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An explanation of the volatility disparity between the domestic and foreign shares in the Chinese stock markets

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Abstract

Return volatility is found significantly higher for the foreign shares (B shares) than for the domestic shares (A shares) traded in the Chinese stock markets. To explain this volatility disparity, we investigate the bid–ask spreads and estimate the market-making costs (informed trading and noninformed trading costs) for each stock. Our results show that the B-share market in China contains higher informed trading and other market-making costs than the A-share market. When informed trading and other cost components are accounted for, the volatility disparity between the A and B shares disappears. Thus, the higher volatility in the B-share market can be attributed to the higher market-making costs faced by B-share traders.

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1. Introduction

In many emerging stock markets, foreign investors face restrictions on owning domestic shares. It is widely documented that ownership restrictions result in price differentials among classes of shares. Bailey and Japtiani (1994) find that foreign investors generate significant price premiums over domestic investors, using data from the Stock Exchange of

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Thailand. [Stulz and Wasserfallen \(1995\)](#) construct a demand function to explain why shares available to foreign investors sell at a premium, using data from Switzerland. [Foerster and Karolyi \(1999\)](#) test foreign stocks listed in the United States, and their results support both market segmentation and investor recognition hypotheses. Recently, [Bekaert and Harvey \(2000\)](#) and [Henry \(2000\)](#) report positive reactions in a country's equity market to important market reforms such as reducing foreign ownership restriction and relaxing currency control.

China has tightly restricted foreign stock ownership throughout the 1990s. The ownership restriction creates two distinct groups of investors: the domestic and foreign investors. Class A shares are domestic shares and Class B shares are foreign shares. During the early and mid-1990s, B shares were traded at a discount relative to A shares, and B-share returns were higher than A-share returns. [Su \(1999\)](#) explains the return premiums on the foreign-owned B shares in the Chinese stock markets by testing a one-period capital asset price model (CAPM). He concludes that foreign investors are more risk-averse than domestic investors. [Sun and Tong \(2000\)](#) explain the price discount of the B shares by differential demand elasticity. They document that when more H shares and red chips are listed in Hong Kong, the B-share discount becomes larger. In addition, [Chui and Kwok \(1998\)](#) show that the returns on B shares lead the returns on A shares, which induces an asymmetric positive cross-autocorrelation between the returns on B and A shares. They argue that A- and B-share investors have different access to information, and information often reaches the B-share market before it reaches the A-share market.

The Chinese stock markets have grown very rapidly during the 1990s.¹ The recent rapid development may affect the risk and return of A- and B-share classes. In this paper, we re-examine the return and volatility patterns of the A and B shares in the Chinese stock markets by using daily data. Our study provides two interesting findings: (1) the daily returns of domestic shares (A shares) and foreign shares (B shares) are almost identical in the late 1990s, while previous studies find that the B-share returns are much higher than the A-share returns during the mid-1990s; (2) the volatility of B-share daily returns is higher than that of A shares, while previous studies have often documented higher return volatility for A shares.²

Since A and B shares are entitled to the same cash flows of a firm and have similar returns, the higher return volatility of B shares is puzzling. The market microstructure theory suggests that both volatility and bid–ask spreads are positively related to asymmetric information (see [Easley, Kiefer, O'Hara, & Paperman, 1996](#); [Kyle, 1985](#)). According to this theory, higher volatility is caused by higher degree of information asymmetry and participation rate of informed traders in the market, which, in turn, lead to higher trading costs. Thus, the higher volatility of B shares may be due to a more severe asymmetric

¹ The Shanghai Stock Exchange was established in 1990, with eight A-share stocks listed. The Shenzhen Securities Exchange was established in 1991, with six A-share stocks listed. At the end of 2000, there were over 1200 stocks (including both A and B shares) listed on both the Shanghai and Shenzhen Stock exchanges.

² For example, [Su and Fleisher \(1999\)](#) found that A shares have higher volatility than B shares based on the data of mid-1990s.

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