



Short-sales constraints and market quality: Evidence from the 2008 short-sales bans[☆]

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ABSTRACT

Using data from fourteen equity markets, this study empirically examines the impact of the 2008 short-selling bans on market quality. Evidence indicates that restrictions on short-selling lead to artificially inflated prices, indicated by positive abnormal returns. This is consistent with Miller's (1977) overvaluation theory, and suggests that the bans are effective in temporarily stabilizing prices in struggling financial stocks. Market quality is reduced during the restrictions, as evidenced by wider bid-ask spreads, increased price volatility and reduced trading activity. While these effects are strong, regulators may view the deterioration in market quality as a necessary by-product of the bans to maintain prices and protect investors.

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1. Introduction

Beginning on September 14, 2008 with the bankruptcy of Lehman Brothers, the global financial crisis entered a new phase marked by the failure of prominent American and European banks. Globally, governments responded by announcing drastic rescue plans for distressed financial institutions. As the financial crisis worsened and with share prices falling sharply, financial market regulators turned to a familiar scapegoat, imposing tight new restrictions on the short-selling of financial stocks. The restrictions commenced on September 19, 2008, with regulators in the United Kingdom banning short-selling (both covered and naked)¹ on leading financial stocks. On the same day the Securities and Exchange Commission (SEC) announced a ban on the short-selling on financial stocks effective September 22, 2008 until October 9, 2008. Other markets soon followed and announced their own bans: Australia and Korea banning short-selling on all stocks; Canada, Norway, Ireland, Denmark, Russia, Pakistan and Greece banning short-selling on leading financial stocks; France,

Italy, Portugal, Luxembourg, The Netherlands, Austria and Belgium banning naked short-selling on leading financial stocks; and Japan banning naked short-selling on all stocks (see Appendix and Table A-1 for details of changes worldwide).

The view of regulators is homogenous with respect to the rationale behind the restrictions. For example the Financial Services Authority (FSA) CEO Hector Sants notes that action was taken to “protect the fundamental integrity and quality of markets and to guard against further instability in the financial sector”.² Callum McCarthy, Chairman of the FSA, notes “(T)here is a danger in a trading system which allows financial institutions to be targeted and subject to extreme short-selling pressures, because movements in equity prices can be translated into uncertainty in the minds of those who place deposits with those institutions with consequent financial stability issues. It (the short-selling ban) is designed to have a calming effect – something which the equity markets for financial firms badly need.”³ The SEC had similar concerns noting “Recent market conditions have made us concerned that short-selling in the securities of a wider range of financial institutions may be causing sudden and excessive fluctuations of the prices of such securities in such a manner so as to threaten fair and orderly markets”.⁴ Overall the comments of regulators suggest that the bans are intended to maintain fair and

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¹ A naked short-sale is where the participant, either proprietary or on behalf of a client, enters an order in the market and does not have in place arrangements for delivery of the securities. The other form of a short-sale, covered short-sale, differs in that arrangements are in place, at the time of sale, for delivery of the securities.

² FSA statement on short positions in financial stocks, September 18, 2008, FSA/PN/102/2008.

³ Callum McCarthy: Comments on short positions in financial stocks, September 18, 2008, FSA/PN/103/2008.

⁴ SEC RELEASE NO. 34-58592/September 18, 2008.

orderly markets by preventing speculators from placing excessive downward pressure on troubled financial firms.

The purpose of this study is to empirically examine the impact of the 2008 short-selling bans on the market quality of stocks subject to the bans. Thus, in doing so we also examine whether short-selling bans achieve their desired outcome. We use data from fourteen equity markets around the world to examine market quality in terms of abnormal returns, stock price volatility, bid-ask spreads and trading volume. To control for market wide factors or different shocks affecting the market, we compare banned stocks to a group of non-banned stocks. We also examine statistics for similar stocks in markets where short-selling restrictions were not imposed. While short-selling is a contentious issue (see Chancellor, 2001), relatively little or no empirical evidence is available on the impact of short-sale restrictions on market quality. The 2008 short-sale bans provide an ideal setting for these tests because it provides a binding constraint. Thus, we do not rely on proxies for short-sale constraints, as in previous research.

While the results of this study can be used to assess the effectiveness of the short-sales bans on market quality during the financial crisis in which they were imposed, the findings in this study can have much wider reaching implications. By their nature, financial crises and other significant market events cannot be predicted. As events of this nature unfold in the future, market operators and regulators will again be called upon to intervene. Providing evidence of how previous intervention affected markets (and possibly the shortcomings of such intervention) will hopefully provide these market operators and regulators with a more complete knowledge set for future decisions.

The remainder of this paper is organized as follows. Section 2 reviews the literature on short-sale constraints and Section 3 develops a set of testable hypotheses. Section 4 describes the data and methodology used in this study. Section 5 reports the empirical analysis of the impact of the bans on returns, liquidity and stock price volatility. Section 6 provides a summary of the main results and conclusions.

2. Literature review

The literature on short-sales constraints emanates from the seminal work of Miller (1977) who develops a model that details how short-sale constrained securities become overpriced because pessimists are restricted from acting on their beliefs. In this scenario, stock prices reflect the beliefs of only optimistic investors. Diamond and Verrecchia (1987) model the effects of short-sale constraints and speed of adjustment, to private information, on prices. An important implication of this model is that short-sale constraints do not bias prices upwards if investors are rational. Rather, this model predicts that short-sale constraints will reduce the speed of adjustment to negative information. Isaka (2007) provides empirical support for this hypothesis.

Consistent with Miller's (1977) hypothesis, the empirical evidence which utilizes proxies of short-sale constraints uniformly indicates that implementing short-sale constraints leads to overvaluation.⁵ Chang, Chang, and Yu (2007) examine the relationship between covered short-sale constraints and stock price overvaluation on the Hong Kong Stock Exchange (HKEx). Consistent with Miller (1977), significant negative cumulative abnormal returns are reported after stocks are added to the list of designated securities for covered short-

sales. Several other studies, including Boulton and Braga-Alves (2010), Saffi and Sigurdsson (2011), Boehmer, Huszar, and Jordan (2010), Chen and Rhee (2010), Boehmer and Wu (2010), Tseng (2010) and Lim (in press) confirm the negative abnormal returns after the implementation of some form of short-selling restriction.

An implication of these studies is that short sellers remove the upward bias from stock prices. Diamond and Verrecchia (1987) suggest that, since short sellers do not have the use of sale proceeds, market participant's never short for liquidity reasons, which *ceteris paribus* implies relatively few uninformed short sellers. Empirical studies confirm heavily shorted stocks under-perform, implying short sellers are informed (see *inter alia* Asquith, Pathak & Ritter, 2005; Białkowski & Jakubowski, 2008; Boehmer, Danielsen, & Sorescu, 2006; Boehmer, Jones, & Zhang, 2008; Desai, Ramesh, Thiagarajan, & Balachandran, 2002; Diether, Lee and Werner, 2009a; Jones & Lamont, 2002 and Takahashi, 2010).

The relationship between short-sales and stock return volatility is a contentious issue and receives limited academic attention. Scheinkman and Xiong (2003) develop a behavioral model with heterogeneous investors that exhibit overconfidence to private information. Contrary to the common belief that short-sale constraints de-stabilize the market, Scheinkman and Xiong (2003) predict a significant decrease in trading volume and price volatility when short-sale constraints are lifted. This is consistent with Diether et al. (2009a) who document that short sellers tend to be contrarian traders, with a stabilizing effect on the market. Zheng (2008) samples intraday short-sales transaction data from the NYSE to examine short-selling around company earnings announcements and finds that where the earnings announcement is above expectations, short sellers act as contrarians.⁶

Ho (1996) documents that the daily volatility of stock returns increases when short-sale constraints are imposed. Chang et al. (2007) however, using a direct measure of short-sale constraints, find that the volatility of stock returns increases when the constraints are lifted.⁷ Consistently, Henry and McKenzie (2006) find that the Hong Kong market exhibits greater price volatility following a period of short-selling and that volatility asymmetry is exacerbated by short-selling. This finding is confirmed by Boulton and Braga-Alves (2010) for a sample of financial stocks in the US. Alexander and Peterson (2008) and Diether, Lee, and Werner (2009b) both examine the removal of price tests (short-sale constraint) and observe insignificant or weak increases in daily and intraday return volatility.

Evidence on short-sale constraints and liquidity is relatively unexplored. Alexander and Peterson (2008), Diether et al. (2009b) and Boulton and Braga-Alves (2010) find that short-sale constraints have a limited effect on market liquidity. A reduction in constraints increases short-sale activity, but both find that the restriction results in only slightly wider bid-ask spreads.

3. Hypotheses

The disagreement models (e.g. Miller 1977) predict that short-selling bans prevent at least some pessimists from taking a bearish position in a financial stock. Thus, short-selling bans should cause prices of affected stocks to rise, leading to overvaluation relative to fundamentals. Empirical evidence is consistent with this notion and suggests a high level of short-selling is followed by negative abnormal returns and short-selling restrictions are related to positive abnormal

⁵ Examples of proxies include Figlewski (1981) and Senchack and Starks (1993) who use changes in short interest, Chen, Hong and Stein (2002) employ declines in breadth of ownership, Danielsen and Sorescu (2001) utilize option introductions, Ofek and Richardson (2003) use stock option lockups, Jones and Lamont (2002) employ the cost of short-selling and Haruvy and Noussair (2006) use experimental markets.

⁶ See also Dennis and Sim (1991) and McKenzie and Kim (2007).

⁷ Ho (1996) utilizes an event where the Stock Exchange of Singapore suspended trading for three days from December 2, 1985 to December 4, 1985. When trading was resumed on December 5, 1985, contracts could only be executed on an immediate delivery basis (i.e., delivery and settlement within 24 h) which implies that short-selling was severely restricted.

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