

Introduction to the Market Microstructure Symposium

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The Market Microstructure Symposium in this issue of the *Review of Financial Studies* illustrates the diverse types of research being undertaken by scholars in this area of finance. The excitement and activity level reflect the overlap of a number of important ingredients, which in turn are helping to shape this subfield. The rational expectations paradigm provides a strong conceptual foundation for the theoretical analysis of problems. The development of the very powerful and tractable frameworks of Grossman and Stiglitz (1980), Glosten and Milgrom (1985), and Kyle (1985), and its extension by Admati and Pfleiderer (1988), has greatly spurred theoretical work in this area. In fact, the symposium includes the important extension of the Kyle framework to incorporate risk aversion in the Subrahmanyam (1991) article. The influence of these theoretical models of adverse selection has been enhanced by the broad recognition of the importance of adverse selection in actual security trading. The development of empirically tractable approaches for examining adverse selection [e.g., Glosten and Harris (1988)] has heightened the impact of the development of the theory. Admati (1991) provides a recent, more detailed overview of the theoretical literature on rational expectations and market microstructure.

The interest in market microstructure also has been enhanced by the availability of a variety of transactional datasets in diverse market settings (and the related substantial reductions in computation and

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storage costs). Transaction, quotation, order flow, and market maker inventory data are enhancing our knowledge of the transactional mechanism. [In fact, Madhavan and Smidt (1991) are able to explore inventory as well as informational issues by using inventory data.] The transactional data are very rich and provide tremendous insight concerning the nature of the trading and informational processes in asset markets. The depth of information in these datasets is quite valuable in empirical work, as illustrated in this symposium by the Harris (1991) study of discreteness and clustering in equity prices and the Harvey and Huang (1991) analysis of volatility patterns in the foreign exchange market. Transactional datasets also allow researchers to analyze the microscopic dynamics of price reactions in event studies, when linked to timed announcements from a major financial news-wire. An early illustration of this approach is in Pate11 and Wolfson (1984). The application of time-series methods has proved valuable for understanding the characteristics of transactional data, as illustrated in this symposium by Hasbrouck (1991). The complex nature of these datasets suggests important problems for methodologically oriented empirical researchers. Interesting aspects of the data include the lack of even spacing of transactions [e.g., Hausman, Lo, and MacKinlay (1991)], the endogeneity of trade executions, and the interaction between quantities and pricing in the bargaining and trading process. These data also allow the testing of explicit theoretical models [the Bossaerts and Hillion (1991) contribution to the symposium illustrates how transactional data can be used to test a theoretical model]. Indeed, the richness of the transactional data helps identify puzzles and important theoretical problems. For example, Harris (1991) indirectly raises important issues about the price formation process for equities and optimal order placement strategies with clustering of prices and bids and offers. The empirical papers in the symposium illustrate some of the diversity in methodology and perspective in utilizing transactional data and how research progress is enhanced by a spectrum of approaches. Of course, there still is much to learn empirically with such datasets as these only have begun to become available in recent years and the scale and inherent complexity of some of the datasets are unusual.

The current interest in market microstructure undoubtedly also reflects the tremendous policy attention to security market issues in the aftermath of the Crash of 1987. The analysis of clustering in Harris (1991) shows the effect of the regulation of the pricing grid in some security markets such as the New York Stock Exchange. In fact, policy concerns motivate the Admati and Pfleiderer (1991) analysis of sunshine trading and the Chowdhry and Nanda (1991) analysis of imperfectly integrated markets in this symposium. These two articles illustrate how the theoretical approaches developed in market microstruc-

ture can help shed light on important applied questions. More broadly, applied analysis in market microstructure has and will be stimulated by the opportunities for informal interactions with practitioners, including visits to trading floors, that are available to the research community.

In concluding this introduction, it may be useful to point to a few directions that have not yet emerged as central issues in market microstructure. One of the useful simplifications in much of the theoretical research has been to abstract from the trading incentives of "liquidity" traders. More attention is beginning to be addressed to understanding the behavior of these agents at more fundamental levels in order to assess the robustness of the conclusions of microstructure analyses [the role of endowment shocks in modeling of liquidity traders is illustrated by such articles as Glosten (1989) and Spiegel and Subrahmanyam (1991)]. An interesting example that illustrates the opportunities for both theoretical and empirical work is the analysis of the nature of execution cost. Relatively little is known about optimal order execution strategies and the empirical determinants of execution cost. Finally, though adverse selection is certainly one of the central issues in market microstructure, relatively little attention has been directed to what degree the design of mechanisms for trade itself reflects market efforts to address the adverse selection problem efficiently.

This symposium issue illustrates the relatively integrated nature of research in market microstructure, including the close connection between theoretical and empirical work, as well as the breadth of problems being examined and methods being utilized in this area. The articles published in this issue followed the customary refereeing process of the *Review of Financial Studies* and were presented as part of the symposium sessions at the Western Finance Association meetings in Santa Barbara during June 1990. Those symposium sessions and this issue are jointly sponsored by the *Review of Financial Studies*, the Western Finance Association, and the New York Stock Exchange.

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