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Return and risk interactions in Chinese stock markets

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Abstract

This paper investigates interactions between Chinese A shares and B shares traded on the Shanghai stock exchange (SHSE) and the Shenzhen stock exchange (SZSE), using an asymmetric multivariate time-varying volatility model. We find that there is a causal relation from B share markets to A share markets in the second moment but no such relation is present in the first moment, suggesting B shares contain more prior information than A shares about risk but not return, due to differences in investment objectives and investment scopes between the two groups of investors and barriers between the two markets. Moreover, there exist stronger links between shares of the same type, i.e., between the two A (B) share markets, than those between shares of different types. All four markets exhibit leverage effects.

JEL classification: G15; C40; C5

Keywords: Asymmetric GARCH models; Chinese stock markets

1. Introduction

Over the last decade, Chinese stock exchanges (CSEs) have experienced rapid growth and development. There were only 10 listed companies when CSEs were established in

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1990 with share trading being restricted to domestic investors only. By December 2000, the number of listed companies increased to 1088, the number of registered investors reached 58 million, and annual turnover was in excess of six trillion RMB yuan. Trading is fully computerised and can be conducted on screens from the offices of securities dealers. On 21 May 1992, the price and volume control imposed by regulations were abolished, so the exchanges are now a totally market driven system.

The CSEs consist of two markets: the Shanghai stock exchange (SHSE) and the Shenzhen stock exchange (SZSE). SHSE was established on 26 November 1990 and started trading on 19 December of the same year, and SZSE was established on 1 December 1990 and started trading on 3 July 1991. SHSE is located in the coastal city of Shanghai, the largest city and one of the financial centres in the country, with most companies listed on it being large and state-owned firms. With its privileged position the local government has an ambition to reinstate it as an influential financial centre in Asia. SZSE is situated in the southern city of Shenzhen which is the first and most important special economic zone in China neighbouring Hong Kong, and the companies listed there are typically small and export-oriented firms, many of them joint ventures. Because of these characteristics, SHSE may be sheltered from the fluctuation in the world economy, and on the other hand, SZSE could be more vulnerable to a global slowdown. At present, two types of shares are traded on both SHSE and SZSE. One is A shares which are ordinary shares issued by mainland Chinese companies, denominated and traded in RMB yuan and designed for domestic investors. The other is B shares which are issued by mainland Chinese companies, denominated in RMB yuan but traded in foreign currencies, i.e., B shares carry a face value denominated in RMB yuan but are bought and sold in foreign currencies.[3] Therefore, there are four major markets representing stock market investment in China-A share markets in Shanghai and Shenzhen, and B share markets in Shanghai and Shenzhen, respectively.

The Chinese stock market is of special interest, as it has four major markets running in parallel, featured by geographically separated trading locations and different shares for different investors. The distinction between A shares and B shares constitutes different channels and ways with which information is received and processed by different groups of investors. This distinction also represents different ownership structures in which investors show interest in the control and running of the company, pursue rent-seeking activities, engage in diversification, or merely trade for liquidity. Finally, the distinction contributes to differed risks and risk attitudes due to restrictions imposed, until recently, on investors, and due to the adoption of different currencies with which shares are traded throughout the whole period. All of these, together with geographical features of Shanghai and Shenzhen, indicate that Chinese stock markets bear many hallmarks of asymmetry, and equilibrium and equilibrium prices are attained through interactions and information transmission among these markets in a rather complicated way.

The subject of Chinese stock market with the above-demonstrated remarkable features indeed opens up an opportunity to investigate different price patterns and investors' behaviour under an investment environment coming into existence for only a decade on the one hand. On the other hand, the subject poses a challenge with a serious task to examine complicated

[3] Since March 2001, B shares have been opened to domestic investors.