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Automated versus Floor Trading: An Analysis of Execution Costs on the Paris and New York Exchanges: Discussion

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- Madhavan, Ananth, and Minder Cheng, 1997, In search of liquidity: Block trades in the upstairs and downstairs markets, *Review of Financial Studies* 10, 175–203.
- Madhavan, Ananth, and Venkatesh Panchapagesan, 2000, Price discovery in auction markets: A look inside the black box, *Review of Financial Studies*, forthcoming.
- Madhavan, Ananth, and Seymour Smidt, 1993, An analysis of changes in specialist quotes and inventories, *Journal of Finance* 48, 1595–1628.
- Madhavan, Ananth, and George Sofianos, 1998, An empirical analysis of NYSE specialist trading, *Journal of Financial Economics* 48, 189–210.
- McNamee, Mike, Stanley Reed, and Debra Sparks, 1999, Still king of the e-bourses? Instinet is a formidable presence, but rivals abound, *Business Week*, June 21, 168–169.
- New York Stock Exchange, 2000, *Fact Book for the year 1999*.
- O'Hara, Maureen, 1995, *Market Microstructure Theory* (Blackwell Publishers, Cambridge).
- Parlour, Christine A., and Duane Seppi, 1998, Liquidity-based competition for order flow. Working paper, Carnegie Mellon University.
- Piowar, Mike, 1997, Intermarket order flow and liquidity: A cross-sectional and time-series analysis of cross-listed securities on U.S. stock exchanges and Paris Bourse, Working paper, The Pennsylvania State University.
- SBF Bourse De Paris, 1995, *BDM—The Paris Bourse Database* (SBF Bourse De Paris, Paris).
- Seppi, Duane, 1997, Liquidity provision with limit orders and a strategic specialist, *Review of Financial Studies* 10, 103–150.
- Sofianos, George, and Ingrid Werner, 1997, The trades of NYSE floor brokers, NYSE working paper 97-04.
- Stoll, Hans R., 1978, The supply of dealer services in securities markets, *Journal of Finance* 33, 1133–1151.
- Venkataraman, Kumar, 2000, The role of an upstairs market in an electronic stock exchange, Working paper, Southern Methodist University.
- Willoughby, Jack, 1998a, Exchange or die, *Institutional Investor*, November, 51–56.
- Willoughby, Jack, 1998b, Execution's song, *Institutional Investor*, November, 41–47.

Discussion

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THIS PAPER CONTRIBUTES TO THE ONGOING debate over the relative merits of floor versus automated systems. Although this is one of the most contentious issues in market microstructure (Madhavan (2000) provides a survey), relatively little empirical analysis has been performed. This paper fills this void; it compares and contrasts execution costs in Paris and New York in an effort to provide empirical evidence for the relative merits of the two systems. The two markets studied are both auction markets—involving public–public trades for the most part—but differ in the level of automation. Specifically, Paris operates as a continuous automated auction while the NYSE uses a floor-based system.

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I enjoyed the paper, especially the careful and thorough discussion of the different dimensions in which the two systems differ. For this reason alone, I would recommend the paper to anyone interested in learning more about this issue. On the empirical side, the paper compares execution costs (using now-standard metrics) in the two systems, controlling for firm effects by using matched samples. Stocks are carefully matched by characteristics including price, size, volume, and industry. The paper finds that the NYSE offers lower trading costs, concluding: "These results suggest that the present form of the automated trading system may not be able to fully replicate the benefits of human intermediation on a trading floor."

While the study is well-motivated and carefully executed, I have some concerns about the interpretation of the empirical results presented here.

I. Apples to Oranges Issues

No study can control for all the factors affecting market outcomes, but there are many institutional details unrelated to automated trading that affect costs in Paris and NYSE. These factors operate not necessarily just at the level of the market, but also at the overall "environmental" level. Some of the more important ones include: (1) The NYSE uses a specialist system, with a designated market maker or specialist, while the Paris Bourse has no such functionary. Numerous studies (e.g., Madhavan and Sofianos (1997)) show that specialists can and do affect the speed of price discovery, the efficiency of prices, spreads, and so forth. Are the results here a comment on the floor system or the specialist system? (2) The overall market structure in the United States is very different from the market structure in Paris. NYSE-listed stocks can be traded by alternative trading systems (POSIT, Arizona Stock Exchange), Regional exchanges (Boston, Philadelphia), and ECNs, among others. By contrast, Paris has a much more centralized and less fragmented market. Could greater competition for the NYSE explain its lower costs? (3) Other differences between France and the United States, such as insider trading rules, macro risk factors and overall level of market activity, might affect even a matched sample of stocks. Again, are these factors secondary to automation or not? Intermarket comparisons are extremely tricky. Can we ever assure a fair "apples to apples" comparison? Perhaps, but only in very controlled situations with natural experiments (Amihud, Mendelson, and Lauterbach (1997)) or with the use of experimental economics.

II. Who Pays the Spread?

While it is common to make inferences about market structure based on effective spreads, this can be misleading in an auction market. Consider the following example of a buy order that executes at the ask price of \$102 when the midquote is \$100, for an effective spread of two percent. In this case, the liquidity demander (who submitted the market order) pays two percent while the liquidity provider (not necessarily a specialist or market maker) receives

two percent. Who would be disadvantaged if the spread were to fall? Narrower spreads benefit liquidity demanders but make liquidity providers worse off. In a dealer market where competitive dealers provide liquidity, higher spreads mean higher costs for investors but not necessarily higher rents for dealers. In this case, lower effective spreads are unambiguously better for the economy. But it is unclear to me how in an *auction* market to interpret effective spreads or a mixed hybrid market like the NYSE where the dealer has a small, but significant, participation rate (Madhavan and Sofianos (1997)).

III. Upstairs Market

So-called upstairs intermediaries can cushion the impact of large-block trades; often upstairs-intermediated trades occur within the quoted bid-offer spread. Consequently, the measured cost of trading for blocks might be very low if these markets exist and are efficient (Madhavan and Cheng (1997)), as they are in both Paris and New York. Differences in the costs of trading across systems may have less to do with automation than with the state of development of the upstairs market. The key point to note here is that the existence of upstairs markets is not necessarily linked to the existence of a physical floor. Nor does automation preclude upstairs trading. Upstairs trading could be fully electronic, anonymous (e.g., POSIT), and automated, or could rely on brokers making telephone calls. Without information on how upstairs activity varies across the two systems, it is impossible to assess the cost of trading for large blocks. The results are most clearly interpreted for smaller trades.

IV. Evidence is Mixed

Previous studies document a wide range in trading costs across countries. Domowitz, Glen, and Madhavan (2000) report that Paris and New York are among the lowest cost markets in a comparison of 45 countries. Costs in Paris are just 30 basis points (one way) versus New York with 35 basis points. This is consistent with the result here, but it means that we are comparing two very low-cost systems to learn more about one dimension in which they differ, namely automation. The second problem is that these differences are economically small, and measuring trading costs (especially implicit trading costs) is very difficult. Indeed, the standard error with these estimates could easily swamp the differences reported here of 14 basis points. Essentially, we have no economically compelling evidence that costs differ between the two systems.

V. Revealed Preference

Most major non-U.S. markets use automated auctions. Examples in equities include ECNs, Toronto Stock Exchange, Euronext (Paris, Amsterdam, Brussels), and the Deutsche Börse; in fixed income: eSpeed and BondNet; in foreign exchange: Reuters 2002 and EBS; and in derivatives: Eurex, Globex,

Matif, and LIFFE. This “revealed preference” suggests that the value of the floor, if any, is dominated by other advantages automated systems have including speed, anonymity, transparency, reliability, and lower costs of operation. Given this clear preference for the automated auction, it is instructive to ask why we do not see the same pressures in the United States. One factor is undoubtedly the nature of governance structures, a factor closely related to automation. The institution of exchange seats, and the mutualized governance structure, are associated with floor markets where physical space is at a premium. An automated, electronic market has no such capacity constraints, obviating the need to limit entry. Demutualization allows automation, because a for-profit governance structure leads to more rational decision making. In the United States, the pressures to demutualize, and hence to automate, are not yet as apparent as in the rest of the world.

REFERENCES

- Amihud, Yakov, Haim Mendelson, and Beni Lauterbach, 1997, Market microstructure and securities values: Evidence from the Tel Aviv Stock Exchange. *Journal of Financial Economics* 45, 365–390.
- Domowitz, Ian, Jack Glen, and Ananth Madhavan, 2000, International equity trading costs: A cross-sectional and time-series analysis. Working paper, Pennsylvania State University.
- Madhavan, Ananth, 2000, Market microstructure: A survey. *Journal of Financial Markets* 3, 205–258.
- Madhavan, Ananth, and Minder Cheng, 1997, In search of liquidity: An analysis of upstairs and downstairs trades. *Review of Financial Studies* 10, 175–204.
- Madhavan, Ananth, and George Sofianos, 1997, An empirical analysis of NYSE specialist trading. *Journal of Financial Economics* 48, 189–210.