Journal of Financial Economics 117 (2015) 350–368

Contents lists available at ScienceDirect

Journal of Financial Economics

journal homepage: www.elsevier.com/locate/jfec

The illiquidity premium: International evidence ☆

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ARTICLE INFO

Article history:
Received 23 July 2013
Received in revised form
22 October 2014
Accepted 31 October 2014
Available online 16 April 2015

JEL classification:
G12
G15
F37

Keywords:
Illiquidity premium
International markets
Commonality in illiquidity premium

ABSTRACT

We examine the illiquidity premium in stock markets across 45 countries and present two findings. First, the average illiquidity return premium across countries is positive and significant, after controlling for other pricing factors. The premium is measured by monthly return series on illiquid-minus-liquid stocks or by the coefficient of stock illiquidity estimated from cross section Fama-MacBeth regressions. Second, a commonality exists across countries in the illiquidity return premium, controlling for common global return factors and variation in global illiquidity. This commonality is different from commonality in illiquidity itself and is greater in globally integrated markets.

1. Introduction

Liquidity is valuable to investors: they demand a return premium to compensate for asset illiquidity (see Amihud and Mendelson, 1986). The supporting evidence, however, is US-centric. This paper is the first to study the illiquidity premium across the world. Consistent with theory, we find in a sample of 45 countries that the illiquidity return premium is positive after controlling for risk factors and firm characteristics. We also show the existence of *commonality in the illiquidity return premium*. A country's illiquidity premium co-varies positively and significantly with the global and regional illiquidity premiums, after controlling for common risk factors at the global and regional level. This commonality in the illiquidity return premium is distinct from the well-established commonality in illiquidity itself.

The pricing of illiquidity is estimated in two ways. One measure of illiquidity return premium is the differential return between the most illiquid and the least illiquid stock quintile portfolios, denoted as *IML*, the illiquid-minus-liquid portfolio return.[1] We find that, across countries, the average monthly *IML* is 0.80% (0.49%) for average portfolio return that is equally return-weighted

☆ We thank an anonymous referee for comments and suggestions that help improve the paper. We also thank Hank Bessembinder, Ekkehart Boehmer, Michael Brennan, Tarun Chordia, Ronnie Sadka, Holger Spamann, Avanidhar Subrahmanyam, Tilan Tang, and participants at Asian Finance Association Conference 2013, China International Conference in Finance 2013, Western Finance Association Meetings 2014, the finance symposium at Shanghai University of Finance and Economics, and seminars at National University of Singapore, Renmin University of China, Queen's University in Belfast, and WHU in Vellendar Germany of Basel for their helpful comments. Amihud is the Ira Leon Rennert professor of Finance. Hameed and Zhang gratefully acknowledge financial support from NUS Academic Research Grant, Shanghai Pujiang Program and the National Natural Science Foundation of China (Grant no. 71402087).

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http://dx.doi.org/10.1016/j.jfineco.2015.04.005
0304-405X/

[1] This is analogous, for example, to the HML (high-minus-low book-to-market) factor of Fama and French (1993), which they use to test whether the book-to-market ratio is a priced stock characteristic.

(value-weighted).[2] The risk-adjusted illiquidity premium, α_{IML}, is, respectively, 0.82% or 0.45% after controlling for six common global and regional risk factors, and it is higher for emerging markets compared with developed ones. We also employ volume-weighted *IML* because ownership concentration in many countries makes the float small relative to market capitalization. For volume-weighted average returns, the mean *IML* is 0.75% and α_{IML} is 0.73%. We observe that α_{IML} is positive in 84% of the countries for equally return-weighted returns (67% and 80% for value- and volume-weighted returns, respectively), significantly higher than the chance result of 50%. Altogether, illiquidity is positively and significantly priced around the world.

We also use the relative illiquidity premium (*RIML*) to account for relative illiquidity differential between countries and over time. *RIML* is the illiquidity return premium (*IML*) per 1% spread in illiquidity between the high and low illiquidity portfolios. For *RIML*, too, the risk-adjusted mean is positive and significant.

The second measure of illiquidity premium is the mean coefficient (denoted $b1$) from cross section monthly regressions of stock returns on lagged stock illiquidity, following Amihud and Mendelson (1986), Amihud (2002), and others, controlling for firm characteristics [size, equity book-to-market ratio (BE/ME), volatility, and past return]. The mean $b1$ is calculated for each country and then averaged across countries. We find that the cross-country average of mean $b1$ is positive and significant.

We introduce a new type of commonality: Across countries, illiquidity return premiums (or, the price of illiquidity) co-vary positively with the global and regional illiquidity premiums after controlling for global and regional common risk factors. The commonality in illiquidity return premiums is robust across the measures of the premium employed in this study. It exists for monthly series of *IML*, *RIML*, and $b1$. Our analysis differs from that of Brockman, Chung, and Perignon (2009), who study the commonality in global (il)liquidity level (bid-ask spread and depth), following the work by Chordia, Roll, and Subrahmanyam (2000) on liquidity commonality in the US.[3] Lee (2011) studies the pricing of systematic risk of shocks in global illiquidity, following the Acharya and Pedersen (2005) study for the US. The commonality that we introduce is different. It is in the illiquidity return premium across markets, not in the level of illiquidity. Our evidence shows that the cross-country commonality in illiquidity return premium is positively and significantly associated with the commonality in the price of illiquidity, but not with the commonality in illiquidity itself. We also find that the commonality in illiquidity return premium remains highly significant after controlling for global illiquidity whose effect on the illiquidity return premiums is very small and mostly insignificant. This shows that the commonality in illiquidity return premium is economically distinct from the commonality in illiquidity characteristic.

We find that the commonality in illiquidity return premium is higher in markets that are more open to foreign investors and more integrated with the global financial market. We also find that an exogenous event — the introduction of the euro as common currency among some European countries — increased the commonality in illiquidity return premium among the countries that adopted the Euro, controlling for the effect of the regional market returns on the illiquidity premiums. Our findings thus suggest that while open markets facilitate financial integration, they also increase domestic investors' exposure to global shocks in illiquidity premiums. Investors' ability to diversify against liquidity shocks is therefore reduced because of stronger co-movement in illiquidity premiums across open markets.

Our paper is the first to study globally the effect on expected return of the stock illiquidity as characteristic (the illiquidity level), which is different from the effect of illiquidity risk (illiquidity beta). The difference between the two approaches, the pricing of stock characteristic versus the pricing of the risk of those characteristics, is discussed by Daniel and Titman (1997). For the US, the effect of illiquidity as characteristic has been studied by Amihud and Mendelson (1986), Brennan and Subrahmanyam (1996), and Amihud (2002), and the illiquidity risk effect by Pastor and Stambaugh (2003) and Acharya and Pedersen (2005).[4] Whereas the pricing of illiquidity risk is studied globally by Lee (2011), a global study of the effect of illiquidity as characteristic has not hitherto been done. For the US, the premium for liquidity as characteristic has been found to be higher than the illiquidity risk premium (see Hagströmer, Hansson, and Nilsson, 2013). In another strand of research on the global return-liquidity relation, Bekaert, Harvey, and Lundblad (2007) study the time series relation between market liquidity shocks and market returns, following Amihud (2002). They find that "unexpected liquidity shocks are positively correlated with contemporaneous return shocks" (p. 1783).

The paper proceeds as follows. In Section 2, we describe the procedure of estimating the illiquidity premium across countries, and in Section 3, we present the estimates of the illiquidity premiums for the 45 countries in our sample. Section 4 presents evidence on commonality in illiquidity return premium and how it is affected by market openness and by increased integration between markets. We offer concluding remarks in Section 5.

2. Data and methodology

2.1. Sample construction

Our sample includes 45 markets with data over 22 years, from 1990 to 2011. Data on stock prices, shares outstanding, and trading volume for all countries except

[2] This method modifies the equally weighted mean to correct for potential bias resulting from microstructure noise, following Asparouhova, Bessembinder, and Kalcheva (2010, 2013).

[3] Karolyi, Lee, and van Dijk (2012) find illiquidity commonality within countries around the world.

[4] For a review of the studies of the positive cross section relation between lagged illiquidity and expected return, see Amihud, Mendelson, and Pedersen (2013).