Overseas listing of China's companies : causes and consequences

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Overseas Listing of China's Companies --- Causes and Consequences

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Nanyang Business School

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Abstract

By using a sample of 72 Chinese firms listed in the Hong Kong Exchange (the H-share firms) and a control sample of 663 pure domestically listed Chinese firms (A-share firms) during the period 1993-2002, this thesis examines the causes and consequences of the overseas listing decisions of these Chinese listed firms. Hypotheses are proposed to explain why these firms would like to list on the overseas market despite there being a huge price discount for their foreign traded shares.

Empirical results show that Chinese firms would like to list overseas mainly because 1. The Chinese Security Regulatory Commission (CSRC) intends to maintain the order of its immature domestic equity market by pushing out large issues to more developed overseas equity markets. 2. Chinese firms use overseas listings to circumvent local IPO listing constraint. 3. The Chinese government utilizes overseas listing to accelerate the process of establishing the "modern corporate system" among these firms. 4. Consistent with the bonding hypothesis (Stulz (1999), Coffee (1999, 2002), Doidge, Karolyi and Stulz (2004)), Chinese overseas listed firms intend to establish better images to investors by bonding themselves to more stringent listing and governance rules in the overseas equity market.

Lastly, empirical evidence shows that when compared with domestic A-share firms, H-share firms perform better in expanding their asset base, lowering their leverage level and increasing their liquidity, but not in improving short-term profitability and efficiency. H-share firms in general perform better in the long term.

Keywords: overseas listing, corporate governance, bonding hypothesis, regulation of stock markets;

JEL classification: G28 G32 G34

Chapter 1: Introduction

1.1 Objectives and Motivation of the Study

International stock cross listing is becoming an increasingly important strategic issue for companies and stock exchanges. As firms become more and more globalized in the product market, direct access to foreign capital markets via an equity listing can yield important benefits. Most conventional studies on overseas listing decisions emphasize the importance of the benefits as a lower cost of capital, an expanded global shareholder base, greater liquidity in share trading, more prestigious company name, convenient foreign takeovers etc. However, *a priori*, these factors seem cannot satisfactorily explain the overseas listing decisions of Chinese firms on the Hong Kong stock exchange.¹

According to Sun and Tong (2000), for Chinese firms dual-listed in both Hong Kong and China, their H-share prices traded at about 20-percent discount relative to their Chinese "A-share" prices for the period 1994-1997. Wang and Jiang (2003) even found an astonishing 75% average discount in 2000. Like the B-share discount, the H-share price discount is a persistent phenomenon although the severity of the discount tends to fluctuate more in recent years. This is in sharp contrast to the general perception that firms get listed overseas to take advantage of a temporarily high price abroad for their shares relative to the price at their home market (Pagano et al., (2002), Bortolotti et al., (2000)). Furthermore, when Chinese firms do their IPOs in the Hong Kong market, they are subject to lower listing PE multiples and thus higher costs of capital. This is contradictory to a "standard" explanation in the overseas listing literature that firms listing shares abroad is to enjoy lower cost of capital (Stapleton and Subrahmanyam (1977), Errunza and Losq (1985), Alexander, Eun and Jankiraman (1987)).

Empirical research using U.S. data also documents that on average non-U.S. companies earn positive cumulative excess returns (Foerster and Karolyi (1999)) and experience a reduction

¹¹Hong Kong was returned to Chinese sovereignty on July 1, 1997 as a special administrative zone under the arrangement of "one country, two systems". Hence, the word "overseas" is not used here in a political sense.

in the home market beta and thereby in the cost of capital (Karolyi (1997)) when they cross-listed in the United States. However, in contrast to most cross-listing activities, all Chinese overseas listed firms conducted their IPOs in the foreign market. Hence, when they initially list on the overseas market, *ex ante* there are no direct benefits associated with overseas listing on their domestic shares. Therefore, to increase existing domestic shareholders' wealth should not be one of the motivations of these firms' decision to list on the overseas market under the China's case.

Other reasons frequently appearing in the overseas listing literature cannot provide satisfactory explanations to the Chinese phenomenon either. For instance, Merton (1987), Chowdhry and Nanda (1991), Fanto and Karmel (1998) and Forester and Karolyi (1998) suggest that overseas listing are motivated by increased demand and liquidity. Yet as far as the trading liquidity is concerned, A-shares in China enjoy even higher share turnover than that of overseas listed shares. Historical data show that the trading for N-Shares in New York has been thin. Trading for H-Shares is also thin with respect to its size. On average, the outstanding H-shares of a Chinese firm are 1.5 times more than the outstanding A-Shares if the firm is dual-listed in both markets, but the average trading volume of H-Shares is often lower than that of A-shares². Actually, the low demand and trading liquidity are often viewed as parts of the reasons for the observed heavy H-share price discount and the stock prices of 70% of overseas listed Chinese firms were lower than their IPO prices³.

Kang and Stulz (1997), Saudagaran (1998), and Mittoo (1992) argue that companies list their shares abroad as a marketing strategy to promote the company name through published quotations and trading statistics in the overseas markets. However, most H-share firms do not sell their products in Hong Kong. On the other hand, the very price discount of N-, H- and B-shares should be damaging rather than enhancing the Chinese companies' name and prestige (Wang and Jiang (2003)).

² See Table 1 for relevant statistics

³ See "Overseas listings: very quiet stocks", China Securities Daily, May 8, 2002.

Moreover, China's foreign listed firms have not shown much interest in using overseas shares to facilitate foreign takeovers. Until 2002, only Haier had conducted overseas M&A in the U.S on a small scale.⁴ To conduct convenient foreign takeover via overseas listing cannot satisfactorily explain the Chinese firms' overseas listing decisions either.

Finally, political risk hypothesis of overseas listing proposes that firms from developed countries would like to list on the stock exchange of less developed foreign countries to minimize political risks. Specifically these firms intend to position themselves as local firms through cross listing. Consequently, they could manage the potential political risk of rising nationalism in the local market (Krayenbuehl (2001)). However, this explanation is not plausible for Chinese overseas listed firms. Overseas listed Chinese firms are not really facing serious political risk in their host countries. In fact, the most popular overseas markets for Chinese firms ---- the U.S, Hong Kong, and Singapore markets usually have the highest ranking in stability. Hong Kong, Singapore and the United States are ranked top three according to the country economic freedom index.⁵

Furthermore, as what will be explained later in detail, the overseas listing of Chinese firms is often largely influenced by the Chinese government's intention. Sun and Tong (2000) found that overseas listing undermines China's B-Share market. Specifically the B-Share discount enlarges with the increase in the number of H-Share listings because H-Shares are close substitutes and perhaps better alternatives to B-Shares. Thus if the Chinese government wants to protect its domestic B-share market it should not encourage firms to go overseas.

On the other hand, listing abroad also involves a variety of costs. There are direct costs, such as initial listing fees and annual fees. Nevertheless, the main costs cited in survey evidence regarding potential cross listing in the United States (Fanto and Karmel (1998)) are the indirect cost in complying with U.S. GAAP accounting standards and the risk of lawsuits. For Chinese

⁴ The Standard 6 April 2004

⁵ Source: World Economy Forum (2003) The Fraser Institute Economic Freedom of the World 2003 Annual Report 4

overseas listed firms, additional costs therefore must be incurred in complying with different standards of reporting and disclosure in foreign host markets. Furthermore, there is implicit opportunity cost associated with overseas listing. China's IPO market is probably the hottest IPO market in the world during our sample period 1993-2002 (Liu (2003)). All IPOs conducted in the domestic equity market enjoy higher IPO P/E ratios and large positive initial returns in China. Hence if choose to list on the domestic market, these firms could enjoy an even lower cost of capital.

Traditional economic theories argue that an economic decision made by a rational entity should be justified by a cost-benefit analysis. As the overseas' listing of Chinese firms have higher issuing expenses, lower issuing P/E ratio, discount in share prices, and higher maintenance costs, it is not very clear in the pervious literature why these firms still like to list overseas.

Therefore, this study is motivated by the following questions. The first is whether Chinese overseas listed firms are rational or irrational decision makers when they choose to go overseas. Second, if they are rational decision makers, then what are the economic benefits they expect to receive via overseas listing? The last question is whether this seemingly puzzling overseas listing decision can still be justified / explained by economic principles.

Up until now, Chinese firms, be they state-owned or private, still need to get CSRC's consent before they are allowed to list overseas. The overseas listing is not purely a firm behavior but also, to a great extent, a government behavior in China. Therefore, in view of the special characteristics of the institutional setting in China, this thesis argues that the phenomenon of Chinese firms listing shares abroad can still be explained by the traditional economic principles, and is best viewed as the result of: government implicit policies of maintaining domestic market order (hypothesis 1), firms' decision to circumvent local IPO constraint (hypothesis 2), the government's intention to accelerate the reform process in these SOEs (hypothesis 3) and firms'

desire to establish better images by bonding themselves to more stringent monitoring environment (hypothesis 4).

1.2 Findings & Contributions

The sample examined in this study include 72 Chinese firms listed on the Stock Exchange of Hong Kong (SEHK) as H-shares and a control sample of 663 purely domestic listed Chinese firms during the period 1993-2002. Major findings of this study are summarized as follow:

Consistent with our first "Market Order Hypothesis", we find that Chinese domestic equity market as a whole responds negatively to the domestic IPO issues and main board listed H-share firms are large in terms of total assets which may put huge pressure to the domestic equity markets if they only get listed domestically. Listing these firms overseas can help divert the supply and avoid possible price crash in the domestic market. Consistent with our second "IPO Constraint Hypothesis", we find that Hong Kong main board listed H-share firms had higher pre-listing leverage level and sales growth, but relatively lower pre-listing liquidity ratio comparing with their domestic counterparts. This indicates that before listing, these H-share firms had more urgent needs for equity capital and thus would be willing to list overseas to cut down the waiting time (in the long queue of domestic firms for IPOs). While Hong Kong GEM board listed H-share firms are mostly private, growth, high-tech start-up firms, which are hard to find channels to get external financing in the China's domestic markets.

Consistent with our third "Governance Hypothesis", we find that many main board H-share firms are from strategically important industries according to the classification of Chinese government industrial policy, and the corporate governance especially the board of directors monitoring mechanism in H-share companies conforms more to the international norm comparing to A-share companies. Consistent with our fourth "Bonding Hypothesis", the domestic shares of A-H dual-listed firms enjoy higher market valuations when compared with pure domestic listed

shares. On the other hand, our fifth "Foreign Currency Hypothesis" that Chinese firms issue shares abroad to obtain foreign currencies is not supported by our findings.

In the later part of this thesis, the performance changes around IPOs of two sets of sample firms – H-share firms and A-share firms are compared. Empirical evidence shows that overseas listed firms generally have better operating performance changes around listing as compared with domestic listed firms. Via initial listing on the overseas market, they could increase their asset and profits more, lower their leverage level and increase their liquidity more. Though in the short run, their performance is inferior to that of their domestic peers as far as the change of efficiency and profitability are concerned, these firms tend to improve their performance later on over a longer time horizons.

The expected contribution of this study to the literature is stated as follow. First, to the best of our knowledge, this study is the first to examine, and to a large extent, resolve the puzzle why Chinese firms would like to list overseas despite the large foreign share price discount "penalty" associated with such listings. We demonstrate that this seemingly puzzling phenomenon can still be explained by economic principles.

Second, though studies on why firms go for overseas listings are voluminous, most of them focus on firms cross-listed in the U.S. (Karolyi (1997, 2004)) and Europe (Pagano et al., (2002)). This analysis enriches the overseas listing literature by not only offering an "out of sample study" on mainland Chinese firms listed in Hong Kong but also by suggesting that maintaining domestic market order and facilitating the reform of privatized SOEs can be additional motives for foreign *primary* listings.

Third, our analysis adds to the privatization literature. According to Megginson et al., (2000), the share issue privatization (SIP) has a significant impact on stock markets around the world. Pagano et al., (2002) point out that privatized firms tend to list overseas. Bortolotti et al., (2000) examine why governments would sell privatized companies abroad. However, they again

address the issue by looking only at OCED and non-OECD privatized firms listed in the U.S. They omit the firms from transitional economies due to data limitation. We compliment their studies by focusing on H-share firms. Almost all these firms are former state-owned enterprises (SOEs) in China, the largest economy in transition from central planning to market mechanism.

Fourth, the difference between China's overseas and domestic listed firms is systematically examined in this study in terms of corporate governance, earning quality and operating performance. By providing evidence on a better corporate governance mechanism and a better earnings quality of firms listed on the foreign market, empirical evidence is shown to support the bonding hypothesis using a set of sample of non-U.S. firms listed on a non-U.S. market. Our explanation that privatization via overseas listing is a strategic move of Chinese government to establish a modern corporate system bears implications to governments of developing countries, which concern their domestic market development and privatization success.

Last, by providing explanations to overseas listing of Chinese firms, our study also bears practical relevance. The overseas listing of Chinese firms has caught attention all over the world. According to a Chinese newspaper *Securities Times* (December 23, 2003), Stock Exchanges from Hong Kong, the U.S., Singapore, London, Australia, Canada, Korea, and Japan all try to allure Chinese firms to list with them. NASDAQ, the Stock Exchange of Hong Kong and the London Stock Exchange all have established offices in China to facilitate the listing of Chinese firms in their respective markets. The Singapore Exchange contacts potential Chinese firms on a daily basis. The Korea Stock Exchange plans to establish a "green corridor" for Chinese firms to list there. On the other hand, China's large-scale privatization via overseas listing is yet to come.⁶

⁶ The State Planning Committee Chief Li Rongrong has repeatedly stated that it is Chinese Government's strategy to continuously list its large SOEs overseas because this would help to establish modern corporations in China. Bank of China and Construction Bank of China plan to raise up to USD10 billion each before the end of 2005 in Hong Kong, the U.S. and China simultaneously.

1.3 Organization and Structure of the Thesis

The rest of this thesis is organized as follows. Chapter 2 provides some background information regarding China's overseas listings. Chapter 3 provides a comprehensive review on the overseas listing literature. Chapter 4 develops testable hypotheses. Chapter 5 describes the sample and data. Chapter 6 to chapter 10 present empirical results to the testable hypotheses. Chapter 11 compares the performance for H and A-listed firms around IPOs. Chapter 12 concludes the thesis by providing some concluding remarks and discussions.

Chapter 2: Background Information

2.1 The development of H-share market

Firms have their incorporation, main business and head office in China with a corporate liaison office in Hong Kong are called H-share firms in China. There are also China incorporated firms listed in New York (N-shares), Singapore (S-shares), London, Australia, Canada, etc.⁷ However, as can be seen from the following figure 1, H-share firms dominate both in terms of the number and issuing size.⁸ In fact, from Appendix 1 attached at the end of the thesis, we could observe that almost all N-shares are traded in the form of ADR with underlying shares traded in Hong Kong. Hong Kong listed Chinese firms therefore account for over 80% in terms of number of Chinese overseas listed firms. In the later part of the thesis, Hong Kong listed H-share firms are used as the sample for analysis purpose.

Figure 1: Number of Overseas-Listed Chinese Firms by the End of Year 2002

Source: China Security Regulatory Committee Website

The overseas listing was not originally planned by the government. Inspired by China's growth potential after Deng Xiaoping's grand south China tour in early 1992, international investors would like to hold Chinese equity. Investment banks foraged China for restructured

⁷ For the complete name list of Chinese overseas listed firms please refer to appendix 1.

⁸ For the distribution details of China's overseas listed firms see Table 3.3 under "Statistical Information" at the CSRC website: <http://www.csrc.com.cn/>.

SOEs, which want to raise capital overseas. Tsingtao Brewery was visited by 25 investment bankers in 1992. In response, the State Council quickly issued its first regulation on overseas listing: "A Special Regulation on Raising Capital and Listing Overseas by a Joint-Stock Firm" on April 19, 1993, only three months before the first H-share listing. On May 24, 1993, it issued another notice on "Further Strengthening the Management of Overseas Equity Offering and Overseas Listing".

Hong Kong due to its inheritable advantages of having close cultural and economic ties with China beats U.S. to become the largest hub for China's overseas listed firms (Euroweek, 1993)⁹. The official overseas listing of firms incorporated in China started on July 15, 1993 when Tsingtao Brewery went public in the Stock Exchange of Hong Kong. The development of the H-share market can be categorized into the follow several periods.¹⁰

1993-1994 is the initial mania period. On July 15th 1993, the first H-share firm, Tsingtao Brewery, went listed on the Hong Kong Stock Exchange. The issue was 110 times oversubscribed and its share price rose 28.57% from its IPO price during its first trading day. Five more H-share firms (Sinopec Shanghai Petrochem; Beiren Printing; Guangzhou ship; Maanshan Iron & Steel and Kunming Machine) listed on the Hong Kong exchange later that year. Maanshan Iron & Steel experienced a 60% first day return from its IPO price. H-share index reached its peak of 9393 at the end of 1993. 1994 saw another 8 H-share firms had their IPOs. Although they were still welcome by investors, the enthusiasm over H-share faded away during late 1994.

1995 is the period when China implemented its macro-policy adjustment. H-share index was down to 3287. There were only two H-share IPOs during that year -- Jilin Chemical and North East Electricity, both of which encountered financial problems in the later years. After the initial period, various problems inherited with H-share firms exposed -- lack of transparency, weak

⁹ The race to list China shares Eruowee Dec 1993.

¹⁰ The information in this section is based on CSRC documentation.

information disclosure, declining operating profitability, low investment returns, etc. International investors started to worry about the future of these H-share firms.

1996-1997 witnessed China's infrastructure and transportation industries' opening up. Firms from transportation industry started to list on Hong Kong market -- Guangshen Railway, Anhui expressway, China Eastern Airline, Shenzhen Expressway, Zhejiang Expressway, Jiangsu Expressway, China Southern Airline and Sichuan Expressway all got listed during this period.

H-shares experienced an unusual bull market when Hong Kong returned to China's jurisdiction in 1997. Hang Seng H-share index outperformed Hong Kong market and reached its second highest level at 7743 on August 1997. However, since September 1997, H-shares as well as Hong Kong market as a whole entered into a long-time bear market due to the impact of Asian Economic Crisis.

In 1998, six mainland firms went for IPO in Hong Kong but three (Zhujiang Steelpipe, Beidahuang, and Shangdong Guodian) failed. The H-share index hit the all time low at 1008. In 1999, some heavyweight SOEs had their IPOs in Hong Kong Stock Exchanges. Two firms, PetroChina Co. and China Petroleum & Chemicals alone, raised over 49 billion Hong Kong dollars.

More heavyweights such as China Telecom, China Life, etc. have had IPOs since 2000. In 2001, the first private firm Zhejiang Glass went listed on Hong Kong's main board. In addition, many private and high-tech firms started to list in the newly established Hong Kong GEM. Therefore, H-share firms are no longer just larger SOEs.

With the extraordinary growth of Chinese economy since 2002, H-share firms again became stars in the Hong Kong market. H-share price index started to rally from 2800 at the end of 2002 to over 5000 in early 2004. However, it went below 4000 again in April 2004.

By the end of 2002, there were 72 Chinese firms listed in Hong Kong main board as well as Hong Kong GEM board. The Hong Kong stock market houses most of China's overseas

listings. Figure 2 shows the H-share price index movements from 1993 to 2003. Starting from 3770 in July 1993, the H-share index hit the peak at more than 9000 in December 1993. Then it declined to 3000 in November 1995 but climbed back to about 5700 after Hong Kong's handover to China in August and September 1997. It crashed to below 2000 in July 1998 and fluctuated around 2000 until June 2003. The IPO P/E ratios for H-share firms have been significantly lower than that of A-share IPOs from the very beginning, and H-shares started to trade at discount relative to A-shares after the H-share price peaked at the end of 1993. The average H-share discount was about 75% at the end of 2000."

¹¹Even at their recent peak in early 2004, most H-shares were still traded at discount relative to their A-shares.

Figure 2: Hong Kong H-share Index over Years (1993-2002)

This figure presents the movements of Hang Seng China Enterprises Index (also known as the H-share index) over year 1993-2002. The Hang Seng China Enterprises Index ("HSCEI") was launched on 8 August (and backdated to 15 July 1993) to track the performance of all the Hong Kong listed H-shares of China enterprises. The number of constituents in the HSCEI increased from 10 to 54 between 1994 and 2001. With the launch of the 200-stock Hang Seng Composite Index ("HSCI") on 3 October 2001, the HSCEI became part of the Hang Seng Composite Index Series ("HSCI Series"). Since then, constituents of the HSCEI comprise only the largest H-share companies that are included in the 200-stock HSCI. As of 30 April 2004, the constituents comprised 37 H-shares. The constituents will be subject to review semi-annually. HSCEI is compiled and calculated by HSI Services Ltd. More information on the HSCEI could be obtained on the website of HSI Services Ltd. (<http://www.hsi.com.hk>)

Hong Kong H-Share Index

2.2 The IPO Quota System

Despite the persistent and heavy price discount, Chinese government continues to encourage large SOEs to list on the Hong Kong stock market, and many firms are willing to list overseas. This may be well related to China's IPO quota system. This system was first adopted in 1993 to prevent cash-starved poor quality SOEs from flooding the market with shares, or in other words, to maintain the market order. The State Planning Commission determined the quantity of equities to be issued each year and then the CSRC would divide this up among the provinces and ministries. A company seeking a listing would first have to be selected by provincial governments or ministries with a quota before asking the CSRC for approval. Local authorities often cut down the issuing proceeds for each firm to let more firms get listed within the quota limit. As a result, many large firms turned to overseas listing to reduce the waiting time and raise more equity. In December 1996, the quota system was changed to restrict the number of firms listed, but the total amount of issuing per year was still controlled by the central authority. For example, in May 1997 the government set the new A-share listing quota of 30 billion shares with the emphasis on giving priority to the key 500 SOEs and to those firms in the industries of energy, transportation, telecommunication, utilities, etc.

Although the quota system may have helped maintaining the market order in the initial stage of China's stock market, it is inconsistent with the market mechanism. Since it lacked a detailed and objective standard and was far from transparent, the quota system gave rise to corruption in the company selection process. In addition, CSRC's quota allocation decisions often reflected political and policy inputs instead of market trends. Many people believe that the quota system is responsible for the large number of low quality SOEs in Chinese domestic stock market today. As Chinese domestic market became more mature, the CSRC became more confident about the depth of SHSE and SZSE and decided to phase out the quota system.

In March 2000, the CSRC replaced the IPO quota system with new rules, which reduced the CSRC's power in approving IPOs and added to the responsibility of lead underwriters. Firstly, there is no more quota allocation for listing. Secondly, the CSRC approval for IPOs is replaced by the confirmation by the CSRC. Thirdly, a review committee has been established by the CSRC, consisting of both its own professionals and external specialists. Fourthly, issuers and underwriters can now negotiate IPO prices on their own, albeit subject to the CSRC approval. The new system is fairer, more transparent, and more in line with international practices.

However, even under the new system, firms intend to go public still need to get recommended by one of 29 major securities firms. A securities firm can, at most, recommend 4 firms for IPO during a particular year. After a firm gets the recommendation, it has to go through a lengthy restructuring process for no less than one year before its IPO. Chinese government, in fact, still controls the amount of IPOs in the domestic markets. According to Economic Daily (June 20, 2002), there were more than 1000 companies which had completed the restructuring and been waiting to get listed. Firms, especially those urgently need equity capital, still have strong incentives to list abroad to cut down the waiting time. On the other hand, the domestic market was not as deep as the CSRC expected. This was evident when the CSRC planned to sell state shares and make them tradable.¹² The plan met with tough resistance from various interest groups and caused panic and strong negative market reactions. It had to be cancelled after two failed attempts in 1999 and 2001, respectively.¹³

¹²The Chinese firm ownership structure is mixed with the state, legal persons (including private organizations, SOEs, etc.), and domestic and foreign publics (including both individual and institutional investors) as the three predominant groups of shareholders. Both state shares and legal-person shares are not tradable on the Shanghai and Shenzhen Stock Exchanges and they account for approximately two-thirds of total company shares, while tradable public shares only account for one-third. See Xu and Wang (1999) and Wang (2002) for details.

¹³The new experiment of reducing state shares started once again in May 2005 on a small scale.

2.3 Introduction to China's Offshore and Local Equity Markets

To put our study in perspective, we present comparative market statistics for firms listed in China and Hong Kong in Table 1. China's domestic stock markets (A-share and B-share markets) are compared with the Hong Kong stock market using a comprehensive set of measures, including the number of listed firms, issuing proceeds raised through IPO, market overall P/E ratios, total market values, total trading values and market turnover rates (defined as trading value /market value).

First (see Panel A), China's domestic equity market grows much faster than Hong Kong market during the last ten years. The number of listed firms in China's A-share market increases by more than 500% from 169 in 1993 to 1200 in 2002. While for the same period, listed firms on the main board of the Hong Kong Exchange increased less than 100% from 477 to 817. Out of the 817 firms, 54 are H-share firms and 27 of them are cross-listed on either SHSE or SZSE. The number of firms listed on China's B-share market also increased from 40 in 1993 to 111 at the end of 2002. 87 out of 111 B-share firms had dual-listings on the A-share market. There were 1085 pure A-share firms, i.e., A-share firms without dual-listings on either B- or H-share market at the end of 2002.

Second (see Panel B), the H-share IPO proceeds raised are not only much larger than that raised from the B-share market but also large relative to that raised from the A-share market, especially when we take into consideration of the number of H-share firms relative to that of A-share firms. In 1994 and 1995, H-share IPO proceeds are even larger than A-share IPO proceeds. In 2000, H-share IPO proceeds as a percentage of A-share IPO proceeds reached the lowest, 6.95%. Yet only 3 H-share firms went public in that year while the number of A-share IPOs in the same year is 137. Obviously, a very significant portion of IPO issuing amount was diverted to the Hong Kong Stock Market during our sample period.

Third (see Panel B), the market PIE ratio in Hong Kong was much lower than that in A-share market throughout our sample period. However, it was higher than the PIE ratio in the B-share market until 2000. The higher PIE ratio for B-shares after 2000 is most likely due to the partial liberalization of the B-share market in early 2001.

Fourth (see Panel C), in terms of the total current market capitalization, the market value of China's domestic A-share market is also catching up with the market value of Hong Kong stock market in recent years. The total current market value for the domestic A-share market exceeds RMB 1500 billion in 2001, about 113 of that of the Hong Kong stock market.

Finally (see Panel C), the annual trading value of the Chinese domestic A-market was consistently higher than that of the Hong Kong market after 1996. The turnover rates of the local A and B-markets are also higher than that of the Hong Kong market. For the A-share market, the peak value occurred in the year 1996 with a surprisingly high turnover rate of 12.73. In contrast, the turnover rate of the Hong Kong market was around 0.5 during the whole sample period (except for 1997, which is the Asian financial crisis period). This shows that the trading is more active in the domestic market.

In summary, the market statistics indicate that on average about 20% of the total IPO supply has been diverted out from the domestic market during the sample period.¹⁴ In addition, A-share market seems more liquid, with higher PIE ratio, but probably more speculative than the Hong Kong market too.

¹⁴The total A-, B-, and H-share IPO proceeds from 1993 to 2002 are RMB379.88 billion, RMB27.63 billion, and RMB 101.89 billion, respectively

Table 1 Comparison across China and Hong Kong Stock Exchanges

This table provides summary statistics of some variables of interest for Chinese domestic A-share, B-share as well as Hong Kong stock markets. Variables examined here include the number of listed companies; proceeds raised through IPOs; market P/E Ratios; total market capitalizations; trading values, and market turnover rate (defined as total trading value / total market capitalization) for the sample period 1993 to 2003. The IPO fund raised, market value and trading value of H-shares and Hong Kong stock market are converted into RMB using year-end official exchange rate between Hong Kong Dollar and Chinese RMB.

Panel A: Number of Listed Firms

Year	Number of Listed Companies									
	A-share Market	B Share Market	H Share	Pure-A Shares	A-B Shares	Pure-B Shares	A-H Shares	Pure-H Shares	Hong Kong	
1993	169	40	6	127	36	4	6	0	477	
1994	289	59	15	228	55	4	6	9	529	
1995	317	70	17	247	59	11	11	6	542	
1996	522	85	23	438	70	15	14	9	583	
1997	729	101	39	637	75	26	17	22	658	
1998	825	106	43	727	80	26	18	25	680	
1999	923	108	44	822	82	26	19	25	701	
2000	1060	114	49	955	86	28	19	30	737	
2001	1136	112	56	1023	88	24	25	31	757	
2002	1199	111	72	1085	87	24	27	45	817	

Panel B: Issuing Proceeds and Market PE Ratios

Year	Fund Raised (IPO) (Billion)				Percentage of Proceeds as of A-share IPO				Market P/E Ratios			
	A-share Market	B Share Market	Hong Kong	H Shares	B Share Market	Hong Kong	H Shares	A-share Market	B Share Market	Hong Kong	H Shares	
1993	19.483	3.813	44.885	6.114	19.57%	230.38%	31.38%	28.19	7.87	21.63	15.93	
1994	4.962	3.827	31.687	10.782	77.13%	638.59%	217.29%	18.4	6.54	10.71	14.13	
1995	2.268	3.335	21.103	3.217	147.05%	930.47%	141.84%	18.54	8.97	11.46	29.37	
1996	22.445	4.718	82.888	8.438	21.02%	369.29%	37.59%	37.62	10.34	16.79	27.30	
1997	65.506	8.076	170.253	35.174	12.33%	259.90%	53.70%	41.75	9.62	12.12	23.52	
1998	43.945	2.076	23.979	3.796	4.72%	54.57%	8.64%	40.77	5.88	10.73	15.42	
1999	49.952	0.381	91.153	4.541	0.76%	182.48%	9.09%	41.46	10.22	26.73	33.01	
2000	78.991	1.400	238.089	5.489	1.77%	301.41%	6.95%	62.54	16.23	12.80	8.53	
2001	46.112	0	59.561	6.436	0.00%	129.17%	13.96%	49.87	34.35	12.18	14.89	
2002	46.216	0	64.763	17.904	0.00%	140.13%	38.74%	53.56	28.06	14.89	12.99	

Panel C: Market Capitalization and Turnover

Year	Total Market Value (Billion)				Trading Value (Billion)				Turnover Rate			
	A-share Market	B Share Market	Hong Kong	H Shares	A-share Market	B Share Market	Hong Kong	H Shares	A-share Market	B Share Market	Hong Kong	H Shares
1993	45.19	6.05	1427.71	13.69	352.25	47.28	762.87	4.54	7.79	7.81	0.53	0.33
1994	72.27	15.55	2683.66	21.81	800.49	95.28	1080.72	13.38	11.08	6.13	0.40	0.61
1995	82.67	14.56	2308.36	17.71	395.82	52.41	799.72	18.16	4.79	3.60	0.35	1.03
1996	165.42	20.50	3086.60	33.80	2105.23	96.53	1383.36	26.68	12.73	4.71	0.45	0.79
1997	410.91	40.66	4061.55	51.73	3028.61	197.78	3771.04	316.78	7.37	4.86	0.93	6.12
1998	556.17	26.18	2788.80	35.84	2340.75	72.24	1707.39	78.60	4.21	2.76	0.61	2.19
1999	728.21	26.10	3640.99	44.62	3093.04	128.56	2043.16	109.48	4.25	4.93	0.56	2.45
2000	1267.97	38.83	5002.72	90.30	6028.85	54.80	3235.51	174.27	4.75	1.41	0.65	1.93
2001	1525.29	106.85	4423.61	105.86	3327.32	514.96	2068.75	260.06	2.18	4.82	0.47	2.46
2002	1360.18	75.37	3946.25	137.15	2704.63	507.62	1696.17	148.25	1.99	6.73	0.43	1.08

2.4 Listing Regulations and Overseas Listing Procedure of Chinese Firms

The earliest rules to set up the listing requirements in China are the Management Methods of Securities Trading in Shanghai issued by SHSE on December 1, 1990 and the Management Methods (provisional) of Securities Trading in Shenzhen issued by SZSE on June 15, 1991. They set up the basic framework of the Securities Laws formulated later in 1998. As for rules related to the governance of Chinese overseas listed firms and foreign share issues, there are essentially three levels.

The first level is the two laws promulgated by the People's Congress of China, i.e. the Company Law of the People's Republic of China issued in 1994 and the Securities Law of the People's Republic of China issued in 1999.

The second level consists five regulations promulgated by the State Council: "Special Regulation of the State Council on Raising Capital and Listing Overseas by a Joint-Stock Company Limited", "The Notice of the State Council on Further Strengthening the Management of Overseas Equity Offering and Overseas Listing", "The Compulsory Provisions for Articles of Association of Firms for Overseas Listing", "Special Regulations on Joint-stock Limited Enterprises Soliciting Overseas Listing", and "Circular on Strengthening of Foreign Listings and Management of the Listing Process".

The "lowest" level is the rules, standards, etc. issued by various bureaus including the CSRC and MOF¹⁵. They include: "Contents Requirements on Articles of Association for Companies Seeking Foreign Listings", "The Notice of CRSC on Further Strengthening the Information Disclosure Procedure of Overseas Listed Companies", "and The Guideline on Professional Secretary of board of directors in the Overseas Listed Companies"¹⁶

The following table summarizes all regulations under these three levels.

¹⁵MOF stands for Ministry of Finance

¹⁶"Information Disclosure and Corporate Governance in China", CSRC.

Table 2: Law & Regulations related to Overseas Listing in China

Category	Name	Issuing Date
Fundamental Law	1. PRC Company Law (New Version)	July 1, 1994
	2. PRC Security Law	July 1, 1999
Law Issued by State Council	3. Special Regulation of the State Council on Raising Capital and Listing Overseas by a Joint-Stock Company Limited	April 9, 1993
	4. The Notice of the State Council on Further Strengthening the Management of Overseas Equity Offering and Overseas Listing	May 24, 1993
	5. The Compulsory Provisions for Articles of Association of Firms for Overseas Listing	June 10, 1993
	6. Special Regulations on Joint-stock Limited Enterprises Soliciting Overseas Listing	August 10, 1996
	7. Circular on Strengthening of Foreign Listings and Management of the Listing Process	Sep 20, 1999
Regulations issued by relevant ministries under the State Council (CRSC)	8. Contents Requirements on Articles of Association for Companies Seeking Foreign Listings	March 26, 1999
	9. The Notice of CRSC on Further Strengthening the Information Disclosure Procedure of Overseas Listed Companies	June 9, 2000
	10. The Guideline on Professional Secretary of board of directors in the Overseas Listed Companies	April 22, 1999

Source: Chinese Security Regulatory Committee Website <http://www.csrc.com.cn>

Besides the law and regulations set by China security authority CSRC, Hong Kong listed H-share firms are subject to the listing requirements and governance regulations set by the Hong Kong Stock Exchange. Some important requirements and governance regulations are highlighted here.

For listing requirements, if the controlling shareholder has an interest in a business which competes or is likely to compete (directly or indirectly) with the company's business to some extent, there could be a conflict between the controlling shareholder's interests and those of the

general shareholders of the company, the Stock Exchange may refuse to list the company and will, in any event, be likely to require a written undertaking from the controlling shareholder restricting future competition with the listed group. (In the case of PRC companies, where the controlling shareholder is a PRC governmental entity, the Stock Exchange will look closely at the relationship with that governmental entity and any related parties.) The Stock Exchange may require the company to appoint a sufficient number of independent non-executive directors to ensure the protection of the interests of the general body of shareholders.

For governance requirements, the company must have a sufficient management presence in Hong Kong. This generally means that at least 2 of its executive directors must be residents in Hong Kong. In addition, the board of directors must include at least 2 independent non-executive directors, who must have the character, integrity, independence and experience to fulfill their roles.

Requirements specially catering for H-share companies include the minimum offer size (to be of market capitalization of at least HK\$50 million)¹⁷, competence of independent non-executive directors (be able to demonstrate an acceptable standard of competence and adequate commercial or professional experience to ensure that the interests of the shareholders will be adequately represented) and disclosure of connected persons (if requested by the Stock Exchange, a PRC company must make written representations to the Stock Exchange explaining its legal, commercial or other relationships with various associates or other persons and must satisfy the Stock Exchange that such persons should not be treated as "connected persons" for the purposes of the connected transaction provisions of the Listing Rules). H-share companies listed in Hong Kong have to comply with the additional requirements set out in the SEHK's Listing Rules. For example, annual accounts have to be in accordance with Hong Kong or international accounting

¹⁷ This is the criteria set by Hong Kong Security Regulatory Authority, which applies to both Hong Kong Main board and Hong Kong GEM Board listed H-share firms. While in addition CSRC requires that Chinese domestic firms applying for Hong Kong main board listing must have a minimum offer size of USD \$50 million.

standards and investor protection provisions equivalent to those in the laws of Hong Kong must be written into its constitutional documents.

Chapter 3: Literature Review on the Overseas Listing Decision

Conventional wisdom based on market segmentation theory argues that firms seek overseas listing to benefit from a lower cost of capital because its shares become more accessible to global investors. Recently, more theories and evidence have widened this field by providing more explanations based on agency theory, information asymmetry theory and other corporate finance theories. The goal of this chapter is to survey, synthesize and review the relevant literature on international cross listing.

3.1 Overseas Listing Decision: Hypotheses based on Market Segmentation Theory

International capital flows can be hampered by a variety of barriers such as transaction costs, information costs and legal restrictions. These barriers can be severe enough to produce segmentations of capital markets, thereby producing incentives for firms to adopt financial policies that can effectively reduce the associated negative effects. According to Stapleton and Subrahmanyam (1977), dual listing of the firm's securities on foreign capital markets is one of such policies. Thus, a firm's choice to list its securities on a particular market is motivated by a search to minimize the impact of trading and listing friction. In this section, we review some existing literature on potential concerns on firms' shares when considering for cross listings based on market segmentation theory.

Diversification gains

Based on the international asset pricing models of Black (1974), Stulz (1981), and Errunza and Losq (1985), a large number of papers argue that since capital markets are not perfectly integrated, firms can benefit from lower capital costs by listing shares abroad. In a sense, firms gain from the premium and investors are willing to pay for restricted foreign securities. Most of the empirical research in this area focuses on the changes in firms' betas and expected returns

following listing on a foreign stock exchange. Foerster and Karolyi (1993) find that domestic market betas and returns decline for a sample of Canadian firms subsequent to their listing in the United States. Jorion and Schwartz (1986) report a higher U.S. risk exposure but lower cost of capital for U.S.-listed Canadian stocks. Errunza and Miller (2000) analyze changes in equity valuation of foreign firms around the announcement dates of their American Depository Receipts (ADR) and document a statistically and economically significant decline in the cost of capital. Some papers provide less convincing evidence of the reduction in the overall cost of capital for foreign-listed stocks. For example, Howe and Madura (1990) find no statistically significant evidence for the decrease in the cost of capital of the cross-listed U.S. stocks. Jayaraman, Shastri and Tandon (1993) report similar results for overseas stocks traded in the U.S. as ADRs. Miller (1999) finds statistically significant increases in U.S. betas for emerging-market stocks after their listing in the U.S. but no changes in their home market betas. Errunza and Miller (2000) shows that U.S. investors can effectively reduce the risk of their portfolios by investing in ADRs rather than directly in foreign countries.

Therefore, with cross-border trading friction, overseas investors are most interested in the capital from some markets that will minimize their portfolio risk. Consequently, firms may capture the premium that foreign investors are willing to pay for equity from markets with little correlation to their home market.

Liquidity

Overseas listed firms may consider the liquidity gains for shares traded abroad as a benefit from overseas listing. Firms based in countries with relatively small capital markets may face an inelastic supply curve if restricted to domestic sources of capital. A new equity issue may saturate the domestic market and depress firm stock prices. Chowdhry and Nanda (1991) shows that liquidity plays an important role in the success of competitive markets to attract trading volume.

Empirical work shows that foreign firms listed in the U.S. achieve significantly lower bid-ask spread (Foerster and Karolyi (1998) for Canadian stocks; Domoizitz, Glen, and Madhavan (1998) for Mexican stocks; and Werner and Kleidon (1996) for U.K. stocks). Noronha, Sarin and Saudagaran (1996) find that the domestic quote depth for U.S. stocks cross listing in London and Tokyo increases with listing. Barclay, Litzenberger and Warner (1990) and Chan et al., (1995) report increases in the domestic volatility and trading volume of foreign stocks listed in the United States. Narrower quotation spreads, superior stability and the greater depth on selected foreign markets may all be expected to have a positive effect in enhancing the marketability of the issuers' securities.

Noronha et al., (1996) find that spreads do not decrease following a dual listing, though the depth of the quotes increases as predicted. They also find that the level of informed trading is enhanced, which increases the cost to the specialist of providing liquidity, and explains why spreads do not decline in spite of increased competition.

Karolyi's (1997) survey paper reviews the academic literature on the economic implications of the corporate decision to list shares in an overseas stock exchange. His focus is on the valuation and liquidity effects of the listing decision, and the impact of listing on the firm's global risk exposure and its cost of equity capital. The evidence he cited includes that

- Share prices react favorably to cross-border listings in the first month after listing.
- Post-listing trading volume increases on average, and, for many issues, home-market trading volume increases also.
- Liquidity of trading in shares improves overall, but depends on the increase in total trading volume, the listing location and the scope of foreign ownership restrictions in the home market.

- Domestic market risk is significantly reduced and is associated with only a slight increase in global market risk and foreign exchange risk, which can result in a net reduction in the cost of equity capital of about 126 basis points.

Expanded Shareholder Base

The potential to expand shareholder base provides another major motive for a firm to list its shares overseas. Merton (1987) shows that an increase in the relative size of a firm's investor base reduces the firm's cost of capital. Merton (1987) relaxes the standard CAPM assumption of equal information across investors and shows that investors invest only in those securities of which they are aware. According to Merton's model, an increase in the size of a firm's investor base will lower the expected returns and increase the market value of the firm's share. Merton suggests that one of the ways in which managers can increase the size of a firm's investor base is to have that firm's shares listed on a stock exchange. If listing is indeed accompanied by an increase in the size of the firm's investor base, it should reduce the expected returns, and consequently, the cost of capital for the firm.

A number of studies provide empirical support for Merton's proposition. Foerster and Karolyi (1999) find that decreases in Canadian firm risk exposure after listing in the United States can be partially attributed to a larger shareholder base. Chaplinsky and Rarnchand (2000) find that equity offering announcement returns are negatively correlated with the prospective shareholder base. Lins et al., (2000) find that the sensitivity of investment to cash flow declines for emerging market firms following foreign listings and that the cost of capital is inversely related to the coverage impact.

The market segmentation hypothesis for cross listing faces a number of shortcomings. (Stulz (1999) and Karolyi (2004)) The first difficulty arises from the fact that almost all of the empirical support for this hypothesis relies on event-study tests of the capital market reactions to listings and

listing announcement. The problem is that the event-study abnormal returns are extremely small (1 to 2 percent, Miller (1999)) compared to the large changes in the cost of capital implied by shifting market risk exposures.

A second criticism is that, if the driver of listing decisions were a lower cost of capital from eliminating investment barriers, then all firms for which the cost of capital would fall sufficiently to justify the costs of listing overseas would do so. In fact, in almost every country in the world which has listed firms, a significant fraction of listed firms do not cross-list their shares overseas even though a critical fraction find it worthwhile to do so. Third, abnormal returns during cross-listing are observed for firms from countries that are substantially integrated in world markets and have been for some time. Fourth, the market segmentation hypothesis cannot explain the time-series pattern of listings. Since the number of listings has continued to grow over the past ten years. With greater integration of markets over time, the net benefits of a listing should diminish since the cost of capital for companies becomes more and more approached to the global level. The fifth and final criticism is that the conventional wisdom about segmented markets cannot explain why the share price reactions are largest for exchange-listed firms (Miller (1999)) and why the post-listing share-price declines are smaller for listings associated with capital-raising activity (Foerster and Karolyi (1999)).

In the light of these criticisms, some important studies have been done recently to provide alternatively theories to explain the cross-listing decisions.

3.2 Overseas Listing Decision: Hypotheses based on Corporate Governance Theory

Corporate Governance, Investor Protection and Legal Bonding

The ability of controlling shareholders or managers to take private benefits from their firms is an important aspect of corporate governance as it is an important source of potential agency conflicts with public shareholders. After all, firms can raise external financing only to the extent

that they can commit to return this capital to investors and not to extract it for the managers' personal use.

There is a logical link between managers' private benefits and their firm's opportunities in the capital markets. From a manager's perspective, there are costs as well as benefits when resources are taken from shareholders. The value of having access to external capital, for example, may be large relative to the size of private benefits when the firm has superior investment opportunities that require external financing. In such circumstances, managers will wish to "bond" themselves not to take private benefits to ensure access to external markets. A number of papers have suggested that one useful way to "bond" managers not to take excessive private benefits is to cross-list the firm's stock on an exchange that imposes higher legal and regulatory costs than the firm's primary exchange.

Meanwhile from the investors' perspective, they may face less expropriation risk if the firms they invested also dual-list on the market with stricter investor protection regulations. Thus, they are willing to accept lower expected return when invested in these stocks.

Coffee (1999, 2002) emphasizes the legal "bonding" mechanisms of U.S. listing in three forms. (1) the listing firm becomes subject to the enforcement powers of the SEC; (2) investors acquire the ability to exercise effective and low-cost actions, such as class actions and derivative actions, not available in the home market; and (3) entry into the U.S. markets commits the firm to provide fuller financial information in response to SEC requirements and to reconcile its financial statements with U.S. generally accepted accounting principles (GAAP). La Porta et al., (1997, 1998) find that financing activity is significantly reduced in countries with poor investor protections systems. Lins et al., (2000) show some evidence that firms from countries with weaker shareholder protection benefit more from listing on in the United States than firms from developed markets.

Therefore, firms from countries with less developed financial and legal systems will find it more beneficial to list in countries with better investor protection.

3.3 Overseas Listing Decision: Hypotheses based on Information Asymmetry Theory

Signaling Effect

Firms must incur additional listing costs when listing abroad. Commonly, a cross listing is accompanied by a need to conform to different financial disclosure and accounting standards. Therefore, the listing cost for overseas listing is often higher than that of domestic listing. Models of signaling behavior maintain that firms may not prefer to minimize the cost of disclosure by listing in markets that have similar reporting requirements to those of their home market, (Cantale (1996), Fuerst (1998), and Moel(1999)).

Cantale (1996) developed a signaling model where firms, trying to communicate their private information regarding their quality to outside investors, choose a particular market to list their shares. Markets are assumed to differ in terms of the level of information disclosure, which he interprets it as a measure of quality, and quantity of information requested by each stock market to qualify for listing. Since higher levels and quantities of disclosure increase outside investors' abilities to monitor managerial actions, the markets will value such firms higher but at the expense of management's private benefit of control. The key difference to Cantale's model is that changes in expected returns around the listing decision are less to do with market segmentation and more to do with changes in information flows.

Huddart et al., (1999) argue that by competing for trading volume, exchanges rather contribute to an increase in disclosure requirements and decrease in trading costs. They conclude that managers prefer to list in countries where the accounting standards are more stringent than those in their home country do. The opposing views motivate tests of the importance of disclosure standards for firms in the overseas listing decision.

3.4 Overseas Listing Decision: Hypotheses based on Corporate Finance Theories

Marketing and Public Relations & Trade exposure

As the firm's foreign business grows, listing on foreign stock exchanges could be considered beneficial in that it increases corporate visibility and aids marketing efforts by broadening product identification in the host country. This "free" advertising may be particularly advantageous to producers of industrial and consumer products who normally spend large sums on advertising in various media to obtain this visibility. The importance of this factor to individual firms is likely to vary in the direct proportion of their degree of dependence on foreign sales.

Another factor sometimes being overlooked is that of public relations. It is not only investors but also the apparatus of government and of stock exchanges, which scrutinize a foreign firm when it decides to list. Through negotiations with the authorities, the distribution of a prospectus, advertisements in the press and meetings with journalists and financial analysts, a firm receives a great deal of exposure in the national financial community. If in the process the firm gains credit for adapting to the country's official requirements, the listing process might compare more than favorably with other forms of financial public relations.

Kang and Stulz (1997) show that investors are more willing to hold stock from foreign firms whose products trade abroad since the trade provides opportunities for increased information flow. Using an international sample of firms, Saudagaran (1998) finds that firms with the greater overseas sales are more likely to list abroad. It is, however, somewhat unclear whether foreign listings improve brand recognition or whether brand recognition helps sell foreign shares. Using a survey of Canadian firms, Mittoo (1992) finds that managers cite access to foreign markets and marketability of their firms as major benefits to cross listing. Saudagaran (1998) and Mittoo (1992) have shown that corporate managers perceive access to additional capital sources and increased visibility (for marketing reasons) as the major factors motivating foreign listings.

Merger & Acquisitions Concerns

A foreign listing may also place a firm in a better position to handle foreign acquisitions and mergers. In some countries, only firms that are listed on the local exchange are permitted to make tender offers. A listing in these countries can facilitate stock swaps and tender offers, where they would not otherwise have been possible.

Familiarity Concerns

Lastly, familiarity issues are potentially important when choosing among foreign markets. The following aspects of familiarity are explored in the existing literature: trade exposure, language, and colonial ties, industrial structure similarity, and geographic proximity.

Similarity in industrial structure of the home and target host countries may improve investor-firm familiarity concerns across particular markets. Brainard (1997) finds that firms tend to invest in those foreign markets that are analogous to the home market by pointing out, for example, that a large share of multinational investment occurs between industrialized countries as both the source and destination markets.

Grinblatt and Keloharju (2001) argue that geographic proximity tends to increase investor familiarity. Arnold et al., (1999) find that distance has historically been important in financing relationships.

Tax Concerns

Some countries seek to attract foreign firms to list in their market by offering an attractive low-tax trading environment for both firms and investors. Some such "tax havens" are islands or dependent territories such as the Cayman Islands or Bermuda with little other non-financial economic activity. Other tax havens, such as Hong Kong, Singapore, and Switzerland, maintain sizeable alternative real economies.

In addition to tax concessions for foreign firms, tax haven countries generally maintain very limited restrictions on asset ownership, capital investment, profit repatriation and listing requirements. Hines and Rice (1994) reports that American firms usually have extraordinarily high profit rates on their tax haven operations and investments. Foreign investors are attracted to tax havens by the absence or low capital gains taxes on investments and few restrictions on ownership and capital flows. The advantageous trading environment provided by tax haven markets is expected to prove successful in attracting overseas listings.

Though lots of researches have been done on this topic, there is still some future work we could contribute to the existing literature. As Karolyi (2004) pointed out,

"Unfortunately, current research has relied very extensively, though thankfully not exclusively, on the experience of the 1990s and especially on the rapid expansion of international cross-listings by non-U.S. firms on U.S. exchanges to gain the inferences about the process. The challenge of broadening its reach stems too often from data limitations in other markets around the world."

Hence by using a sample of Chinese firms listed in Hong Kong is the form of "H-class" shares, our study may help to enrich the overseas listing literature by offering an "out of sample study" and provide more interesting results based on China's unique institutional background.

Chapter 4: Hypothesis Development

4.1 IPO Quota System & H1 Market Order Hypothesis

As pointed out by Sun and Tong (2003), one major purpose for establishing stock markets in China during the early 1990s was to supply state-owned enterprises (SOEs) direct financing, without adding budgetary burdens to the government and/or bad debt to China's ailing banking system. Due to the transition of the Chinese economy from a central planning to a market mechanism, most SOEs were heavily indebted and short of equity capital. A large number of firms hence would have liked to get listed and raise equity capital from the stock market.

Yet, the Chinese stock market was still in its early stage with a lot of speculative bubbles and a lower market depth. Domestic investors in China often worry that large supply of shares will drain up the limited money supply in the market. As a result, the high share price in the domestic market can no longer be sustained. Consequently, domestic investors often behave strongly against any news about large supply of shares in future.¹⁸ To build domestic investors' confidence, maintain the market order and avoid the possible market crash, Chinese government imposed an annual quota system in regulating the total amount of shares to be issued in the market.¹⁹

Since the demand to get listed was much larger than the quota given, many firms had to wait in queue for years before they could get listed. According to *Economic Daily*, June 20, 2002, more than 1000 firms had completed the restructuring and were waiting to be listed.

Furthermore, the Chinese stock market was mainly for former SOEs to raise capital, there is no growth enterprise board available for small private or high tech firms to raise external capital.

²⁰ Although CSRC has loosened the restrictions on small and private firm listings on the domestic

¹⁸ Such investors' behavior was evident when CSRC planned to sell state shares and make them tradable. The plan met with tough resistance from various interest groups and caused strong negative market reactions. It had to be cancelled after two failed attempts in 1999 and 2001, respectively

¹⁹ The listing quota system was abolished in 2000, see chapter 3 for details.

²⁰ It was announced in 2001 that the Shenzhen Stock Exchange would be merged into the Shanghai Stock Exchange and a new Growth Enterprise Market (GEM) would be established in Shenzhen catering new and high-tech firms. According to the *Economic Daily* (June 20, 2002), more than 2000 small and private firms had prepared to issue equity in the planned growth enterprise market. However, up to now, this planned merger and new GEM have not

A-share market since 1999, the new recommendation system is biased against small firms due to the high income associated with underwriting large firms and the limited number of recommendations that can be made each year by a particular underwriter. Many small firms, especially private and high tech firms therefore started to look for listings on overseas markets. Many foreign stock markets have been aggressively recruiting high-tech and private firms from China to list on them. For example, Hong Kong established the Growth Enterprise Market (GEM) in November 1999. Quite a few small private Chinese firms have listed there since that time.

Based on this unique institutional background, the first hypothesis to explain the overseas listing decision of Chinese firms is the "Market Order Hypothesis".

Hypothesis1: Market Order Hypothesis

Since the Chinese government intends to maintain market order of its domestic equity market, firms with large equity issues are diverted to deeper and more developed overseas equity markets.

4.2 H2 IPO Constraint Hypothesis

On the firm side, by listing abroad, firms may improve the terms on which they can raise capital or on which their shareholders can sell existing securities. This motive is strongest if the firm or its shareholders need to raise capital and if financial constraints in the home market are significant (Pagano et al., (2002)). The salient reason why a company may need equity funding is to carry out new investment programs. The required funding is likely to be especially large for fast-growing companies and for companies that have already exhausted their debt capacity. Therefore cross-listing companies should have higher growth rate, higher leverage and lower liquidity than firms listed in the domestic market before their cross listing.²¹

been materialized. Instead a small-and-medium stock sector has been started in the Shenzhen Stock Exchange in June 2004.

²¹ Since debt capacity depends on the firm's growth prospects and the nature of its assets, in relating the probability of cross-listing to leverage, we shall control for growth and various firms characteristics.

This issue is particularly important in China, because in China, if a firm applies for listing on the domestic equity market, generally it will take two years to complete its restructuring and be qualified for the IPO application, however, even when this firm finishes its pre-listing restructuring and is qualified to go public, it is still subject to the availability of the IPO quota from its province. If the quota for this year has already been allocated, this firm has to wait for another year. In order to cut down the waiting time, a firm hungry for capital might be willing to afford a higher cost to list overseas.

Therefore, we have our second hypothesis

Hypothesis 2: IPO Constraint Hypothesis

Firms choose to list on foreign markets in order to circumvent the local IPO quota system and avoid waiting in the long queue of the domestic IPO applicants.

4.3 Corporate Governance Issues in China and H3 Governance Hypothesis

As the domestic equity market becomes increasingly mature, the impact of large issues on the domestic equity market will be mitigated. Consequently, the Chinese government places a greater emphasis on the effects of strategic reform contributed by the overseas listing process. It highlights the establishment of the so-called modern corporate system in the overseas listed firms as one of the major reasons why it encourages overseas listing. In addition, the Chinese government uses overseas listing to implement its industry policy by channeling foreign funds to its favored SOEs in the energy, transportation, telecom and basic material industries (Aharony, Lee and Wong (2000)). It also takes overseas listing as a strategy to reform the large SOEs. The State Planning Committee Chief Li Rongrong has repeatedly stated that it is China's strategy to continuously list its large SOEs overseas because this would help to establish modern corporations in China.

According to the literature, China's large-scale share issuing privatization has at least two apparent problems (Wang 2002). First, due to the special characteristics of listed firms in China,

stocks are concentrated in the hands of state authorities or legal entities approved by the states. The majority shareholders—with a huge concentration of shares—thus have unmatched power to dominate shareholders' meetings, and boards of directors. Therefore, there is a high probability that the controlling shareholder will expropriate minority shareholders through tunneling.²²

Second, the Chinese shareholding system does little to improve the decision-making process. The board of directors is prevented from serving its proper function by the enormous power of the controlling shareholders and insider directors, while the second-tier board of supervisors is too weak to have any significant influence.

A good corporate system, especially good corporate governance, depends on a set of institutions for its implementation (Roe (2002)). Although institutions such as law firms, accounting firms, investment banks, brokerage firms, financial information firms and stock exchanges all emerged in China, they are still immature and their operations are often handicapped due to the poor business environment and cannot spring up or grow in response to market demand. Firms applying for overseas listings are forced to undergo a thorough restructuring. They are audited according to international standards and disciplined and monitored by a more demanding investment community. Thus, the Chinese government hopes that overseas listing can help accelerate the SOE reform and improve the corporate governance. This is consistent with Bortolotti et al.'s (2000) view that selling a SOE to foreign investors could represent a commitment device supporting market-oriented policies.

With this background, we have our third hypothesis

Hypothesis 3: Governance Hypothesis:

The Chinese Government encourages large SOEs to list on the overseas equity market because it hopes the external monitoring environment in the overseas market could

²² Tunneling: The term "tunneling" refers to the expropriation of minority shareholders by the controlling shareholders, through the transferring of assets and profits out of the controlled firm for the benefit of those who control them (See Johnson, La Porta, Lopez-de-Silanes, and Shleifer [2000])

accelerate the process to establish the modern corporate system in these SOEs, especially to establish a better corporate governance system.

4.4 The Return Tide of Overseas Listed Firms and H4 Bonding Hypothesis

The bonding hypothesis of overseas listing (Stulz (1999), Coffee (1999, 2002), Doidge, Karolyi, and Stulz (2004) suggest that firms located in countries with particularly inadequate supervision and disclosure standards want to cross-list in the high quality markets. These firms self-selectively binding themselves to more stringent listing and governance rules essentially signal to investors that they are either firms with less agency problems and better governance structure or firms willing to reduce agency problems and improve their governance structure. Hence, it helps to differentiate themselves from other poor quality firms. As a result, these cross-listed firms would earn a "cross-listing premium" in the form of higher firm valuations, which is empirically demonstrated in the study of Doidge et al., (2004) on non-U.S. firms listed in the U.S.

Nenova (2003), Dyck and Zingales (2004), and Doidge et al., (2004) further demonstrate that cross-listing in the U.S. improves the protection of minority shareholders and decreases various kinds of private benefits in the control of major shareholders.

Therefore, because of the poor corporate governance mechanism in the domestic stock market, some high-quality Chinese firms are willing to take a higher cost to list on the overseas market in order to establish better images to their investors. Consequently, they could capitalize their market image when they return to cross-list in the domestic market.

The fourth hypothesis for explaining the overseas listing decision of Chinese firms is hence the "Bonding Hypothesis".

Hypothesis 4: Bonding Hypothesis

Chinese firms are willing to list on a high quality overseas market, because they want to establish a better image to the domestic investors by bonding themselves to more stringent listing and governance requirements.

45 Foreign Currency Control System in China and H5 Foreign Currency Hypothesis

Another possible explanation why Chinese firms would issue shares overseas at discount is that firms want to get foreign currencies. China has, up until now, foreign exchange control under the capital account. In 1994, substantial reform measures were introduced to restructure China's foreign exchange control system. This resulted in the establishment of the system of "purchasing and surrendering foreign exchange through designated banks," the nationwide foreign exchange interbank market, the unification of dual exchange rates, and the managed floating exchange rate regime. In December 1996, China made its currency, the renminbi (RMB), convertible for current account transactions, removing both quantitative and regulatory restrictions on the use of foreign exchange for current account transactions.

Meanwhile, China continues to maintain a certain control over transactions and currency exchanges on the capital account, including restrictions applied to cross-border capital flows, as well as quantitative and regulatory controls on exchanges between the RMB and foreign currencies. Current restrictions on capital accounts are predominately reflected in the restrictions on the access by foreign investors to domestic financial markets and by Chinese investors to foreign financial markets. The Chinese government is pursuing a strategy of "fragmenting the market with separate investors", which means foreign investors are only allowed to buy foreign currency denominated shares and debt instruments in either the domestic B-share market or the overseas H-shares market.²³

²³ QFII (Qualified Foreign Institutional Investor) system was established recently to allow certain qualified large foreign institutional investors to invest on domestic A-share market.

However, due to the ballooning of China's foreign exchange reserve and the gradual loosening of the foreign exchange control since 1994, the demand for foreign currencies should not be a major reason for the overseas listing of Chinese firms. As a matter of fact, the pace of overseas listing for Chinese firms accelerated in the recent two years while there is huge pressure from international societies to revalue RMB. Nevertheless, as long as there is still capital control, we cannot totally rule out the possibility that firms list overseas to get foreign currencies. Our last hypothesis is thus the "Foreign Currency Hypothesis".

Hypothesis 5: Foreign Currency Hypothesis:

Domestic firms choose to list on the overseas market to raise foreign currency because the supply of foreign currency is limited from domestic sources and the market consensus valuation of foreign currency is high relative to the official exchange rate.

Chapter 5: Sample Description and Sample Statistics

5.1 Sample Selection and Data Description

The sample in this study consists of 72 Chinese H-share firms that have issued H-shares on the Hong Kong Stock Exchange and 663 A-share firms that have issued A-shares on the domestic stock market (both Shanghai Stock Exchange and Shenzhen Stock Exchange) during the sample period from January 1993 to December 2002.

There are two equity boards in the Hong Kong stock exchange: the Hong Kong Main Board and the Hong Kong Growth Enterprise Market (GEM) Board. The Hong Kong GEM Board, which was established in November 1999, predominately aimed to finance start-up firms. Until the end of the year 2002, there were 18 Chinese firms listed on the Hong Kong GEM Board. Since the functions of the GEM Board and the Main Board are quite different, it is expected that firms listed on each board will have different motivations and different firm characteristics. Therefore, the H-share firm sample is further separated into two sub-samples, one with 54 Hong Kong Main Board listed H-share firms and the other with 18 Hong Kong GEM Board listed H-share firms.

1199 A-share firms were listed on the SHSE and SZSE at the end of 2002 (see Table 2). We exclude 114 firms cross-listed either on B- or H-share market to avoid the possible bias because the issuing sizes of these cross-listed firms in the A-share market are usually small and many of them are not really IPOs.²⁴ Since the first H-share was issued in 1993, we further exclude 53 pure A-share firms, which went public before 1993 because the option to list in Hong Kong or overseas was not available. In addition, we exclude 8 financial firms because their capital structures are not comparable to other firms. Finally, we exclude 362 firms with missing data, most of which have less than two years of pre-listing leverage data. The remaining 663 pure A-share firms are used as a control group.

²⁴ All cross-listed H-share firms have their IPOs in the SEHK and more than half of cross-listed B-share firms had their IPOs in the B-share market.

All prelisting financial data are manually collected from the firms' IPO prospectuses for both Hong Kong listed H-share firms and domestic listed A-share firms. Post-listing financial data are obtained from three sources, the *Taiwan Economic Journal* (TEJ) database and the Bloomberg database for H-share listed firms and the CSMAR (China Stock Market & Accounting Research Database) for A-share listed firms.

Table 3: Sample Statistics

The table presents the summary statistics for each proxy of firm characteristics for the A-share listed firms (A), Hong Kong main board listed H-share firms (H Main board) and Hong Kong GEM board listed H-share firms (H GEM board). A-share sample includes 663 purely domestic listed firms (excluding financial firms). H Main Board sample includes 54 H-share companies listed on the Hong Kong Stock exchange main board during the period 1993 to 2002. H GEM Board sample includes 18 H-share companies listed on the Hong Kong exchange GEM board during sample period 1993-2002. Firm characteristics of each listing firm are analyzed with respect to six categories, which are size, growth, leverage, liquidity, profitability and IPO market valuation. Within each category, several comparable accounting measures are used. Wilcoxon Z-test is used to test the median difference between H Main Board group (H GEM board group) and A-share group for each measure.

Category	Variables		N	Mean	Median	Std Dev	Median Difference	Wilcoxon Z test
Size (millions)	Total Asset	A	663	556.26	305.46	1729.67		
		H(Main board)	54	20170.85	3278.57	65111.55	2973.11	10.03***
		H(GEM board)	18	129.44	92.45	102.37	-213.01	-4.58***
	Sales	A	663	457.85	206.57	126.02		
		H(Main board)	54	10610.17	1695.60	37686.87	1489.03	8.39***
		H(GEM board)	18	74.44	43.81	81.07	-162.76	-4.84***
Growth	GTA	A	663	0.341	0.224	0.368		
		H(Main board)	54	0.350	0.216	0.413	-0.008	-0.32
		H(GEM board)	18	0.687	0.540	0.844	0.316	5.80***
	GSales	A	663	0.305	0.197	0.440		
		H(Main board)	54	0.339	0.225	0.375	0.028	1.65*
		H(GEM board)	18	1.531	0.778	1.474	0.581	4.91***
Leverage	TL/TE	A	663	1.523	1.436	0.988		
		H(Main board)	54	2.767	1.898	3.008	0.462	3.79***
		H(GEM board)	18	2.652	1.392	4.899	-0.044	-0.87
	TL/TA	A	663	0.550	0.582	0.144		
		H(Main board)	54	0.617	0.647	0.187	0.065	3.83***
		H(GEM board)	18	0.466	0.457	0.229	-0.125	-2.25*
Liquidity	Current	A	663	1.725	1.280	2.247		
		H(Main board)	54	1.038	0.911	0.657	-0.369	-5.91***
		H(GEM board)	18	1.693	1.581	0.774	0.301	1.78*
	Quick	A	663	1.185	0.854	1.665		
		H(Main board)	54	0.698	0.548	0.593	-0.306	-5.10***
		H(GEM board)	18	1.523	1.602	0.710	0.748	3.37***
Profitability	ROA	A	663	0.102	0.088	0.067		
		H(Main board)	54	0.117	0.097	0.131	0.009	1.56*
		H(GEM board)	18	0.054	0.059	0.111	-0.029	-0.73
	ROE	A	663	0.244	0.197	0.194		
		H(Main board)	54	0.283	0.212	0.281	0.015	1.73*
		H(GEM board)	18	0.195	0.142	0.360	-0.055	-0.55
	ROS	A	663	0.155	0.123	0.124		
		H(Main board)	54	0.179	0.136	0.162	0.011	1.78*
		H(GEM board)	18	0.044	0.074	0.257	-0.049	-0.91
IPO Market	PE	A	663	17.95	15.00	7.925		
		H(Main board)	54	12.13	11.60	7.095	-3.50	-6.40***
		H(GEM board)	18	30.43	28.23	9.341	13.23	7.43***

* ** *** denote 10% 5% 1% significant levels based on two-tail critical value.

5.2 Sample Statistics

Table 3 provides the summary statistics of the sample. The pre-listing firm characteristics are group into to six categories, which are size, growth, leverage, liquidity, efficiency and profitability. Within each category, several accounting measures are examined. The value of each measure is the mean value of each variable (proxy) for each firm up to three years before its IPO. A univariate test (Wilcoxon Z-test) is used to test the median difference between H-share firms and A-share firms on each proxy of the firm's characteristics.

The first section compares the size measures for these three groups. Results show that comparing with A-share firms, the main board listed H-share firms have larger sizes both in terms of total assets and real sales during the pre-listing period, while GEM listed H-share firms have much smaller sizes based on these two measures.

The second section is related to the growth measure. The growth rate of total assets (GTA) and the growth rate of real sales (GSALES) were calculated up to two years before the listing for each firm. Sample statistics show that main board listed H-share firms have marginally higher growth rate in sales than A-share firms. Wilcoxon Z test on Gsales is 1.65, significant at the 10% level. However, when GTA measure is concerned, main board listed H-share firms do not have higher growth rates than A-share firms. However, GEM listed H-share firms have significantly high growth rates in comparison with the domestic listed firms, while z statistics are 5.80 and 4.91 for GTA and Gsales measure respectively, both are significant at the 1% level.

In the third section, two leverage measures are compared, which are the total liability / total asset (TL/TA) ratio and the total liability / total shareholders' equity (TL/TE) ratio. Both TL/TA and TL/TE measures show similar results. Main board listed H-share firms are higher leveraged than A-share firms before listing are. Both Z statistics are significant at the 1% level. While the difference in leverage between GEM Board listed H-share firms and A-share listed

firms is only marginal. GEM board listed H-share firms even have a lower TWTA ratio than A-share firms do. Z statistics is significant at the 10% level.

The fourth section compares the liquidity measures across H-share and A-share firms. The liquidity measures used are current ratio and quick ratio. As far as main board H-share firms are concerned, they are significantly less liquid than A-share firms are. However, GEM H-share firms show a slightly higher liquidity than do A-share firms.

Three profitability measures, return on total asset (ROA), return on total shareholder equity (ROE), and return on sales (ROS), are compared in the fifth section. Main board H-share firms show statistically significant higher profitability than do A-share firms. There is no obvious difference in median profitability between the GEM H-share firms and the A-share firms.

The results in the last section show that the IPO P/E ratios of the main board listed H-share firms are significantly lower than those of the pure A-share firms. The median IPO ratio for main board H-share firms is 11.50, while it is 15 for A-share firms. However, the IPO P/E ratios of the GEM H-share firms are significantly higher than those of the pure A-share firms, and both Z statistics are significant at the 1% level.

Chapter 6: Empirical Results on Testing H1 Market Order Hypothesis & H2 IPO

Constraint Hypothesis

6.1 IPO Impacts on Market Prices and Liquidity

The market order hypothesis implicitly assumes that the market depth is low on the SHSE and the SZSE. Large IPO issues in these domestic equity markets may depress the price and trading value of the secondary market. Historical evidence shows that the Chinese primary IPO market has a strong linkage with its secondary market. Chan et al., (2001) found that China's IPOs were severely under-priced. The average under-pricing for A-share IPOs was over 178% over their sample period. Such a high IPO price discount makes China's IPO market a very profitable arena for speculative investors. Gambling in this primary market in China is almost risk-free. They also show that after adjusting for the allocation rate and the cost of money, the investors in the primary market still can earn positive returns from each issue. As a result, in China almost every IPO before 2002 is a hot issue with enormous over-subscription. Funds from all channels are pouring into the primary market when there is a new issue available for subscription on the IPO market.

In addition, the supply of capital in China's stock market is quite inelastic as in other emerging markets. In China, most of the funds subscribing for new issues come from the secondary market (Mok et al., (1998)). If the issue on the IPO primary market is large, it may divert huge amounts of capital away from the secondary market. Thus, it will have a seriously negative impact on the secondary market trading activities, and to some extent, it could hurt the performance of other stocks in the secondary market. On the other hand, the IPO pricing mechanism is well established in the Hong Kong market and the Hong Kong market is much deeper. Hence, the negative impact of IPOs on the secondary market should be less severe than that on the A-share market.

To shed some light on this issue, we compare the secondary market responses to the IPO issuing in China and Hong Kong stock exchanges. We first identify all trading days with IPOs in both SHSE and SZSE and compute the IPO proceeds for each of these days. If there are multiple IPOs on the same day, their proceeds will be summed up. Next, we compute two secondary market activity measures: VWRET, the market capitalization weighted market return on the IPO day and TURNOVER, the IPO day market turnover defined as the total market trading value divided by total market capitalization. All IPO firms are excluded in VWRET and TURNOVER calculation.²⁵ The following regression model is used to examine if Chinese domestic IPO issuing has any impact on the secondary market return and volume.

$$\text{VWRET} / \text{Market Turnover} = \alpha_i + \beta_1 \text{Ln(IPO Issuing Proceeds)} + \text{Control Variables} + \epsilon_i \quad (6.1)$$

The dependent variables in equation (6.1) are the two secondary market activity measures mentioned above. The independent variable is the natural log of inflation adjusted IPO issuing proceeds on the IPO day. If the depth of Chinese stock market is really low, then even domestic IPOs, which have a much smaller average issuing size than H-shares, may have a negative impact on secondary market return and/or turnover.

Similarly, we identify all trading days with H-share IPOs in SEHK, compute VWRET and TURNOVER for Hong Kong market in the same way²⁶ and repeat the regression (6.1) to examine Hong Kong market response to H-share IPOs. The regression results are presented in Table 5.

²⁵VWRET and TURNOVER are computed based on all firms listed on both SHSE and SZSE.

²⁶If there is Hong Kong local firm IPOs on the same day as H-share IPOs, we sum up both local firm IPO and H-share IPO proceeds together.

Table 4: IPO impacts on China and Hong Kong Stock Markets

This table reports the estimated coefficients from cross-sectional regressions of market return and turnover on IPO issuing amounts. VWRET is the market capitalization weighted market return excluding IPO firms of the IPO day; TURNOVER is the total market trading value scaled by total market capitalization, both excluding IPO firms for the IPO day. Independent variable PROCEEDS is the logarithm of IPO issuing amount on that day.

Panel A:

	A-Share Market		Hong Kong Market	
Variables	VWRET	Turnover	VWRET	Turnover
Intercept	0.0066 (0.71)	-0.0611*** (12.89)	-0.0059 (-0.38)	0.0011 (0.80)
Proceeds	-0.000074 (-0.05)	-0.0059*** (-7.09)	0.00092 (0.44)	0.00024 (1.23)
No. Obs.	819	819	53	53
Adj. R-Sq	0.0012	0.0567	0.0161	0.010

Panel B:

	A-Share Market		Hong Kong Market	
Variables	VWRET	Turnover	VWRET	Turnover
Intercept	0.0062 (0.66)	0.0088*** (3.77)	-0.0065 (-0.41)	-0.0006 (-1.04)
Proceeds	-0.000062 (-0.04)	-0.000844** (-2.18)	0.00099 (0.46)	0.000142* (1.81)
Lag VWRET	0.0164 (1.22)		0.0164 (0.17)	
Lag Turnover		0.8643*** (56.12)		0.8814*** (16.15)
No. Obs.	819	819	53	53
Adj. R-Sq	0.0006	0.8056	0.0365	0.8402

Note: *, ** and *** denote significance at the 10, 5 and 1 percent level, respectively (two-tails)

As can be seen from Panel A Table 4, the amount of IPO proceeds tends to exert a downward pressure to the A-share market return on the IPO date although the t-value is too low to claim statistical significance. However, the IPO proceed is negatively correlated with the market turnover, which is the total market trading value scaled by the total market capitalization (excluding IPO volume). The coefficient is -0.0059 with a highly significant t-value of -7.09 . This indicates that when A-share firms raise new capital from the domestic market, it has a negative impact on the trading of existing shares in the market. It is therefore conceivable that if the H-share firms were floating their shares in China instead of Hong Kong, it would produce even more significant negative impact on the domestic market as H-share firms typically raise much larger amount of IPO proceed than A-share firms do. On the other hand, H-share IPOs have no

significant impact on the Hong Kong market return as well as the turnover, indicating that Hong Kong market is much deeper than Chinese A-share market. Adding lagged dependent variables into the regressions do not affect the conclusion as shown in Panel B of Table 4. In fact, the H-share IPO proceed now has a positive and significant impact on Hong Kong's market turnover, suggesting that H-share issuing helps fostering the trading activities in Hong Kong. We have also used equal-weighted market return in place of value-weighted market return in Equation (6.1), while the results are similar and therefore are not reported to save space.

6.2 Multinomial Logit Regression on the Choice of Listing Location

In this section, a multinomial Logit regression is used to test Hypothesis 1 "Market order hypothesis: and Hypothesis 2 "IPO Constraint Hypothesis" directly. This regression also helps us to examine the *ex ante* determinants to the choice of listing locations for different Chinese listed firms. A multinomial Logit model is for data in which the response is a set of choices and is therefore measured on a nominal scale. The dependent variable "H" is a multinomial qualitative variable. The possible outcomes of this variable are: listed on the Hong Kong main board, listed on the Hong Kong GEM Board and listed on the domestic A-share market. The third group (firms listed on the domestic A-share market) is used as the comparison group. While the estimated coefficients measure the increase (decrease) in the likelihood of a firm's choice of listing on the Hong Kong market versus listing on the domestic A-share market.

Hong Kong GEM board is a start-up board, which aims to provide a channel for young, private firms to seek external financing. Though we include both Hong Kong main board and Hong Kong GEM board listed H-share firms into the analysis, we would like to highlight here that our emphasis is on the Hong Kong main board listed firms.

To maintain the market order, the CSRC would like to divert large IPOs to overseas main board markets. There are several testable implications. First, the size of a firm should be positively related to the overseas listing decision because a large firm usually issues more shares and thus exerts more downward price pressure on the domestic market. However, this may be complicated by the fact that the positive relation between the firm size and overseas listing is also consistent with other explanations such as the economies of scale, and information availability (Pagano et al., (2002) and Saudagaran (1998)). In fact, Pagano et al., (2002) show that firm size is one of the only two common factors which can explain a firm's cross-listing decision on both the U.S. and European markets. Nevertheless, our case, as mentioned earlier, differs from the previous studies in that H-shares are issued at lower PE ratio than domestic listed firms are and are persistently

traded at the heavy discount relative to the domestic market price. Although we cannot rule out the economies of scale and the information availability as possible explanations for the positive relationship between the firm size and overseas listing decision, their explanatory power is probably secondary because a firm should not have much incentive to list overseas at large discount under the normal situation. Using the natural log of inflation-adjusted prelisting total assets (TA) as a proxy for firm size, TA is expected to contribute positively to the main board H-share listing decision.

Second, we construct two additional proxies to test more directly the hypothesis that the government will let large firms list abroad to relieve the issuing pressure from the domestic market. One is the ratio of a firm's IPO issuing proceeds on a particular day over the average A-share market capitalization for the previous three months, MP1. The other proxy is the ratio of IPO issuing proceeds on a particular day over the total A-share issuing amount for that year, MP2. If we consider that the total A-share issuing amount during a particular year is roughly equal to the issuing quota of the year, then MP2 is a measure of H-share issuing amount relative to the yearly quota. All H-share and pure A-share IPO firms are included in the computation for MP1 and MP2. H-share IPO proceeds are converted into RMB in the computation. MP1 and MP2 are then our major experimental variables to test the market order hypothesis. We expect both of them to be positively related to the overseas listing decision because the larger the MP1 or MP2, the larger the negative price impact on the domestic market if these H-share firms were allowed to list there.

Following the logic of hypothesis 2, "IPO Constraint Hypothesis", firms with more urgent needs for equity capital would have more incentive to jump over the long queue and list overseas. We do not have any direct measures of the degree of hunger for equity capital across firms. However, it is reasonable that firms with lower pre-listing liquidity but higher pre-listing leverage and growth rate are hungrier for equity capital. Using the debt-equity ratio as the proxy for firm leverage (LEV), the quick ratio as the proxy for firm liquidity (LIQ), and the percentage change of

inflation-adjusted sales as a proxy for firm growth rate (Gsales), we expect that H-share listing decision should be positively related to LEV and Gsales, but negatively related to LIQ. All these accounting measures are calculated using the average value of the corresponding prelisting data up to three years before a firm's listing.

We also add other control variables into the regression specification. Return-on-Asset (ROA) is a proxy for profitability used as a control variable. Fuerst (1998) argues that highly profitable firms are more credibly communicated in the stricter regulatory regime.²⁷ SOE is a dummy variable, which takes a value of 1 if the listing firm is a former state-owned enterprise and 0 else. Hong Kong GEM board listed firms are expected to be quite different with Hong Kong main board listed firms as they are mainly high tech start-up firms, and most of them are private firms. Hence, we expect SOE to be negatively correlated to firm's Hong Kong GEM board listed decision.

"IND_j" is set as a dummy variable for industry *j* to see if some key industries supported by the government are more likely to list overseas. Bortolotti et al., (2000) find that telecommunications companies tend to seek foreign listings whereas energy companies are seldom floated abroad. While in our case, Chinese government has an industry policy to support energy, basic materials, transportation and recent technological firms to raise funds abroad.

Finally, RELPE_{*i*} is the yearly average PE ratio in Hong Kong market over that in A-share market to control for possible time specific effect due to windows of opportunities, business cycles, etc. (Ritter, 1991). Firms may decide to list abroad to take advantage of a temporarily high price for their shares abroad relative to their home market, due to either an overvaluation in the foreign market or an undervaluation in the domestic market. Hence, it is expected that RELPE will be positively correlated with firms' decision to go overseas. "YR_{*t*}" is the IPO year dummy, an alternative way to control for the time specific effect.

²⁷ The percentage profitability requirement for overseas listing is the same as that for domestic listing, i.e., ROE equals 10%. Therefore, the profitability requirement, per se, does not guarantee that H-share firms are more profitable upon listing than their domestic counterparts are.

[illegible]

Table 6: Generalized Multinomial Logit Regression: The Choice of Listing Location

This table presents the results of the cross-sectional regression on the choice of the listing location using the following multinomial Logit model:

$$H = \alpha_i + \beta_1 TA + \beta_2 MP1 + \beta_3 GSales + \beta_4 LEV + \beta_5 LIQ + \beta_6 ROA + \beta_7 SOE + \beta_8 \sum b_j IND_j + \beta_9 RELPE_i \text{ (or } \sum c_t YR_t) + \epsilon_i$$

H is the qualitative dependent variable, which has three possible outcomes: firm listed on the Hong Kong Main Board, firm listed on the Hong Kong GEM board and firm listed on the domestic A-share market. Size is proxied by the natural logarithm of the inflation adjusted total assets (TA). Growth is proxied by the growth rate of inflation adjusted net sales (GSales). Leverage measure is proxied by the total liability / total equity ratio (LEV). Quick ratio is used to proxy for the short-term liquidity of the firm (LIQ), and ROA is used to proxy for the profitability. All these measures are calculated using the average value of corresponding figure for three years before listing. SOE is a dummy variable, which takes value of 1 if the firm is a former state-owned enterprise and 0 if else. MP1 is defined as IPO issuing amount / average MKT Cap of A-share market for the previous 3 months. MP2 is defined as IPO issuing amount / total A-Share issued amount for the year. Both measures are used to proxy for the IPO issuing pressure on the domestic secondary market. RELPE takes the value of the yearly average Hong Kong market PE over the average of A-share market PE. MD and YR are industry and year dummies. All models are estimated using maximum likelihood method, and Chi square value for each estimated parameter is stated in the bracket.

Variables	Model 1		Model 2		Model 3		Model 4	
Constant	Main Board -23.12*** (38.50)	GEM 12.11** (4.41)	Main Board -23.52*** (39.03)	GEM -11.34** (4.56)	Main Board -24.85*** (43.27)	GEM 10.72* (3.11)	Main Board -25.61*** (45.45)	GEM 8.414 (2.38)
TA	1.213*** (21.64)	-1.111*** (6.86)	1.301*** (24.80)	-1.131*** (7.17)	1.363*** (25.11)	-0.711** (2.42)	1.472*** (30.37)	-0.739* (2.80)
MP1	0.503*** (18.57)	-0.374 (1.80)	0.490*** (19.30)	-0.374 (2.20)				
MP2								
GSales	0.796 (2.40)	1.007*** (7.71)	0.752 (2.17)	0.973*** (7.17)	26.99** (6.49)	-364.2** (6.28)	26.47*** (6.73)	-352.0* (5.69)
LEV	0.249* (3.19)	0.331 (2.46)	0.229* (2.72)	0.344 (2.51)	0.780* (2.95)	1.660*** (8.63)	0.721 (2.31)	1.493*** (7.83)
LIQ	-0.409 (1.17)	0.237 (1.77)	-0.276 (0.64)	0.230 (1.67)	-0.581** (2.07)	0.327 (0.32)	0.206* (1.15)	0.350 (0.24)
ROA	7.374*** (11.74)	-12.60** (4.95)	7.274*** (10.83)	-12.39** (4.73)	7.702*** (14.39)	-11.36* (3.68)	7.571*** (13.29)	-10.74* (3.31)
SOE	0.676 (0.64)	-3.335*** (6.64)	0.649 (0.57)	-3.381*** (6.70)	1.071 (1.57)	-3.580*** (8.91)	0.948 (1.21)	-3.522*** (8.31)
Material	-0.483 (1.26)	-0.652 (-1.77)	-0.417 (-1.35)	-0.648 (-1.72)	-0.368 (-0.82)	-0.365** (-2.53)	-0.414 (-1.00)	-0.372** (-2.58)
Energy	0.024 (0.04)	-0.068 (-0.32)	-0.097 (-0.18)	-0.062 (-0.29)	0.537 (0.66)	-0.177 (-0.78)	0.659 (0.91)	-0.223 (-0.95)
Transport	0.999** (2.49)	-0.342* (-2.14)	0.914** (2.50)	-0.307** (-2.81)	1.419*** (2.71)	-1.271** (-2.61)	1.669*** (3.32)	-1.354*** (2.99)
Technology	2.251** (2.45)	4.443*** (5.04)	2.038** (2.38)	4.401*** (5.10)	2.438** (2.42)	4.572*** (5.15)	2.344** (2.34)	4.672*** (5.23)
RELPE	2.123*** (2.98)	0.078 (0.43)			2.378** (2.38)	0.118 (0.25)		
Year Dummies								
No. Obs	735		Included 735		735		Included 735	
Likelihood Ratio	221.93		222.05		241.10		241.09	

Note: *, **, and *** denote significance at the 10, 5 and 1 percent level, respectively (two-tails)

Regression results are reported in Table 6. In Model 1 and Model 2, MP1 is used as the proxy of issuing pressure on the domestic A-share market. Model 1 includes RELPE to control for time specific effect, while Model 2 includes year dummies to control for the time specific effect. In Model 3 and Model 4 MP2 is used as the proxy of issuing pressure on the domestic A-share market. Similarly, Model 3 employs RELPE and Model 4 employs year dummies to control for the time specific effect respectively.

First, regarding the firms' decision to list on the Hong Kong main board, regression results in Model 1 show that the coefficient of the size measure TA is 1.213 (Chi square value 21.64). The market pressure proxy MP1 has a coefficient of 0.503, which is also significant at 1% level. That means the larger the issuing amount relative to the domestic market capitalization and the larger the firm size, the more likely a firm would list in Hong Kong. This is very much consistent with our hypothesis that CSRC uses H-share listings as a means to divert large IPO issues overseas and thus, to relieve domestic issuing pressure.

Second, consistent with the urgent need of equity capital hypothesis, the coefficient of the LEV is 0.249, which is significant at the 10% level. This means the higher the prelisting debt-equity (quick) ratio, the more likely a firm would list overseas. The coefficient of Gsales (LIQ) measure is positive (negative) as expected, but they are only significant in Model 3 when MP2 and year dummies are used in the regression. These results generally show that overseas listed firms have a higher leverage and lower operation liquidity during their prelisting period. All these results suggest that firms list on foreign markets because they are severely indebted before listing; they have an urgent need for capital and attempt to avoid waiting in the long queue of domestic IPO applicants.

Third, the control variable ROA has a coefficient being 7.374 with a highly significant Chi-square value of 11.74, which is consistent with the general perception that better-performed firms are more likely to list overseas.

Last, regarding industry control variables, the transportation and technology dummies are positive and significant at the 5 percent level in Model 1. This indicates that firms in the transportation and technology industries are more likely to list overseas. All these are somewhat consistent with Chinese government's industry policy mentioned earlier. However, the dummy of energy industry does not enter significantly in either equation, suggesting firms in this industry are not favored by Chinese government for overseas listing. The relative market condition variable, RELPE, is positive and significant at 5% significance level. This suggests that H-share listings and issuing amount are quite sensitive to the Hong Kong market condition relative to that in the A-share market, which is a consistent with the market timing explanations. The regression results are almost the same when RELPE is replaced by the year dummies in Model 2.

When the market pressure is proxied by "MP2" in Model 3 and 4, the results are even better. Specifically, in Model 3 "MP2", has a coefficient of 26.99 with a highly significant Chi-square value of 6.49. Now the Gsales and LIQ coefficients in the main board Listing Decision regression are statistically significant at the 10 and 5 percent level respectively. The positive (negative) impact of Gsales (LIQ) in the listing decision equation is consistent with our "IPO Constraint Hypothesis". In addition, RELPE is also positively significant at the 5 percent level in the equation. Model 4 shows similar results, however, the Gsales and LIQ are no longer significant when RELPE is replaced by year dummies.

Regarding the firm's decision to list on the Hong Kong GEM Board, regression results show that SIZE measure is significant but with a negative sign, indicating smaller firms would like to list on the Hong Kong GEM Board. Furthermore, the growth measure is positive and significant at the 1% level in all model specifications, while the profitability measure is negative and significant. Finally, the SOE dummy is significantly negative under all model specifications. These findings are consistent with the prediction that Hong Kong GEM Board listed firms are mainly small start-ups with a high growth potential, and lower

profitability. They are generally private firms from high-growth industries.²⁸ The market pressure and year specific variables RELPE are not useful in explaining the listing decision of these GEM listed H-share firms. These firms choose to list on the Hong Kong market mainly because there were no growth enterprise boards in China at the time. As a result, the foreign market is the only place they can go if they are looking for external financing.

To sum it up, the multinomial Logit regression results indicate that in terms of the firm's characteristics before listing, those firms listed on the Hong Kong main board are very different from those listed on the Hong Kong GEM Board.²⁹ Hence, there are different motivations behind these two groups' decision to list on the overseas market. As there are only 18 GEM board listed firms and they are quite different to other overseas listed firms in terms of firm size, issuing proceeds and other firm characteristics. Including these firms with other 54 Hong Kong main board listed firms into the sample may contaminate the analysis results. In the later part of the study, we only report the results based on those 54 Hong Kong main board listed firms. The results for Hong Kong GEM Board listed H-share firms are still available upon request. However, as this sample only includes limited number of observations (18 firms), the interpretation based on the regression results may need more cautions.

6.3 Robustness Test: Generalized Type II Tobit Equation Systems

In year 1996 CSRC has set the quantitative criteria that only firms with a net worth above RMB 400 million, previous year's net profit greater than RMB 60 million, and issuing proceeds more than USD 50 million are allowed to apply for an overseas listing.³⁰ Table 7

²⁸ GEM Board H-share firms are mainly from pharmaceuticals, information technology and service industries. See Appendix 1 for detail.

²⁹ We also run the regression using different variables from each category, the results are consistent with the regression results reported. We also add year dummy to the regression model to control for the year specific effect, the estimated coefficients are still consistent with the results We reported. All these regression results will be provided upon request.

³⁰ These are large by Chinese standard (see Table 2 for comparison statistics with domestic listed firms).

presents the distributions of the sample firms over different ranges of prelisting total equity, prelisting net income, and issuing proceeds, respectively.

As can be seen from the distribution, a few H-share firms did not meet these criteria. 13 out of 54 H-share firms had the net worth below RMB400 million upon their IPO; 8 out of 54 had the net income less than RMB60 million; and 6 out of 54 had issued less than US\$50 (about RMB400) million in their IPOs. These exceptions mostly occurred before 1996 when the quantitative criteria are not enforced. The later occurrences are probably due to some government industry policies. On the other hand, quite a few pure A-share firms also met the CSRC quantitative criteria for overseas listings. As shown in Table 7, 91 pure A-share firms had their net worth more than RMB400 million upon their IPOs, 136 had their prelisting net income over RMB60 million, and 156 had issuing proceeds more than RMB400 million. The distribution presented in Table 7 indicates that size effect in the Tobit model would not be solely determined by the CSRC quantitative criteria. In fact, we see from Table 7 that more than half of the H-share firms had their net worth; net income and issuing proceeds much larger than those specified by the CSRC do.

Table 7: Sample Distributions over Size, Profitability and Issuing Proceeds

Size (Total Equity)	Sample	Total No. of Sample Firms	Below 100 Million	Between 100- 400 Million	Between 400 – 1000 Million	Above 1 Billion
	A-Share Firms	663 (100%)	184 (27.75%)	387 (58.37%)	69 (10.41%)	23 (3.47%)
	H-Share Firms	54 (100%)	2 (3.70%)	11 (20.37%)	10 (18.52%)	31 (57.41%)
Profitability (Net Income)	Sample	Total No. of Sample Firms	Below 10 million	Between 10- 60 Million	Between 60- 100 Million	Above 100 Million
	A-Share Firms	663 (100%)	82 (12.37%)	445 (67.12%)	71 (10.71%)	65 (9.80%)
	H-Share Firms	54 (100%)	0 (0.00%)	8 (14.81%)	9 (16.67%)	37 (68.52%)
Issuing Proceeds	Sample	Total No. of Sample Firms	Below 100 Million	Between 100- 400 Million	Between 400- 1000 Million	Above 1 Billion
	A-Share Firms	663 (100%)	151 (22.78%)	358 (54.00%)	126 (19.80%)	28 (4.22%)
	H-Share Firms	54 (100%)	1 (1.85%)	5 (9.26%)	13 (24.07%)	35 (64.81%)

One may also argue that including pure A-share firms that do not meet the quantitative criteria set by the CSRC in the control sample could bias the estimation results. We therefore in the following Tobit regressions delete those pure A-share firms whose net worth or net income is smaller than those required by the CSRC.

Following Bortolotti et al., (2000), we employ a generalized Type II Tobit model, which allows a simultaneous analysis of two aspects: the decision to list abroad and the size of the H-share issuing.

The first equation of the model can be written as Arnemiya (1985, p.385):

$$y_1 = X_1 b_1 + e_1$$

Where y_1 represents the firms' "utility" of listing abroad and X_1 is the factors affecting the dependent variable. Given that this utility is unobserved, we can define a new observable variable that equals 1 when the utility of the firm is beyond a critical threshold y^* as the firm decides to list abroad, and 0 otherwise

$$d_1 = 1 \text{ if } y_1 > y^*,$$

$$d_1 = 0 \text{ otherwise.}$$

The variable d_1 is the dependent variable in the equation for the choice to list abroad or not and will be referred to this as the SELECTION equation.

Whenever the firm decides to list abroad, we observe the amount and percentage of stock sold on foreign markets. The second equation of the estimated model is thus:

$$y_2 = X_2 b_2 + e_2 \text{ if } d_1=1$$

$$\text{Not observed if } d_1=0$$

Where y_2 represents the proceeds / percentage of stock sold abroad and X_2 the factors affecting this variable. This equation is referred to as the REGRESSION equation. The hypothesis on the error terms from the two equations is standard and correlated.

Subsequently, there is a simultaneous analysis of two aspects. The first one (the decision to go abroad) is captured by the Logit analysis, while the second one (the amount to

sell on the foreign market) is carried out through a simple regression equation. However, the second part of the model uses the information from the first part to improve the estimation of the coefficients.³¹

Specifically, the Tobit model used here is specified as follow:

Decision (selection) equation:

$$\text{Prob } (Y_i > 0) = a_0 + a_1TA_i + a_2ROA_i + a_3LEV_i + a_4LIQ_i + a_5GSales_i + a_6MP1 \text{ (or } MP2_i) + \sum b_jIND_j + a_7RELPE_i \text{ (or } \sum c_tYR_t) + \varepsilon_i, \quad Z_i = 1 \text{ if } Y_i > 0 \quad (6-3)$$

OLS regression equation:

$$E[Y_i | Z_i = 1] = a_0 + a_1TA_i + a_2ROA_i + a_3LEV_i + a_4LIQ_i + a_5PE_i + a_6Gsals_i + \sum b_jIND_j + a_7RELPE_i \text{ (or } \sum c_tYR_t) + \varepsilon_i, \quad (6-4)$$

The selection equation is a Logit model. Y_i is defined as the natural logarithm of inflation-adjusted H-share IPO proceeds of Firm i in millions of RMB. Z_i is a binary variable that takes the value of 1 if a firm issues H-shares and the value of zero if a firm does not. The OLS equation is a truncated regression model.

The results are presented in Table 8. Several observations are obvious. First, while TA is negative but insignificant in the selection equation, it is still highly positive and significant in the issuing proceed regression in all four models. The negative TA in selection equation may be biased due to the fact that 13 H-share firms that do not meet the CSRC net worth requirement are still included in the sample. The result indicates that the size may not be a determinant for listing decision but it is still a determinant for the amount of proceeds raised. Second, the market pressure proxies MP1 and MP2 are all positive and highly significant. Recall MP2 is not significant for Model 4 in Panel A. This offers a stronger support for the market order hypothesis: even among the large firms, H-share firms would create more downward pressure for the domestic market. The other results are largely similar to those

³¹The same method has also been adopted by Bortolotti Fantini and Scarpa (2000).

presented in Table 7 except that the technology firms do not enter the regressions significantly. Therefore, the basic results are not affected by excluding the pure A-share firms, which do not meet the quantitative requirement set by the CSRC for overseas listings.

Regarding the determinants to the issuing amount, regression results show that the issuing proceeds tend to be jointly determined by prelisting sizes (TA), prelisting liquidity (LIQ), prelisting profitability (ROA) and issuing P/E ratio (PE). Specifically, larger highly liquid and highly profitable firms tend to issue more to the market. This finding is probably due to the fact that these firms are generally better managed; hence, investors have more confidence in these firms. Furthermore, the IPO issuing P/E ratio is significantly positive in the regression results, indicating that firms with a higher issuing P/E ratio will be able to raise more capital from the market. This finding is consistent with Bikhchandani et al., (1998), which predicts that a hot issue with a high market valuation will be able to attract a more investors due to investors' herding behavior.

Table 8: Generalized Type II Tobit Regression

This table reports the results of the following Generalized Type II Tobit model:

Selection Equation:

$$\text{Prob}(Y_i > 0) = a_0 + a_1 \text{TA}_i + a_2 \text{ROA}_i + a_3 \text{LEV}_i + a_4 \text{LIQ}_i + a_5 \text{GSales}_i + a_6 \text{MP1 (or MP2)}_i + \sum b_j \text{IND}_j + a_7 \text{RELPE}_i \text{ (or } \sum c_i \text{YR}_i) + \varepsilon_i$$

$$Z_i = 1 \text{ if } Y_i > 0$$

OLS Equation:

$$E[Y_i | Z_i = 1] = a_0 + a_1 \text{TA}_i + a_2 \text{ROA}_i + a_3 \text{LEV}_i + a_4 \text{LIQ}_i + a_5 \text{PE}_i + a_6 \text{Gsales}_i + \sum b_j \text{IND}_j + a_7 \text{RELPE}_i \text{ (or } \sum c_i \text{YR}_i) + \varepsilon_i$$

Dependent variable in the OLS equation is the natural logarithm of inflation-adjusted H-share issuing proceeds. Size is proxied by the natural logarithm of inflation-adjusted total assets. Growth is proxied by the growth rate of inflation-adjusted sales. Leverage measure is proxied by total liability / total equity (LEV). Quick ratio is used to proxy for liquidity (LIQ), and ROA is used to proxy for profitability of each firm. PE is the IPO issuing PE ratio. MPI is defined as IPO issuing amount / average MKT Cap of A-share market for the previous 3 months. MP2 is defined as IPO issuing amount / total A-Share issuing amount for the year. Both measures are used to proxy for the IPO issuing pressure on the domestic secondary market. RELPE takes the value of the yearly average Hong Kong market PE over the average of A-share market PE. IND and YR are industry and year dummies. All the accounting measures are computed using the average value of corresponding data for up to three years before listing. All models are estimated using maximum likelihood method. Computed t value for each estimated parameter is stated in the bracket.

Sample (Firms met the CSRC overseas listing requirements)

Variables	Model 1		Model 2		Model 3		Model 4	
	Listing Decision	H-share Proceeds	Listing Decision	H-share Proceeds	Listing Decision	H-share Proceeds	Listing Decision	H-share Proceeds
Constant	2.163 (0.78)	-4.068*** (-6.22)	1.370 (0.49)	-3.987*** (-5.67)	5.225 (1.19)	-2.559** (-2.91)	-0.553 (-0.15)	-2.894** (-3.36)
TA	-0.355 (-1.61)	0.683*** (17.36)	-0.287 (-1.45)	0.680*** (16.80)	-0.485 (-1.57)	0.615*** (12.23)	0.010 (0.04)	0.629*** (12.70)
MP1	0.391*** (4.04)				0.504*** (3.57)			
MP2			15.34*** (3.37)				12.197** (2.06)	
Gsales	0.190 (0.49)	0.260* (1.73)	0.128 (0.37)	0.243 (1.61)	0.148 (0.29)	0.239 (1.61)	0.150 (0.32)	0.224 (1.52)
LEV	0.300** (2.52)	0.006 (0.33)	0.223** (2.28)	0.005 (0.26)	0.262** (2.02)	0.007 (0.33)	0.173* (1.66)	0.007 (0.36)
LIQ	-0.679** (-2.41)	0.204** (2.04)	-0.630*** (-2.65)	0.219*** (2.05)	-0.558* (-1.67)	0.126 (1.19)	-0.481* (-1.92)	0.124 (1.06)
ROA	1.173 (0.84)	2.740*** (5.93)	0.954 (0.75)	2.669*** (5.67)	1.199 (0.71)	2.277*** (4.56)	2.106 (1.33)	2.326*** (4.50)
PE		0.022*** (2.39)		0.024*** (2.66)		0.025** (2.29)		0.029** (2.81)
Material	-0.454 (-0.98)	0.264* (1.87)	-0.460 (-1.18)	0.267* (1.87)	-0.142 (-0.27)	0.327** (2.24)	-0.255 (-0.57)	0.357** (2.47)
Energy	0.626 (0.83)	0.044 (0.21)	0.434 (0.64)	0.017 (0.08)	2.200 (1.38)	-0.239 (-1.02)	0.726 (0.81)	-0.229 (-1.01)
Transport	1.223** (2.14)	0.350** (2.18)	1.065** (2.17)	0.322* (1.94)	1.360 (1.57)	0.255 (1.59)	1.680** (2.15)	0.261 (1.53)
Technology	0.567 (1.50)	0.403 (0.93)	0.801 (1.57)	0.349 (0.74)	0.602 (1.51)	0.642 (1.30)	0.668 (1.53)	0.401 (0.65)
RELPE	2.412 (1.46)	0.153 (0.33)	3.623** (2.61)	0.113 (0.23)				
Year Dummies					Included		Included	
Sigma		0.370*** (10.00)		0.375*** (8.94)		0.357*** (7.43)		0.339*** (8.81)
Rho	-0.355 (-1.44)		-0.346 (-1.01)		-0.518* (-1.67)		-0.297 (-0.67)	
Likelihood	-59.55		-72.40		-47.29		-59.53	
No. Obs	114		114		114		114	

Note: *, ** and *** denote significance at the 10, 5 and 1 percent level, respectively (two-tails)

Chapter 7: Empirical Results on Testing H3 Governance Hypothesis

If the H-share listing is driven by the motive of SOE reform, then H-share firms should exhibit better governance structure and accounting practices than their domestic counterparts do after the listing, and this is what we examine in this section. The overseas listed H-share firms are therefore compared with domestic listed A-share firms in terms of a set of corporate governance measures.

Since almost all Chinese firms went through restructuring before they listed in domestic or foreign markets and since all H-share firms had their IPOs in Hong Kong, we have no data on their governance structure before listing. However, most of the firms listed on China and Hong Kong are former SOEs, the organization structure is quite different to the modern corporation. Specifically they do not have modern corporate governance mechanisms. For example, the firms are 100% owned by government, and there is no board of directors in the firms etc. Hence, it seems safe to assume that all listed SOEs had poor corporate governance and accounting practices before they were restructured for listing. Therefore, we focus on the comparison of the post-listing governance and accounting practice between H-share firms and pure A-share firms.

7.1 Corporate Governance & Earnings Management Measures

Corporate governance mainly helps to solve two types of agency problems: the one between corporate owners and managers; and the one between controlling shareholders and minority shareholders. The monitoring mechanisms performed by boards of directors are mainly designed to solve the first type of agency problem. While through study on the ownership structure, it is helpful to determine the extent of the second type of agency problem (Shleifer and Vishny (1997)).

Therefore, two sets of corporate governance measures were used. The first set of measures is related to the corporate ownership structure, which measures the likelihood that

the controlling shareholder will expropriate minority shareholders through tunneling. The second is on board structure.

For ownership concentration, we construct two variables, "PARENT" focusing on the absolute control and "SEC" looking at the relative power of the second largest shareholder versus the largest shareholder. "PARENT" is a dummy variable, which takes the value of one if there exists a control shareholder holding more than 50% outstanding shares of the firm and zero otherwise. It is also well known that tunneling by the controlling shareholder is a serious problem in Asia (Clasessens et al., (2000)), especially in China (Bai et al., (2004), Jian and Wong (2003) and Aharony et al., (2005)). The large control shareholders in China have both incentive and ability to expropriate minority shareholders. If listing overseas lead to better corporate governance, then we should observe fewer H-share firms with such control shareholder.³²

The proxy for the relative power of the second largest shareholder "SEC" is constructed as the ratio of the second largest shareholder's shareholding divided by the sum of the top two largest shareholders' shareholdings. La Porta et al., (2002) argue that the second largest shareholder may serve as a monitor against the expropriation by the controlling shareholder. On the other hand, it is also possible that the second largest shareholder will collude with the controlling shareholder to expropriate the minority shareholders. However, Aharony et al., (2005) find that the presence of larger shareholders besides the controlling one enhances the quality of corporate governance in China. Therefore, we expect that the higher the SEC, the better the corporate governance because the second largest shareholder may better check and balance the largest (usually the controlling)

³² The PARENT includes not only SOEs and legal persons but also private firms, government agencies or asset management firms. Private control shareholders should have an incentive and capability to tunnel just like SOE and legal person control shareholders. Government agencies and asset management firms may have less incentive to tunnel, but their negative impact on firm performances are well documented (Fan, Wong, and Zhang (2005)).

shareholder. The more shares they hold, the higher the incentives and more the power they have in monitoring the management (Shleifer and Vishny (1986)).

For board structure, the following proxies are constructed: the duality of chairman and CEO ("DUAL"), the board size ("BDSIZE"), and the proportion of non-executive directors on the board ("PNEXE"). Jensen (1993) suggests that agency problems are more serious when the CEO is also the chairman of the board and large board size is less effective in governance control. Using Tobin's Q as an approximation of market valuation, Yermack (1996) finds that firms are valued higher when the CEO and chairman positions are separated. Furthermore, there is an inverse association between board size and firm value, a relationship also found in Eisenberg et al.'s (1998) sample of small and midsize Finnish firms. However, larger board size may yield benefits by creating a network with the external environment and securing a broader resource base (Pfeffer (1973), Pearce and Zahra (1992)). This may be important for Chinese firms cross-listed in Hong Kong. Furthermore, Xu and Wang (1999) point out that Chinese firms have characteristics of the state being over-represented on the board and in their sample, over 50% of board positions are filled by government officials but less than 1% of the positions are filled by public individual. Yet, the listing requirement of SEHK requires Chinese firms listed in Hong Kong to have Hong Kong investors sitting on the board, which tends to increase the board size. As for non-executive directors, it is a general view in favor of more independent, outside directors on the board (Higgs Report (1992)).

The data used to construct the above five corporate governance variables are mainly from the China Corporate Governance Research Database, which provides shareholding and board structure data for the period 1999-2003 for all listed firms in China. The relevant H-share data are obtained from their annual reports (available on Hong Kong Exchange website). For firms listed before 1999, we compute the five-year (1999-2003) average as the proxy for each of the five corporate governance variables. For firms listed in 1999, 2000,

2001 and 2002, we use four-year, three-year, two-year and one-year average, respectively. The final sample consists of 967 non-finance pure A-share firms with available data and 53 H-share firms.

We also look at earnings management as another set of measures on accounting and governance quality. Presumably, firms of better governance manage their earnings less. Klein (2002) finds a negative relation between board independence and abnormal accruals. Beekes, Pope and Young (2002) examine the links between the boards of directors and accounting conservatism using a sample of UK firms. They find that firms with a higher proportion of outside board members are more likely to recognize bad news in earnings on a timely basis and display greater reporting conservatism with regard to the recognition of good news. Lobo and Zhou (2001) observe a negative relationship between corporate disclosure and earnings management. On the other hand, Leuz, Nanda and Wysocki (2003) suggest an endogenous link between corporate governance and the quality of reported earnings. The idea is that earnings management is partly driven by private control benefits. If such benefits are reduced, insiders have less incentive to manage earnings. From examining the differences in earnings management across 31 countries, they find supporting evidence.

Following Leuz, Nanda and Wysocki (2003), for each firm we construct four measures on earnings management (EM). All relevant financial statement data of listed pure A-share firms are obtained from CSMAR and annual reports of H-share firms. The longest time span used in estimating our EM measures is from 1993 to 2003 and the shortest from 2000-2003. Since we need at least three data points to compute for the standard deviation of a particular variable, we have to omit all the firms listed in 2001 and thereafter. Altogether, there are 701 pure A-share firms (excluding finance firms) and 47 H-share firms with data available to compute earnings management measures.

"EM1" is the ratio of the standard deviation of a firm's yearly operating earnings over the standard deviation of the firm's yearly cash flow from operations. EM1 can capture the

degree of income smoothing. Income smoothing is one form of earnings management in which the company "smoothes" reported operating earnings by altering the accounting component of earnings, namely accruals to reduce its variability. Therefore, the less volatile is the operating earnings relative to that of the cash flow, the larger the earnings management.

Cash flow from operations is calculated indirectly by subtracting the accrual component from earnings. Following Dechow et al., (1995), the accrual component of earnings is computed as

$$\text{Accruals}_{it} = (\Delta CA_{it} - \Delta \text{Cash}_{it}) - (\Delta CL_{it} - \Delta \text{STD}_{it} - \Delta \text{TP}_{it}) - \text{Dep}_{it} \quad (7-1)$$

Where ΔCA_{it} = change in total current assets, ΔCash_{it} = change in cash/cash equivalent, ΔCL_{it} = change in total current liabilities, ΔSTD_{it} = change in short term debt included in current liabilities, ΔTP_{it} = change in income taxes payable, and Dep_{it} = depreciation and amortization expense from firm i in year t . Changes in short-term debt are excluded from accruals because they relate to financing transactions as opposed to operating activities. If a firm does not report information on taxes payable or short-term debt, then the change in both variables is assumed to be zero.

Since income smoothing is relatively common and "normal", following Leuz, Nanda and Wysocki (2003) we also look at the discretion in reported earnings. Specifically, we take the magnitude of accruals as a proxy for the extent to which a company exercises discretion in reporting earnings. We construct "EM2", which is the Spearman correlation between a firm's annual changes in accounting accruals and annual changes in operating cash flows. If a firm actively manages its earnings, the magnitude of its accruals tends to be large and the change in accruals tends to be more negatively correlated with changes in operating cash flows.

For example, firms may accelerate the reporting of future revenues or delay the reporting of current costs in order to hide poor current performance. Conversely, insiders underreport strong current performance to create reserves for the future. In either case,

accounting accruals buffer cash flow shocks and result in a negative correlation between changes in accruals and operating cash flows. A negative correlation is a natural result of accrual accounting (Dechow (1994)). However, larger magnitudes of this correlation indicate, *ceteris paribus*, smoothing of reported earnings that does not reflect a firm's underlying economic performance (Skinner and Myers (1994)).

"EM3" is the average of a firm's yearly absolute value of the accruals scaled by its absolute value of the cash flow from operations. If firms do not manage earnings, accrual amount and the cash flow from operations tend to move together and hence "EM3" will have a small value.

Lastly, "EM4" is the standard deviation of the yearly non-operating profit scaled by the total equities in the corresponding year. The components of non-operating income, such as profits from the sale of fixed assets or investments, have been shown to be tools of earnings management in the U.S. (Bartov (1993)) and other countries, including Japan (Herrmann et al., (2003)) and Singapore (Poitras et al., (2001)). Previous studies (Haw et al., (2003)) also show that firms whose ROE is between 10 and 11 percent have higher non-operating income than other firms. Chen and Yuan (2004) also show that this practice is not limited to those "borderline firms". The firms with an operating ROE (after-tax operating income / total equity) below 10 percent prior to the application also had higher non-operating income in excess of industry medians. When a firm actively manages its earnings, its non-operating profits tend to be quite volatile.

We use the following simple Logit model to test if good corporate governance and good accounting practice can help distinguish H-share firms from the pure A-share firms:

$$\begin{aligned} \text{Prob}(H_i=1) = & \alpha_0 + \beta_1 \text{PARENT}_i + \beta_2 \text{SEC}_i + \beta_3 \text{PNEXE}_i + \beta_4 \text{DUAL}_i + \beta_5 \text{BDSIZE}_i + \beta_6 \text{EM1} \\ & + \beta_7 \text{EM2} + \beta_8 \text{EM3} + \beta_9 \text{EM4} + \text{Control Variables} + \varepsilon_i \end{aligned} \quad (7.2)$$

If the observation included in the regression is from an H-share firm, H takes the value of 1, otherwise zero. All corporate governance (CG) and earnings management (EM)

variables are the same as defined above. If H-share firms have better corporate governance and less earnings management, we expect that SEC_i , $PNEXE_i$, $BDSIXE_i$, EM1 and EM2 enter the regression significantly positive while $PARENT_i$, $DUAL_i$, EM3 and EM4 enter significantly negative. The control variables include contemporaneous total assets (TA), debt-equity ratio (LEV), and industry dummies.

7.2 Empirical Results

The correlation matrix for all corporate governance and earnings management proxies are reported in Panel A of Table 9. The results show that the highest correlation coefficient is 0.5153 between PARENT and SEC and the second highest is 0.4931 between EM1 and EM2. The rest are mostly below 0.2. Hence, in the later regression, PARENT and SEC are added into different regressions to avoid the possible multicollinearity problem.

Panel B of Table 9 reports the Logit regression results without control variables. Model 1 only includes four earnings management proxies. It shows that H-share firms do associated with less earnings management. EM1 to EM4 are associated with the right sign and EM1 to EM3 are significant at the 5 percent level or better. EM4 is marginally insignificant. Model 2 and Model 3 include only corporate governance variables, PARENT and SEC are added into two regressions respectively. While PARENT is positive and significant at the 10 percent level in Model 2, SEC is positive but insignificant in Model 3. This suggests that H-share firms are more likely to have a controlling shareholder than pure A-share firms, which is not consistent with our expectation that the controlling shareholder is associated with bad corporate governance and thus should be associated less with the H-share firms. SEC is insignificant which means that check and balance from the second largest shareholder in a listed company does not help to differentiate H-share firms from the rest. DUAL is negative and insignificant in both Models 2 and 3, indicating H-share firms are not associated less with the duality of CEO and Chairman than their pure A-share counterpart.

However, both PNEXE and BDSIZE are positive and significant in Models 2 and 3, suggesting that H-share firms do have more non-executive directors in the board and the board size is larger than pure A-share firms, both of which are consistent with the expectation of better corporate governance of H-share firms. Including both CG and EM variables in the regression produces similar results as shown in Models 4 and 5. Now all four EM measures have the expected signs and all are statistically significant except EM2 in Model 5.

Panel C of Table 9 further presents the Logit regression results including CG, EM as well as control variables. Several observations are worth mentioning. First, TA is significantly positive in all the models, and LEV is mostly insignificant. It again confirms the results shown before that large firms tend to list on the overseas market. Once the firm size is controlled, H-share firms are no longer associated more with PARENT as is shown in Panel B of Table 9. Second, PNEXE enters the regression significantly at the 1 percent level with positive sign in all models, while SEC, DUAL, and BDSIZE are not significant at all. Third, while EM1 and EM2 are still positive and significant, EM3 and EM4 are not significant although still negative. Finally, including industry dummies or not does not affect the estimation results.

Table 9: Corporate Governance Hypothesis

The table reports the results of the following cross-sectional Logit regression

$$\text{Prob}(H_i = 1) = a_0 + a_1 \text{PARENT}_i + a_2 \text{SEC}_i + a_3 \text{PNEXE}_i + a_4 \text{DUAL}_i + a_5 \text{BDSIZE}_i + a_6 \text{EM1} + a_7 \text{EM2} + a_8 \text{EM3} + a_9 \text{EM4} + \text{Control Variables} + \varepsilon_i$$

H_{it} takes the value of 1 if the observation in the regression is an H-share firm and zero otherwise. PARENT is a dummy variable, which takes the value 1 if the largest shareholder is another company holding more than 50% of the total share outstanding of the company. SEC is defined as the number of shares held by the second largest shareholder as a percentage of the top two largest shareholders. PNEXE is the number of non-executive directors to the total number of directors in the board. DUAL is a dummy variable that takes the value of 1 if the company's CEO is also the chairperson of the board and 0 otherwise. BSIZE is the total number of directors on the board. EM1 is the ratio of the firm-level standard deviation of yearly operating earnings and yearly operating cash flow (both scaled by the lagged total assets). EM2 is the Spearman correlation between changes in accounting accruals and changes in operating cash flows (both scaled by lagged total assets). EM3 is the ratio of the absolute value of firms' accruals and the absolute value of firms' cash flow from operations, and EM4 is the standard deviation of firm's non-operating profit scaled by firms' total equity. Logarithm of total asset (TA), Debt-Equity ratio (LEV), and industry dummies are included as control variables. t-statistics are in parentheses. Note: *, **, and *** denote significance at the 10, 5 and 1 percent level, respectively (two-tails).

Panel A: Correlation Coefficient Matrix of Regressors

[illegible]

Panel B: Regressions without Control Variables

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	-1.190* (-1.81)	-7.475*** (-8.05)	-7.992*** (-6.55)	-12.57*** (-4.30)	-11.83*** (-3.43)
PARENT		0.632* (1.70)		1.843** (2.28)	
SEC			1.545 (0.39)		-1.731 (-0.16)
PNEXE		16.97*** (10.22)	16.75*** (8.92)	39.33*** (6.21)	46.18*** (5.21)
DUAL		-0.533 (-1.08)	-0.681 (-1.14)	-0.662 (-0.49)	-0.585 (-0.37)
BDSIZE		0.144* (1.81)	0.193* (1.91)	0.476*** (2.62)	0.402* (1.68)
EM1	1.272*** (4.10)			2.061*** (4.17)	2.269*** (3.43)
EM2	1.675*** (2.89)			2.116* (1.79)	1.749 (1.39)
EM3	-0.351** (-2.18)			-0.978*** (-3.29)	-1.459** (-2.47)
EM4	-5.978 (-1.55)			-23.88** (-2.30)	-24.79** (-2.00)
No. Obs	718	718	718	718	650
Log Likelihood	-149.05	-120.67	-89.81	-30.70	-22.93

Panel C: Regressions with Control Variables

Variables	Model 1	Model 2	Model 3	Model 4
Intercept	-59.74*** (-4.06)	-73.73*** (-3.21)	-53.76*** (-3.43)	-73.82*** (-2.78)
PARENT	0.932 (0.90)	2.092 (1.44)		
SEC			0.407 (-0.03)	3.204 (0.28)
PNEXE	39.10*** (4.50)	44.40*** (3.65)	37.933*** (3.95)	48.89*** (3.34)
DUAL	-0.819 (-0.49)	-1.229 (-0.68)	-0.721 (-0.37)	-0.768 (-0.38)
BDSIZE	0.323 (1.30)	0.329 (1.00)	0.247 (0.81)	0.125 (0.35)
EM1	2.028*** (2.85)	2.565*** (2.58)	1.852** (2.16)	2.823** (2.26)
EM2	3.127*** (2.22)	3.346* (1.88)	2.278* (1.79)	2.836* (1.77)
EM3	-0.480 (-0.93)	-0.967 (-1.44)	-0.678 (-0.84)	-1.382 (-1.35)
	-14.917 (-1.17)	-22.923 (-1.38)	-15.24 (-1.06)	-26.61 (-1.45)
	2.478*** (3.50)	3.016*** (2.85)	2.189*** (2.90)	3.128** (2.48)
	-9.511* (-1.90)	-5.269 (-1.05)	-6.441 (-1.16)	-5.048 (-0.89)
		-3.027 (-1.64)		-3.715* (-1.66)
		-0.830 (-0.05)		0.738 (0.03)
		3.348** (2.19)		2.114** (2.35)
		6.540 (1.51)		11.231* (1.74)
No. Obs	718	718	718	718
Log Likelihood	-18.43	-15.93	-15.49	-13.11

Overall, the Logit results do provide rather strong support to the hypothesis that H-share firms manage earnings less than the pure A-share firms do after listing. This is consistent with Aharony, Lee and Wong's (2000) finding that H-share firms engage in less earnings management than domestically listed B-share firms do. The results also support the hypothesis that H-share firms have better corporate governance than their pure A-share counterparts do, especially in terms of having more non-executive directors.

Chapter 8: Empirical Results on Testing H4 Bonding Hypothesis

8.1 Bonding Hypothesis and Testable Implications

The bonding hypothesis (Stulz (1999), Coffee (1999, 2002), Doidge, Karolyi, and Stulz (2004)) tries to explain the cross-listing phenomenon from the perspectives of agency problem and corporate governance. Foreign firms listed in the U.S. market are subject to more stringent listing requirements, which enable investors to monitor the management better through increased disclosure requirements and to have better protections from stronger legal systems. As bonding is costly to controlling shareholders for not being able to expropriate rents from the firms, cross-listing firms self-selectively binding themselves to more stringent listing and governance rules essentially signal to investors that they are either firms of less agency problems and better governance structure or firms willing to reduce agency problems and improve governance structure. As such, these cross-listed firms might earn a "cross-listing premium" in the form of higher firm valuation relative to their domestic peers, which is empirically demonstrated in the study of Doidge et al., (2004) on non-U.S. firms listed in the U.S. Nenova (2003), Dyck and Zingales (2004), and Doidge (2004) further demonstrate that cross-listing in the U.S. improves the protection of minority shareholders and decreases the private benefits of major shareholders in various kinds.

From the previous analysis, the empirical evidence shows that H-share firms tend to have a better director monitoring mechanism and their financial reports are more reliable when compared with those of domestic listed firms. Therefore, for those cross-listed AH share firms if they successfully signaled their better investor protection images to the domestic investors by listing shares on the overseas market, their domestic shares should enjoy higher market valuations as compared with purely domestic listed peers. In addition, these expected benefits associated with their domestic traded shares could be one motivation to their overseas listing decision.

A strong assertion of the bonding argument is that cross-listing firms should enjoy higher valuation, the "cross-listing premium". Doidge et al., (2004) use market-to-book ratio as the proxy for Tobin's Q to capture the premium. King and Segal (2004) also use PE multiple. However, an issue that does not exist in these studies but is critical to this study is the appropriate share price used to compute the MBR and PE figures. In normal circumstances, when a company cross lists its shares in a foreign market, the share prices in the two markets will be the same after adjusting for exchange rate and transaction costs to prevent arbitrage opportunity. For Chinese firms, the A-share, and H-share markets are segmented and the H-share prices trade at a large discount relative to their A-share counterparts, as mentioned before. Hence, there is an issue of which one, the H-share price or its corresponding A-share price, should be used for the MBR and PE computation.

A-share price is used in this study for the reason that the cross-listing firms should be compared against pure A-share companies, and thus we can see how the A-share market investors may evaluate these two groups of firms differently.

Chinese listed firms are required to provide their last year's annual reports to the CSRC by the end of April. This information will be published later in several major security newspapers and will invariably reach the small investors by June. Hence, the value for the MBR and PE measures for each stock is calculated as an average over a period from June to the next June.

8.2 Empirical Results from the Regression Analysis

The basic regression module used in testing the "Bonding Hypothesis" is hence specified as follows:

$$MBR_{i,t} / PE_{i,t} = \alpha_0 + \beta_1 H_{i,t} + \beta_2 GSales_{i,t} + \text{Control Variables}_{i,t} + \epsilon_{i,t} \quad (8-1)$$

"MBR" is the market to book ratio, computed as market value of the tradable shares divided by book value of the tradable shares. "PE" is the price to earnings ratio computed as

the average stock price divided by the earnings per year of the previous year. As said, both MBR and PE are computed using the A-share price. "H" is a dummy variable that takes the value of 1 if the firm issue shares both in the China and Hong Kong markets, and zero otherwise. If cross-listing premiums do exist, the coefficients of this dummy variable, β_1 should be significantly positive. In the PE regression, following King and Segal (2004) we only use positive PE data, as negative PE does not have any economic meaning.

Doidge et al., (2004) find that cross-listed firms from countries with poor investor protection earn higher premiums and it is especially so for firms with higher growth opportunities. Following them, "GSales" was constructed, the growth rate in inflation-adjusted sales of the previous year, as the proxy for growth opportunities. If the argument is correct, the coefficient β_2 will be significantly positive.

Similar to King and Segal (2004) and Siegel (2005), we put in other firm-level control variables. TA is the natural log of inflation-adjusted total assets (book value). LEV is the Debt-Equity ratio. EFF is the total asset turnover (Total sales over total assets). The annual data of all these control variables obtained from the CSMAR are used in the regressions. The full sample includes all pure A firms, and 27 dual-listed A-H-share firms. The regression results are presented in Table 10.

Table 10: Cross-listing Premium

The table reports the estimated coefficients from pooled regressions of the stock performance measures on company characteristics for all domestic-listed companies including pure A-share firms, and cross-listed H-share firms for the period 1994-2002. MBR is the market to book ratio, which is calculated as the market value of tradable share per share divided by the book value per share. PE is the price to earnings ratio, which is calculated as the average stock price for a particular year divided by the previous year's EPS. TA is the natural log of inflation-adjusted total assets (book value). LEV is the Debt-Equity ratio. EFF is the total asset turnover (Total sales over total assets). GSALES is the annual sales growth rate. H is a dummy variable, which takes the value of 1 if the company is cross-listed on the H-share market, and zero other wise. t-values are in parentheses.

	Panel A. MBR			Panel B. PE		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Intercept	40.78*** (32.60)	41.16*** (32.32)	49.35*** (40.97)	160.55*** (17.34)	153.73*** (16.07)	198.20*** (19.35)
TA	-1.896*** (-31.00)	-1.929*** (-30.83)	-2.341*** (-40.12)	-6.511*** (-14.38)	-6.199*** (-13.19)	-8.376*** (-16.93)
LEV	8.784*** (29.67)	9.060*** (30.07)	9.334*** (34.59)	25.64*** (10.60)	24.50*** (9.87)	27.93*** (11.50)
EFF	-0.005 (-0.04)	0.474*** (3.39)	0.577*** (4.61)	-2.992*** (-3.20)	-2.454** (-2.31)	-2.403** (-2.32)
H	1.414*** (3.90)	1.379*** (3.83)	2.250*** (6.93)	14.93*** (5.02)	15.16*** (5.06)	19.99*** (6.79)
GSALES	-0.027 (-0.32)	-0.128 (-1.51)	-0.012 (-0.16)	-2.035*** (-3.33)	-2.116*** (-3.43)	-1.579*** (-2.62)
Ind. Dummy	Included			Included		
Year Dummy	Included			Included		
No.Obs	4594	4594	4594	3467	3467	3467
Adj R-Sq	0.2590	0.2788	0.4235	0.0757	0.0823	0.1362

Note: *, ** and *** denote significance at the 10, 5 and 1 percent level, respectively.

Panel A of Table 10 shows the MBR results on the full sample including all cross-listing and non-cross-listing firms with various model specifications. In Model 1, we do a simple panel regression without industry and year dummies. The "H" dummy variable has a coefficient of 1.41 with a t-value of 3.90, which is significant at any reasonable statistical level. Such results suggest that on average, firms cross-listed in the H-share market indeed have significantly higher market-to-book ratios than the firms only listed in the A-share market.

The results are qualitatively the same in Model 2 where we add in the industry dummy and Model 3 where we add in both the industry and year dummies. Specifically, the H-dummy coefficient in Model 2 and Model 3 is 1.37 and 2.25, respectively. All the coefficients take in large t-values that are statistically significant at the 1% level.

Panel B of Table 9 shows the results on PE ratio. Since there are some extreme values in the PE ratios, we have deleted the outlying top 1% observations. The H-dummy coefficient in Model 1 where no industrial and yearly dummies are put in is 14.93 with a t-value of 5.02. Such results maintain in Models 2 and 3.

A marked difference between our results and the results in Doidge et al., (2004) lies with the growth terms. They find that cross-listed firms with growth opportunities earn particularly high premiums. Yet, we do not observe growth opportunities having any bearing on valuation. The proxy "GSales" shows no statistical significance in all three MBR regressions. Similarly, King and Segal (2004) have mixed results on the valuation and sales growth. Firms with higher sales growth enjoy higher market-to-book value but face lower PE ratio. In our study, sales growth is also negatively correlated with PE significantly in all three models. All in all, we do not observe cross-listing firms having higher sales growth and enjoying higher growth-valuation relationship.

For the control variables, they all bear reasonable signs throughout the regressions. For instance, total asset, a proxy of firm size, has a negative sign, indicating that larger firms

are valued at a discount to smaller firms, consistent with the size effect documented in the literature. The financial leverage "LEV" has a positive sign, suggesting that more leverage leads to a higher valuation.

8.3 Turnover and Cross-Listing Premium

Siegel (2005) asserts that bonding works through a reputational mechanism and King and Segal(2004) search for evidence from Canadian firms cross-listed in the U.S. They argue that if Canadian firms cannot win their reputations from U.S. investors there is a question whether minority rights are respected, and their shares will not generate significant turnover in the U.S. market, indicating a failure to bond. Indeed, they find that only those Canadian firms cross-listed in the U.S. markets with high share turnover earn high valuations. Those that cannot attract high trading activities do not.

We hence construct the volume ratio "HVRatio" as a turnover measure of a cross-listed firm. We define turnover per share as the ratio of the trading volume over the total outstanding tradable shares. The HVRatio for firms cross-listed in the H-share market is the ratio of H-share turnover per share over A-share turnover per share. We then run the following regressions:

$$MBR_{i,t} / PE_{i,t} = \alpha_0 + \beta_1 H_{i,t} + \beta_2 GSales_{i,t} + \beta_3 HVRatio_{i,t} + \text{Control Variables} + \varepsilon_{it} \quad (8-2)$$

The idea is that if higher MBR and PE for cross-listed firms are purely driven by those firms whose shares can attract high trading volume, the cross-listing premiums that captured by the significance of the H-share dummy coefficient, β_1 , should go away after putting in "HVRatio".

Table 11: Cross-listing Premium controlled for Turnover

The table reports the estimated coefficients from pooled regressions of the stock performance measures on company characteristics for all domestic-listed companies including pure A-share firms, and cross-listed H-share firms for the period 1994-2002. MBR is the market to book ratio, which is calculated as the market value of tradable share per share divided by the book value per share. PE is the price to earnings ratio, which is calculated as average stock price for a particular year divided by previous year's EPS. TA is the natural log of inflation-adjusted total assets (book value). LEV is the Debt-Equity ratio. EFF is the total asset turnover (Total sales over total assets). GSALES is the annual sales growth rate. H is a dummy variable, which take the value of 1 if the company is cross-listed on the H-share market, and zero other wise. HVRATIO takes the value of the H-share trading value over A-share trading value for cross-listed H-share companies, and zero otherwise. t-values are in parentheses.

	Panel A. MBR			Panel B. PE		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Intercept	41.79*** (33.53)	42.21*** (33.27)	49.53*** (41.03)	167.00*** (17.94)	160.59*** (16.70)	201.70*** (19.71)
TA	-1.947*** (-31.95)	-1.982*** (-31.80)	-2.350*** (-40.20)	-6.828*** (-15.00)	-6.529*** (-13.82)	-8.532*** (-17.25)
LEV	8.883*** (30.28)	9.162*** (30.69)	9.358*** (34.70)	26.33*** (10.89)	25.23*** (10.17)	28.14*** (11.60)
EFF	0.018 (0.14)	0.501*** (3.62)	0.579*** (4.63)	-3.022*** (-3.25)	-2.463** (-2.32)	-2.469** (-2.39)
H	1.048** (2.49)	0.990** (2.37)	1.852*** (4.89)	6.903** (2.20)	7.140** (2.25)	11.38*** (3.66)
HVRATIO	0.466 (1.51)	0.522* (1.71)	0.419 (1.52)	9.429*** (4.53)	9.421*** (4.53)	9.516*** (4.71)
GSALES	-0.069 (-0.89)	-0.161** (-2.08)	-0.027 (-0.39)	-2.469*** (-4.25)	-2.548*** (-4.35)	-1.839*** (-3.19)
Ind. Dummy	Included			Included		
Year Dummy	Included			Included		
No. Obs	4594	4594	4594	3467	3467	3467
Adj R-Sq	0.2725	0.2924	0.4242	0.0823	0.0887	0.1408

Note: *, ** and *** denote significance at the 10, 5 and 1 percent level, respectively.

Panel A of Table 11 shows the results on MBR. In Model 1 where no industrial and yearly dummies are put in, the "H" dummy has a coefficient of 1.048 with a t-value of 2.49 while "HVRatio" has a coefficient of 0.466 with a t-value of 1.51. Hence, the cross-listing premium has only weak relationship with turnover. To put things in perspective, recall the "H" dummy coefficient in Model 1 of Table 11A being 1.414 with a t-value of 3.90. The coefficient estimate drops around 30% when putting in the turnover variable. That means, the turnover ratio can, at best, help to "explain" only 30% of the cross-listing premium earned by the firms cross-listed in the H-share market. Yet, by the fact that the "H" dummy still enters significantly into the regression, the premium is not driven only by the high-turnover stocks.

Such scenarios carry through to Model 2 where industrial dummies are put in. However, in Model 3 where both industrial and yearly dummies are put into the regression, the explanatory power of turnover on cross-listing premium diminishes. Specifically, the "H" dummy now has a coefficient of 1.85 with a much higher t-value of 4.89 than in Model 1. The explanatory power of the turnover ratio on the cross-listing premium drops to 20%.

If the cross-listing premium is measured with respect to PE ratio, the turnover ratio tends to have stronger explanatory power on firms cross-listed in the H-share market, as shown in Panel B of Table 11. Unlike in Panel A, "HVRatio" now has coefficients uniformly significant in all three-regression models with estimates ranging from 9.426 in Model 1 to 9.516 in Model 3 and t-values ranging from 4.53 in Model 1 to 4.71 in Model 3. As a result, the estimates of "H" dummy show dramatic decrease as compared with those in Table 11B. For Models 1 and 2, for instance, the "H" coefficients drop from 14.92 and 15.15, respectively in Table 10B to 6.90 and 7.14, respectively in Table 11B. Even when we allow the PE ratio to vary across years in Model 3, the "H" coefficient still has a big drop in value from 19.98 (Table 10B) to 11.38 and the corresponding t-value drops from 6.79 to 3.66. We hence conclude that for firms cross-listed in the H-share market, the cross-listing premium in

terms of PE is partially driven by firms whose shares attract high turnover in the foreign markets.

In summary, the regression results from the market valuation measures MBR and P/E ratio are consistent with the "Bonding Hypothesis", showing that for those dual-listed AH stocks, their domestic shares are more favored by the local investors and consequently enjoy a superior secondary market valuation. Hence, although foreign listed firms cannot capitalize their better firm images on the overseas equity market, they actually benefit tremendously from the listing shares subsequently in the domestic secondary market.

Chapter 9: Empirical Results on Testing H5 Foreign Currency Hypothesis

9.1 Measures Description

Due to the existence of the foreign currency control system in China, one could argue that Chinese firms list overseas despite price discount because they want to obtain foreign currency. Although such view becomes less popular when China accumulates foreign reserve in a rapid speed in recent years, it still merits testing formally if such conjecture has ground. In this section, this hypothesis is empirically tested. Two proxies of foreign issuing activities are defined. H PROCEEDS is defined as the H-share issuing proceeds / total issuing proceeds (both A and H issues) of the month, and H ISSUES is defined as the number of H issues / total number of issues (both A and H issues) of the month.

Proceeding with the study, the monthly black market exchange rate of Chinese RMB per U.S. dollar was collected. Due, however, to problems regarding data availability, only data covering the periods of January 1993- December 1993 and June 1998 - December 2000 were actually available. DIFF Forex is defined as the difference between the black market exchange rate and the official exchange rate. The DIFF Forex measure is used as a proxy for the difference between the official rate and the market consensus valuation of the foreign currency. The spread between the black-market rate and the official rate of RMB is arguably a good measure of relative shortage of foreign capital. When foreign capital, essentially in USD, is relatively abundant in the market, the spread would be narrow, and vice versa. Therefore, if the Foreign Currency Hypothesis holds, it is predicted that there will be a positive relationship between the DIFF Forex variable and the foreign issuing activity proxies (H Proceeds and/or H Issues).

Foreign reserve balance provides an overall measure of foreign capital availability in China. If the reserve is abundant, foreign listing will be of a less important means for Chinese firms to get foreign capital. If the Chinese foreign reserve is low, then the channels from which Chinese firms could obtain foreign currency will be limited and the cost of getting the

foreign currency will be high. Furthermore, there is also a devaluation risk regarding the domestic currency. In this case, firms may consider raising foreign currency through issuing equity on a foreign bourse a more viable option. Therefore, if the Foreign Currency Hypothesis holds, it is predicted that there will be a negative relationship between the RESERVE and the foreign issuing activity proxies (H Proceeds and/or H Issues).

Lagged (up to three) values of foreign reserve are added into the regression to control for the possible time lag between the date when firms made the application for listing and the date when firms actually got listed on the stock market. Other control variables include PREMIUM, which is the monthly average A-share price premium over H-share price. If the A-share premium is high, then it is expected that firms will prefer listing in the domestic market instead of listing in the overseas market. HK_PE is the monthly average Hong Kong market PE ratio. A_PE is the monthly average Chinese domestic A-share market PE ratio. In addition, RELPE is calculated as HK_PE divided by A_PE. All these three control variables are used to measure the overseas (domestic) overall market condition when the IPO takes place. If the overseas market valuation is high, then it is expected more firms will go to overseas. Hence, PREMIUM and A_PE are expected to be negatively correlated with firms' decision to go overseas. While HK_PE and RELPE are expected to be positively correlated with firms' decision to go overseas.

The model specifications are defined as follow:

$$\text{H Proceeds / H issues} = \alpha_i + \beta_1 \text{Reserve} + \beta_{2-4} \text{Lag (reserves)} + \text{Control Variables} + \epsilon_i \quad (9-1)$$

$$\text{H Proceeds / H issues} = \alpha_i + \beta_1 \text{Diff Forex} + \text{Control Variables} + \epsilon_i \quad (9-2)$$

Table 12 presents the empirical analysis results.

Table 12: Foreign Currency Hypothesis

This table presents the regression results of the percentage of H issuing amount or the percentage of numbers of H-share issues against foreign reserve and its lag values (up to 3 lags) and currency value. "H Proceeds" is the percentage of monthly H-share issuing proceeds relative to the total proceeds issued for that month (include all H and A issuing proceeds). "H Issues" is the percentage of numbers of H-share issues relative to the total number of issues for the month (both A- and H-share issue). "Reserve" is the monthly balance of China official foreign reserve. "Diff Forex" is the difference between black Market and official RMB-USD exchange rate. Sample period is from July 1993 to Dec 2002.

Panel A: Correlation Coefficient Matrix of Regressors

Panel A presents Pearson Correlation Coefficients among different regressors used in the later regressions.

Prob > |r| under $H_0: \text{Rho}=0$

	H Issues	RESERVE	DIFF Forex	PREMIUM	HK PE	A PE	RELPE
H Proceeds	0.5933*** <.0001	-0.0045 0.9620	-0.1078 0.3888	-0.2287** 0.0168	-0.0660 0.4795	-0.0561 0.5571	0.0486 0.6111
H Issues	1.0000	-0.1270 0.1724	0.1059 0.3974	-0.2051** 0.0324	0.1672* 0.0715	-0.0793 0.4062	0.2136* 0.0237
RESERVE		1.0000	-0.8631*** <.0001	0.5281*** <.0001	0.0374 0.6848	0.0183 0.8458	-0.0428 0.6497
DIFF Forex				-0.3491*** 0.0067	0.1261 0.3092	0.2896* 0.0224	-0.0588 0.6498
PREMIUM				1.0000	-0.0395 0.6792	0.0403 0.6729	-0.1167 0.2205
HK_PE					1.0000	0.0071 0.9398	0.7237*** <.0001
A_PE						1.0000	-0.6264*** <.0001

Panel B: Regressions without Control Variables

	H Proceeds	H Issues	H Proceeds	H Issues
Intercept	0.093** (2.53)	0.388*** (5.02)	0.079 (4.85)	0.169 (3.65)
RESERVE	0.010 (0.79)	0.018 (0.67)		
Lag(1)	0.010 (0.41)	0.018 (0.34)		
Lag(2)	-0.024 (-0.96)	-0.053 (-1.02)		
Lag(3)	0.003 (0.24)	0.016 (0.55)		
DIFF Forex			-0.007 (-0.87)	0.020 (0.85)
Adj R-sq	0.036	0.034	-0.004	-0.004
No. Obs	114	114	66	66

Panel C: Regressions with Control Variables

	Model 1		Model 2	
	H Proceeds	H Issues	H Proceeds	H Issues
Intercept	0.223* (1.98)	0.252 (1.09)	0.103 (1.36)	0.147 (0.96)
RESERVE	0.005 (0.37)	0.015 (0.54)	0.005 (0.37)	0.012 (0.43)
Lag(1)	0.012 (0.49)	0.021 (0.41)	0.012 (0.49)	0.247 (0.48)
Lag(2)	-0.029 (-1.13)	-0.046 (-0.86)	-0.027 (-1.05)	-0.045 (-0.87)
Lag(3)	0.012 (0.74)	0.008 (0.24)	0.010 (0.61)	0.007 (0.22)
PREMIUM	-0.011 (-1.25)	0.003 (0.18)	-0.009 (-1.09)	0.003 (0.18)
HK_PE	0.004 (0.92)	0.019* (1.87)		
A_PE	-0.002 (-0.55)	-0.007 (-0.79)		
RELPE			0.021 (0.21)	0.431** (2.13)
Adj R-sq	0.093	0.107	0.083	0.111
No. Obs	114	114	114	114

	Model 3		Model 4	
	H Proceeds	H Issues	H Proceeds	H Issues
Intercept	0.151 (1.38)	-0.271 (-0.85)	0.167*** (2.80)	0.065 (0.37)
DIFF Forex	-0.032** (-2.59)	0.003 (0.08)	-0.031** (-2.55)	0.011 (0.32)
PREMIUM	-0.012** (-2.48)	0.003 (0.21)	-0.012*** (-2.79)	-0.0047 (-0.34)
HK_PE	0.003 (0.85)	0.022** (2.14)		
A_PE	-0.001 (-0.05)	0.004 (0.59)		
RELPE			0.056 (0.75)	0.300* (1.74)
Adj R-sq	0.115	0.091	0.128	0.041
No. Obs	66	66	66	66

Note: *, ** and *** denote significance at the 10, 5 and 1 percent level, respectively (two-tails)

9.2 Empirical Results

Panel A Table 12 presents the Person correlation coefficient matrix between the two foreign issuing activities proxies, two different currency value variables and other control variables. Several observations are evident from the matrix. First, the two foreign issuing activity variables, H Proceeds and H Issues, are highly correlated. The correlation coefficient equals to 0.5933. Second, RESERVE is highly negatively correlated with DIFF FOREX, which shows that when the foreign reserve in China is high, the difference between black market exchange rate and official exchange rate should be lower.

Third, the HK_PE and A_PE are highly correlated with RELPE, while the correlation coefficient between HK_PE and RELPE is 0.7237, and the correlation between A_PE and RELPE is -0.6264, both are significant at 1% level. Therefore, in the later regression analysis, HK_PE(A_PE) and RELPE are added into different regression models to avoid the possible multicollinearity problems.

Last, the correlation coefficients between RESERVE and H Proceeds / H Issues are -0.004 and -0.127 respectively, neither is statistically significant. The correlation coefficient between DIFF Forex and H Proceeds / H Issues is about -0.108 and 0.106 respectively, which is not statistically significant either. The existence of such low insignificant correlation coefficients seems to suggest that the Foreign Currency Hypothesis may not be useful in explaining the firms' overseas listing decision.

Panel B Table 12 presents the regression results by excluding the control variables. First, the estimated coefficients of RESERVE and their lags are all insignificant under any statistical levels. Furthermore, the estimated coefficient of DIFF FOREX is -0.007 and not significant (t value -0.87) when H Proceeds is the dependent variable. Moreover, the estimated coefficient of DIFF FOREX is 0.020 and not significant when H Issues replaces H Proceeds as the dependent variable.

Panel C Table 12 presents the regression results with control variables, the results are qualitatively the same. The estimate coefficient of RESERVE and its lags are all not significant in all the model specifications. DIFF Forex even has a significant negative coefficient when H Proceeds is the dependent variable, which is strongly inconsistent with the Foreign Currency Hypothesis.

Regarding the control variables, PREMIUM has significantly negative coefficients in Model 3 and Model 4 when H Proceeds is the dependent variable, which suggests that when the A-share price premium is low, more firms issue shares on the overseas equity market. Similarly, HK_PE is positively correlated with both two foreign issuing activity variables H Proceeds and H Issues, but it is only significant when H Issues is the dependent variable in Model 1 and Model 3. A_PE is generally negative but it is not significant in all model specifications. RELPE, similarly, is positive in all regressions but only significant when H Issue is the dependent variable. This finding is supportive to the market timing hypothesis of IPOs (Ritter 1991), which shows that when the overall overseas market condition is favorable, more firms would like to list on the overseas market.

In conclusion, the empirical findings generally do not support the Foreign Currency Hypothesis. It suggests that bypassing the domestic foreign currency control system and raising high-valued foreign currency from the overseas equity market cannot rationalize Chinese firms' overseas listing decision. However, we do find evidence that foreign listed firms tend to time their listings in the overseas stock market.

Chapter 10: The Impact of Listing on Operating Performance

10.1 Hypothesis Development

The performance change after China's large SIP (share issue privatization) has been empirically examined by Sun and Tong (2003) and Jia, Sun and Tong (2005). Major findings of their study on A-share firms (Sun and Tong 2003) are that China's SIP are effective in improving SOEs' earnings ability, real sales, and workers' productivity but are not successful in improving profit returns and leverage after privatization. Jia, Sun and Tong (2005) further examined the performance change of 46 Hong Kong listed H-share firms, by focusing on the impact of foreign ownership on China H-share firms' performance. They find the floating of shares in a mature, foreign market could benefit a privatization program. Finally, they also find improvements in firm profitability for these foreign listed firms. While these two studies have been extensively challenged on a time-series comparison of the performance change for Chinese listed firms before and after their IPOs, there is no research so far that has been done to examine the cross-sectional difference in the performance change around their listings on different markets.

However, this horizontal comparison has its merits. The test results on the governance and bonding hypothesis all indicate that overseas listed firms have a better governance structure and better investor protection. Repeated studies in the corporate governance literature show that corporate governance matters in terms of affecting firm value and performance through the various channels. For instance, Core, Holthausen and Larcker (1999) found that for firms with less effective governance structures, their CEOs receive greater compensation but their firms perform worse. Gibson (2003) found a link between CEO turnover and firm performance for over 1,200 firms in eight emerging markets, but not for the subset of firms with a large domestic shareholder. Huson, Malatesta, and Parrino (2004) found that the degree of performance improvement after CEO turnover is related to the governance structure, such as the level of institutional shareholdings, the presence of an

outsider-dominated board, and the appointment of an outsider CEO. La Porta et al., (2002) found evidence of a higher valuation of firms in countries with better protection of minority shareholders and of firms with higher cash-flow ownership by the controlling shareholders. With a sample of 398 firms from five East Asian countries during the Asian financial crisis, Mitton (2002) found significantly better stock price performance for firms with higher disclosure quality and for firms with higher outside ownership concentration. Baek, Kang, and Park (2004) found that Korean firms with better corporate governance had a smaller drop in firm value during the 1997 crisis. The results of Lemmon and Lins (2003) research suggest that insiders have greater incentives to expropriate minority shareholders during "bad" times than in "normal" times. Gompers, Ishii, and Metrick (2003) constructed a governance index based on 24 governance rules and found that firms whose shareholder had more rights enjoyed higher firm value, higher profits, and higher sales growth. However, Bebchuk, Cohen, and Ferrell(2004) found that only six of the 24 governance rules matter.

Hence, if listing on the foreign equity market could really add value to the listed firms by improving corporate governance and management, then overseas listed firms will benefit more from the listing than do their domestic peers. In the later section, empirical tests are performed to see whether these better-governed overseas listed firms really outperform the domestic listed firms in terms of operation performance. Focusing on a horizontal comparison, all the Chinese listed firms were pooled into one sample and examined to determine whether there were any systematic differences in the performance changes after listing between these two different groups of firms.

10.2 Empirical Results from the Regression Analysis

We adopt the same model specified by Paganol (2002). Each performance variable y_{it} (e.g., the logarithm of total assets of company i at time t) is modeled as depending on a fixed effect and a set of cross-listing dummies.

$$\text{Performance Measure } y_{it} = \alpha_0 + \alpha_i f_i + \beta_1 d_0^{\text{HK}} + \beta_2 d_{1-3}^{\text{HK}} + \beta_3 d_p^{\text{HK}} + \epsilon_{it} \quad (10-1)$$

where f_i denotes a company fixed effect, d_0^{HK} is a dummy intended to capture the impact of the first listing of company i in Hong Kong, d_{1-3}^{HK} is a dummy corresponding to the three years performance after listing in Hong Kong, and d_p^{HK} captures the permanent shift in the dependent variable after three years of listing. The performance change of all pure domestic listed firms is used as the benchmark in this study. To eliminate fixed effects, we take first order difference for all variables except dummies, so that the specification becomes

$$\text{Change in Performance Measure } \Delta y_{it} = \beta_1 d_0^{\text{HK}} + \beta_2 d_{1-3}^{\text{HK}} + \beta_3 d_p^{\text{HK}} + \eta_{it} \quad (10-2)$$

where $\eta_{it} = \Delta \epsilon_{it}$.

Following the literature, several performance proxies are examined in this study. Cantale (1996) and Fuerst (1998) argue that the post-listing profitability of firms' cross listing on a more demanding exchange should be better than that of companies listing or cross listing on other exchanges. Therefore, we examine the change of net income (NI), return on assets (ROA), return on equities (ROE), and return on sales (ROS) around listing between the two groups of firms.

"EFF" is used as a performance measure as Ang et al., (1999), Singh and Davidson (2003) argue and find supporting evidence that firms with considerable agency conflict will have lower asset turnover ratios relative to those having less agency conflict.

Other performance measures such as total assets, net sales, sales growth, leverage and liquidity ratio are also standard performance measures often used by previous authors (Megginson et al., (1994), Sun and Tong (2003)).

If firms listed abroad could improve their performance more as compared with domestically listed firms, the three "HK" dummy coefficients, β_{1-3} should be significant in the regressions. Regression results are reported in Table 13.

Table 13: Effect of Listing: Ex Post Performance Change on Listings in Hong Kong

This table reports estimates of the ex post effects of listing in Hong Kong. Each row in the table gives the results of an OLS regression, for a dependent variable (e.g., Total Assets). The sample includes observations from 1993 to 2002. The explanatory variables are dummies capturing the timing of the first listing in Hong Kong, which include an impact dummy (one in the year of cross listing and zero elsewhere), a three-year dummy (one in the three years after cross-listing), and a permanent effect dummy (one after the third year subsequent to cross-listing and later). We take first differences of all variables in order to eliminate fixed effects. The following dependent variables have been used in a logarithmic form: total assets, employees, issue market value, and total revenue. A constant and additional control dummies are included in non-differenced form: i.e. calendar year dummies in all regressions and industry dummies. The coefficients of these variables are not reported for brevity.

	Hong Kong Impact	Hong Kong Three Year Effect	Hong Kong Permanent Effect	R-square	No of Obs.
Total Assets	0.172*** (3.01)	-0.115*** (-3.19)	-0.131*** (-3.82)	0.2431	6377
Net Sales	0.104 (1.27)	0.039 (0.77)	-0.039 (-0.82)	0.0947	6377
Net Profit	0.308** (2.39)	-0.175** (-2.03)	0.019 (0.21)	0.0523	6377
Sales Growth	-0.048 (-0.84)	0.053 (0.70)	0.057 (0.84)	0.2645	6377
Net Profit Growth	-0.233 (-0.35)	0.145 (0.37)	0.168 (0.48)	0.0077	6377
Leverage (TL/TE)	-1.722*** (-14.99)	0.087 (1.21)	0.133* (1.94)	0.0646	6377
Current Ratio	1.232*** (6.83)	0.023 (0.21)	-0.005 (-0.05)	0.0339	6377
EFF	-0.340*** (-7.90)	0.061** (2.25)	0.057** (2.19)	0.0367	6377
ROA	-0.043*** (-4.65)	0.005 (0.78)	0.009* (1.79)	0.0120	6377
ROE	-0.100*** (-4.06)	0.019 (1.23)	0.018 (1.23)	0.0187	6377
ROS	0.061 (1.59)	-0.008 (-0.35)	0.019 (0.85)	0.0260	6377

Note: *, ** and *** denote significance at the 10, 5 and 1 percent level, respectively (two-tails).

Firstly, the results in the first row of Table 13 shows that during the listing year Hong Kong listed firms increase their assets more than domestic listed firms do, β_1 equals to 0.172 with a highly significant t value of 3.01. However, this trend does not continue after the listing year, the three-year effect and the permanent effect coefficients, β_2 and β_3 , are both significantly negative at the 1% level. This finding indicates that foreign listed firms could raise lots of capital from the overseas market during their IPOs, but these firms generally face difficulties in further undertaking external financing from the overseas capital market. While on the contrary, for domestic listed firms, though they could not raise comparable capital in the IPO market, they are able to expand their asset base later on during subsequent offerings.

Secondly, results in the second and third regression show that Hong Kong listed firms tend to increase sales and net profit more during the listing year. The estimated coefficient β_1 of Net Sales and Net Profit is 0.104 and 0.308 respectively. Though β_1 of net sales is not significant, β_1 of net profit have a significant t value of 2.39. Similarly, this trend does not continue after the listing year, and foreign listed firms even show a decrease in profit changes within three years after their listings (the temporary effect).

Thirdly, the listing location has no impact on firms' growth rates. Both Sales growth and Net Profit growth do not show significant difference between Hong Kong listed firms and domestic listed firms.

Fourthly, listing on an overseas market seems to help firms lower their leverage level and increase their liquidity level. The estimated coefficient β_1 is -1.722 for the Leverage ratios and 1.232 for the Current ratios; both are significant at the 1% level. While the coefficient of the permanent effect β_3 of TL/TE has a positive value of 0.133 and is significant at the 10% level. This could be explained by the same argument as mentioned before that H-share firms in general are difficult to raise more equity after IPOs in the overseas markets.

Fifthly, the results of the efficiency measures show an interesting pattern. The change of efficiency is lower for Hong Kong listed H-share firms during the listing year. This could attribute to the fact that during IPO year the percentage increase of asset is much larger than the percentage increase of sales for overseas listed firm. However, overseas listed firms tend to improve their efficiency after the listing year. β_2 and β_3 have positive values of 0.0061 and 0.0057 respectively, both are significant at the 5% level.

Lastly, foreign listing also has different impacts on firms' profitability. Through overseas listing, firms tend to increase their asset (equity) base much more than their domestic peers do. The increase of asset (equity) generally outpaces the increase of Net Profit of the listing year, which results in a much larger decrease of ROA and ROE during the IPO years. However, as compared with domestic listed firms, these firms tend to improve their profitability after listings. The estimated coefficients of temporary and permanent effects, β_2 and β_3 of ROA are 0.005 and 0.009 respectively, and β_3 is significant at 10% level. Similar results are found for the other two profitability measures ROE and ROS.

In conclusion, the empirical findings show that foreign listed firms generally have better operating performance changes around listing as compared with domestic listed firms. Through initial listing on the overseas market, they could increase their asset and profits more, lower their leverage and increase their liquidity more. However in the short run, their performance is inferior to that of their domestic peers as far as the change of efficiency and profitability are concerned, however, these firms tend to improve their performance both within three years and after three years time horizons.

This finding is of practical importance. Overseas listed firms are to be monitored by more stringent investment communities; their management teams are forced to focus on the longer-term development, therefore these firms may not show immediate improvements in profitability in the short-term period after their listings. However, in the long-term, empirical

evidence does indicate that they tend to become more and more competitive and generate more real economic value for their investors.

Chapter 11: Discussion and Conclusions

By examining a sample of 72 Chinese firms listed on the Stock Exchange of Hong Kong (SEHK) as H-shares and a control sample of 663 purely domestically-listed Chinese firms during the period 1993-2002, we find supporting evidence for our hypotheses which explain the puzzle why Chinese firms would like to list overseas at the big price discount. Consistent with our first market order hypothesis, we find that the Chinese domestic market as a whole responds negatively to the domestic IPO issues and H-share firms are large in terms of total assets, sales and issuing proceeds. Listing these firms overseas can help divert the supply and avoid possible price crash in the domestic market. Consistent with our second IPO Constraint hypothesis we find that H-share firms had higher pre-listing leverage and sales growth, but lower pre-listing liquidity ratio than their domestic counterparts. This indicates that H-share firms had urgent needs of capital before their listings, thus would be willing to list overseas despite issuing at the large discount. Also as a particular group, Hong Kong GEM board listed firms are mostly private, high-growth start-up firms. They choose to list on the overseas market because domestic equity markets do not provide them with the equal opportunity to apply for listing as that to the former state owned enterprises (SOEs).

Consistent with our third Governance hypothesis, we find that many H-share firms are from strategically important industries according to the classification of government industrial policy, and the corporate governance of overseas listed firms after listing is closer to the international norm comparing to A-share companies. In addition, we find supportive evidence to the bonding hypothesis that firms signal their willingness to control agency problem by voluntarily list on a well-developed overseas market and bond themselves to more stringent listing and governance regulations.

This study also discloses that H-share companies in general perform better in maintaining its competitiveness after listing especially when a longer time horizon is

considered. On the other hand, the foreign currency hypothesis (H5) that Chinese firms issue shares abroad to obtain foreign currencies is not supported by our findings.

Overall, the listing of Chinese firms on the overseas market has produced multiple effects. First, large amounts of capital have been raised for the re-structuring and growth of these large former Chinese SOEs. Because of the immature nature of the domestic equity market, these large size SIPs (Share Issuing Privatization) can only be conducted successfully in a market with a high market depth and large sophisticated institutional investors. The Hong Kong equity market provides a suitable arena for this. Second, the transition of the operation mechanism of SOEs and segregation of SOEs from government control has been promoted.

Third, foreign ownership has been brought into the firms, which helps to monitor the management and help to control the high agency problem in these firms. A number of important enterprises have successfully entered the international capital market, learning the management method, learning how to establish a modern corporate governance system, and learning how to build sound investors relationships.

Finally, in the short term, these foreign listed firms underperform the local listed firms in terms of return of capital and operating efficiency. However, these firms do improve their performance over the long term, which shows that overseas listing is beneficiary to Chinese listed firms by forcing them to look forward and focus on long-term healthy development.

The contributions of this study are fourfold. First, given the finding that the foreign traded share of China's dual-listed firms are trading at a significant discount as compared with their share traded in the domestic A-share market, it is surprising to see more and more firms continue to list on the Hong Kong and the U.S. market. This study is the first empirical study to examine why Chinese SOEs would like to list overseas. The CSRC's policy to maintain the local market order, firms' motivation to bypass local IPO constraint and firms' motivation to establish modern corporate governance system are three major reasons to explain this overseas listing tide since 1993.

Second, although many studies have been carried out to examine the extent of the success of China's large scale SIPs, none of them focused on the impacts of foreign listing on a firm's performance as compared with local listed firms. By pinpointing the fact that a high-quality corporate governance system and the better accounting quality are the major value-added to the overseas listed firms, this study has implications for policy makers as well as for firms seeking foreign listings.

Third, the existing privatization literature mainly focused on the developed market, (Megginson, Nash and Randenborgh (1994), Boubakri and Cosset (1998), D'Souza and Megginson (1999) and Megginson et al., (2000)). Due to the different institutional backgrounds and the different motivations behind Chinese firms, the extent of success on China's large scale of SIPs via overseas listing needs to be examined with care. This study enriches prior studies to the extent that if the motivations behind overseas listings are not benign, mixed effects on performance changes could be evident especially in the case of emerging markets.

Finally, the bonding hypothesis of cross listings views firms from markets of weak governance structure and legal protections cross-listed to markets of better governance system and stronger legal protections as subsuming themselves to a more stringent corporate environment. Cross-listing firms self-selectively bind themselves to tougher listing and governance rules, which essentially sends a signal to investors that they are either firms of less agency problems and better governance structure or firms willing to reduce agency problems and improve governance structure. As such, these cross-listed firms earn a "cross-listing premium". This argument is tested in the context of the Chinese firms listing in Hong Kong. Thus, this study provides a more powerful test on the bonding argument. Most if not all empirical results are on firms cross-listed in the U.S. suggesting that the thrust of the bonding argument rests on the quality difference between the home market and the foreign market, rather than on non-U.S. markets and the U.S. market. Hence, the examination of

China-listings in Hong Kong provides a non-trivial, alternative test on the argument. Empirical results are generally consistent with the bonding hypothesis. It suggests that when compared with other arguments, the bonding argument seems to be quite powerful in explaining the overseas listing decision of firms from emerging markets on a developed market.

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Appendix A: List of China's Overseas Listed Companies

Company Name	List Date	Industry	Exchange
Tsingtao Brewery	19930715	Brewers	Hong Kong Main Board
Shanghai Petrochem	19930726	Petrochemical	Hong Kong Main Board
Guangzhou Shipyard	19930806	Shipping and Ports	Hong Kong Main Board
Beiren Co.	19930806	Machinery	Hong Kong Main Board
Maanshan Iron & Steel	19931103	Steel	Hong Kong Main Board
Jiaoda High-Tech	19931207	Electronic Equipment	Hong Kong Main Board
Yizheng Chem Fibre	19940329	Petrochemical	Hong Kong Main Board
Venture Enviro Protec (Former Tianjin Bohai Chemical Industry)	19940517	Petrochemical	Hong Kong Main Board
Dongfang Electric	19940606	Machinery	Hong Kong Main Board
Louyang Glass	19940708	Building Materials	Hong Kong Main Board
Qingling Motors	19940817	Automobile	Hong Kong Main Board
China Shipping Dev.	19941111	Shipping and Ports	Hong Kong Main Board
Zhenhai Refining & Chemical	19941202	Petrochemical	Hong Kong Main Board
Chendu Telecom Cable	19941213	Telecommunication Equipment	Hong Kong Main Board
Harbin Power	19941216	Machinery	Hong Kong Main Board
Jilin Chemical	19950523	Petrochemical	Hong Kong Main Board
Northeast Machinery	19950706	Machinery	Hong Kong Main Board
Jingwei Textile	19960202	Machinery	Hong Kong Main Board
Nanjing Panda Electronics	19960502	Electronics	Hong Kong Main Board
Guangshen Railway	19960514	Rail, Road, Freight	Hong Kong Main Board
Guangdong Kelon Electrical	19960723	Electronics	Hong Kong Main Board
Anhui Expressway	19961113	Rail, Road, Freight	Hong Kong Main Board
Shangdong Xinhua Pharm.	19961231	Pharmaceuticals	Hong Kong Main Board
Eastern Airlines	19970205	Airlines + Airports	Hong Kong Main Board
Shenzhen Expressway	19970312	Rail, Road, Freight	Hong Kong Main Board
Beijing Datang Power	19970321	Electricity	Hong Kong Main Board
Beijing North Star	19970514	Real Estate Dev.	Hong Kong Main Board
Zhejiang Expressway	19970515	Rail, Road, Freight	Hong Kong Main Board
Jiangxi Copper	19970612	Other Mining (Copper)	Hong Kong Main Board
First Tractor	19970623	Automobile	Hong Kong Main Board
Beijing Yanhua	19970625	Petrochemical	Hong Kong Main Board
Jiangsu Expressway	19970627	Rail, Road, Freight	Hong Kong Main Board
Angang New Steel	19970724	Steel	Hong Kong Main Board
China Southern Airline	19970731	Airlines Airports	Hong Kong Main Board
CATIC Shenzhen	19970929	Electronic Equipment	Hong Kong Main Board
Sichuan Expressway	19971007	Rail, Road, Freight	Hong Kong Main Board
Chongqing Iron & Steel	19971017	Steel	Hong Kong Main Board
Anhui Conch	19971021	Building Materials	Hong Kong Main Board
Guangzhou Pharm	19971030	Pharmaceuticals	Hong Kong Main Board
Huaneng Power Intl.	19980121	Electricity	Hong Kong Main Board
Yanzhou Coal Mining	19980401	Other Mining (Coal)	Hong Kong Main Board
Shandong Intl. Power	19990630	Electricity	Hong Kong Main Board
Great Wall Tech.	19990805	Information Technology	Hong Kong Main Board
Shenyang Public Utility	19991216	Public Utility (Water)	Hong Kong Main Board
Beijing Cap. Intl. Airport	20000201	Airlines Airports	Hong Kong Main Board
PetroChina	20000407	Petrochemical	Hong Kong Main Board

Beijin Beida Jade Bird	20000727	Software	Hong Kong GEM Board
Shanghai Fudan Microelec.	20000804	Electronic Equipment	Hong Kong GEM Board
China Petroleum & Chm.	20001019	Petrochemical	Hong Kong Main Board
Tong Ren Tang Tech.	20001031	Pharmaceuticals	Hong Kong GEM Board
TravelSky Technology	20010207	Information Technology	Hong Kong Main Board
Chengdu Top Sci-Tech	20010330	Pharmaceuticals	Hong Kong GEM Board
Jiangsu Nandasoft	20010424	Software	Hong Kong GEM Board
Changlong Bio-pharma	20010524	Electronics	Hong Kong GEM Board
CHALCO	20011212	Non-Ferrous Material	Hong Kong Main Board
Capinfo	20011221	Pharmaceuticals	Hong Kong GEM Board
Northeast Tiger	20020228	Pharmaceuticals	Hong Kong GEM Board
Zheda Lande Scitech	20020503	Pharmaceuticals	Hong Kong GEM Board
Tianjin TEDA	20020618	Pharmaceuticals	Hong Kong GEM Board
Changchun Da Xing	20020628	Pharmaceuticals	Hong Kong GEM Board
Changmao Biochemical	20020628	Electronical Equipment	Hong Kong GEM Board
Byd Company Limited	20020731	Battery	Hong Kong Main Board
Jiaoda Withub	20020731	Media	Hong Kong GEM Board
Shanghai Fudan	20020813	Information Technology	Hong Kong GEM Board
Milkyway Image	20020826	Information Technology	Hong Kong GEM Board
Tech Company	20021007	Information Technology	Hong Kong GEM Board
Zhengzhou Gas	20021029	Energy	Hong Kong GEM Board
Yonglong	20021108	Electricity, Water	Hong Kong GEM Board
China Telecom	20021115	Telecom	Hong Kong Main Board
Meilan Airport	20021118	Airlines Airports	Hong Kong Main Board
China Oilfield	20021120	Mining	Hong Kong Main Board
CCID Consulting	20021212	Information Technology	Hong Kong GEM Board
Dongjiang Env	20030129	Textile	Hong Kong GEM Board
Sinotrans Limited	20030213	Transportation Warehousing	Hong Kong Main Board
Andel Juice	20030422	Beverage	Hong Kong GEM Board
Aluminum Corp. of China	20011211	Aluminum	NYSE ADR
Beijing Yanhua Petrochemical	19970624	Commodity Chemicals	NYSE ADR
China Eastern Airlines	19970204	Airlines	NYSE ADR
China Life Insurance	20031217	Life Insurance	NYSE ADR
China Mobile (Hong Kong)	19971022	Wireless Communications	NYSE ADR
China Petroleum & Chemical	20001018	Major Oil Companies	NYSE ADR
China Southern Airlines	19970730	Airlines	NYSE ADR
China Telecom Corporation	20021114	Fixed-line Communications	NYSE ADR
China Unicom	20000621	Wireless Communications	NYSE ADR
Guangshen Railway	19960513	Railroads	NYSE ADR
Huaneng Power International	19941006	Electric Utilities	NYSE ADR
Jilin Chemical Industrial	19950522	Commodity Chemicals	NYSE ADR
PetroChina	20000406	Secondary Oil Companies	NYSE ADR
Semiconductor Manufacturing	20040317	Semiconductors	NYSE ADR
Sinopec Shanghai Petrochemical	19930726	Secondary Oil Companies	NYSE ADR
Yanzhou Coal Mining	19980331	Coal	NYSE ADR
AsiaInfo Holdings, Inc.	20000306	Technology	NASDAQ
Xiao Xing Universal Telephone	19990219	Technology	NASDAQ

Ctrip.Com International Ltd.	20031209	Technology	NASDAQ
Linktone Ltd.	20040304	Technology	NASDAQ
Sina.com	20000413	Technology	NASDAQ
Netease.com, Inc.	20000630	Technology	NASDAQ
Sohu.com, Inc.	20000712	Technology	NASDAQ
Shanda Interactive Entertainment	20040513	Technology	NASDAQ
Tom Online Inc.	20040310	Technology	NASDAQ
Beijing Datag Power Generation	19970320	Electricity	London Stock Exchange
China Petroleum & Chemical	20001018	Chemicals - Advanced Materials	London Stock Exchange
Jiangxi Copper	19970612	Other Mineral Extractors & Mines	London Stock Exchange
Zhejiang Expressway	20000505	Other Construction	London Stock Exchange
Zhejiang Southeast Electric Power	19970923	Electricity	London Stock Exchange
Tianjin Zhong Xin Pharm Group	19970627	Pharmaceuticals	SGX Main board
China Merchants Shekou Holdings	19950724	Port and Harbor Service	SGX Main board
Hanfeng Evergreen Inc.	20040922	Industrial	Toronto Venture Exchange