Report on Ph.D. Thesis Defence

Ph.D. Candidate	Zhang Yan（PHD09010）
Dissertation submitted	10 July 2014
Dissertation Defense Date	31 July 2014
Time	13:00-15:00
Main referee	Shinsuke Ikeda
Referees	Roberto Leon-Gonzalez
	Minchung Hsu
	Tetsushi Sonobe
	Yohei Yamamoto (Hitotsubashi University)
Dissertation Title	Three Essays on Empirical Studies of the Short-Sale Ban in Shanghai and Hong Kong Stock Markets.

Result: Pass (subject to minor changes)

1. Thesis overview

Short sale is a transaction of selling financial assets that an investor does not own currently by borrowing them, with the intention that one can subsequently repurchase them at lower prices and therefore enjoy the capital gain, typically for a very short period of time. It is sometimes blamed for as an additional source of instability and risk of crash in a bearish market. Given the prevalence of short-sale bans on financial markets around the world during a crisis period yet inconclusive results of their impacts both in theoretical and empirical literature as a background, this dissertation attempts to empirically examine the impact of short-sale constraints in financial markets and to enhance the understanding on this subject among regulators, investors and academics.

In Chapter 1, the author motivates the whole dissertation works by surveying a history of short-sale activity, the legal and regulatory status of such constraints in the contemporaneous world, and recent interests in the short-sale ban around the world, in reaction to the risk of market crash during the global financial crisis over 2007 to 2009.

In Chapter 2, the author empirically confirms a negative relationship between the heterogeneity of investors' beliefs and future returns in Shanghai Security Exchange, in which a strict short-sale ban is imposed for decades in the sample period of this study. This relationship is robust to controlling for several stock characteristics such as size, leverage, book-to-market ratio, momentum, and different quantiles of the return’s distribution.

In Chapter 3, the author switches her focus to Hong Kong Stock Exchange, in which some stocks are exempted from a regular short-sale ban. Using this variation of the possibility of short-selling among stocks traded in this market, the author obtains (i) a similar negative relationship between the heterogeneous beliefs future returns of stocks under the short-sale ban, but (ii) such a relationship disappears if the ban is lifted, and (iii) such a varying impact of short-sale ban on future returns is stronger if good news of companies' earnings are announced. The author provides the following mechanism of (iii): because the ban tends to eliminate potential short-sellers, who have relatively negative opinions on companies' earnings, relatively optimistic investors remain in the market and their opinions are easily augmented by good earnings news, thereby making them more aggressive to purchase and stock prices more over-valued.

In Chapter 4, the author turns to the analysis of the short sale ban’s liquidity effect by exploiting the variation in the status of ``shortability” of stocks in Hong Kong, again, but with a propensity-score matching method to create pseudo-controlled/treatment groups regarding the short-sale ban policy. She establishes that the short-sale ban has a positive effect on liquidity of stocks under influence during a regular ``non-crisis” period, while such an effect disappears during the 2007-2009 financial crisis period. The former result on the possibility of liquidity-supporting function of the short-sale ban in the Hong-Kong style is an unexpected result, and the author provides a justification such that these short-sellers are typically informed traders, so that the short-sale ban would eliminate them and therefore reduce the scope of the adverse selection between informed and uninformed traders in a regular time.

These findings suggest three important policy implications. First, the effect of short-sale ban on future returns is typically negative. Second, short-sale constraint of a Hong Kong-style may support liquidity of somewhat distressed stocks during a normal period, so that the effect of a short-sale ban on stocks may be subject to a trade-off between a negative impact on future returns and a positive impact on current liquidity. Third, the liquidity-supporting effect of a short-sale constraint may disappear in the face of a market-wide financial distress.

2. Result /Notes from the Examining meeting / Final Evaluation

The dissertation defence was held on 31st July 2014, followed by the examining meeting. The participants were the main referee Shinsuke Ikeda and four referees in the dissertation committee members: Roberto Leon-Gonzalez, Minchung Hsu, Tetsushi Sonobe, and Yohei Yamamoto (Hitotsubashi University). During the defence by the candidate herself, and the examining meeting afterwards, the examining committee members had been relatively satisfied by the quality of thesis. This thesis uses an extensive dataset and analyses the impact of a short-sale policy on future returns and liquidity of stocks under regulation. The findings are supported by a careful statistical procedure, i.e., controlling for several confounding factors, removing stock-specific fixed effects, exploiting a timing of policy change, and dealing with a selection bias in the treatment of a policy. Overall, the thesis can successfully provide some contributions to the literature and in the policy debate regarding how the short-sale policy should be designed. However, the examiners gave several comments to be incorporated in the final draft.

(1) The skill of oral and writing presentations should be improve.

(2) Chapter 1 regarding the motivation of the whole study is not attractively written. It also lacks the details about how short-selling is actually conducted, what are the legal status of such activities in each country, and how the regulatory boards in major markets justify the short-sale ban, especially during the crisis period.

(3) The volume-based measure of heterogeneity of beliefs used in Chapters 3 and 4 may be subject to a downward bias, because the truly pessimistic investors may be kicked out of the market under the short-sale ban or even be refrained from participating in the market. The author should provide more details about the pro and con of such a measure.

(4) Specifications, explanations and estimation of econometric models are sometimes done in a bit sloppy fashion. In Chapter 3, the change of a security's short-sellable status by the Hong Kong exchange's rule may induce an endogenous relationship between the returns and characteristics of a stock. There are several concerns about the insignificance of some estimates in panel-data regression in Chapter 3, perhaps due to the small sample size generated by the author's sole focus on the events of lifting the short-sale constraint, and to the author's obscure explanation about how she dealt with the fixed effect.

(5) Explanations about the economic mechanism of investors' behaviour are not so convincing. The author briefly indicated the interaction between informed and uninformed traders in the market, but not sufficiently clearly to convince

economists as readers. If the short-sale activity is mainly driven by informed pessimists, the short-selling itself may convey a signal to uninformed traders that the market is going to decline soon. The author cited a work such that the investors in the market become more risk-averse during a financial crisis period, but truly pessimistic/risk-averse investors may leave the market. Such a possibility is also linked to the issue of whether a volume-based measure of the heterogeneity of investors' beliefs is valid or not, as suggested in (3). The author should also investigate the explanation about the effect of short-sale ban on abnormal returns from a transaction cost.

Nevertheless, the examining committee judged that the author would be able to successfully respond to most of these questions, comments and suggestions for improvement of the manuscript. Conditional on the accomplishment of the requested revisions, the dissertation committee strongly supported for the validity of awarding the author for the Ph.D. in public economics, with an excellent average grade far exceeding the minimum criterion for the pass.

The final revisions of the manuscript had been conducted under the supervision of the main referee from 31st July 2014 to 25th August 2014. Regarding (1), the author promised to improve the quality of English presentation continually until the submission of each of three main chapters to academic journals, and the main advisor welcomes the supervision regarding this issue even after the completion of her Ph.D. degree. In response to (2), the author provided more details about the nature of short-sale restrictions in p.1-2. The main points are that (i) the short-sale transaction has a long history, even dating back to the 17th century Netherland, and (ii) in the modern era, such a restriction is not a legal procedure but a regulatory measure conducted by the security exchange authorities/regulators. Regarding (3), the author added the seventh remark on the volume-based measure of investors' heterogeneous beliefs in p.19 to explain that such a measure suggests a lower bound of the heterogeneity of all of the potential investors. Regarding (4), the author emphasized in the beginning of Section 3.4.7 (p.62) that she did her best to avoid a possible omitted-variable bias by carefully examining and including control variables for the stock-specific characteristics. Moreover, the author made it clear that she actually used a within-transformation rather than first-differencing when she conducted a fixed-effect panel regression in Chapter 3 (Section 3.6.2, p.74- 75), thereby correcting her imprecise explanation during the defence presentation about the procedure. She also fixed a typo in Chapter 2 (Equation (2.6) in p.42) so that the error term now has a correct time index T, rather than T-j as in the first draft. Two econometricians in the committee (Ikeda and Yamamoto) agreed that some comments in (4), especially the expansion of data scope and applications of more robust econometric techniques than the Fama-MacBeth shortcut for a panel-data analysis, should be conducted in future works but not necessarily in the current draft, mainly because it is expected to be time-consuming yet the main message will not change be drastically. The comments in (5) suggest important economic issues, but more or less empirical nature of the whole thesis may not be suitable to pursue these questions given limited scope of data. The author promised to attempt an investigation regarding the transaction-cost story of the abnormal returns in Chapter 3, which is now under the revision for submitting an academic journal.

The final draft of Ms. Yan Zhang's Ph.D. thesis is submitted to the examining committee members on 27th August 2014. Upon a careful examination of the entire draft, the main referee confirmed that major comments from the examining members are successfully incorporated in the final draft and therefore the completion of the suggested revisions.