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Are the China-related stock markets segmented with both world and regional stock markets?

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Abstract

Implementing the Capital Asset Pricing Model framework, this study investigates the integration of three China-related stock markets, namely, the A-, B- and H-share markets, with both the Hong Kong stock market and the world market. An analysis of market segmentation versus integration using the Jorion and Schwartz model suggests that the A-share market was a segmented market during the period 1995–2004. However, evidence of a higher-level integration between the A- and B-share markets, and the A-share and Hong Kong stock markets is found in the sub-period tests. The hypothesis that the B- and H-share markets are becoming increasingly integrated with the world stock market is not supported.

JEL classification: C33; G12; G15

Keywords: Market segmentation; CAPM; Chinese stock market; Hong Kong Stock Market; A, B and H shares

1. Introduction

The financial deregulation process, beginning with the relaxation of controls on capital movements and followed by the reduction of exchange controls, has led many to argue that stock markets across the world are becoming increasingly integrated (see, for example, Grundfest, 1990). In turn, the significant cross-border investment activity that has resulted as a consequence of these liberalization measures has contributed considerably to the progress of market integration, and the benefit to investors is obvious. Specifically, investors benefit from international diversification because stock price changes in different markets are imperfectly correlated and

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thus overall portfolio risk exposure can be reduced by holding securities from a variety of firms in different countries (see, for example, Grubel, 1968; Sarkar and Li, 2002). Investors can also benefit from assembling a portfolio where the components are priced incorrectly relative to one another (see, for example, McDondald, 1973; Stulz, 1981). However, investment barriers such as ownership restrictions (see, for example, Eun and Janakiramanan, 1986) differential tax rates (see, for example, Black, 1974; Stapleton and Subrahmanyam, 1977) lack of sufficient information (see, for example, Adler and Dumas, 1975; Sjöö and Zhang, 2000) and market illiquidity (see, for example, Bekaert, 1995; Bailey and Chung, 1999), are widely believed to hamper the process of integration. Consequently, a persistent issue in the field of international finance is the extent to which international financial markets are integrated.

The analysis of market integration reported in the literature has been undertaken using several different empirical frameworks although many studies have been conducted based on an asset pricing model or pricing kernel. The general hypothesis of this type of analysis is that assets, which exhibit related risk characteristics should yield similar returns. For example, studies by Solnik (1974), Stehle (1977), and Jorion and Schwartz (1986) each examine the risk–return relationship between various stock markets in the framework of an equilibrium international asset pricing model. These studies, however, test the polar case of integration or segmentation. Others, such as Errunza and Losq (1985, 1992), and Hietala (1989) examine the international capital market equilibrium under partial segmentation and argue that the required return on an ineligible stock, which cannot be held by some investors due to government restrictions, is different from what the standard CAPM suggests. Extending the investigation of the issue of market integration even further, Bekaert and Harvey (1995), Rockinger and Urga (2001), and Vaihekoski and Nummelin (2001) explore the time-varying integration properties of a number of stock markets. Moreover, Cho et al. (1986), Gultekin et al. (1989), and Mittoo (1992) provide evidence of market integration by using the arbitrage pricing model.

One market that has recently stimulated some interest with regard to the question of integration is the Chinese stock market. Indeed, the Chinese stock market has a history of no more than 15 years and the government has been relatively cautious in opening it to foreign investment. The Chinese market has two classes of shares—A- and B-shares. The A-shares were initially designated exclusively for domestic investors, while the B-shares were initially designated exclusively for foreign investors. A further class of Chinese shares, namely H-shares, are issued by some mainland enterprises on the Hong Kong stock market and trade in HK dollars. Interestingly, although mainland enterprises are allowed to issue two classes of shares in China-related stock markets, the shares are usually observed to trade at significantly different prices.[1] Ma (1996), Su (1999), and Fung et al. (2000) investigate the price difference for the stocks dual-listed on the Chinese A- and B-share markets and conclude that the same assets are priced differently because the two markets are segmented. Considering the current barriers that hinder foreign investors investing in A-shares (the largest Chinese share market), it would be reasonable to conclude that the A-share market is probably segmented from other world stock markets while the B- and H-share markets (both considerably smaller than the A-share market) are relatively integrated. However, recent changes, such as the Chinese government's decision to open the B-share market to domestic investors in February 2001, could lead some to argue that the A-share market is becoming increasingly integrated with the B-share market. Interestingly, prices of A-shares plunged more than 30% from June 2001 to the end of 2003, and the price gap between A-, B- and

[1] A listed company can issue shares on either the A- and B-share markets, or the A- and H-share markets.