



The impact of short sale restrictions on informed trading in the stock and options markets



Van Le ^{a,*}, Ralf Zurbrugg ^{b,1}

^a Newcastle Business School, University of Newcastle, University Drive, Callaghan, NSW 2287, Australia

^b Adelaide Business School, University of Adelaide, 10 Pulteney St, Adelaide, SA 5000, Australia

ARTICLE INFO

Article history:

Received 5 June 2014

Received in revised form 11 March 2015

Accepted 25 August 2015

Available online 3 September 2015

JEL classification:

G10

G12

G14

G18

Keywords:

Short sale restrictions

Options

Price discovery

Informed trading

ABSTRACT

This paper examines the impact of short sale restrictions (SSR) on the price discovery process of stocks and their corresponding options. We utilize a new measure to examine the impact these restrictions have on information efficiency between the two instruments. Based on one year of intraday data surrounding the US emergency order of 2008, we find evidence of traders switching from SSR restricted products to a matched group of stocks and options. At the same time there is a decline in the role options provided to price discovery in the SSR affected stocks, along with a significant rise in the importance of options for the matched sample as informed traders move to trading in markets that are unaffected by the restrictions. From a policy perspective our results indicate that a greater consideration needs to be made for the impact SSR has on trade informativeness and the price discovery process, as well as how it affects the inter-related markets through the trader-switching effect.

© 2015 Elsevier Inc. All rights reserved.

1. Introduction

The market reaction from short sale restrictions has consistently been at the centre of academic, practitioner and regulatory debate. Notably, the restrictions imposed in most equity markets around the world during the financial crisis of 2008 have kept this field of research active. Although most research agrees that short sale constraints have an adverse effect on market liquidity and the speed of price adjustments to negative news, there is mixed empirical evidence on the role derivatives markets have in these circumstances. Some studies show restrictions lead to a substitution effect away from the affected stocks into the related options market, and others find a switching effect with traders moving entirely out of the stocks affected by the constraints to unaffected equity. In this paper we examine the impact of short sale restrictions on the stock and corresponding options markets on price discovery. We design a price discovery measure with the objective to test if there is a change in the composition of informed traders between the options markets and their underlying stocks to provide evidence of a substitution or switching effect. By focusing on price discovery we are able to contribute to the extant literature by capturing the proportion of informed traders moving from one market to another before, during, and after a short sale restriction is imposed.

* Corresponding author. Tel.: +61 2 49218798.

E-mail addresses: van.le@newcastle.edu.au (V. Le), ralf.zurbrugg@adelaide.edu.au (R. Zurbrugg).

¹ Tel.: +61 8 8313 5535.

Although work examining short sale restrictions (SSR) dates back to Miller (1977), the majority of research conducted recently has focused on the 2008 short sales bans that were imposed in a number of markets around the world following heavy losses in the global equities markets. Hendershott, Namvar, and Phillips (2013) provide a concise review of this literature, highlighting research that shows both the intended and unintended outcomes from SSR. Although generally effective in reducing the amount of short selling in the equity market (see Harris, Namvar, & Phillips, 2013 and Boehmer, Jones, & Zhang, 2013), a question mark remains as to the ease of which it is possible for investors to circumvent the ban by simply moving to the derivatives market. Phillips (2011) provides evidence for this by showing that the introduction of options trading significantly increases stock price adjustment efficiency by mitigating short-sale constraints. Both Harris et al. (2013) and Beber and Pagano (2013) also find evidence that short sales bans have a different impact on stocks dependent on whether there are options written on them or not. Harris et al. (2013) provide evidence that there was significant price inflation in stocks without tradable options relative to stocks with tradable options as a result of the SSR in the U.S., while Beber and Pagano (2013) show that the bans had a particularly negative impact on liquidity for stocks with no listed options across a number of markets around the world. Likewise, Boehmer et al. (2013) find evidence that the effective spread of banned stocks widened significantly. Additionally, there is evidence of investors moving to the CDS market as a response to the short sales bans (Courtney, 2010) while Ni and Pan (2011) find that cross-sectional predictability increased between the equity, option and CDS markets during the SSR period.

In contrast to the research showing the SSR primarily had only a detrimental effect on stocks, Battalio and Schultz (2011) and Grundy, Lim, and Verwijmeren (2012) find that the 2008 SSR caused deteriorating liquidity not just for the affected stocks but also the options market in terms of lower trading volume and higher spreads. However, their analysis was principally on the second short sales ban that was imposed, which Boehmer et al. (2013) point out can suffer from a number of confounding effects due to the introduction of the Trouble Asset Relief Program (TARP) and other similar government programs that were announced on the same day as the ban was declared.

The literature, therefore, provides differing opinions on the impact SSR have on the related options markets with some arguing a substitution effect may take place with traders moving from stocks to options to circumvent short sale restrictions (see Nilsson, 2008 and Phillips, 2011), while others posit there will be a switching effect in traders moving away from stocks (and their corresponding options) affected by the ban to those unaffected by it (Boulton & Braga-Alves, 2010). This latter possibility arises if options and their underlying stocks are used as complimentary products where restrictions placed on one leads to a detrimental effect on the other.

One theoretical prediction made by Diamond and Verrecchia (1987) is that trading costs should increase when restrictions on short sales are imposed, which may then lead to uniformed traders, who face higher trading costs, to move out of the market first. If this is the case then we should be able to see a change in the informativeness of stock and options price movements when SSR are introduced. We postulate that by focusing on the price discovery process we can track how SSR affects the proportion of informed traders that are active in the stock and options markets. Specifically, we are interested to test if there is a change in the proportion of informed traders operating between the stock and options markets for stocks affected by the ban, and those that are not. Changes in the level of price discovery between these markets can help determine if a substitution or switching effect is more likely taking place with informed traders.

In this paper we examine the impact on both the stocks and options from the short sale restrictions that were imposed on the original group of financial stocks in the US on July 2008, and a matched sample of stocks that were unaffected by the ban. Our analysis is performed using trade and quote data on 15,135,351 transactions on 14,178 option contracts which cover a period of time prior to the first short sales ban being implemented (January 2, 2008) until one month after the end of the ban (September 12, 2008). A benefit of focusing on the first SSR in 2008 is that we hope to capture the initial movement of informed traders from one market to another, whilst also avoiding the confounding factors Boehmer et al. (2013) raise with the second set of restrictions that were imposed at a later date that would affect the other studies.

Consistent with the literature examining the 2008 period, we first confirm that stock liquidity, measured by both trading volume and spread, does significantly reduce during the SSR period for the stocks affected by the ban. We also observe a similar decline in the liquidity of the options market for these same stocks, which is congruent with the argument that traders are potentially switching away from stocks (and their options) affected by the ban to products that are not affected.

These results compliment what we find when examining the change in informed trading between the options and stock markets through the application of our price discovery measure. Specifically, the measure we employ is constructed by examining the time series relationship between stock prices with implied prices from the options market using a modification of Yan and Zivot's (2010) information shares proposed by Putniņš (2013). Using this measure we find there is a reduction in the proportion of price discovery that originates from options for the group of stocks affected by the SSR, and a corresponding rise in the measure for the options of the unaffected stocks. Along with a significant negative relationship between changes in options volume for the SSR group and the level of price discovery exhibited by the options of our matched sample of unaffected stocks our evidence supports a switching effect specifically amongst informed options traders.

The contribution of our paper to the literature is therefore threefold. First, we focus on the impact of the first set of short sale restrictions that were enacted in 2008 in order to capture the change in the relative distribution of informed trading within the market. This, secondly, then provides a cleaner, albeit smaller, sample to examine the initial migration of informed traders from one instrument to another as a result of the short sale restrictions. This has not specifically been examined in detail before. Finally, we capture the relative proportion of informed trading through applying a new price discovery metric. Our price discovery measure has the advantage of combining the Hasbrouck information share (Hasbrouck, 1995) and the component share of Gonzalo and Granger (1995) to provide a superior ability to attribute contributions to price discovery in the presence of different types of noise.

Download English Version:

<https://daneshyari.com/en/article/5083249>

Download Persian Version:

<https://daneshyari.com/article/5083249>

[Daneshyari.com](https://daneshyari.com)