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Adverse selection, brokerage coverage, and trading activity on the Tokyo Stock Exchange

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Abstract

Limit-order trading mechanisms, corporate ownership structure, and incentive structures in the Japanese brokerage industry differ from those in the US in several important ways. This paper exploits these differences to examine the joint and cross-sectional determinants of adverse selection costs, brokerage coverage, and trading activity for a large sample of Japanese firms traded on the Tokyo Stock Exchange. We find that adverse selection costs are associated with firm characteristics but not with ownership characteristics, which implies that adverse selection costs are affected by inside trading rather than inside holdings. We also find that while brokerage coverage reduces adverse selection costs, higher adverse selection costs lead more brokerage firms to enter the market because of the greater profit potential. Finally, we find that causality also runs both ways between brokerage coverage and trading volume: brokerage coverage increases trading volume and trading volume increases brokerage coverage.

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1. Introduction

Numerous studies of the US financial markets have found evidence of adverse selection costs due to information-based trading. Most of these studies focus on the theoretical development and empirical testing of microstructure models that measure adverse selection costs on the basis of intraday transaction data.[1] The determinants of information production, and analyst following in particular, have also aroused considerable interest among academics.[2] Several papers attempt to examine the joint and cross-sectional determinants of adverse selection costs and information production, which are affected by a common set of firm and trading characteristics as well as by each other (Brennan and Subrahmanyam, 1995). For the most part, attempts to link the two lines of research have generated inconsistent empirical results for large samples of US stocks.[3]

The conflicting empirical findings from existing studies suggest that more work is necessary. Using data from a large sample of Japanese firms on the Tokyo Stock Exchange (TSE), we estimate the adverse selection cost component of the bid–ask spread based on the microstructure models developed by Glosten and Harris (1988); De Jong et al. (1996), and Madhavan et al. (1997). We then examine how our estimates of adverse selection costs are cross-sectionally related to various firm and ownership characteristics in an ordinary least squares (OLS) framework and how adverse selection costs, brokerage coverage, and trading activity are jointly determined in a simultaneous equation framework.

In addition to providing new evidence, our paper makes an important contribution to the literature for the following reasons. First, the TSE is a quote-driven limit-order market. There are no designated market makers with an obligation to take positions in the market. Liquidity is supplied by traders who submit limit- or market-orders. A number of earlier studies examine various aspects of the TSE, such as institutional features, trading mechanisms, price limit rules, and intraday patterns on spread, volume, and volatility.[4] However, there are few papers that decompose

[1] Goodhart and O'Hara (1997) and Madhavan (2000) provide recent surveys on market microstructure.
[2] See Bhushan (1989); O'Brien and Bhushan (1990), and Brennan and Hughes (1991).
[3] In addition to Brennan and Subrahmanyam (1995); Chung et al. (1995) and Van Ness et al. (2001) provide studies on the joint determination of the spread (adverse selection cost) and analyst following using different samples of US stocks. While Brennan and Subrahmanyam report a positive relation between adverse selection costs and analyst following, Chung et al. find a negative relation between the spread (a proxy for adverse selection costs) and analyst following. Van Ness et al. report mixed results.
[4] See Amihud and Mendelson (1991, 1993); Lehmann and Modest (1994); Hamao and Hasbrouck (1995), and Kim and Rhee (1997), among others.