

The impact of informed trading on corporate liquidity

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Abstract

The purpose of this paper is to analyze the impact of informed trading on corporate liquidity. Although theory posits an inverse relation between informed trading and firm liquidity, there is relatively little evidence on precisely how this relation is established or maintained. The trading model of Easley et al. (*J. Finance* 51 (1996) 1405) is employed to estimate the probability of informed trading and to identify specific days of informed trading using posterior probabilities. The results show that corporate liquidity, both in terms of spreads and depths, is a decreasing function of the probability of informed trading. The main finding is that spreads narrow and depths increase on actual information days even after controlling for variations in price, volume, and volatility. © 2002 Elsevier Science B.V. All rights reserved.

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1. Introduction

The purpose of this paper is to analyze the impact of informed trading on corporate liquidity. Although the presence of informed traders is expected to reduce

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corporate liquidity, little is known about the mechanism through which this relationship is established or maintained. The generally accepted view is that informed traders generate or obtain private information that is subsequently impounded into market prices through their trading activities. Uninformed traders are unaware of the private information content but are aware of the possible existence of information asymmetries. They respond to their informational disadvantage by reducing trading activity (i.e. lowering depths) and/or increasing required rates of return (i.e. widening spreads). The higher the probability of trading against informed traders, the lower the firm's depth and/or the wider firm's bid–ask spread. In this manner, the presence of informational asymmetries and informed trading reduces firm liquidity and raises the cost of capital.

Although the connection between informed trading and firm liquidity is rather straightforward, the dynamics of the process are not as well understood. For example, by what means do uninformed traders identify the presence of informed trading, and does this identification take place during or after prices have adjusted to reflect the new (private) information? If uninformed traders are able to identify contemporaneous informed trading, then their depth and spread adjustments will increase the costs of incorporating such information into prices. If, on the other hand, uninformed traders are unable to identify contemporaneous informed trading, then this lowers the marginal cost of price discovery. In the latter case, uninformed market participants might be able to identify information events after their occurrence and use such information (i.e. frequency of information events) to form expectations about the future likelihood of trading against informed traders.

It is important to identify and understand the variables affecting liquidity because of the close connection between corporate liquidity and cost of capital (Amihud and Mendelson, 1986). Recent empirical evidence confirms that a corporation's required rate of return is significantly related to various liquidity proxies, such as amortized spreads (Chalmers and Kadlec, 1998), turnover rates (Datar et al., 1998), and adverse selection costs (Brennan and Subrahmanyam, 1996). Our paper contributes to the literature by analyzing how spreads and depths adjust to the likely presence of informed trading. A secondary contribution is the use of data from an electronic order-driven market, the Stock Exchange of Hong Kong (SEHK). As more and more exchanges conduct trading through electronic limit order books, it is increasingly important to analyze strategic behavior in these transparent environments without designated market makers (see Madhavan, 1992, 1996 or Handa and Schwartz, 1996).

We employ the trading model of Easley et al. (1996) (EKOP) to identify the presence of informed trading and to measure its effect on liquidity. The data consist of over 7 million intra-day observations for 521 companies traded on the SEHK from May 1, 1996 to August 29, 1997. The EKOP model is utilized to generate firm-by-firm estimates of the probability of an information event, the probability of bad news given the occurrence of an information event, and the order arrival rates of informed and uninformed traders. A maximum likelihood procedure is implemented to obtain parameter estimates which, in turn, are used to estimate the probability of informed trading and to identify trading days with active informa-

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