Economics Letters 161 (2017) 10–14

Contents lists available at ScienceDirect

Economics Letters

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

Liquidity commonality in the secondary corporate loan market[☆]

John Anthony [a], Paul Docherty [b,*], Doowon Lee [a], Abul Shamsuddin [a]

[a] Newcastle Business School, University of Newcastle, Newcastle NSW 2300, Australia
[b] Department of Banking and Finance, Monash University, Caulfield, Victoria 3145, Australia

HIGHLIGHTS

- Liquidity commonality in the loan market varies across market states.
- The impact of liquidity commonality is limited to periods of market stress.
- The illiquid loan market is more sensitive to liquidity risk than other markets.

ARTICLE INFO

Article history:
Received 1 May 2017
Received in revised form 13 September 2017
Accepted 14 September 2017
Available online 20 September 2017

JEL classification:
C23
G01
G12
G14

Keywords:
Liquidity
Liquidity commonality
Liquidity risk
Financial crisis
OTC markets
Loan market

ABSTRACT

This study is the first to examine liquidity commonality, a measure of liquidity risk, in the U.S. secondary corporate loan market. Liquidity commonality varies substantially across market states, being completely absent during more benign market conditions. The results have implications for banking portfolio management, the pricing of liquidity risk and for regulators interested in the time-variation of liquidity risk in illiquid markets.

Crown Copyright © 2017 Published by Elsevier B.V. All rights reserved.

1. Introduction

Policy makers and regulators are concerned that "fragile" market liquidity will lead to more volatile market outcomes, particularly in relatively illiquid markets (IMF, 2015).[1] We explore the fragility of a relatively illiquid market through the prism of liquidity commonality, which is a common measure of liquidity risk. Liquidity commonality has been explored in various markets. These include, for example: Karolyi et al. (2012) in the equity market; Corò et al. (2013) in the corporate credit default swap market; and Marshall et al. (2013) in commodities markets. Our focus is the secondary corporate loan market (herein loan market. [2]) The loan market is an economically significant trading market, and is an important source of liquidity for banks (Gupta et al., 2008; Kamstra et al., 2014).[3] In the loan market, transactions occur over-the-counter (OTC), there is no post-trade price transparency and relatively large bid–ask spreads indicate that liquidity is relatively low. Many common measures of liquidity used in other markets,

---

[☆] We thank Darrell Duffie, Hai Lin, Mark Tippett and seminar participants at the Australasian Finance and Banking Conference 2015, Melbourne Business School, KAIST Business School, Value Investment Asset Management and the University of Queensland for comments. We also thank Jonathan Wang and Markit for providing data and answering all our questions.

* Corresponding author.
E-mail address: Paul.Docherty@monash.edu (P. Docherty).

[1] The concern is that movements in market liquidity will lead to outsized movements in pricing, that is, the extent of liquidity risk.

[2] The loan market is sometimes referred to as the leveraged loan market, given the preponderance of low grade leveraged credits.

[3] In 1991 just $7 billion of loans were traded in the loan market; however, by 2008 the market had grown to $510 billion (Loan Syndications and Trading Association, 2014). The growth in the loan market also corresponds with a growth in banks' portfolio management activities.

http://dx.doi.org/10.1016/j.econlet.2017.09.016
0165-1765/Crown Copyright © 2017 Published by Elsevier B.V. All rights reserved.

such as price impact measures, are not available in the loan market. Further, loans are not securities, as they can be issued to qualified institutional buyers under Rule 144a of the Securities Act of 1993, limiting public disclosure requirements. The uniqueness of the loan market is further motivation for this study, as the liquidity commonality findings from other asset classes may not apply.

We test for the presence of liquidity commonality in the loan market and investigate whether it differs across market states. Liquidity commonality is one source or "channel" for liquidity risk in Acharya and Pedersen's (2005) liquidity-adjusted CAPM model. Investors prefer assets with low liquidity commonality, as they are relatively liquid when market liquidity is low and liquidity is more valuable. Various researchers show theoretically and empirically that liquidity risk is increasing in expected illiquidity (for example, see Acharya and Pedersen, 2005 and Lin et al., 2011). It follows that more illiquid markets may display greater variation in liquidity risk.[4] Vayanos (2004) provides a model where high volatility is associated with a higher risk premium on illiquid assets and "flights to liquidity" occur wherein fund managers become more concerned about withdrawals, inducing them to tailor their portfolio toward more liquid assets. The impact of these "flights" may be greater in markets where liquidity frictions are severe since broker-dealers with market power have limited incentive to accumulate inventories during a crisis, thus limiting liquidity when it is most required (Lagos et al., 2011). Significant concentration amongst quoting dealers provides evidence that such frictions are high in the loan market.

Several studies beginning with Chordia et al. (2000) and later Karolyi et al. (2012) and Rösch and Kaserer (2013), among others, show that liquidity commonality is increasing in volatility. In the bond market Bao et al. (2011) point to an increase in the level of market illiquidity by 12 standard deviations as evidence of commonality during the Global Financial Crisis (GFC). We therefore hypothesize that liquidity commonality varies according to market conditions.

We find a complete lack of liquidity commonality in the loan market during the more benign period prior to the GFC; however, liquidity commonality is pervasive during the GFC and decreases substantially in the post-GFC period. The results have several implications. First, liquidity in the loan market should be analyzed in a framework that is conditional on market states, in particular movements in liquidity. Second, the contrast between a benign period and a period of volatility suggests that less liquid markets may indeed be more sensitive to liquidity risk.[5] Third, banks need to incorporate significant time-variation in liquidity risk when modeling liquidation values for corporate loans.

2. Data summary

The sample provided by Markit begins on September 28, 2001, and ends on October 28, 2013, when data was collected. We only examine U.S. issuers and screen potential errors by eliminating loans with daily price movements greater than 50%, or loans that trade below 10% or above 150% of par. At least 20 days of data is required for each loan. The final sample comprises 14,952 loans with 12,838,083 quotes. For the purpose of analysis we split the sample into three 24-month sub-periods. Following Dick-Nielsen et al. (2012) the GFC is the period from July 2007 to June 2009. The 24-month periods before and after the GFC are the pre-GFC and post-GFC periods, respectively.

Table 1 presents the time-series average of the cross-sectional sample statistics over the full sample. The relatively short average life of loans (1.5 years) is explained by their callability; loans are opportunistically repaid when better financing opportunities arise or due to merger activity (Standard and Poor's, 2013a). The average initial tenor of loans (5.6 years) also reflects their relatively short-term nature. The average loan size is $392 million; although there is substantial right-tail skew reflecting the presence of several very large loans, such as the $16 billion term loan to Texas Competitive Electric Holdings in April 2011. The mean initial coupon rate is 360 basis points over LIBOR with positive skewness. Ratings are tightly clustered at Ba3/B1, reflecting the relatively low credit quality of loans that trade in the secondary loan market, and contrasts with the investment grade heavy corporate bond market.[6]

3. Commonality in liquidity

During the GFC, the average spread to maturity over LIBOR in the loan market reached 1699 basis points, compared to 244 points on average during 2006 (Standard and Poor's, 2013b). The total increases in interest rates are larger when viewed in the context of very large increases in LIBOR during the GFC, as loans are quoted over LIBOR. An important question is the extent of liquidity risk during periods of high volatility. To investigate liquidity commonality in the loan market, we follow a method that is similar to Chordia et al. (2000). Like Chordia et al. (2000), we consider changes rather than the level of liquidity because we are also primarily interested in co-movement and liquidity is non-stationary at the level form. In addition, to limit the risk of omitted variable bias, we include a loan market volatility variable given the argument put forward by Vayanos (2004) that investors' preferences for liquidity increases with volatility.[7] Liquidity commonality for each loan is measured using the following time series regression,

$$\Delta Liquidity_{i,t} = \alpha_i + \beta_i \Delta Liquidity_{m,t} + \gamma_i \Delta Volatility_{m,t} + \varepsilon_{it}, \quad (1)$$

where $\Delta Liquidity_{it}$ is the monthly change in the quoted bid–ask spread (herein *Bid–Ask*) for each loan i in month t, $\Delta Liquidity_{m,t}$ is the monthly change in market-wide average *Bid–Ask* and $\Delta Volatility_{m,t}$ is the monthly change in realized loan market volatility.[8]

Eq. (1) is estimated separately for pre-GFC, GFC and post-GFC sub-periods. As shown in Table 2, the loan market volatility has no statistically significant effect on liquidity in any of these sub-periods. Liquidity commonality increases during the GFC. We report both average and median coefficients and t-statistics due to some positive skewness in the distribution of these parameters, although the results are similar. For the value-weighted portfolio, average adjusted R^2 is 0.01 in the 24 months immediately preceding the crisis, increasing to 0.37 during the crisis.[9] Liquidity

---

[4] Over our sample period, mean proportional bid–ask spreads in the loan market range from 64 to 287 basis points. While not a direct comparison, *effective* bid–ask spreads for NYSE-listed stocks are typically below 10 basis points, although they rose to almost 30 basis points during 2008 (Chordia et al., 2000).

[5] Due, for example, to differences in sample time horizons and market location, direct comparisons cannot be made between the loan market and other markets. Despite this, the time-variation in liquidity commonality in the loan market documented in this paper appears larger than equity markets (see Karolyi et al., 2012; Rösch and Kaserer, 2013).

[6] For example, just 11% of corporate bonds analyzed by Chen et al. (2007) are below investment grade (that is, rated below Baa3 by Moody's or its equivalent).

[7] The inclusion or exclusion of the realized loan market volatility measure does not alter our results.

[8] We test using both value-weighted and equal-weighted data. Realized volatility is calculated as the standard deviation of the annualized sum of squared daily returns in month t as per Bao et al. (2011).

[9] While direct comparisons cannot be made, the contrast between crisis and non-crisis periods appears more pronounced in the loan market compared with other markets. Karolyi et al. (2012) report that liquidity commonality in the equity market measured by R^2 ranges from 20%–25% in normal times and increases to 25%–40% during the GFC. In the German equity market, Rösch and Kaserer (2013) find that R^2 increases 5.4-fold during the GFC and the average equal-weighted liquidity beta increases 5-fold. In the loan market, there is even greater contrast between normal times and the GFC period.

Download English Version:

https://daneshyari.com/en/article/5057502

Download Persian Version:

https://daneshyari.com/article/5057502

Daneshyari.com