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Stabilizing the market with short sale constraint? New evidence from price jump activities



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ABSTRACT

We re-examine the impact of short-sale constraints (SSC) on market stabilization via realized jump activities during 2002–2009 to circumvent the reverse causality in identifying the policy effects of SSC. We observed that the abnormal downturns under tighter short sale constraints are significantly larger whereas there is no difference for abnormal upturns. Our empirical results survive across a sequence of robustness examinations controlled for market illiquidity. The findings do not support the claims by regulators that restraining short-sales can stabilize prices; instead, SSC has led to a less efficient market with stronger extreme downward returns.

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1. Introduction

The effects of short sale constraints (hereafter as SSC) on market stability have received much attention by regulators, academicians and practitioners. Regulators occasionally implement SSC in financial panics to protect the integrity and quality of the securities market, to strengthen investor's confidence, and to combat manipulations. Previous studies, nonetheless, provide evidence against the desired objective of stabilization among regulators (e.g. [Hong and Stein, 2003](#); [Abreu and Brunnermeier,](#)

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2003; Bris et al., 2007; Saffi and Sigurdsson, 2011). They find imposition of constraints threatens market stability via the accumulated delay of negative information, and leads to higher downside risks and total market volatility. These findings obviously contradict the view shared by Allen and Gale (1991) and Bernardo and Welch (2004), who pointed out that restraining short sales may stabilize the market. Nevertheless, there is an overlooked endogeneity among these studies in that regulators usually restrict short-selling to prevent market abnormal movements when the market volatility is particularly high. Therefore, a period of high price variation per se (as it can be the cause instead of the consequence) does not preclude the stabilizing effectiveness of the SSC. To resolve the picture, we thus control for the endogeneity concerns by probing the jump activities under SSC using a jump identification approach by Barndorff-Nielsen and Shephard (2004) and Huang and Tauchen (2005).

In order to pinning down the relationship between SSC and price jump activities during the different regimes of uptick rules imposed upon the equities in the past decade in Taiwan (as disclosed in Section 2.1), we need a measure to portray the extent of inflexibility to trade under different policy regimes. As already known, difficult-to-short stocks tend to be overpriced. However, investors can long/short option contracts freely even if there are SSCs imposed in the underlying equities. In view of this, we use the model-free assumption-free and arbitrage-free put-call parity to recover the option implied theoretical price.¹ Once obtained, the discrepancy between the option-implied and the actual prices turned out to serve as a good proxy for SSC strength. We then examine the identified realized jumps across the different regimes of uptick rules.

There are two new findings in our entertained set ups. First, we find strong evidence that when SSC strength is high, jump size and jump intensity are significantly larger. Abnormal downward jump size is larger with higher degree of barrier to short sale than that with lower ones, but there is no significant difference for abnormal upward jump size. Second, under higher pressure to short sell, the downward abnormal market movement is stronger than the upward one. We subsequently conduct a series of robustness checks. Particularly, we use alternative setups to tease out the effect of SSC from the potential confounding effect from liquidity. Interestingly, the obtained results reinforce our main results. In terms of extreme price movements, our findings do not support the view expressed by regulators that restraining short sales can stabilize prices, they do patronize academic findings that SSC generally lead to more volatile and less efficient markets.

Why SSC cannot stabilize the market? Our story follows closely to that of Bris et al. (2007), and Saffi and Sigurdsson (2011) which was deduced from the heterogeneous agent model in Hong and Stein (2003). Imposing SSC tends to prevent negative information from being impounded into prices and makes downward adjustment more difficult. As some investors are constrained from selling short, their accumulated unrevealed negative information will not be manifested until the market trades to adjust. Once it gets the chance to adjust, it will be a sharp correction and lead ultimately to a negative jump. As such, restricting short selling may turned out to destabilize prices.

While previous models, such as Hong and Stein (2003), predicts a higher frequency of extreme negative stock returns when short-sales constraints are binding, they do not specifically distinguish whether the sources of the extreme negative return is due to the period of radical volatility (thus lead to imposition of SSC) or due to the asymmetric adjustment attributable to the SSC. Our approach brings such a distinction by examining the realized extreme jump activities. Moreover, in contrast to the prediction made by Hong and Stein (2003), our empirical findings show SSC does not drive up the likelihood of extreme jumps. Alternatively, SSC indeed leads to bigger downward jumps. Our new findings, as a whole, highlighting the asymmetric adjusting mechanism as disclosed in our story and echo the inability of SSC to stabilize the market as documented in Bris et al. (2007), Saffi and Sigurdsson (2011), and Boehmer et al. (2013).

The rest of this research proceeds as follows. Section 2 presents our empirical designs and Section 3 shows main results and the robustness analysis. Section 4 concludes our findings.

¹ In addition to these circumvented biases in computing theoretical prices, our implied price also avoid the possible effects of early exercise issues since TAIEX options belong to European options.

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