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ScienceDirect
Japan and the World Economy
18 (2006) 528–544
Japan and the WORLD ECONOMY
www.elsevier.com/locate/econbase

Short selling and stock prices with regime switching in the absence of market makers: The case of Japan

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Received 2 January 2002; received in revised form 3 October 2004; accepted 28 October 2004

Abstract

This paper investigates the relation between short selling and stock price at an aggregated market level. In order to study the differential impact of market microstructure on short selling, the data from Japanese stock markets are used. Both traditional regression and Markov switching models are used to compare Japanese results to those of U.S. and to admit non-stationary relation between short selling and stock price, respectively. Particularly, relatively long period (1978–2002) of analysis including bullish and bearish periods gives a good testable bed for studying the effect of short selling on stock price according to market condition. The empirical findings reveal that percentage change of short interests has a statistically significant positive relation with stock returns. It gives regulators policy implication that short selling is not a destabilizing activity, but an acceptable form of trading even in the absence of market makers. And short selling information cannot be used as an indicator for predicting future stock markets.

JEL classification: G14; G28

Keywords: Short selling; Stock prices; Markov regime switching

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0922-1425/$ – see front matter
doi:10.1016/j.japwor.2004.10.002

1. Introduction

The validity of short selling as an acceptable form of trading has been an important issue for a long time, in both academic and practical senses. One of the most debatable issues concerns whether or not short selling exerts an unfavorable effect on stock prices. While increased margin buying, as excess demand for stocks, can push up the stock prices, short selling activity is likely to pull them down since increased short selling can be considered as excess supply. In this case, short selling could be considered to have an unfavorable effect on stock prices. Another issue concerns whether a level of short interest is a bullish or bearish indicator of stock prices. Since an increase in short interest boosts the potential demand for stocks in the near future, it can therefore be seen as a bullish indicator of future stock prices. On the other hand, high short interests may be a pessimistic sign that stock markets may soon be going down. In that case, an increase in short interests can be viewed as a bearish indicator.

Many researchers have investigated the relationship between short selling and stock price (see Seneca, 1967; Mayor, 1968; McDonald and Baron, 1973; Figlewski, 1981; Reilly and Whitford, 1983; Bowlin and Rozeff, 1987). Their studies did not provide a clear and unified conclusion. Diamond and Verrecchia (1987) also analyzed the issue from a theoretical point of view. They found that an unanticipated increase in short interests has a negative effect on the subsequent stock prices at an individual stock level. Desai et al. (2002) showed empirical evidence on the negative effect of short selling on individual stock prices for the very short period of time (1988–1994). At an aggregated stock market level, however, a meticulous study was executed by Woolridge and Dickinson (1994) for the New York Stock Exchange (NYSE), American Stock Exchange (AMEX) and National Association of Securities Dealers' Automated Quotation (NASDAQ) system. They refuted the popular understanding that, at the expense of less informed investors, short sellers earn abnormal profits by artificially driving down stock prices through short selling. They also found a positive correlation between short interest changes and stock returns. From their results, they concluded that short sellers provide liquidity to the market by shorting into bullish markets and reducing short positions in bearish markets. This implies that short selling can be viewed as an acceptable form of trading by providing market liquidity. From the viewpoint of stock market regulation, government regulators could be interested in the effect of short selling at an aggregated stock market level rather than at an individual stock level.

However, several issues still remain. First, most of the previous studies had focused only on U.S. stock markets. Most U.S. stock exchanges employ specialists or market makers who have an affirmative obligation to maintain a fair and orderly market. In the NYSE, for example, most short selling is performed by market professionals (e.g., market makers) to provide liquidity to the market. Many other countries' stock markets, however, are operated by electronic order matching auction systems without market makers. That is, they have different market microstructure from that of the U.S. Such difference could give an appropriate environment to investigate the differential impact of market microstructure on short selling.

The second issue concerns whether the market states are linked to the relation between short interest and stock prices. Generally, regulators are interested in short selling especially when the stock market is highly volatile or bearish rather than when it is less volatile or bullish. This raises a need for studying the effect of short selling by incorporating market states into analysis.