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Market microstructure and corporate finance

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Abstract

This article provides a brief overview of the importance of market microstructure research and identifies existing areas of research that focus on links between microstructure and corporate finance. Each of the special issue articles is then summarized with particular attention given to the research contribution of the article and to the links explored between microstructure and corporate finance. © 2002 Elsevier Science B.V. All rights reserved.

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These trees are magnificent, but even more magnificent is the sublime and moving space between them. Rainer Rilke.¹

While the growing complexity of both theoretical constructs and empirical methodologies leads to ever more specialized research, a healthy preoccupation with the meaning and relevance of our research still ensures we never lose sight of the forest for the trees.² Furthermore, an honest fascination with the myriad details and nuances of our work ensures that every tree gets more than a passing glance. What Rilke so elegantly reminds us, is to devote at least some of our attention to those topics that lie between established lines of inquiry. This special issue explores just such a set of topics—those that combine corporate finance with market microstructure.³

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¹ This quote appeared in a letter to Claire Goll and appears in Goll (1995, pp. 63–64).

² This proverb was first documented by John Heywood in 1546 and the first use in print was by Christoph Martin Weiland, a German poet, who wrote “Too much light often blinds gentlemen of this sort. They cannot see the forest for the trees.”

³ This is not to say there has been no research in this area. There has been substantial activity in some areas and these are discussed below. The focus of this special issue might best be described as bringing to light some new or less explored areas.

While the articles collected here are by no means exhaustive, they do suggest two paths down which one might proceed. First, there are empirical methods in market microstructure that can be used to evaluate theories in corporate finance. For example, there are measures of the degree to which some individuals are better informed than others and these can be used to evaluate links between asymmetric information and corporate decisions. The second path is to examine the influence of microstructure outcomes on corporate decisions. In this case, the microstructure of markets may influence corporate strategy.⁴

The goal of this introduction is twofold. First, to place microstructure research itself into a broad context. Specifically, I will briefly address the general relevance of microstructure issues and discuss some existing research that links microstructure and corporate finance. Second, to introduce each of the articles in this collection and highlight the contribution of the work in light of both microstructure and corporate finance literatures.

1. Microstructure: does it matter?

Market microstructure is the study of the organization and function of markets. Most of the literature focuses on the two central roles of markets—the transfer of ownership and price discovery. Research on the former role emphasizes the costs of trading (liquidity), while research on the latter emphasizes the process by which private information is incorporated into prices.

Given the centrality of liquidity, it is not surprising that one of the first papers to assess the importance of microstructure examined the relation between asset value and liquidity.⁵ Amihud and Mendelson (1986) looked at the relation between the bid-ask spread and expected returns. In their conclusion, they write

Applying our empirical results, consider an asset which yields \$1 per month, has a bid-ask spread of 3.2% (as in our high-spread portfolio group) and its proper opportunity cost of capital is 2% per month, yielding a value of \$50. If the spread is reduced to 0.486% (as in our low-spread portfolio group), our estimates imply that the value of the asset would increase to \$75.8... (pg. 246).

While this analysis has its weaknesses (see O'Hara, 1999 for a complete discussion), the magnitude of the results is striking. An improvement in liquidity that spanned their sample implied an increase in value of about 50%.

More recently, these two authors, with Beni Lauterbach, provided corroborating evidence of a different sort.⁶ They examined a change in the trading mechanism of the Tel Aviv Stock

⁴ Which is not to say that microstructure issues are necessarily dominant or deciding factors. In some cases, they will be of secondary importance, while in others they may be central.

⁵ O'Hara (1999) discusses the importance of market microstructure in an engaging short article entitled "Making Market Microstructure Matter."

⁶ Amihud et al. (1997).

Exchange that moved securities from single daily auctions to continuous daytime auctions (in other words, increased intra-daily liquidity) and documented about a 5.5% permanent increase in asset values. The point of these two articles is that the microstructure of markets can significantly affect the value of securities. As such, the microstructure outcomes of corporate decisions can significantly affect firm values.

Studies that emphasize the importance of microstructure are not limited to asset pricing. A number of areas of corporate research have embraced microstructure issues. In fact, two of these can quite easily be thought of as essentially microstructure events: initial public offerings (IPOs) and listing changes. In both cases, the event is a change in the mechanism by which ownership is transferred—a microstructure change. In the case of IPOs, central questions are how the issues are priced (price discovery) and how the issue is distributed and stabilized (trading costs).⁷ For listing changes, numerous studies document a permanent price increase as firms move from the Nasdaq to the NYSE, and have explored changes in liquidity associated with that event.⁸ Another example is stock splits. Despite being little more than a paper change, stock split announcements are associated with positive and permanent abnormal returns, on average. Many studies of stock split announcement reactions have focused on the market microstructure effects of the change in price level induced by the split.⁹

Clearly, this discussion is far from comprehensive. Its purpose is simply to pique your interest and suggest that microstructure research might very well be a source of insight if not inspiration. In fact, this is the central purpose of the special issue as a whole and we now turn our attention to the papers that have been included.

2. Overview of papers in the special issue

As mentioned at the beginning, the papers in this special issue suggest two paths that might connect microstructure to corporate finance: using traditional microstructure techniques to examine corporate decisions, and examining the effect of microstructure outcomes on corporate decisions. However, these paths are not mutually exclusive and the first paper in this issue clearly and explicitly traverses both.

2.1. *The impact of informed trading on dividend signaling*

Fuller (2002) examines the decision to employ dividends as a signal of private information in light of pre-dividend trading activity. This paper develops a theoretical model of a relation between trading activity and subsequent dividend signaling, and then uses empirical microstructure techniques to validate the empirical predictions of the model.

Fuller motivates her analysis by noting that there is substantial variation in the price reaction to unexpected dividend changes. She develops a model that links the extent of this price reaction (and, by extension, the decision to use dividends as a signal) to the nature of

⁷ See Hanley et al. (1993), Krigman et al. (1999), Ellis et al. (2000), and an overview by Ritter (1998).

⁸ See Christie and Huang (1994), Huang and Stoll (1996) and Jones and Lipson (1999), among others.

⁹ See Conroy et al. (1990), Maloney and Mulherin (1992) and Angel (1997), among others.

trading activity prior to the dividend. Given that informed traders are likely to be trading on the very information that a dividend is supposed to convey, she makes two related observations. First, informed trading prior to the dividend will reveal much of the information that might be conveyed by the dividend; therefore, one would expect an inverse relation between measures of informed trading and announcement reactions. Second, since dividends are signals of positive news, the extent to which trades are more likely to be buyer initiated will also be related (inversely) to the price reaction at announcement. This follows since informed traders are more likely to be buyers than sellers.

Using a sample of dividend increases from 1994 through 1998, Fuller tests the predictions of the model. To gauge the extent of informed trading, she uses three empirical measures. Two of these rely on the idea that price changes subsequent to a trade (acknowledging whether the trade was a buy or sell) will reflect the information of the trade. This type of measure is suggested most directly in the work of [Glosten and Milgrom \(1985\)](#) and [Glosten \(1987\)](#).¹⁰ In contrast to these price change measures, the third measure is based on a very general model of the arrival of traders developed in [Easley et al. \(1996\)](#) and is calculated from the extent and nature (buy versus sell) of trading activity.

The empirical results tend to confirm the implications of the model. When there is more extensive informed trading or buying activity in advance of a dividend announcement, the reaction to the announcement is attenuated. While these results are interesting on their own, and certainly expand our understanding of dividend signaling, it should be noted that the model is general enough that it might apply to most any corporate signal. One could just as well use the techniques in Fuller to explore cross-sectional variation in price reactions to a host of announcements.

2.2. DaimlerChrysler, the first truly global share

Whereas an IPO represents an important first step in accessing the liquidity of public capital markets, the decision to issue globally fungible securities represents a step toward accessing the full breadth of international capital. [Karolyi \(2002\)](#) examines the first instance of unfettered global trading as the newly formed DaimlerChrysler began trading its global registered shares (GRSs) on stock exchanges across the world.

The GRS is best thought of as a more easily traded version of an American Depository Receipts (ADRs). With ADRs, foreign shares are held by an intermediary who issues ADRs against the shares. The ADRs trade in the US markets while foreign shares trade in non-US markets. In contrast, GRSs can trade in either US or non-US markets and would not need an ADR-like facility. Karolyi explores whether this new structure provides improvements in market quality—more liquidity, greater trading in each country's markets, and reduced volatility.

[Domowitz et al. \(1998\)](#) explore international cross-listings using ADRs and, in general, found improved liquidity with increased trading volumes in both the home and ADR markets. Karolyi also finds an overall improvement in liquidity, but the other

¹⁰ Many authors have contributed substantially to the development of this body of work. The interested reader is referred to [O'Hara \(1997\)](#) and [Harris \(2002\)](#) who provide excellent and comprehensive overviews of this material.

results are mixed. For example, Karolyi finds that there is a substantial shift in trading volume to the new home market.¹¹ This result is interesting because it suggests that some individuals who followed and traded Chrysler stock before the merger are no longer interested in Chrysler as part of DaimlerChrysler even though Chrysler's share of the automobile market is undiminished. Karolyi also finds that volatility increases, but this is not related to other changes in trading activity. In general, there appears to be little evidence that this first use of a global share led to improved market quality. Of course, it is difficult to generalize from this single event. However, the article provides an excellent description of the global share, the events surrounding this first (and very high profile) introduction of the shares to world markets, and points out some significant issues for further research.

2.3. *The incremental impact of analyst initiation of coverage*

The quality and usefulness of stock analyst recommendations is uncertain—a condition that might be related to various explicit and implicit incentives within a brokerage firm (Womack, 1996; Michaely and Womack, 1999). However, there is little doubt that analyst coverage is considered beneficial and there appears to be a positive price reaction to initiations of coverage (Kim et al. (1997)). Irvine addresses two important issues related to initiations. First, despite the attention paid to initiations, the best evidence on the magnitude of the price response to initiations is an unconditional estimate by Barber et al. (2001), and the magnitude is not economically large. Second, it remains unclear what factor supports the positive price response—improved monitoring, better public information, or improved liquidity.¹² Irvine (2002) tackles these two questions directly and isolates, as his title suggests, the incremental impact of analyst initiations.

Irvine compares the cumulative return around recommendations of analysts who are initiating coverage to identical recommendations by analysts already covering a firm. This approach provides a careful control for the information released in the initiation and, along with other empirical choices in this study, allows a more accurate assessment of the magnitude of the price response to initiations. The incremental price reaction to initiations is statistically and economically meaningful—an incremental response of about 1%.¹³ More importantly, Irvine goes on to show that these initiation returns are positively related to improvements in the liquidity of the firm's stock.¹⁴ These results show that liquidity improvements are an important source of value from analyst coverage and suggest that actively courting analyst attention can benefit the firm's shareholders.

¹¹ Note that the DaimlerChrysler GRS represented the newly merged Daimler and Chrysler firms. To assess the degree of change in trading in each market (US and Germany), one would look at trading in each of the pre-merged firm's equities. The new home market, in this case, would be Germany.

¹² The reader is directed to Moyer et al. (1989), Peterson (1987), and Brennan and Subrahmanyam (1995), for discussions of these three possibilities, respectively.

¹³ As a basis of comparison, Irvine documents an unconditional price response to a strong buy recommendation of about 1.5%.

¹⁴ Interestingly, Irvine also shows that there is still an important effect associated with the nature of the recommendation—positive initial recommendations lead to greater improvements in liquidity.

2.4. The stock market reaction to the challenger crash

Event studies are probably the most commonly used tool of financial research. This is especially true in corporate finance, where event studies are used to assess both the direction and magnitude of the value implications of corporate decisions (see Fama, 1991; MacKinlay, 1997 for overviews). The usefulness of this tool is directly related to the market's ability to quickly and accurately reflect both public and private information. Maloney and Mulherin (2002) take an innovative approach to examining the market's ability to reveal information: they study a particularly extreme *public* event (the crash of the space shuttle Challenger) in order to assess the market's ability to infer *private* information. The basic results are striking. While it took months before a consensus was reached by government investigators that the O-rings manufactured by Morton Thiokol were the principal cause of the crash, price changes immediately after the crash were significantly more negative for Morton Thiokol than for other firms that were just as likely to have been at fault. These results suggest that markets are able to uncover private information with considerable accuracy.

Maloney and Mulherin go on to examine a number of questions that link microstructure and corporate finance event studies. First, they examine trade and quote data to see if there are clear links between specific trading activity and the price response. They find no such links, which raises some questions as to the exact means by which private information makes it way into prices. Second, they note that much of the price response in Morton Thiokol occurred during a trading halt in that firm's shares, while no halts were observed in any of the other firms at that time. The authors note that the difference in price reactions across firms possibly at fault in the Challenger crash, which explicitly isolated Morton Thiokol, would have been lost had there been a broader stock market halt at that time. They argue, therefore, that circuit breakers and other market-wide trading halts might hamper price discovery.

The results in Maloney and Mulherin might appear extraordinary—without any apparent link to a specific informed trader, prices seem to reflect even very private information. But the analysis is well crafted and the facts are clear. In the end, the article makes a strong case for efficiency and the incredulous among us are invited to explore this kind of analysis further.

2.5. Corporate spinoffs and information asymmetry between investors

A number of theories suggest a link between corporate spinoffs and changes in the information environment of a firm's shares. For example, Habib et al. (1997) suggest that spinoffs improve the accuracy of public information since prices are available for each segment of the business. In contrast, Gorton and Penacchi (1993) note that bundled securities diversify away the informational advantage of traders with private information on single securities, suggesting that spinoffs would exacerbate adverse selection problems.

Looking at various measures of market quality, Huson and MacKinnon (2002) find that spinoffs appear to benefit informed traders. Specifically, the authors document an increase in variance, spreads, and the degree of adverse selection (as measured by the

price change following trades). More importantly, these changes are more pronounced for spinoffs of units in unrelated lines of business.

These results suggest an important link between decisions that affect corporate focus and the information available on a firm's operations. In particular, the results highlight the very links that this special issue is intended to draw attention to: a corporate decision regarding the operations of a firm is connected to a change in the information structure of a firm's shares, which, in turn, affects the costs of trading.

3. Conclusion

Each of the papers in this special issue advances our understanding of a specific corporate decision and raises interesting questions for future study. More important, the variety of papers provides a sense of the breadth of possible research that can be generated by linking corporate finance and market microstructure. From theory to empirical methods, from global markets to market efficiency, from spinoffs to dividends, this special issue certainly covers a lot of ground—and suggests that there is much yet to be done.

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