Journal of Banking & Finance 54 (2015) 87–103

Contents lists available at ScienceDirect

Journal of Banking & Finance

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

Which financial stocks did short sellers target in the subprime crisis? ☆

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A R T I C L E   I N F O

Article history:
Received 30 September 2013
Accepted 29 December 2014
Available online 6 January 2015

JEL classification:
G01
G14
G18
G28
G33

Keywords:
Short selling
Subprime assets
Financial crisis
Short-sale ban
CDS spread

A B S T R A C T

Tracing the SEC ban on the short selling of financial stocks in September 2008, this paper investigates whether such selling activity before the 2008 short ban reflected financial companies' risk exposure in the subprime crisis. Evidence suggests that short sellers sold short stocks that had the greatest asset and insolvency risk exposures, and that the short selling of financial firms' stocks was not significantly greater than that of non-financial firms after we match them on firm size and insolvency risk. When the short ban was in effect, the market quality of financial stocks without subprime assets exposure had deteriorated to a larger degree than that of financial companies with subprime assets exposure. The findings imply that such a regulation may mute the market disciplining effects of investors and may also be seen as a counterweight to any perceived macro or systemic risk reduction benefits resulting from such a ban.

1. Introduction

Short sellers such as hedge funds were accused of using short sale strategies to push down the prices of financial company equities below their fundamental values during the 2007–2009 crisis. Indeed, a sequence of actions taken by the SEC seems to be consistent with this belief. On 15 July 2008, the SEC issued an emergency rule to limit certain types of short selling,[1] namely, the "naked" short selling of 19 major financial firms. On 17 September 2008, the SEC announced that this rule was to be extended to all publicly traded financial firms. On 18 September 2008, the SEC announced a ban effective immediately on all types of short selling of the stocks of 797 public financial companies, which continued until 8 October 2008. At the time, the SEC's Chairman, Christopher Cox, claimed that this short selling ban was an effort "to combat market manipulation that threatens investors and capital markets."[2] Within a week, the prohibition on short selling had spread to markets overseas, including the United Kingdom, Australia, Taiwan, and the Netherlands.[3]

☆ Hasan is from the Schools of Business, Fordham University and Bank of Finland, Massoud is from Melbourne Business School, University of Melbourne, Song is from Rowe School of Business, Dalhousie University and Saunders is from Stern School of Business, New York University. We would like to thank two anonymous reviewers for very helpful comments. We are also thankful, to Frank Heathway, Chief Economist at NASDAQ OMX, for providing the proprietary daily short selling data for the period post REGSHO; to Markit for providing the CDS Database. Massoud would like to acknowledge funding from Melbourne Business School, University of Melbourne as well as financial support from the Social Sciences and Humanities Research Council (SSHRC) of Canada. Song would like to acknowledge funding from Rowe School of Business, Dalhousie University and to acknowledge financial support from the Social Sciences and Humanities Research Council (SSHRC) of Canada.

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http://dx.doi.org/10.1016/j.jbankfin.2014.12.021
0378-4266/

[1] See SEC Press Release 2008-143 on 15 July 2008.

[2] See SEC Press Release 2008-211 on 19 September 2008.

[3] According to a recent BBC news article from 12 August 2011, the European Securities and Markets Authority (ESMA) issued a statement that France, Italy, Spain, and Belgium were set to ban short selling on select stocks, including large banks and insurers such as BNP Paribas, Crédit Agricole, and Natixis.

The 2008 short ban triggered significant controversy. A number of hedge fund managers and other investors actively opposed the ban, arguing that regulators were actually punishing short sellers for the mistakes made by financial companies that had exposed themselves to risky asset investments, such as subprime mortgage-backed securities and other credit derivatives. Richard Baker, head of the Managed Funds Association, a hedge fund lobbying group, argued that hedge funds short because they identify fundamental problems with a company. "If in fact a company does fail, it will have nothing to do with the fact that someone on the outside noticed these deficiencies."[4] Additionally, financial economics researchers commonly believe that short sellers are active, rational, and even informed traders that help facilitate the price discovery process (Boehmer and Wu, 2013) and keep price in line with the fundamental or intrinsic values (e.g., Dechow et al., 2001). Short-sale constrained stocks, on the other hand, may be traded at a price above their fundamental values, and therefore may underperform in the future (e.g., Miller, 1977; Boehme et al., 2006; Asquith et al., 2005).

This paper investigates whether investors rationally anticipated and traded on certain types of fundamental information that affected future returns, and we are specifically interested in overinvestment in risky assets and overall insolvency risk exposure. Given the controversies regarding the short ban, this is an important research question for both researchers and regulators. First, financial institutions' excessive exposure to risky assets—specifically subprime assets—is believed to have been one of the major causes of the 2007–2009 crisis. The question of whether and how these types of risk exposures affected short selling activity remains unanswered in the literature. Second, if companies with greater exposure to risky assets were actually sold short to a greater degree, then opposition to the SEC's ban on short selling would have been reasonable. Indeed, as has been shown in a more general context, short selling activity enhances the informational efficiency of asset prices (e.g., Boehmer et al., 2008; Boehmer and Wu, 2013). That is informed traders inject additional information (and potentially more accurate information) into the marketplace by short selling.[5] Thus, banning short selling could have had unfavorable informational consequences. Stock prices, for instance, might no longer be an accurate reflection of the full information set in the marketplace, especially with regard to a financial company's investment in subprime assets. Such "inefficiency" effects may be perceived as offsets to any potential macro policy or systemic risk reduction benefits from such a ban.

There have been a number of papers that investigate the impact of the short ban on different markets. For example, Boehmer et al. (2013) show that the ban lowered market quality as measured by spreads, price impact, and intraday volatility for affected stocks. Gagnon and Witmer (2009) have demonstrated—via a natural experiment crafted around cross-listed stocks between the Canadian and U.S. markets—that the 2008 short selling ban actually caused stock prices to trade above their fundamental values. Beber and Pagano (2013) find that short bans around the world during the 2007–2009 crisis were detrimental for liquidity, slowed price discovery, and failed to support prices. Kolasinski et al. (2013) find that short bans result in more informed trading. Battalio and Schultz (2011) and Grundy et al. (2012) focus on the impact on the option market. Danciulescu (2009) and Choi et al. (2010) examine the impact on the bond market. However, the heterogeneity of market quality deterioration within stocks affected by the short ban has been relatively under-researched. This paper further investigates whether financial firms with greater subprime asset exposure experienced a higher or lower degree of market quality deterioration when the ban became effective.

This paper complements the existing literature by answering the important question of which type of financial stocks were more likely to be short sold during the subprime crisis. Our results underscore the important role of short sellers in incorporating financial companies' subprime exposures into their stock prices, and in monitoring and disciplining the targeted companies by discouraging incautious, value-destroying investments.[6] Lorenzo Di Mattia, the manager of the hedge fund Sibilla Global Fund, argued at the time of the ban: "Funny they don't understand that it is because there is short selling that the market didn't crash. If there were no shorts in this market, there would be only sellers."[7] Moreover, banning short selling limits investors' hedges against their market risks, as short selling financial company stocks with significant exposure to risky assets might be viewed as a crucial "self-rescue" strategy for some institutional investors.[8]

To address these research questions, we conduct three different sets of tests. First, we examine whether short sellers actually differentiated between financial companies with substantial exposure to subprime and related assets and financial companies with little exposure over the period prior to the SEC's short sale ban. To examine the extent to which financial firms were exposed to risky asset investments, we use a unique data set of subprime activity at the financial company level by collecting subprime-asset-related accounting information from financial company annual reports during the year prior to the 18 September 2008 short selling ban. Since there is on average 3 months lag between a company's financial statement filing date and its fiscal year end date (following Compustat's definition of the fiscal year end date), our sample of financial report filings during the year prior to September 2008 covers the 2007 *fiscal year*. Thus, for example, the 2007 fiscal year end for Meta Financial Group Inc. of NASDAQ was 30 September 2007; however, the filing date for its fiscal year-end report was approximately 3 months later, on 11 January 2008. Thus, Meta's financial reporting disclosure at the time of the 18 September 2008 ban would not have included fiscal year 2008 data, since this had been unavailable until December 2008. It should also be noted that prior to 2009, the subprime asset holdings of financial companies were primarily reported in footnotes to annual financial statements. We compare short selling activities between financial stocks with subprime assets and those without subprime assets over the window (−10, +10) and (−10, −1) surrounding the 2007 financial report filing date.

Second, we examine Credit Default Swap (CDS) spreads as an alternative but broader measure of a financial company's insolvency risk exposure. Acharya and Johnson (2007) argue that CDS spreads may contain private information such as bank lenders' assessment of the underlying companies' prospects.[9] If short sellers are rational, we might expect that companies with greater risk exposure (measured by their risky asset exposures and CDS spreads) were sold short more. Thus, in our analysis, we investigate how Lagged Daily CDS Spreads affected short volumes over two periods: the windows surrounding the 2007 financial report filing dates, and the one-year period preceding the 2008 short sale ban (from 18 September 2007 to 17 September 2008). We also compare short volumes on

[4] See *The Wall Street Journal Article*, "SEC Issues Temporary Ban Against Short Selling," by Kara Scannell, Deborah Solomon, Craig Karmin, and Gregory Zuckerman on 19 September 2008.

[5] See Desai et al. (2002), Asquith et al. (2005) and Diether et al. (2009), for example.

[6] Balasubramanian and Cyree (2008) show evidence that the short selling of bank stocks can provide a signal about the future performance of the banks.

[7] See the article in *Dow Jones Newswires*: "UPDATE: Short Selling Limit May Have Unintended Consequences," by Rob Curran, 15 July 15 2008.

[8] Brunnermeier (2009) mentions a Wall Street saying: "If you can't sell what you want to sell, sell what you can sell."

[9] Acharya and Johnson (2007) provide evidence that CDS spread changes predict stock returns of the borrowing companies.