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# Free float and market liquidity around the world

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ABSTRACT

We investigate the relationship between free float and stock market liquidity using a sample covering 55 countries from 2003 to 2011. We find that stocks with higher free float have a higher level of liquidity. The relationship between free float and liquidity is evident in all regions regardless of the degree of economic development or geographic location and is more pronounced when the legal structure and corporate governance environment are strong. We present evidence that free float can mitigate liquidity dry-ups when there are large shocks to market liquidity, such as during the recent financial crisis. Finally, our study finds that higher free float is associated with lower liquidity risk. The paper suggests that liquidity can be a significant channel through which free float may affect stocks' expected returns.

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## 1. Introduction

Liquidity has become an increasingly important issue in capital markets. Liquidity denotes the ability to trade large quantities quickly at low cost and without moving the price. It is generally acknowledged that higher liquidity is associated with lower expected returns (Amihud and Mendelson, 1986; Brennan and Subrahmanyam, 1996; Amihud, 2002). This study investigates the relationship between free float and liquidity across 55 countries, including both developed and emerging markets. A company's free float refers to the number of outstanding shares that are available to the public for trade. The definition excludes shares held by strategic investors because those shares are held on a very long-term basis for control purposes.[2] The importance of free float has been noted by many investment banks in recent years for the purpose of assessing the investability and liquidity of stock markets. For example, for most of the world's major indexes, including the DJIA, S&P 500, FTSE, and MSCI indexes, the weights of the constituent stocks are free-float-adjusted to ensure a more accurate representation of the available stocks in the market. It is noteworthy that on December 14, 2011, the FTSE announced that the minimum free float required for UK-incorporated companies would increase from 15% to 25% for inclusion in the FTSE UK Index Series.[3] The new rules were designed

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[2] Strategic ownership usually includes holdings by government entities, other companies, and a company's own management and founders.

[3] http://www.ft.com/cms/s/0/1ab7c1b4-267c-11e1-91cd-00144feabdc0.html#axzz24JnbED9f

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to respond to the concerns of institutional investors that majority shareholders could exert excessive influence on their firms. The market expected that the new threshold would make it easier for regular shareholders to trade the firms' shares and increase share liquidity.[4]

Prior literature suggests two major mechanisms through which a firm's free float can affect its market liquidity. First, investor trading behavior may be an important factor related to liquidity. Stoll (2000) refers to the reduction in liquidity related to trading activity as a real friction effect that is defined as "the real resources used up" in the liquidity-provision process. When investors turn over their portfolio more often, transaction costs are reduced, which increases liquidity (Demsetz, 1968; Merton, 1987; and Schwartz and Shapiro, 1992). Free float may affect liquidity by altering a firm's trading activity. Bolton and Thadden (1998) develop a corporate ownership structure model to analyze the costs and benefits of ownership concentration. Their principal mechanism relating ownership structure and liquidity is that when a firm sets up a controlling block, it reduces the number of shareholders who can participate in trading the firm's stock; therefore, it effectively reduces the market capitalization and hence the liquidity of its stock. Lending support to the argument that strategic investors trade less often than non-strategic investors, Ali et al. (2008) find that institutions with large stakes generally do not trade around earnings announcements because they are dedicated investors or face regulations that make informed trading difficult. In particular, if non-strategic investors trade significantly more often than strategic investors, the increase in trading activity will reduce real friction costs by spreading fixed real costs over more trades. Therefore, we posit that free float can increase liquidity by altering a firm's trading activities and reducing real trading frictions.

Second, it follows that free float can increase liquidity through its influence on information asymmetries. Prior literature has noted the adverse effects of information asymmetries on the functioning of markets (Akerlof, 1970). This adverse selection problem leads market makers to widen bid-ask spreads and reduce depths to recoup the potential losses from trading against informed traders (Copeland and Galai, 1983; Glosten and Milgrom, 1985; and Kyle, 1985). Thus, market liquidity is a decreasing function of the adverse selection risk induced by information asymmetries between market makers and informed traders. Many papers (see, for example, Lakonishok and Lee, 2001; Marin and Olivier, 2008; Cohen et al., 2012) have provided evidence on the superior information of insiders by identifying an association between insider trading and abnormal returns. Strategic investors are assumed to possess superior information about a firm, and providing more shares to ordinary investors will alleviate the information asymmetry problem. Therefore, free float can increase market liquidity by reducing information costs.[5] Indeed, Ciner and Karagozoglu (2008) study foreign private-information-based trading on the Istanbul Stock Exchange. They provide empirical evidence that firms with a lower percentage of shares in free float suffer more from informational asymmetry problems. Thus, our main hypothesis is that a firm's liquidity level increases with the level of free float.

Based on the above prediction, we further argue that the impact of free float on liquidity can be different across international markets. Higher free float is associated with more trading activities which lead to higher liquidity. However, types of information that induce trading may mediate the positive relationship between free float and liquidity. Trading can be generated because of the different interpretation of the same public information (Cao and Ou-Yang, 2009; Kandel and Pearson, 1995; Pfleiderer, 1984; Varian, 1989), or due to the holding of private information (Kyle, 1985; Milgrom and Stokey, 1982; Wang, 1994). Different types of information have different impact on the stock market liquidity. If trading is mainly caused by different interpretation of public information, then higher trading activity should be associated with lower bid-ask spread and better stock liquidity. On the other hand, if trading is dominantly caused by the holding of private information, dealers faces higher risk to trade with informed traders and should charge higher bid-ask spreads in this case, hence stock liquidity will be lower (Copeland and Galai, 1983). Consistent with these theories, Gopinath and Krishnamurti (2001) explore the cross-sectional difference of the impact of trading on stock liquidity using transaction data for a sample of NASDAQ firms. They conclude that for large firms, an increase in the number of trades has beneficial effect on stock liquidity as measured by bid-ask spread. Contrast to that, an increase in the number of trades for small and medium firms deteriorates the liquidity, as evidenced by a widen bid-ask spread. This empirical finding and the previous theoretical prediction suggest that the extent to which free float increases market liquidity depends on the information environment.

Unlike the United States, other international markets, especially emerging markets, can be characterized as lack of strong investor protection and developed legal system. The consequence of the variety of legal system around the world is a much different information environment (La Porta et al., 2001). In an environment with weak investor protection and poor corporate governance system, investor have higher uncertainty because of the lack of reliable public information, particularly at the firm level. Consistent with this argument, Brockman and Chung (2003) document that less protective environments lead to wider bid-ask spreads and thinner depths, due to the associated higher information asymmetries in these environments. Hence, along this line of argument, we propose that the relationship between free float and market liquidity is mediated by country level governance measures. In better-governed countries, ceteris paribus, stronger investor-protection rights reduce investors' adverse discounts against informed trading and facilitate trading activities, thus inducing a stronger relationship between free float and

[4] Prior to December 14, 2011, the threshold was 50% for LSE-listed companies that were incorporated outside the UK. As of December 14, 2011, the FTSE extended the threshold requirement to UK–incorporated firms to address investors' concerns about firms inside the UK.

[5] Ali et al. (2008) use data around earnings announcements to provide empirical evidence that only medium stakeholders (not large) possess more precise private information; thus, the ownership of medium-stake institutions acts as a proxy for the proportion of better-informed traders. However, this approach does not contradict the argument that strategic shareholders possess superior information. As noted by Ali et al. (2008), large shareholders do not trade around earnings announcements because they are dedicated investors or they face regulations that make informed trading difficult. Therefore, there may be too little information transmitted into stock prices to be detected by statistical tests.

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