Pacific-Basin Finance Journal 21 (2013) 1232–1248

Contents lists available at ScienceDirect

Pacific-Basin Finance Journal

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

Short selling by individual investors: Destabilizing or price discovering?☆

Chan Shik Jung [a], Woojin Kim [b], Dong Wook Lee [c,*]

[a] Dong-A University Business School, 225 Gudeokro, Seo-gu, Busan 602-072, Republic of Korea
[b] SNU Business School, Seoul National University, Gwanak Ro, Gwanakgu, Seoul 151-916, Republic of Korea
[c] Korea University Business School, Anam-Dong, Seongbuk-Gu, Seoul 136-701, Republic of Korea

A R T I C L E I N F O

Article history:
Received 28 August 2011
Accepted 10 September 2012
Available online 20 September 2012

JEL classification:
G10
G14
G20

Keywords:
Short sale
Individual investors
Korean stock market
Pricing efficiency
Destabilizing

A B S T R A C T

This paper examines how individual investors' participation in short sale affects the efficiency of stock pricing using a unique regulatory change in Korea. The change enables individual investors to sell short some – but not all – domestic stocks, without affecting the short-selling ability of institutions. We find no evidence that individuals' participation in short sale destabilizes stock market. Specifically, our difference-in-difference estimates indicate that stocks show little change in their return volatility or skewness after they become shortable by individuals. Moreover, we find that stocks are traded within a *narrower* bid–ask spread and deviate *less* from the random-walk process after becoming shortable by individuals. Overall, our results suggest that at least some individual investors are privy to private information and they contribute to more efficient pricing via their short sales.

1. Introduction

Since the path-breaking works by Black (1986) and De Long et al. (1990), there has been continued interest in whether "noise" can affect stock price. It is exactly in this context that individual investors started to attract academic attention. Allegedly more subject to psychological biases and unexpected liquidity shocks, individual investors have often been characterized as a natural empirical proxy for noise traders. Subsequent

☆ We would like to thank an anonymous referee for the valuable comments and suggestions. We are also grateful to Jae Man Chung, Paul Moonsub Choi, and other seminar participants at the 12th Korean Academic Society of Business Administration Conference, Inchon, (August 2010), 2010 KSA (Korean Securities Association) Annual Meeting, Seoul (February 2010), and Korea University Business School for helpful comments. This study was supported by the Institute of Management Research at Seoul National University. Chan Shik Jung acknowledges financial support from Dong-A University.

* Corresponding author.
E-mail addresses: michael@dau.ac.kr (C.S. Jung), woojinkim@snu.ac.kr (W. Kim), donglee@korea.ac.kr (D.W. Lee).

0927-538X/$ – see front matter © 2012 Elsevier B.V. All rights reserved.
http://dx.doi.org/10.1016/j.pacfin.2012.09.001

studies have shown that individual investors indeed trade for non-fundamental reasons and their trades are capable of affecting or destabilizing stock prices (e.g., Lee et al., 1991; Odean 1998a, 1998b, 1999; Kumar and Lee 2006; Barber et al., 2009).

Despite these findings, viewing individual investors *as a whole* as noise traders may require further scrutiny. As some authors convincingly argue, not all individuals are made alike and thus at least some individual investors might contribute to pricing efficiency (e.g., Coval et al., 2005; Dhar and Zhu, 2006; Griffin and Zhu, 2006; Nicolosi et al., 2009). Short sales are particularly instructive in this regard, since they are largely motivated by private information (e.g., Boehmer et al., 2008). By focusing on short sales by individual investors, one can thus identify a subset of individuals who believe that they have private information, and then examine how their trades affect stock prices.

In this paper, we examine a recent regulatory change in the Korean stock market, which provides a rare opportunity to isolate short sales by individual investors. The change, which occurred in January 2008, is to resume the share-lending business to individual investors 22 years after this business had been banned. As institutional investors have had access to an over-the-counter market in which they can borrow shares directly from one another, this regulatory change does not affect the short-selling ability of institutions. In other words, our "event" creates an ideal setting to compare a stock market with short sale by individual investors to the one without.[1] Moreover, the lifting of the short sale constraint applies only to a subset of stocks in the market; consequently, we are able to compare the stocks shortable by individuals with other stocks, both before and after the regulatory change. Such a difference-in-difference framework significantly mitigates the endogeneity issue in making inferences.

To examine the effects of individual investors' short sales on stock prices, we examine four variables in a difference-in-difference framework. First, we examine stock return volatility. If individual investors only create noise through short sales, volatility will increase. Since the regulatory change is exogenous, we do not expect the economic fundamentals of the shortable stocks to change. Thus, any increases in volatility must be largely attributed to increases in noise. Second, as short sale transactions speculate on a fall in stock price, we examine stock return skewness to test whether shortable stocks exhibit more negatively skewed returns after they become shortable. Again, unless there is a sudden downward revision in the economic fundamentals of those stocks around the regulatory change, there is no reason to expect a more negative skewness. Rather, changes in skewness – if any – are likely to reflect the speculative influence of individuals' short sale. Third, to the extent that short sales reflect private information, individual investors' short selling might improve price discovery and may lead to a narrower bid–ask bound. Finally, we examine stock return variance ratios for both shortable and non-shortable stocks around the regulatory change. If stocks are more efficiently priced after becoming shortable by individuals, their price changes will be less serially correlated and the variance ratios will be closer to unity.

Our results, based on monthly panel data from January 2007 to August 2008, can be summarized as follows. First, we find little change in stock return volatility attributable to the lifting of the short sale constraint on individual investors. While shortable stocks tend to have greater volatility than others in the first place, these stocks do not become more volatile after they actually become shortable. Similarly, we find little change in stock return skewness related to the lifting of the short-sale constraint on individuals, a result that makes it further implausible that individual investors play a detrimental role in the stock market through their short sale transactions. Finally, we find that the bid–ask spread narrows and the variance ratio becomes closer to unity after the stock becomes shortable by individual investors.

We ensure the robustness of the above results in many different specifications. First, we employ two-way clustered standard errors in all of our panel regressions. In other words, we take into account *both* the correlation among the observations for a given firm over time *and* the correlation among the observations across firms at a given point in time. We also address this issue by modifying the panel dataset in such a way that the cross-time or the cross-firm correlations are eliminated. Specifically, we "collapse" the panel data into a single cross-section using the ratio of the post-event volatility (bid–ask spread, skewness, variance ratio, or the absolute value of one minus variance ratio) to the pre-event mean volatility (bid–ask spread, skewness,

[1] Prior to this regulatory change, individual investors were able to borrow stocks only from their own stock brokers. This short-sale channel was extremely limited, as individuals were responsible for only 3% of the total short sale volume. Following the regulatory change, this proportion has risen dramatically to 20%. We detail this change in Section 2.2.