HITOTSUBASHI UNIVERSITY

Three Essays on Empirical Tests of Market Efficiency (Summary)

A DISSERTATION

SUBMITTED TO THE GRADUATE SCHOOL

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

for the degree

DOCTOR OF PHILOSOPHY

Field of Finance

By

Hidetomo Takahashi

KUNITACHI, TOKYO

This dissertation provides empirical evidence that the notion of market efficiency is not consistent with the real world and explains how market efficiency is violated. As a result of studies in the field of finance in the past decades, issues that remain unsolved and ongoing in the literature are (a) why stock prices do not rapidly respond to earnings announcements, (b) whether security prices in stock markets incorporate all available information, including private information, and (c) whether stock prices are mispriced in the presence of limits on arbitraging. These questions are still ongoing and require further investigation. Three essays contained in this dissertation explore these topics and explain how and under what circumstances the EMH is violated.

The first essay, entitled "The influence of academic interactions on stock selection and performance: Evidence from Japan", asks whether security prices in stock markets incorporate all available information, including private information, by analyzing mutual funds' performance. By exploring whether academic interactions are beneficial to a mutual funds' performance, I find that mutual fund managers appear to take advantage of academic ties established in school to earn greater profits. This empirical evidence lends support for the milder form of market efficiency suggested by Grossman and Stiglitz (1980) rather than the traditional version of the EMH. That is, in the real world, stock prices do not always incorporate all available information, thereby yielding opportunities to generate abnormal profits by acquiring an informational advantage.

The second and third essays focus on whether stocks are mispriced in the presence of limits on arbitraging. To test this prediction, the second essay, entitled "Short-sale inflow and stock returns: Evidence from Japan", focuses on the demand side of short sales, examining whether strong shorting demand predict negative subsequent returns. In the field of finance, short sellers are considered to be informed. Thereby, strong shorting demand should predict negative subsequent returns. In my investigation, I find that the least heavily shorted stocks tend to outperform the most heavily shorted stocks. This evidence implies that stocks with unmet shorting demand are overpriced. As a result, skillful short sellers who are able to detect the deviation of a stock price from its fundamental value should be able to exploit arbitrage opportunities.

The third essay, entitled "Individual investor flows and cross-section of stock returns: Evidence from Japan", examines the effect of systematic trading behavior of a particular investor group on stock returns. As previous empirical studies have reported, trading behaviors of a particular investor group are systematic and correlated, thereby generating cross-sectional differences in future stock returns. In the essay, I examine whether trading behaviors of individual investors, who are regarded as noise traders in the literature, affect stock returns. In my empirical analysis, I find that stocks that are heavily sold by individual investors outperform stocks that are heavily purchased. In addition, this effect is stronger among firms with stricter limits on arbitraging. This evidence is consistent with the predictions of noise trader models and implies that the effect of investor irrationality persists when arbitraging pressures are weaker.

In this dissertation, I provide empirical evidence that the traditional form of market efficiency is not, in some cases, consistent with the real world. The first essay suggests that a milder form of the EMH, such as the one proposed by Grossman and Stiglitz (1980), is more suitable to explain actual security markets. The second and third essays provide evidence that stock prices deviate from fundamental values in the presence of limits on arbitraging and, as a result, create security mispricings. However, these empirical findings do not necessarily imply that the notion of market efficiency is inappropriate to describe the real world. The hypothesis still provides a powerful analytical framework for understanding asset prices and has been responsible for an incredible volume of valuable research into market behavior. In actuality, the weak form and semi-strong form of informational market efficiency are confirmed by empirical studies. From an academic perspective, the empirical evidence found in this dissertation suggests that we should define a milder or more adaptive version of the EMH. The debate on whether to employ a more realistic form of the EMH is likely to continue into the future because empirical evidence for the traditional EMH is still controversial. For future research, the literature requires a number of empirical studies related to the issues that remain unsolved.