



## Liquidity, analysts, and institutional ownership

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### ABSTRACT

In this paper, we investigate the empirical relationship between institutional ownership, number of analysts following and stock market liquidity. We find that firms with larger number of financial analysts following have wider spreads, lower market quality index, and larger price impact of trades. However, we find that firms with higher institutional ownership have narrower spreads, higher market quality index, and smaller price impact of trades. In addition, we show that changes in our liquidity measures are significantly related to changes in institutional ownership over time. These results suggest that firms may alleviate information asymmetry and improve stock market liquidity by increasing institutional ownership. Our results are remarkably robust to different measures of liquidity and measures of information asymmetry.

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### 1. Introduction

In this paper, we examine how financial analysts following (i.e., the number of analysts following the company) or/and institutional ownership (i.e., the percentage of shares held by institutions) affect stock market liquidity. The relationship between financial analysts following or the institutional ownership and information asymmetry has received a great deal of attention in the finance literature. The focus has been on the following questions: (1) are financial analysts' forecasts and stock recommendations useful and informative and is the information production of analysts correlated with lower degree of information asymmetry? (2) Is higher institutional ownership associated with a lower or higher degree of informed trading? To date the empirical results are quite mixed, and further theoretical and empirical studies are clearly needed.

One of the roles of financial analysts is to make buy/sell recommendation to brokerage firms and their clients that may lead to more profitable investment decisions. Analysts also provide forecasts on future earnings and other pertinent financial variables that are considered to have a material impact on stock prices. For example, Imhoff and Lobo (1992), Atiase and Bamber (1994), Marquardt and Weidman (1998), and Womack (1996) use the

number of financial analysts following as a proxy for the amount of information available about a firm. Brennan and Subrahmanyam (1995) and Roulstone (2003) find that the financial analysts provide information to market participants. Firms with many analysts following exhibit better liquidity such as smaller spreads and larger depths, and has overall lower degree of information asymmetry. In addition, Givoly and Lakonishok (1979), Lys and Sohn (1990), Francis and Soffer (1997), and Moshirian, Ng, and Wu (2009) show that financial analysts' forecasts and recommendations affect stock prices.<sup>3</sup>

However, Chung, McInish, Wood, and Wyhowski (1995) and Van Ness, Van Ness, and Warr (2001) report a negative association between analysts following and liquidity. They conjecture that financial analysts have a greater incentive to follow stocks with greater information asymmetry. The value of private information increases with informational asymmetry, and market makers post wider spreads for stocks that are followed by more analysts.<sup>4</sup> Additionally, Easley, O'Hara, and Paperman (1998) show that stocks with more analysts have more informed trades, but that they have even greater rates of uninformed trades. This result suggests that while analysts' clients may be trading on the basis of information, analysts attract even more uninformed trading in a stock and it

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<sup>3</sup> Moshirian et al. (2009) find that stock prices react significantly to financial analysts' recommendations and revisions. They suggest that investors can make abnormal returns based on information provided by stock analysts in emerging markets.

<sup>4</sup> Van Ness et al. (2001) also show that the adverse selection components of the spread are positively related to the number of analysts following the firm.

supports the view that analysts serve to increase trading volume by showcasing stocks to uninformed traders.

Related to the relationship between institutional ownership and liquidity, Grullon and Wang (2001) assume that institutional investors are informed as they have an informational advantage through exploiting economies of scale in information acquisition and processing.<sup>5</sup> Thus if institution holdings are associated with private information production, we expect a negative correlation between institutional holding and liquidity. However, firms that are widely held by institutional investors may be pressured to adopt better corporate governance. Recently, Chung, Elder, and Kim (2010) find that better corporate governance is associated with higher stock market liquidity such as narrower spreads, higher market quality index, and smaller price impact of trades. Also, effective monitoring of corporate managers provided by institutional investors reduces information asymmetry between insiders and liquidity providers. Good monitoring by institutional holders influences liquidity because it is difficult for the insiders and/or managers to exploit private information. Liquidity providers are likely to maintain smaller spreads for stocks of companies with higher institutional ownership. For example, Jiang and Kim (2005) find that, non-US stocks have wider spreads, less depth, and larger intraday volatility than comparable US stocks and the higher spreads and information asymmetry on non-U.S. stocks can be explained by the lower institutional ownership.

The link between institutional ownership and corporate governance and its subsequent impact on returns, liquidity has been the focus of many recent works. The efficient functioning of capital markets depends on the quality, reliability, and transparency of financial information disseminated to the markets. The financial scandals at the turn of the 21st century (Enron, WorldCom, Global Crossing, and Qwest) raised serious concerns regarding corporate accountability, the reliability of public financial information, and corporate governance. The poor corporate governance system was criticized during the financial scandals. The lessons learned from these failures have since led to the adoption of major legislative changes and regulatory changes in U.S. However, even after such changes, we still see severe problems in U.S. corporate governance structure from the experience of the recent financial crisis.

Institutional investors have increasingly engaged in corporate governance activities. Institutional investors have strong incentives of monitoring management to generate greater stock returns. According to *The Conference Board: Institutional Investment Report* (March 2003), in 2001 institutional investors held 55.8% of the publicly traded equities in the U.S. Firms that are widely held by institutional investors may be pressured to adopt better corporate governance. Recently, Chung et al. (2010) find that better corporate governance is associated with higher stock market liquidity such as narrower spreads, higher market quality index, and smaller price impact of trades. Also, effective monitoring of corporate managers provided by institutional investors reduces information asymmetry between insiders and liquidity providers. Good monitoring by institutional holders influences liquidity because it is difficult for the insiders and/or managers to exploit private information. Liquidity providers are likely to maintain smaller spreads for stocks of companies with higher institutional ownership. Chung and Zhang (submitted for publication) find evidence that institutional investors prefer stocks with better corporate governance for monitoring costs and liquidity reasons. However, Erkens et al. (2010) find that firms with higher institutional ownership show worse stock returns during financial crisis, 2007–2008. This is likely due to the fact that even though institutional ownership and liquidity are positively correlated, there are heavier selling pressure during the financial crisis.

<sup>5</sup> Chung and Zhang (submitted for publication) analyze the relation between corporate governance and institutional ownership. They show that the percentage of institutional ownership is positively and significantly related to its governance quality.

There is also a related strand of literature that investigates the relationship between ownership concentrated and information asymmetry. Heflin and Shaw (2002) and Jacoby and Zheng (2010) examine whether blockholdings increase information asymmetry and reduce liquidity, and they show a significant positive relation between concentrated ownership and liquidity.<sup>6</sup> Rubin (2007), Agarwal (2007), and Brockman and Yan (2009) investigate the link between the liquidity of a stock and its ownership structure, how much of the firm's stock is owned by insiders and institutions, and how concentrated is their ownership. They argue that while the percentage of institutional ownership proxies for trading activity, the concentration of such ownership proxies for adverse selection.<sup>7</sup>

In sum, although researchers agree that analysts following and institutional ownership should be related to market liquidity and information asymmetry, empirical evidence on the direction of the relationship is far from conclusive.

In this study, we include a large sample of US firms for the period of 2003–2004. In studying the relationships between analysts following or the institutional ownership and liquidity, we include a number of control variables that are important in explaining cross-sectional variation in liquidity such as share price, return volatility, trading volume, firm size, company age, asset tangibility, and R&D expenditures in the multivariate regression. Our results show that firms with larger number of financial analysts following have wider spreads, lower market quality index, and larger price impact of trades. However, we find that firms with higher institutional ownership have narrower spreads, higher market quality index, and smaller price impact of trades. In addition, we show that changes in our liquidity measures are significantly related to changes in institutional ownership over time. Our results are consistent with Rubin (2007) who find that liquidity and institutional ownership are positively correlated. More recently, Fernando et al. (2010) show institutional investors play a role in monitoring and improving analyst information quality, and institutional investors can reduce the need for firms to rely on costly information generation by analysts.

The paper is organized as follows. Section 2 presents the detailed description of the measures of stock market liquidity and their descriptive statistics. Section 3 presents our empirical findings, and Section 4 concludes the paper.

## 2. Data sources, variable measurement, and descriptive statistics

In this section we discuss our data sources, variable measurement procedures, and descriptive statistics and correlation of the key variables used in the study.

### 2.1. Data sources

We obtained all NYSE, AMEX and Nasdaq listed stocks data for liquidity variables covering 2003 to 2004 from the Trade and Quote Database (TAQ) provided by the NYSE. Each quote observation in the

<sup>6</sup> Jacoby and Zheng (2010) find a positive relation between blockholder ownership and quoted spread, effective spread, and the adverse selection component of effective spread. Their results show that the number of shareholders plays an important role in the relation between ownership dispersion and market liquidity.

<sup>7</sup> Rubin (2007) finds that liquidity is mostly driven by institutional ownership rather than insider ownership. He also finds that liquidity and institutional ownership are positively correlated and liquidity and institutional blockholdings are negatively correlated. Agarwal (2007) finds that information advantage of institutions can affect liquidity through adverse selection and information efficiency. The adverse selection effect results from an increase in information asymmetry while the information efficiency effect results from an increase in competition among institutions. Brockman and Yan (2009) find that stocks with higher block ownership exhibit a higher probability of informed trading, higher idiosyncratic volatility, and low synchronicity with the market. They conclude that stocks with higher block ownership contain greater firm-specific information.

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