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Liquidity and stock returns: Evidence from international markets



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ABSTRACT

This paper tests the relation between expected excess stock returns and illiquidity risk in G7 markets. By conducting panel regressions on monthly data for 20 years, evidence shows that excess stock returns of the G7 countries are positively correlated with market illiquidity risk, but are negatively correlated with the innovation of firm-level illiquidity. Applying the model to the portfolio analysis, the evidence shows that the market-level illiquidity risk has a more profound effect on excess stock returns for large stocks, growth stocks, more liquid stocks, lower idiosyncratic risk stocks, and lower skewness stocks. However, the innovation from firm-level illiquidity has a stronger effect on small stocks, value stocks, more illiquid stocks, higher idiosyncratic risk stocks, lower skewness stocks, and lower kurtosis stocks.

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1. Introduction

Liquidity of stocks usually refers to how quickly a given security can be traded in the market to prevent loss or to make a profit. Traditional asset pricing models often ignore the illiquidity effect by assuming that stock returns can be explained by their fundamental factors. However, in practice, if investors want to short (long) their stocks, the ask (offer) price requires a selling concession (buying premium), resulting in a difference between the bid and ask prices in the market. The liquidity (marketability) of a stock, therefore, is often reflected in the bid-ask price spread (Amihud, Mendelson, & Pedersen, 2005).

In the early literature, Amihud and Mendelson (1986) use the bid-ask spread as a measure of illiquidity. They find that the excess return on stocks is an increasing and concave function of the spread, while firm value is a decreasing and convex function of the spread. Pastor and Stambaugh (2003) predict that market-

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wide liquidity is an important factor for pricing stocks. Acharya and Pedersen (2005) provide a theoretical basis¹ for the liquidity premium in asset pricing by solving an equilibrium model with liquidity risk. They reach an empirical conclusion that negative shocks to a security's liquidity are associated with both lower contemporaneous returns and higher predicted future returns.

Some recent research on asset pricing models also includes liquidity as a price factor. For instance, Jacoby, Fowler, and Gottesman (2000) develop a one-period CAPM-based model and show that a true measure of systematic risk needs to consider the magnitude of liquidity costs. Domowitz, Hansch, and Wang (2005) argue that not only liquidity but also liquidity's commonalities should be incorporated into the specification of asset pricing models.

In conducting empirical estimations, researchers often use different measures of liquidity to examine the relation between liquidity and excess stock returns.² For example, Brennan and Subrahmanyam (1996) use transaction costs as a measure of liquidity. Datar, Naik, and Radcliffe (1998) use the trading volume turnover rate as a proxy for liquidity. A general conclusion emerging from the empirical literature is that no matter which measure is used, liquidity consistently plays a meaningful role in explaining the stock return premium in cross-sectional studies.

Recent empirical investigations into the relation between liquidity and excess stock returns have moved toward a time-series approach. Jones (2002), Amihud (2002), and Pastor and Stambaugh (2003) find evidence that the correlation between realized excess returns and the change in illiquidity is negative. This is due to the fact that positive shocks of illiquidity usually reflect firms experiencing poorer performance than expected; to attract investors to absorb stocks into their portfolios, prevailing stock prices have to fall. As a result, current stock returns decline. Empirically, the coefficient of the unexpected change in the illiquidity on excess stock returns is negative.

Since illiquidity entails risk, investors require a higher expected return. The positive relation is seen to reflect investors' expectations of a higher illiquidity premium to compensate for less liquid securities. Amihud et al. (2005), Amihud (2002), and Acharya and Pedersen (2005) empirically document that the coefficient from regressing excess returns on the lagged illiquidity level bears a positive sign. Although the liquidity-excess stock return relation has been examined in a number of studies, the liquidity risk, by now, has not been consistently tested as a price factor in the literature. In addition, much of the previous research has mainly looked at the U.S. market; very few attempts have been devoted to studying international markets, even though attention has shifted to an international perspective. For instance, Lesmond (2005) compares the five most commonly used measures of liquidity³ to test 31 emerging markets. His empirical investigation documents some supportive evidence for a liquidity premium, although the results vary among different markets. Stahel (2005) and Bekaert, Harvey, and Lundblad (2007) find evidence that liquidity is an important factor in pricing assets traded in international markets. Lee (2011) extends Acharya and Pedersen's (2005) model to a global level and shows that stock return depends on the covariance of its own liquidity with aggregate local market liquidity as well as the covariance of its own liquidity with global market returns.

Following the above-mentioned literature in studying the liquidity-excess stock returns relation, recent empirical investigation has been designed to highlight certain market forces to determine the comovement of liquidity or to elaborate the traditional asset pricing model pertinent to a particular market. For instance, Karolyi, Lee, and Van Dijk (2012) examine how commonality in liquidity varies across countries and over time in relation to supply determinants via funding liquidity by financial intermediaries and to demand determinants due to the correlated trading behavior of investors. Lam and Tam (2011) document that liquidity is an important factor for pricing returns in Hong Kong after taking well-documented asset pricing factors into account. These studies suggest that the impact of liquidity on excess returns can be conditional on market conditions or the control variables to be included in the test equation. Thus, in examining the cross-sectional dispersion in expected equity returns, it is important to test whether firm characteristics such as illiquidity, size, book-to-market, and momentum play a significant role. Addressing this issue, this paper investigates liquidity effects across G7 countries based on an asset pricing model, including factors such as market excess return,

¹ Early theoretical background on liquidity can also be found in Kyle (1985) and Glosten and Milgrom (1985).

² Liquidity impacts not only stock returns but also the returns on closed-end funds (Chan, Jain, & Xia, 2008) and hedge funds (Kessler & Scherer, 2010).

³ Please see the next section for more detailed information about measurements of liquidity.

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