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厦门大学

博 士 学 位 论 文

开放经济下我国股票市场的分割与整合研究

Research on the Segmentation and Integration Process of the Chinese Stock Market in the Open Economy

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内容摘要

我国的股票市场是世界上最主要的新兴资本市场之一。我国最早的公司股票出现在上世纪 20 年代，但真正的股票市场成形于改革开放以后。经历了近 20 年的发展，我国股票市场的规模和成长速度引起国内外众多投资者的关注。然而目前股票市场运行机制不完善，特别是若干个分割市场并存的情况已逐渐不适应发展的需要。这种分割将阻碍信息流动、降低市场运行效率；阻碍国内企业融资、影响企业发展；从宏观经济环境来看，会推迟国家的国际化进程，抑制经济发展。因此股票市场一体化，已经成为当下调整市场结构、促进市场发展亟待研究解决的重要课题。

过去的 20 年是我国经济从计划向市场转型的时期，市场经济的一个显著特征就是开放。加入 WTO 以后，开放型经济的特征更加明显，表现在金融市场上就是国际化进程加快。资本市场的各种金融创新手段、金融开放政策不断推出，如 2001 年 2 月开始 B 股市场向境内投资者开放，2002 年 12 月正式推出 QFII 政策，2006 年 7 月第一单 QDII 进入 H 股市场等。虽然我国的资本项目仍未完全放开，但这些开放政策都将对股票市场的分割与一体化进程产生影响。本文将在我国资本市场开放的大环境下，对境内外股票市场的分割与融合及相关问题进行探讨。需要强调的是，这里的资本市场开放不仅指对外国资本的单向开放，而且指对境内投资者投资限制的开放；相应的，股票市场的分割不仅要考察境内市场与境外市场的分割情况，同时也要研究境内若干个分割子市场的关系。

论文的总体思路是：首先，对股票市场的分割现状和开放历程做简要回顾，为研究提供必要的现实背景；其次，对股票市场的分割理论及相关问题进行文献回顾，为论文的研究提供借鉴和起点；再次，分别对市场分割程度的度量、市场间动态协同运动、双重上市公司的价格差异分析以及分割市场的市场效率展开理论和实证分析，为描述股市一体化进程寻找理论和现实依据；最后，对全文进行总结。论文的分析方法以动态数量分析为主，借用计量和统计工具，结合经济学、金融学等学科的基本原理进行分析。

论文的基本结论是：(1)境内子市场 A 股、B 股和 H 股均与境外（国际）资本市场存在部分分割，上证 A-B 股间已基本形成一体化局面，深证 A-B 股和深证 A-H 股间也呈现局部分割的特点，但上证 A-H 股间分割程度仍然较高。(2)在市

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场开放之前，A 股市场与境外市场不存在相关结构；在逐步开放资本市场以后，A 股市场与境外其它市场产生一定程度的同步变化，市场间下尾协同运动明显；A 股、B 股和 H 股间的动态相关关系在市场开放政策实施以后逐步增强，特别当 B 股市场向境内投资者开放以后，A 股与 B 股的动态相关系数呈跳跃性增长，表现出较强的联动性。(3)A-B 股市场、A-H 股市场的折价程度在市场逐步开放之后，有明显的减少；开放前后，市场需求弹性、市场流动性以及投资者风险偏好因素对双重上市公司的股票折价率的影响程度出现了变化，开放政策的实施有助于减少折价率程度。(4)应用鞅差分理论对若干个分割市场进行弱式有效检定，在移动宽窗下，不论是市场指数还是双重上市公司组合，A 股始终比 B 股、H 股具有有效性，在更长的时段满足市场弱式有效的假定。总体来看，市场的“对内对外”双向开放，有助于消除市场间的分割，促进市场间的联动，削减同股不同价的差异，但对提高市场运行效率影响有限。

论文的创新主要体现在：

第一，从研究框架来看，将市场开放和市场分割问题放在统一的框架下进行研究。市场开放与市场分割的联系相当紧密，开放政策会加快信息与资本的流动，会改善市场分割的状态，从而促进市场间一体化进程。在这一整体框架下进行研究，使本文的研究更加广泛和全面。

其次，从研究方法来看，全篇论文均采用时间动态的实证分析方法，例如，对市场动态分割程度的衡量，我们采用多元 GARCH-BEKK 模型，模拟市场间的时变协方差及时变市场 β 系数。全方位动态衡量市场内部以及市场间关系，弥补了以往研究的不足。

第三，从具体应用的模型来看，贡献有：运用多元 GARCH-BEKK 模型，对 ICAPM 模型进行估计，动态模拟各类风险的定价因素及市场分割程度，填补了国内这一方面研究的空白；引入非参数检验方法 Chi 图和 K 图，利用图形特点初步判断市场间的相关结构，并作为选择 Copula 函数的依据之一，简化了模型的拟合优度检验；重新梳理市场有效性理论和检验模型，引入应用简便的鞅差分平滑检验，动态描述市场弱式有效的过程。

关键词：证券市场开放；市场分割；一体化

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Abstract

Due to the reforms of the economic system and the open policies introduced in the last two decades, China is experiencing a speedy growth in stock markets and trading activities. However, Chinese stock market has unique features in the segmentation of the A-, B- and H- shares in the way of being open to the outside world, which has negative effect on the development of equity market. The market segmentation will wear down the market efficiency and hung up the internationalization process of China economy.

Since 2001, some important stock market liberalization polices were implemented in mainland China according to the commitment of being a member in the WTO. The B-shares was available for domestic investors since Feb, 2001. From Dec. 2002, foreign investors have been allowed to invest in the 'A' shares, which was exclusively available for domestic investors previously. The first QDII deal was achieved in July, 2006, which allowed domestic investors to invest H- shares through professional qualified institutions. What we investigate in this dissertation is whether the stock market openness has played a role on the integrated course of Chinese segmental stock markets. It is worth noting that the openness we mentioned above means the liberalization with bilateral openness, including the elimination of the restriction of foreign investors to A-shares as well as the restriction of domestic investors to B-shares and H-shares. Therefore, the research on market segmentation includes the relationships of Chinese stock markets with overseas markets as well as the ones of several sub-segmental Chinese stock markets.

We firstly give a brief introduction of Chinese segmentation situation and openness policies. Secondly, the dissertation briefly discusses the previous literatures on the segmentation theory and related empirical study. Thirdly, based on the fundamental principles of economics, finance and econometrics, we carry out a series of dynamic empirical methodologies for analysing our problems. We construct models to measure the segmentation of domestic markets and foreign markets, analyse the dynamic comovement between markets, explain the differential pricing

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among sub stock markets and explore the dynamic efficiency of segmental markets. Finally, we conclude the paper.

The main conclusion we made from the empirical research is summarized as follows,

(1) The paper finds the partial segmentation between Chinese domestic stock markets and the foreign equity markets by modeling a time-varying risk price in an ICAPM empirical model. However, for the segmental domestic markets, the degree of markets segmentation is not consistent for all the sub-markets. The degree of integration for Shanghai A- with B- shares is highest, followed by the one of Shenzhen A- with B- share and Shenzhen A- with H-shares. However, the Shanghai A- and H-shares are still in high segmentation, which means the market risk of Shanghai A- shares has no significant effect on the pricing of H- shares.

(2) The estimated results do not provide the evidence of dependence in A- shares with foreign markets before the introduction of the open policy. In the post- openness period, there is significant lower tail dependence of the 'A' shares with other Asian markets, especially with Hong Kong and Singapore, indicating that the financial sectors returns in these pair markets move downwards together. Further, we find the increasing linkage between the A-, B- and H-shares in the post- liberalization period, especially when the B- shares were not restricted to domestic investors from 2001, which means strong co-movement between sub-domestic markets.

(3) The empirical results exhibit the obvious decreasing in discount degree of A-B shares and A-H shares after the openness policies were implemented. We find the demand elasticity as well as the market liquidity has made different influence on the Shanghai A-B pricing differential before and after open policy period. For Shenzhen A-B shares and A-H shares, the effect of the investors risk preference has changed compared to the pre- open period.

(4) The analysis shows that the A-share market behaves more efficiently than the B- and H-share. After opening B markets and QFII implemented, all the A- and B-share are supported by MDT during a short period. However, H-share displays a

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weak response to the regulatory changes. QDII scheme seems have no impact on all the markets.

On the whole, the bilateral liberalization is useful for eliminating markets segmentation, accelerating the information flowing, minimizing the differential of dual-listed shares. However, the open policies have not obvious effect as expected on the market efficiency.

The innovations of the paper are listed as followed,

Firstly, compared to the previous literatures, the dissertation discusses the Chinese stock market segmentation in the perspective of market openness process, which probably has a positive influence on the current segmentation. To an extent, the paper has shed light on the relevant research, which only paid attention to the market segmentation.

Secondly, we apply time-varying methodology for empirical research, by which the paper made up insufficiency of the past study. Take the measurement of market segmentation for an example, multivariate GARCH-BEKK models employed in Chapter 3, were helpful for modelling market dynamic covariance and time-varying beta coefficient.

Moreover, we introduce the nonparametric plots in Chapter 4 for the intuitive examination of markets dependence, which were employed as a method for choosing the appropriate Copula functions.

Finally, based on the definition of the market efficiency and the martingale process, the paper believes that whether the stock returns are the martingale difference process is equivalent to the test for market weak efficiency. We apply the new martingale difference tests introduced by Escanciano and Mayoral (2007) to Chinese stock markets. The new smooth tests are robust to conditional heteroskedasticity and are optimal in a semiparametric sense.

Keywords: Market Segmentation; Integration; Stock Market Openness

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