per share, professional traders (specialists, a market maker on NASDAQ, or the investor's own broker) will make a front run or step in front of public orders. In other words, the professional uses knowledge of a customer's intentions to trade ahead of the customer. Front-running could result in a significant shift of power from public customers to professional traders and big investors could become more reluctant to use limit orders. Securities law prohibits front-funning when a professional trades at the same price his customer would have traded, but not necessarily when he trades at a better price. Elstein [5] suggests that day traders will have a difficult time competing with the shrinking spreads, but not to expect decimalization to end day trading.

EVALUATION

The first three months of decimalization have gone smoothly as reported by various reporters (see, for example, Ceron [1,2,3,4] and Munk [8]). There were no reports of any problems or confusion, and by and large, trading has proceeded without any hitches. Some brokerage firms reported increased workloads because many large block transactions have required several partial transactions at different prices versus a single transaction as previously done which suggests that investors were experiencing savings. Some firms suggested that limit orders appear to provide fewer advantages when someone can step in front of the order for only a penny. Most firms conclude, however, that decimalization made their jobs more labor intensive due to more executions of pieces of large orders.

Ceron [4] reports that industry experts say that the early evidence from the first two stages of decimalization indicates that spreads have narrowed which regulators hope will lead to investor savings. Has decimalization narrowed spreads? The data to study this question is guarded by each brokerage firm, which prevents this paper to analyze actual bid/ask spreads. Ceron [3] reports that two researchers (Chakravarty/Wood) were given data by a brokerage firm that the researchers refused to identify. They found that quoted bid-ask spreads on the seven NYSE stocks that began participating in Phase I of the program shrank 38 per cent and the six AME stocks from Phase I narrowed by 47 per cent when comparing data covering 15 days before August 28 to those results from 10 days after decimalization began.

Two elementary measures were selected for this study because of the lack of public bid-ask data. Since shrinking spreads suggest increased volume, average daily volume for the seven NYSE stocks from Phase I were computed for the three months (12 weeks) prior to the initial implementation of decimalization on August 28 and compared to the 12-week period immediately after the implementation. The results are shown in Table 1. Two of the three most active stocks exhibit a decrease in average daily volume during the post 12-week period. Each of the four less active stocks had either an increase or no change in volume.

Table 1
Average Daily Volume Prior And Post 12 Weeks

Stock	Prior 12 Weeks	Post 12 Weeks
Anadarko Petroleum	17,142	12,850
FedEx Corp.	8,285	7,206
Forest City Enterprises Class A	54	139
Forest City Enterprises Class B	10	10
Gateway Inc.	15,943	17,299
Hughes Supply Inc.	461	506
MSC Software Corp.	279	347

Table 2 shows average daily high-low differences in dollars for the prior and post 12-week periods for the same Phase I seven NYSE stocks. While the average daily high-low differences do not represent bid/ask spreads, they do indicate total daily price deviations of all executed orders. If bid/ask spreads narrowed, the price deviations should also on average narrow. Table 2 indicates that while the average differences for both the prior and post periods changed, four of the seven stocks actually had greater deviations after decimalization began.

Table 2
Average Daily High-Low Difference In Dollars Prior And Post 12 Weeks

Stock	Prior 12 Weeks	Post 12 Weeks
Anadarko Petroleum	\$1.88	\$2.58
FedEx Corp.	\$1.13	\$1.46
Forest City Enterprises Class A	\$.50	\$.35
Forest City Enterprises Class B	\$.26	\$.19
Gateway Inc.	\$2.67	\$3.32
Hughes Supply Inc.	\$.55	\$.54
MSC Software Corp.	\$.26	\$.35

CONCLUSION

The transition to trading stocks in dollars and cents, rather than fractions, has proceeded smoothly. After more than two centuries of trading in fractions, the NYSE and the ASE will make the complete transition and on January 29, 2001, all issues will be priced in decimals. Stocks will then trade in increments as small as one penny. The argument for decimalization is that investors will save significant amounts of money because they will now have 100 price points instead of 16 between each dollar. As researchers get access to bid-ask data, the shrinkage of the spreads and cost savings can be validated. The elementary measures used in this study were at best mixed.

Potential trouble spots to trading in decimals, such as front running will be closely monitored by the exchanges. The true test will come in early April of the coming year when the NASD fully converts its nearly 5,000 issues.

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