Extended Abstract

The Role of Stocks' Trading Characteristics in Stock Liquidity in Tehran Stock Exchange (TSE)

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Introduction

Liquidity is an important issue for securities traded in financial markets. A certain level of liquidity is necessary for securities to be traded in the quantites required in a timely fashion whithout any price discount. The goal of this paper is to examine the relationship between different liquidity proxies and stocks' trading characteristics for listed companies in Tehran Stock Exchange. In this paper, five different liquidity proxies are introduced. The proxies are stock turnover, the illiquidity ratio, zero return measure, proportional bid–ask spread and turnover adjusted number of zero daily volumes. Stocks' trading characteristics include stock price, trading volume, return volatility, absolute return, and Beedles' thin trading measure.

The efforts are significant as liquidity plays an important role in asset pricing, and the selection of liquidity proxies in a research design would have considerable influence on empirical results.

Research hypothesis

The underlying principle in the relationship between liquidity and stock characteristics is based on order execution and inventory control (Stoll, 2000). Large trading volume reduces the risk of carrying inventory for a period of time, which should increase stock liquidity. Higher return volatility increases the risk of holding inventory, and it should have a

negative effect on stock liquidity. Stock price controls the effects of price discreteness and can be used as a proxy for risk, as low price stocks tend to be riskier. Absolute stock return can be treated as an alternative measure of volatility. The advantage of this measure is that it is simple to calculate, particularly in comparison to conventional volatility measures. Similar to volatility, absolute stock return should have a negative influence on liquidity. A thin trading measure proposed by Beedles, Dodd and Officer (1988) is used to create a crude proxy for the proportion of missing daily returns. Since the Beedles measure aims to capture the thin trading aspect of stock illiquidity, it should be negatively related with liquidity. Thus, out testable hypotheses are:

Hypothesis 1: Price per share is expected to be related to liquidity.

Hypothesis 2: Trading volume is expected to be related to liquidity.

Hypothesis 3: Return volatility is expected to be related to liquidity.

Hypothesis 4: Absolute return is expected to be related to liquidity.

Hypothesis 5: Beedles' thin trading measure is expected to be related to liquidity.

Methods

This research is of descriptive-correlative type. The study sample includes 38 companies listed in Tehran Stock Exchange. The analysis in this paper is carried out at the monthly level from January 2003 to September 2009. For hypothesis testing, this study uses multivariable regressiones for pooled data. The variables being considered are liquidity proxies as the dependent variable and Stocks' Trading Characteristics as independent variables.This paper employs five widely used liquidity proxies that are stock turnover (TO), the illiquidity ratio (ILLIQUID), proportional spread (PBA), the zero return measure (ZERO) and turnover-adjusted number of zero daily volumes (LM). Each is discussed in turn below:

$TO_{i,t} = vol_{i,t} \, / \, share_{i,t}$

Where $vol_{i,t}$ is the total trading volume for stock i in month t and $share_{i,t}$, t is the number of shares outstanding for stock i in month t.

$$Illiquid_{i,t} = \frac{1}{D_{i,t}} \sum_{d=1}^{wi,t} \left| r_{i,d,t} \right| / v_{i,d,t}$$

where $r_{i,d,t}$ is the return for stock i on day d in month t, and $v_{i,d,t}$ is the trading volume for stock i on day d in month t and D is the number of daily observations for stock i in month t.

$$PBA_{i,t} = \frac{1}{D_{i,t}} \sum_{d=1}^{w_{i,t}} (AP_{i,t} - BP_{i,t}) / (0.5AP_{i,t} + 0.5BP_{i,t})$$

Where $AP_{i,t}(BP_{i,t})$ is the daily closing ask (bid) prices for stock i on day d in month t and D is the number of daily observations for stock i in month t.

$$ZERO_{i,t} = zeroreturn_{i,t} / tradingday_{i,t}$$

Where $zeroreturn_{i,t}$ is the number of zero daily return days for stock i in month t, and $tradingday_{i,t}$ is the number of trading days for stock i in month t.

$$LM_{i,t} = \left[NoZV_{i,t} + \frac{1/(turnover_{i,t})}{480000} \right] \times \frac{21}{NoTD_t}$$

Where $NoZV_{i,t}$ is the number of zero daily trading volumes for stock i in month t; $turnover_{i,t}$ is the stock turnover rate for stock i in month t. $NoTD_t$ is the total number of trading days in the market in month t.

The trading characteristics include PRICE (price per share at the end of each month), VARIANCE (return volatility of daily stock returns in each month), VOLUME (trading volume aggregated in each month), (ABSR) Absolute monthly stock return and Beedles that is defined as:

$$BEEDLES = \{100 - [100/(n + 1)]\}/100$$

Where n is the difference in time (measured in days) between the last price date and last trading date in each month.

Results

This paper examined the influences of trading characteristics on stock liquidity. Consistent with the literature, trading characteristics are important determinants of liquidity. In general the impact of the trading characteristics on PBA and LM is consistent with our hypotheses. However, their relationships with stock turnover exhibit a somewhat different pattern than the other liquidity proxies.This result suggests that the source of the stock turnover is not related to stock characteristics that are important for the other proxies. Notably, we have been silent on the question of what is the "best" liquidity proxy. This research issue is beyond the scope of the current study. However, as noted in Goyenko et al. (2009), the selection of liquidity proxies in an empirical design depends on what exactly one wants to capture. Our results support their assertion, as liquidity is multidimensional and can be captured by differentmeasures of trading activity. The current study shows that through firm trading characteristics, we can better understand the sources of liquidity.

Keywords: Stocks' trading characteristics, Stock liquidity, Stock liquidity proxies, Tehran Stock Exchange.