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Liquidity risk and accounting information ☆

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ABSTRACT

This paper highlights the different avenues through which stock liquidity can potentially transcend into accounting research. Recently, Lang and Maffett show that transparency reduces firm-level liquidity uncertainty, while Ng shows that increased information quality can reduce a firm's exposure to systematic liquidity risk. These studies respectively suggest that accounting variables can affect firm valuation and cost-of-capital through their impact on different aspects of liquidity. Although some doubt may arise about the economic significance of such effects on average, further evidence from the recent financial crisis presented in this paper confirms the important role of accounting information during liquidity events.

1. Introduction

In the wake of the financial crisis of 2008–2009, the financial economics literature has displayed an increasing interest in liquidity-related research. However, the interest in understanding the notion of liquidity and its implications by no means constitutes a new front; it has been steadily developing over the past several decades. One way to describe the evolution of the liquidity literature is through its implications for investment management. In this respect, three phases can be identified.

Before the early 1980s, liquidity has often taken the form of transactions costs, and was primary used by practitioners for the calculation of net profitability of different trading strategies. In the academic literature, standard asset-pricing models asserting that expected returns vary across assets because of variations in risk, typically ignored the effects of market frictions, such as transaction costs. A theoretical justification for ignoring transaction costs in the pricing of financial assets is that investors may choose to trade only in liquid assets with low transaction costs and hold higher transaction-costs assets for longer periods (see, e.g., Constantinides, 1986; Heaton and Lucas, 1996; Vayanos, 1998). Hence, when transaction costs are amortized over the expected holding period they become rather small and of second order. This argument assumes that transaction costs are constant and that investors are free to choose when to trade. In practice, however, liquidity varies over time and investors may be impatient to execute their trades or they might be subject to liquidity shocks, forcing them to liquidate their positions. In the early years of the previous decade, a growing literature on the limits of arbitrage opportunities examined whether strategies constructed to exploit several prominent asset-pricing anomalies can still remain profitable after taking into account transactions costs. For example, Knez and Ready (1996) find that size-based strategies are too costly to trade; Mitchell and Pulvino (2001) analyze the profits to risk arbitrage of

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mergers and acquisitions; and Korajczyk and Sadka (2004) examine the profitability of momentum strategies.[1] These empirical studies argue that transaction costs can impose a first-order effect on prices.

With the increased availability of data, several empirical works study whether investors demand a premium for holding illiquid securities. For example, Amihud and Mendelson (1986) argue that investors demand a premium for relatively low liquidity stocks (measured by bid-ask spreads). Similarly, Brennan and Subrahmanyam (1996) find that stocks with higher price impacts earn higher future returns. Also, Easley et al. (2002) find that the level of liquidity, measured as the probability of information-based trade (PIN), carries a positive premium in asset prices. Therefore, this strand of the literature argues that liquidity not only can significantly affect net profitability, but it can also serve as an investment signal as it can predict future performance.

Finally, recent studies focus on the systematic component of liquidity (liquidity risk) rather than on its actual idiosyncratic level (i.e., liquidity level). This strand of literature begins with studies that document the that firm-specific liquidity fluctuates over time, and also that there is a systematic, or market-wide component to these liquidity fluctuations (see, e.g., Chordia et al., 2000; Huberman and Halka, 2001; Amihud, 2002). Pástor and Stambaugh (2003) show that systematic liquidity risk is a priced risk factor. They develop a measure of aggregate (market-wide) liquidity based on daily price reversals and show that assets whose returns covary highly with this aggregate liquidity measure (i.e., assets with high liquidity beta) earn high expected returns. Acharya and Pedersen (2005) employ the liquidity measure of Amihud (2002) to show that expected stock returns are a function of several terms: first, expected stock illiquidity and second, some covariances between stock return, stock illiquidity, market return, and market illiquidity. Sadka (2006) extends the literature on liquidity risk and identifies the component of liquidity risk that is related to existing asset-pricing anomalies, such as stock price momentum (see Jegadeesh and Titman, 1993) and the post-earnings-announcement drift (see Ball and Brown, 1968). Korajczyk and Sadka (2008) show that liquidity risk is priced in the cross-section of stock returns even after controlling for firm liquidity level.

In sum, the empirical literature about liquidity and asset pricing has shown that liquidity can be used to calculate net profitability of trading strategies, and that both the liquidity level and the liquidity risk (beta) are priced in the cross-section of stock. The purpose of this article is to examine the recent work of Lang and Maffett (this issue) as well as that of Ng (this issue). I attempt to position these works in the literature, offer some critiques, replicate some of the results, and provide some further evidence to highlight the significance of the findings of these works.

2. Liquidity and accounting research

The liquidity literature and the accounting literature are naturally related because accounting information can affect the information environment of the stock. Theoretical works in microstructure often model stock illiquidity as the inverse of market depth or the price change per unit of order flow (i.e., price impact). For example, studies such as Kyle (1985) and Admati and Pfleiderer (1988) show that stock illiquidity is a function of the interaction between informed traders, discretionary liquidity traders, and nondiscretionary liquidity traders (noise traders). These studies often express price impact as a function of the precision of the information of informed investors, the number of informed investors, and the total variance of liquidity and noise trades. To the extent that the release of accounting information can reduce information asymmetry in the marketplace, such information can improve stock liquidity (see, e.g., Diamond and Verrecchia, 1991).

Consequently, many studies in the literature relate accounting information events, such as earnings announcements, to stock liquidity. Lee et al. (1993), Kim and Verrecchia (1994), Krinsky and Lee (1996), and Affleck-Graves et al. (2002) study measures of liquidity around earnings announcements. More recently, Vega (2006) and Francis et al. (2007) find that the post-earnings-announcement drift is related to the amount of private information. Finally, several works discuss the relation between disclosure policy and liquidity (e.g., Welker, 1995; Brown et al., 2004; Brown and Hillegeist, 2007).

Most studies in accounting, such as the aforementioned, focus on the first moment of liquidity, i.e. the liquidity level of a stock. In the attempt to provide a risk-based explanation for the post-earnings-announcement drift anomaly, Sadka (2006) shows that this anomaly is related to systematic liquidity volatility. Similarly, the recent studies of Lang and Maffett and Ng study the implications of accounting information on different measures of liquidity volatility.

3. Recent works

To position recent works in the liquidity literature, consider the possible relations between four different variables: firm return, R_i, firm liquidity, L_i, market return, R_m, and market liquidity, L_m. A covariance matrix of these four variables (as illustrated in Fig. 1) outlines the possible relations between the different variables. For example, to study the extent to which liquidity exhibits systematic variations, Chordia et al. (2000) study $cov(L_i,L_m)$, that is the covariance between firm liquidity and market liquidity. To demonstrate that liquidity risk is priced in the cross-section of stocks, Pástor and Stambaugh (2003) focus on the pricing of $cov(R_i,L_m)$. Sadka (2006) and the recent work of Ng focus on this component as well. The framework introduced by Acharya and Pedersen (2005) includes four components, two of which are included in the recent work of Lang and Maffett ($cov(L_i,R_m)$ and $cov(L_i,L_m)$). The latter study also studies the relation of firm-level

[1] See also Chen et al. (2002), Lesmond et al. (2004), Mendenhall (2004), Sadka and Scherbina (2007), Ng et al. (2008), and Chordia et al. (2009).