Impacts of Financial Regulatory Decentralization: What Firms Went Public in China?

Abstract

The financial market development in China has been plagued by a notoriously weak legal system. However, China developed an alternative governance system based on the *de facto* regulatory decentralization. In this system, up to 2000, regional governments were responsible for selecting state-owned enterprises (SOEs) for going public. The effect of this regulatory system has been highly controversial but evidence is terribly scrawny in the literature. This paper provides evidence that regional governments tend to choose better-performing SOEs in the pre-listing stage to go public. This demonstrates that listed companies in China were on average better SOEs before initial public offerings (IPOs) and a substantial portion of stock market investment funds were channeled into potentially productive companies. The firm level data we collected for SOE performances were published when this regulatory regime did not exist, which minimizes data manipulation problem for IPO purposes.

1. Introduction

Recent cross-country studies demonstrate the central importance of formal legal institutions for financial market development. These legal institutions encompass various dimensions such as formal minority shareholder rights (La Porta et al., 1997, 1998), formal mandatory disclosure rules and their enforcement (La Porta et al., 2006), the effectiveness of legal institutions (Pistor et al.,2000), and the legacy of legal development in countries being studied (Berkowitz et al., 2003).

Transition economies including China suffer from severe enforcement failures. Thus, any mainstream wisdom of law and finance would predict that financial market development in transition economies would be inevitably retarded. However, China seems to have defied the above prediction by jump starting capital markets on the basis of rather weak formal legal institutions characterized by the absence of a functioning and effective court system, the lack of an independent judiciary system and the weak proactive law enforcement by the national regulatory authority (Allen et al., 2004; Pistor and Xu, 2005). [1]

China re-launched stock markets only in the early 1990s, which was approximately the same time as in other transition economies. However, standard measures for stock market development suggest that China has been performing better than most other transition economies both when comparing all other transition economies taken together with China and when comparing selected provinces of China with other individual transition economies with similar size. Take the probably most important aspect of financial market development – the ability of listed firms to

[1] From a standard point of view in legal studies, a financial regulator such as the China Securities Regulatory Commission (CSRC) is a law enforcement agent. Though it has punished some misbehaving listed companies through some law enforcement actions such as public censure, delisting, etc., overall it is very weak in many law enforcement aspects including delisting ailing companies etc. We thank the editors for suggesting this point.

raise funds. According to the data shown in Pistor and Xu (2005), the year 2002 ratio of market capitalization to GDP is 0.4 in China, doubling the average of this ratio in all the East European and former Soviet Union transition economies. Only Russia and Estonia are at a similar level as China. Those comparatively rich East European countries such as Hungary and Czech Republic have per capita GDP close to those of China's richer provinces such as Guangdong and Shanghai. Nonetheless, the market capitalization/GDP ratio of Hungary and Czech Republic are 0.25 and 0.28 respectively, while those of Guangdong and Shanghai amount to as high as 0.52 and 1.61 respectively.

Taking into account the fact that a substantial proportion of shares in the stock markets in transition economies are non-tradable illiquid ones owing to block shareholding in Central and Eastern Europe and state shareholding or control in China, we might discount the market capitalization by 40% in Central and Eastern Europe and 60% in China to obtain the tradable market capitalization/GDP (Pistor and Xu, 2005). China with a ratio of 0.16 still fares better than the transition economies in Central and Eastern Europe as a whole having a ratio of 0.12. Hungary and Czech have a ratio (0.15 and 0.17 respectively) that is almost the same as Guangdong does (0.16), but their ratios are still far below that of Shanghai (0.41). Even the star performers in the Central and Eastern Europe, Estonia and Russia, have tradable market capitalization/GDP ratios of 0.26 and 0.24 respectively that are far below that of Shanghai.

Next, we turn to market liquidity. The year 2002 data illustrated in Pistor and Xu (2005) demonstrate that China has the most liquid of all stock markets in transition economies with a turnover ratio of 67.6, while the average ratio of the Central and Eastern European transition economies is only 24.65. In terms of

individual countries, Hungary and Czech have the most liquid markets in the Eastern European bloc with a turnover ratio of 52.2 and 48.7 respectively, but these figures are far below the average for China and even much lower than that in Guangdong and Shanghai that have a ratio of 331.7 and 391.8 respectively.

Finally, the number of initial public offerings (IPOs) also exhibits a great disparity between China and the other transition economies. Companies in Central and Eastern Europe have only rarely used IPOs to raise capital except Poland with 47 IPOs between 1994 and 2001. By contrast, in the same period of time, there were 873 IPOs in China. Between 1998 and 2001 alone China witnessed 414 IPOs with firms raising a total of 508.6 billion RMB (or 61.6 billion US$). No other transition economy is even close (Pistor and Xu, 2005).

China's spectacular growth in stock markets on a weak legal basis poses a puzzle to the financial development literature. In our view, China has developed an alternative governance system based on the *de facto* regulatory decentralization. In this system, regional governments were responsible for screening and selecting state-owned enterprises (SOEs) for going public. The main instrument to implement a decentralized capital market regulation is the quota system deployed in stock share issuance process. The effect of the quota-based regulatory decentralization has been highly controversial. Many people criticize it as spawning rampant rent-seeking activities of China's SOEs. As a result, the majority of firms selected to go public are lemons. For instance, Mr. Cheng Siwei, the vice chairman of the National People's Congress Standing Committee, said in a forum on finance at Peking University in November, 2005 that the overall quality of China's listed companies is fairly poor. Among the around 1300 listed companies, only 30% of them, i.e., about 400 companies, are worth investing (United Morning Post, 2005). Zhu (2001) argues that

the state-administered quota system leads to the generally low quality of listed companies in China as it puts politically-connected SOEs rather than excellent SOEs onto the exchanges. Nonetheless, some other experts took a more positive view. For example, according to a report in Stock Star (www.stockstar.com), Mr. Tong Daochi, the deputy director of the listed company supervision department of the CSRC, said in 2001 that the widespread suspicion about the quality of listed companies mainly stemmed from the bear stock market and the media coverage of some sensational corporate fraud cases. In fact, the quality of China's listed companies was on average still better than that of non-listed companies, especially that of non-listed SOEs. Though the overall quality of China's listed companies is a heatedly debated topic, evidence in assessing the effect of this regulatory system is terribly scrawny in the literature. This study makes a first attempt to directly address the issue of what kinds of SOEs were selected to go public.

Du and Xu (2006) provide systematic econometric evidence to demonstrate that in the quota-based decentralized regulatory system regional governments having selected better performing firms for stock share issuance in pervious periods had been rewarded by gaining more stock issuance quotas in the later periods, and vice versa. By doing so, this regulatory system has mitigated the problems of enforcement failure.

This paper complements Du and Xu (2006) to shed light on the impact of regulatory decentralization by examining what SOEs were chosen by regional governments for IPOs. We provide evidence from twenty three provincial level regions that regional governments tend to choose better-performing SOEs under their jurisdiction in the pre-listing stage to go public. This suggests that the administrative

governance system based on regulatory decentralization did provide a reasonable financial regulation system in the absence of strong formal legal institutions.

Our results also demonstrate that the listed companies in China were on average better SOEs in each region before IPOs. In data collection process we have carefully controlled for the possible earnings management or window dressing practices of the firm managers or government officials in the pre-IPO period. The large majority of the data we collected were published before the quota system was introduced. This helps us to reduce greatly the possibility that the data were manipulated for the purpose of going public.

Our research is related to a growing literature on IPOs in China. The majority of the existing studies, among which are Chan, Wei and Wang (2004), Su and Fleisher (1998, 1999), Tian and Megginson (2007), focus on the underpricing of IPO shares and the post-listing performance of IPO shares in China. Our paper addresses a fundamental issue, which has not been addressed by the literature: how the Chinese regulatory regime chooses firms to go public and ensures a reasonably good return to investors. We identify the administrative governance system based on regulatory decentralization and regional competition as an institutional arrangement that ensures the proper operation of the equity markets in China.

However, we want to add a caveat on the effectiveness of regulatory decentralization that it works only when it is carefully implemented together with other factors. Incentives associated with a quota-based regulatory decentralization regime might not ensure successful implementations of selecting good SOEs for public listing automatically. A quota-based regulatory regime is not incentive compatible with regulating IPOs of non-state-owned firms; and it does not fit the enforcement of some important laws/rules, such as the post-IPO information

disclosure, etc. This may explain the phasing out of the quota-based regulatory regime when those problems have become critically important.

The rest of the paper is organized as follows. Section 2 gives an overview of the administrative governance of financial markets based on regulatory decentralization. Section 3 describes data and methodology. Results of the empirical analysis are displayed in Section 4. Section 5 discusses the empirical findings. Concluding remarks are contained in Section 6.

2. Decentralized Regulation of Capital Markets in China

The administrative governance of capital markets based on regulatory decentralization emerged in the Chinese capital market in response to the absence of formal law enforcement institutions. In transition economies, courts may fail in deterrence against violations due to incomplete law (Xu and Pistor, 2004). Though law incompleteness exists even in advanced market economies, transition economies including China are particularly vulnerable to it. Given the scale and scope of economic and legal reforms that are taking place concurrently, law in transition countries is bound to be highly incomplete, i.e. its meaning and application to specific cases are largely untested and the scope of liability is therefore uncertain. Moreover, the level of incompleteness of the law may exacerbate the problem of judicial corruption, as judges may more easily distort the purpose of an untested legal rule than one the meaning and application of which has long been established.

In the presence of severe deterrence failures, regulations may be introduced to address law enforcement problem (Xu and Pistor, 2004). Regulators typically combine flexible lawmaking with proactive law enforcement powers, which distinguishes them from courts. The proactive enforcement powers allow regulators to enforce laws *ex ante* by screening and monitoring companies so as to prevent actions

that can potentially cause harm. Nominally, the power to regulate capital markets rests with the China Securities Regulatory Commission (CSRC), the national capital market regulatory authority. It regulates the capital market and listed companies according to a uniform set of laws, rules and regulations.

Nonetheless, if the CSRC were the sole *de facto* regulatory body, regulators could hardly fulfil their task in a transition economy like China. To see this, let's look at the mandatory disclosure rule which is the core of financial market regulation. The efficacy of information disclosure regulation depends crucially on the quality of company-specific information. The stylized enforcement of a disclosure rule works as follows. First, the regulator requires potential stock issuers to reveal a set of standardized information. Second, the regulator would use this information to perform a "smell test" (Coffee, 1999) in order to determine whether the public issue can go forward, or whether additional information should be requested. Once the additional information is revealed, the regulator decides whether the company may or may not go forward with the issuance.

However, if the information submitted is noisy or manipulated, the smell test and the final decision are doomed to suffer a large margin of error, which results in regulatory failure. In transition economies such as China, reliable company-specific information is difficult to obtain. Financial information disclosed by state-owned enterprises may well be misleading because their accounts were created on the basis of socialist book-keeping with little relation to market principles (Bailey, 1995). The balance sheets of China's listed companies to this day have double entries: one for the value of company assets according to legal accounting principles, which may be legal, but do not present the intrinsic value of the firm and another with re-evaluation estimates, which may be closer to the actual market value, but remain guesswork in an

environment where markets for many assets remain underdeveloped (Fang, 1995). The information problem is aggravated by the absence of reliable independent sources of information or experts. In this environment, regulatory failure is likely to be severe if the whole regulatory system relies solely on the central regulatory authorities. Obviously, the CSRC does not have sufficient resources to check corporate information in detail in such a large country with substantial disparity across regions and corporations.

It is the administrative governance based on regulatory decentralization that partially substituted for formal law enforcement institutions and prevented the worst enforcement failures. Apparently, the regulatory power in China is highly centralized. As China is a unitary state, most of the regulations are enacted at the national level and officially implemented by the central regulatory agency. There is no regional regulatory body that helps enforce the regulations. However, the national regulatory authorities make use of regional competition to create a *de facto* decentralized regulatory system through which regional governments assist in implementing and enforcing national regulations by taking advantage of their strength in information acquisition. This regulatory decentralization creates a dynamic incentive scheme to encourage regional governments to cooperate with the central regulatory authorities in screening and monitoring listed companies. Clearly, it is an institutional arrangement that improves the efficacy of regulations in an economy that lacks rule of law.

Regulatory decentralization is introduced into China in the transition process. As we know, China's economic reform has been characterized by regional decentralization (Granick, 1990; Qian and Xu, 1993; Qian and Weingast, 1997). It provides incentives for regional governments to compete in reforms by linking regional government officials' career paths with regional economic performance

reflected in such indicators as GDP growth rate (Maskin, Qian and Xu, 2000; Li and Zhou, 2006). It also facilitates a regional-experiment-based reform strategy in China's economic reform (Qian, Roland and Xu, 2006).[2]

Regulatory decentralization has evolved from the existing institutions inherited from the central planning economy. First, the close ties between regional governments and SOEs have been maintained in the transition period. Regional governments orchestrated the restructuring of SOEs to become competitive market agents. Hence, regional governments have natural advantages in acquiring information from the SOEs operating in their regions. Second, similar to the case in the pre-reform period, regional governments still play a primary role in fulfilling or implementing government functions in the transition era. Thus, the evolved new regulatory regime naturally relies essentially on regional governments' assistance and cooperation in enforcing regulations.

The functioning of regulatory decentralization in China depends crucially upon the quota system. The quota system of stock issuance was introduced to the Chinese equity market in 1993. Originally, it was designed by the central government to control the size of financial markets, to maintain balance among the regions and to preserve the dominant position of state ownership in listed companies. The operation of the stock issuance quota system works as follows. The central government determines the total number of shares to be issued in the nation and then allocates stock issuance quotas to regions and ministries. Regional governments in turn allocate quotas to selected SOEs for going public through IPOs or to listed companies seeking seasoned equity offerings (SEOs). The regional governments collect information on

[2] As emphasized by Blanchard and Shleifer (2000), one essential precondition for the success of regional decentralization in China is that the central government remains strong and is able to make political appointments of regional leadership, which allows the central government to use career path concern of regional officials to motivate them to improve their performance to help fulfill the national objectives in economic development

these firms and submit it to the CSRC, the national regulatory agent. After reviewing the company information, the CSRC gives its approval to companies to issue shares in the public equity markets. In this process, regional governments negotiated the size of the quotas for their regions with the CSRC. When they had reached an agreement, the request together with information about the companies the province wanted to bring to the market was submitted to the CSRC. The CSRC decided on the allocation of quotas to different provinces and ministries on the basis of the information it had received and within the quantity constraint established by the People's Bank of China. The quota system was officially in place from 1993 to 2000. However, it actually governed financial markets up until around 2003.

The quota system promotes decentralized information collection in the regulation of financial markets. It encourages regional governments to collect and corporate insiders to reveal firm-specific information. As a matter of fact, most SOEs in China are "owned" by regional governments, i.e., regional governments bear the responsibility of exercising ownership rights of SOEs on behalf of the State. At the same time, regional SOEs provide the bulk of financial resources for regional governments. As "owners" of SOEs under their jurisdiction, regional governments are better informed than others about "their" firms and, thus, they are more capable of acquiring information about "their" firms.

As shown by Du and Xu (2006), the stock issuance quota system in China's financial markets generates such a mechanism: regions whose listed companies recommended by the regional governments perform better in the preceding years are rewarded with more stock issuance quotas in the future. Thus, it creates a dynamic incentive scheme for regional governments to select companies that would enhance the province's future access to quotas. By involving regional governments as the

owners of regional SOEs, the quota system also taps into insiders' knowledge, thereby reducing the information problem.

One important consequence of the stock issuance quota system is that it encourages regional governments to select high-quality SOEs to go public in the first place. SOEs with good *ex ante* performance before listing are more likely to perform well in the post-listing stage. By choosing better-performing SOEs in the pre-listing stage to go public, regional governments can maximize the chances of achieving good regional corporate and economic performance so as to enhance their ability in securing stock issuance quota in the future if pre-listing SOE performance has a reasonably high positive correlation with the post-listing performance. This also ensures that stock market investment funds be channelled into the potentially most productive companies. Regional governments have indisputable natural advantage in choosing promising SOEs for going public because they "own" SOEs and know well the business operations of SOEs under their jurisdiction. In this study, we plan to examine systematically whether regional governments did select SOEs with excellent pre-listing performance to go public.

3. Data and Methodology

To see how regional governments, under the quota system, selected SOEs to go public, we compare the pre-listing performance of listed companies with that of other SOEs that were candidates for listing but remain unlisted in each region. Given that China's stock market started large-scale development and expansion around the mid-1990s, we choose to examine the SOE performance in the 1980s or early 1990s, a period when the majority of SOE-turned listed companies in most regions have not

been listed and started public trading in the stock exchanges. Examining this period could tell us how SOEs were chosen for listing in different regions.

We first look for the information on SOE performance in different regions, i.e., provinces or province-level cities. A number of regions published provincial yearbooks or almanacs that contain operational performance information for large and medium-sized SOEs under the jurisdiction of each provincial government. In the 1980s and early 1990s, SOE performance was of utmost importance to the vitality of regional economic activities. Many provinces provided information on SOE performance in various ways in their provincial yearbooks or almanacs. In order to reduce the impact of the prospect of being chosen to get listed on the pre-listing SOE performance, we have tried our best to collect the earliest available information on SOE performance for each region. The number of SOEs covered in the regional yearbook or almanac varies across provinces, from less than 100 to several hundred SOEs. This disparity could be due to the cross-region variation in the number of large and medium-sized SOEs in existence. It could also be a result of the cross-region variation in the criteria of reporting SOE performance used by different regional governments. For example, Jiangsu has much more developed manufacturing industries than Jiangxi did, but Jiangsu presumably sets higher standards in choosing SOEs to be included in its provincial yearbooks so that the number of SOEs covered in Jiangsu turns out to be smaller than that in Jiangxi.

In general, we have collected two types of data regarding SOE performance: a) firm level absolute performance data, such as output value per worker, total sales per worker; b) firm level relative performance data, such as ranking of each enterprise in total sales, profits and tax contribution among large and medium-sized SOEs in the region. For instance, in the 1992 issue of Shanghai Yearbook (data for 1991), absolute

performance data for 915 large and medium-sized enterprises in Shanghai were published. Whereas in the 1992 issue of Beijing Almanac (data for 1991), relative performance data were published on the rankings of 100 large and medium-sized state enterprises. These enterprises are ranked according to the total sales revenue, total profits and taxes, and capital profits.

Table 1 lists the absolute or relative SOE performance indicators available for fifteen province-level regions, the year in which the performance data were collected, and the number of SOEs having performance information.

When the above mentioned two types of data are not available for a region, wherever possible we have collected award winning data as a substitute. The award winning data are based on those regions' regular award offering practices. This kind of data provides relative performance information in the pre-listing stage. For instance, the 1994 issue of Tianjin Yearbook published a list of excellent state-owned large and medium-sized enterprises. Among them two large SOEs were awarded the title of excellent enterprises and later they went public. Another example is the Dongfeng Automobile Manufacturer. This leading automaker in China was named as an excellent enterprise of Hubei Province in 1995, and it got listed in 1999. Table 4 provides information on the year in which the award winning data are collected.

There are concerns that regional governments and SOEs might have conducted earnings management in the financial packaging of SOEs before going public (see, for example, Aharony, Lee and Wong, 2000). According to this view, many of the companies listed in China's stock exchanges were not high-quality firms. They were converted from those SOEs that actively conducted rent-seeking to please and even bribe regional bureaucrats to obtain the privilege of getting listed. In particular, as the

CSRC sets requirements on SOE performance in the three years before listing, the pre-listing SOE performance figures could be subject to manipulation.

We address this issue by collecting the earliest available firm level data. For most regions, we have collected the firm level absolute performance data for year 1991 or earlier that are well before the quota system was introduced. This minimizes the possibility that the data were manipulated for the purpose of meeting the CSRC rules for getting publicly listed or obtaining more quotas.

To further ensure that our SOE performance data were not seriously affected by the earnings manipulation for listing purpose, we examine the cumulative number of listed companies in the period 1990-2003 for regions that we are able to collect information on the absolute or relative performance of predecessor SOEs. Taking total number of listed firms in year 2003, when quota system phased out in practice, as a benchmark, we find that for most regions their majority (over 50%) of the listed firms did not go public until 1997 or later. To see this point more clearly, we list the year in which the cumulative number of listed companies reached 50% or above and the year in which the cumulative number of listed companies having SOE predecessor performance data reached 50% or above (in parentheses) in each province or municipality: Anhui, 1999 (1998); Beijing, 1999 (1997); Fujian, 1997 (1997); Guangzhou, 1997 (1997); Hainan, 1996 (1997); Inner Mongolia/Baotou, 1998 (1997); Jiangsu, 1999 (1997); Jiangxi, 2000 (1997); Jilin/Changchun, 1999 (1997); Shaanxi, 1997 (1997); Shandong, 1998 (1998); Shanghai, 1994 (1994); Shenzhen, 1994 (1994); Sichuan and Chongqing, 1997 (1996); Xinjiang, 1999 (2001). Comparing with the pre-listing SOE performance information as shown in Table 1, we clearly see that, except Shanghai and Shenzhen, the time interval between the year in which SOE performance is collected and the year in which the majority of listed companies in the

region began trading publicly or the year in which the majority of predecessor SOE performance data are available is more than three years. Given the quota system requires three years' performance for each applicant firm our data of pre-listing firms would not be seriously affected by accounting manipulation. Although Shanghai and Shenzhen looks like exceptional cases in Table 1, given the pre-listing SOE performance information in these two cities was published in 1991 when the quota system was not introduced, the likelihood that our data are affected by deliberate earnings management or window dressing in SOEs for listing purpose is slim.

Next, we turn to the group of provinces that have the predecessor SOE award winning information. We examine the cumulative number of listed companies, the cumulative number of listed companies with manufacturing SOE predecessors, and the cumulative number of listed companies with SOE predecessors designated as key or excellent SOEs. Again, using year 2003 as a benchmark, we find that for most regions their majority (over 50%) of the listed firms did not go public until 1996 or later. The year in which the cumulative number of listed companies reached more than 50% in each region is as follows: Guangxi, 1998; Hebei, 2000; Heilongjiang, 1998; Hubei, 1997; Hunan, 2000; Liaoning, 1997; Tianjin, 1999; Yunnan, 1998. Similarly, the year in which the cumulative number of listed companies with manufacturing SOE predecessors reached more than half in each region is: Guangxi, 1996; Hebei, 2002; Heilongjiang, 1996; Hubei, 1999; Hunan, 2000; Liaoning, 1997; Tianjin, 1997; Yunnan, 1999. The year in which the cumulative number of listed companies with SOE predecessors designated as key or excellent SOEs reached over half in each region is: Guangxi, 1999; Hebei, 2002; Heilongjiang, 1999; Hubei, 1998; Hunan, 2000; Liaoning, 1997; Tianjin, 1997; Yunan, 2000. Clearly, the number of listed companies with manufacturing SOE predecessors or excellent manufacturing

SOE predecessors reached over half around the same year or in adjacent years as that for the total number of listed companies. Comparing against Table 4, we find that, except Guangxi and Hubei, all the regions or cities have a time difference of more than three years between the time of SOE information collection and the time of the majority of listed companies being traded publicly. This helps reduce the concern for earnings management in compiling the SOE performance information.

It is common that some listed firms were reorganized before they went public. To trace back the pre-listing performance, we identify the predecessor of each listed company in the regions that we have SOE performance information, and check whether those SOE predecessors were included in the list of SOEs with corporate performance information in the almanacs of their respective regions in the years before listing. Sometimes a listed company has several predecessors if it underwent a merger before went public. Under this circumstance, as long as one of the predecessors could be found in the list of SOE performance in provincial yearbooks, we use the performance information of that one predecessor in our analysis. For example, a Shanghai-based listed company, East Shanghai Heavy Machinery (stock code 600150), was listed in 1998. It was a company formed by combining the relevant units of East Shanghai Shipbuilding Factory and the Shanghai Shipbuilding Factory. As we can only find the performance information of East China Shipbuilding Factory in the Shanghai yearbook, we use the enterprise performance information of East Shanghai Shipbuilding Factory as the predecessor performance for this listed company.

Unfortunately, data are not always available for all listed companies in all provinces. This is because regional almanacs tend to cover only manufacturing firms, while a number of listed companies and their predecessors are in non-manufacturing

sectors. Or, even within manufacturing sector, the coverage of SOEs in regional almanacs is not complete.

Through an extensive search of provincial yearbooks or almanacs, we are able to collect the absolute or relative performance data on SOE performance for fifteen regions and the award winning SOE data for eight. For Guangdong province, there is no SOE performance information for the province as a whole; we only have information for Guangzhou and Shenzhen, the two major cities in Guangdong, separately. However, these two cities presumably have the largest number of SOEs in Guangdong province. Similar situation happens to Inner Mongolia and Jilin. We can only obtain city-level information from Baotou of Inner Mongolia and Changchun of Jilin province. Nonetheless, Baotou is the most important industrial base in Inner Mongolia; Changchun, as the capital city of Jilin province, is also the largest industrial hub of the province. In this sense, examining the SOE selection in these two key cities could still provide a good picture of the two provinces. We combine Sichuan province and Chongqing city together, although Chongqing has become a province-level city. The reason is that Chongqing had not become a province-level municipality until March 1997; before 1997, Chongqing was the largest industrial city in Sichuan province under the jurisdiction of Sichuan provincial government. Geographically, these fifteen regions include most of developed regions in China.

In the following, we investigate how SOE performance determines the chances of being chosen to go public. For the whole set of SOEs in each province that have absolute or relative SOE performance information in their yearbooks, we construct a binary dependent variable that takes value one if the SOE becomes a listed company ultimately and zero otherwise.

For each region we conduct logistic cross-section regressions to see how SOE performance characteristics contribute to the likelihood of being chosen to be listed. Consider a binary variable Y_i taking value one if the SOE finally got listed and zero otherwise. Suppose it follows a binomial distribution. The final probability of Y_i taking value one (p_i) is determined by a set of independent variables, i.e.,

$$p_i = \alpha_0 + \beta_1 X_i + I' \beta_2 + \varepsilon_i$$

where X_i is the absolute or relative SOE performance indicators, I is a vector of industry dummies, α_0 is a constant term, and ε_i is random error term. To control for the potential heteroscedasticity problem in the cross-sectional data analysis, we employ the heteroscedasticity-consistent robust standard errors.

Taking the whole list of SOEs in each province with absolute or relative performance information, we identify some of them as getting listed ultimately and the rest remaining non-listed. This variation is captured by the dependent variable Y_i. We are interested in knowing whether SOE performance captured by X_i casts impacts on the chances of SOEs being chosen by regional governments to go public. If regional governments truly tended to select better performing SOEs to be listed in stock exchanges, we expect the estimated coefficient of β_1 to be positive and statistically significant. In other words, better performing SOEs have larger chances of being chosen by regional governments to be listed. In addition to SOE performance, the selection of SOEs for listing could be influenced by government industrial policies. Those SOEs engaged in the key industries that fit the industrial policies may have better chances of being chosen to go public. As discussed by Aharony, Lee and Wong (2000), the State Council and the CSRC did favour SOEs in the "protected" industries such as petrochemicals, energy, and raw materials in the selection process of listing. To incorporate the potential impact of government industrial policies, we control for

industry dummy variables in some regression specifications. Given that all the data available are for the SOEs in manufacturing, we classify industries into the following categories: food; textile, knitwear, woollen, clothes; leather goods; paper, wooden goods, and printing; stationery and toys; electricity; chemical and petrochemical; pharmaceutical; rubber and plastics; construction material; metal, steel, and tools; machinery; sophisticated meters and watches; vehicles. Our primary goal is to see whether SOE performance positively affects the likelihood of SOEs having been selected to go public after taking into account the bureaucratic preference for certain industries.

We conduct this type of regression for each province or province-level municipality separately based on the following considerations. Firstly, as the central regulator allocates stock issuance quotas to each province and then each province recommends SOEs under its jurisdiction to apply for listing, the most crucial part of selection of IPO SOEs is conducted by the regional governments. Running regressions for each region separately can demonstrate whether each region exhibits similar behavioural pattern in choosing *ex ante* better performing SOEs to go public. Secondly, due to data limitation the measurement of performance indicators are not totally compatible across provinces. This makes measurement errors in performance indicators across regions larger than those across firms within a region. Finally, even the absolute or relative performance indicators are not uniform across all provinces. Pooling firms from different regions together could lead to inconsistent and incompatible performance indicators.

For regions with only award winning SOE information, because this type of information is uniformly confined to manufacturing SOEs across regions, we focus on how many listed companies with manufacturing SOEs as predecessors were award

winning SOEs in the pre-listing stage. If a province has only award winning information on SOE performance, we identify whether those predecessor SOEs are in manufacturing industries. Then we check against the enterprise award list published in the regional yearbooks or almanacs to see how large a proportion of the award winning enterprises finally went public.

4. Results

For each province or municipality having absolute or relative SOE performance information, we conduct logistic regressions to see whether *ex ante* better performing SOEs are more likely to be chosen by their regional governments to be listed in Shanghai or Shenzhen stock exchanges. Table 1 presents a summary of the sample size and the sign and statistical significance of the estimated coefficients of the performance variables in the regressions for these fifteen regions. Because each region has full discretion on the reporting of SOE performance information, the earliest year in which we can find this kind of information and what performance indicators each region adopted vary a great deal from region to region. However, it is striking that we detect consistent and statistically significant evidence that in each region those SOEs exhibiting better prior performances were more likely to be selected to go public.

Tables 2 and 3 present the detailed logistic regressions for the fifteen regions. The empirical evidence is quite consistent: SOEs with better *ex ante* performance were more likely to be chosen to go public. To illustrate the results, we examine a couple of regions. Table 2 presents the cases of Beijing and Shanghai. First, we take a look at Shanghai. Shanghai has been China's industrial and financial centre. It had an extremely large agglomeration of SOEs in the 1980s and early 1990s. We collect

information on industrial production value per worker and total sales per worker for 915 SOEs in 1991. We present different regression specifications with or without industry fixed effects. The results are highly consistent and significant that SOEs in Shanghai with higher *ex ante* efficiency were more likely to go public. According to the estimated coefficients in Column 1, each additional one million yuan of industrial production value per worker in an SOE increases the predicted log odds of its getting listed by 2.67%.

Next, we turn to Beijing. As China's capital city, the economy of Beijing had been put under strict state control in the 1980s and early 1990s. The almanac of Beijing in 1991 provides information on the ranking of SOEs in terms of total sales, profits and taxes contribution, and capital profits, where a lower number means a higher ranking. Regressions show that higher-ranked SOEs truly were more likely to go public than lower-ranked SOEs. The impact of performance ranking on the likelihood of going public is economically significant. Take the smallest estimated coefficient on the performance variable (total sales ranking) in the leftmost regression column (-0.028) as an example. An upgrading of one in total sales ranking increases the predicted log odds of getting listed by 2.8% on average.

Table 3 lists the regression analysis results for the other thirteen regions. The message is quite consistent: SOEs with better *ex ante* performance were more likely to be chosen to go public by their regional governments.

In Table 4, we give a summary of evidence on the eight province-level regions having firm level award winning data. We list the year in which the data was collected, the number of listed companies having manufacturing SOEs as their predecessors, and the number and the percentage of manufacturing SOEs that were rewarded in that year. The findings suggest that *ex ante* better performing SOEs were

more likely to be selected to be publicly listed in stock exchanges. In four out of eight provinces, namely Hebei, Heilongjiang, Hunan and Tianjin, more than half of the predecessors of listed firms were award winning SOEs. The remaining provinces, i.e., Guangxi, Hubei, Liaoning, and Yunnan, also had more than 25% of the predecessors of listed firms were award winning SOEs. Combined with the results in Tables 1-3, this draws a clear picture for us: most regions tended to select *ex ante* better performing SOEs under their jurisdiction to go public under the dynamic incentive scheme of the quota system.

One potential concern with our approach is that our analysis on SOE performance is based on a sample of large and medium-sized SOEs in each region. Typically they do not include the whole population of SOEs in the region. This may lead to the sample selection bias in the econometric analysis. Although we do not have the data on the whole population of SOEs in each region, the potential sample selection bias imposed to us due to the availability of data would not weaken but reinforce our conclusion. The reason is the following. Publishing some SOEs performance within each jurisdiction, regional yearbooks or almanacs tend to select better performing SOEs, not average representing firms. Using this potentially inflated SOE performance reports as comparison benchmarks, our finding will be strengthened if we had better data which represent the true population.

5. Discussion

The role played by the administrative governance system based on regulatory decentralization has remained a controversial issue. Many studies such as Tian and Megginson (2007) regard the stock issuance quota system simply as a regulatory failure. It is viewed as a licensing mechanism that promotes rent-seeking activities. The enterprises aimed at going public must devote resources to competing for the

quota allocation. In this process, SOEs often conduct financial packaging. They carve out selected profitable business units for public offerings. The unprofitable units are either retained by the original SOEs or absorbed by the provincial governments. SOEs need to restructure their accounting system and convert their organization form into a limited liability corporation. Because earnings performance is a stated criterion for selecting IPO candidates, SOE managers attempt to conduct earnings management to boost their firms' chances of being ultimately chosen for public listing. The provincial or municipal governments might also encourage SOE managers to conduct earnings management in the hope of obtaining as high an offering price as possible (Aharony, Lee and Wong, 2000).

We certainly admit that the quota-based regulatory decentralization has some deficiencies as stated above. The question is that all these studies take the first best scenario as the benchmark in assessing the merits and demerits of the quota system. In the presence of strong rule of law and adequate legal institutions, it is of course ideal to minimize the role played by governments in the equity markets. However, the equity market development in China started on a rather weak legal basis. In the absence of formal legal institutions, the regulatory decentralization based on the quota system could avoid the tragedy of disorganization and disorder and support the development of equity markets. In this sense, it is a second best institutional arrangement in the face of various institutional constraints. Our study shows that regional governments truly push those SOEs with *ex ante* better performance to go public. Similarly, the pre-listing SOE restructuring to carve out profitable units for listing also demonstrates that enterprises and governments try to bring quality SOEs onto the publicly traded equity market. Though earnings management is a prevalent practice among listed companies, this mainly reflects the generally uncompetitive

earnings performance of the pre-listing SOEs. It does not contradict the fact that the predecessors of the listed companies were relatively good SOEs in the first place. Without the quota system, there could be many worse performing SOEs as candidates for IPOs. Then the earnings management could be much more severe.

It is natural to wonder that there might be alternative explanations of the results we have obtained. That is, even if regulatory decentralization was not effective, the same empirical phenomena might still exist for other alternative reasons. Here we list some alternative explanations and discuss whether they can explain our findings well. [3]

Firstly, the rapid development of capital markets in China in the absence of formal legal institutions could be the result of a high domestic savings rate and hence abundant availability of capital. When capital supply remains high and share prices are acceptable, firms are more likely to use equity markets to raise external finance. In our opinion, high savings rate cannot ensure that equity markets would develop. If there is no reasonable rate of return, outside investors would not invest in equity markets simply because they would have no confidence in putting money into listed companies. We argue that regulatory decentralization can provide a scheme to improve the quality of listed companies and thus the return to investors; this helps ensure that investors have sufficient confidence in stock markets to make investments.

Secondly, China could successfully jump start its capital markets because of the high overall level of trust in public institutions, which is equally reflected in a high ratio of bank deposits to GDP despite weaknesses in creditor protection. We do not think that this is a convincing explanation. Stock markets drastically differ from banks. Bank deposits are the most basic form of savings in almost every country.

[3] We thank one referee for suggesting these potential alternative explanations.

Explicit and/or implicit deposit guarantees are widespread around countries. These schemes ensure that bank deposits are generally quite safe. However, stock markets are different. Governments usually have no ability or prior commitment to support equity market prices. Investment risks are clearly much higher in equity markets than in bank deposits. In this scenario, the development of equity market cannot depend mainly on people's expectation of government support. On the contrary, it requires a more adequate regulation system, and we identify this system as the administrative governance system based on regulatory decentralization.

Thirdly, a high level of top-down discipline within the public sector allowing the centre to replace regional leaders easily could be sufficient for capital market development. Regulatory decentralization could be in fact secondary, since the level of control allowed the centre to enforce regulatory standards even without regional competition overcoming information deficiencies. In our view, discipline stemming from the power of the centre to replace provincial leaders truly helps ensure the regulatory decentralization to work smoothly. However, discipline itself cannot necessarily solve the problem of information collection. Discipline needs some specific mechanism to realize the information collection and revelation objective. We need a system that motivates the provincial governments to collect information on SOEs and select better-performing SOEs to go public. This process cannot be guaranteed by discipline itself. The quota-based regulatory decentralization provides a concrete mechanism to carry out information collection and revelation. Discipline provides a way to ensure this system to work properly and smoothly as the centre can punish the poorly performing provincial bureaucrats.

Finally, one potential explanation of China's capital market development is bureaucrats could obtain high net private benefits from listing quality SOEs in the

market. Bureaucrats could obtain sufficiently high private benefits from a successful listing because of rising share values and incur high perceived private costs to abusing the capital markets for private gains. This could ensure provincial officials to select good SOEs for public listing even without a quota system based on regional competition. In our opinion, private benefits and costs cannot automatically guarantee that bureaucrats would select the best companies to go public. For instance, provincial officials could choose some related companies with mediocre performance but without great potential to go public, from which they could derive large amounts of private benefits but incur relatively small amounts of private costs. Clearly, private benefits and private costs cannot automatically guarantee that provincial bureaucrats would behave as we wish. Interestingly, the regulatory decentralization based on regional competition for stock issuance quotas could generate private benefits and private costs to guide provincial officials to behave in the way we wish them to be. When the listing quota allocation is based on prior performance, provincial government officials could have dynamic incentives to put companies with great potential onto the stock market.

6. Concluding Remarks

In this study, we show that the quota-based regulatory decentralization motivated regional governments in China to select relatively high-quality SOEs for going public by taking advantage of their strength in corporate information acquisition. This provides a reasonable governance system that ensures the relatively smooth development of capital markets in China.

Our paper focuses on explaining the effectiveness of the quota-based regulatory decentralization in the initial stage of jumping start stock markets in China. However, we wish to point out this type of administrative governance is not a long

run solution for financial regulation. It does not work effectively for non-state-owned firms because regional governments do not have natural advantage in information acquisition in non-state-owned enterprises. Moreover, the effectiveness of the administrative governance system in monitoring companies weakens once companies are listed on the market. The diversification of post-listing corporate ownership and the negative impact of government intervention deter regional governments from continuing to keep closely involved in the business operations of listed companies. Therefore, although the quota system may have helped successfully in jumping start the financial market, in the long run it is essential for China to strengthen standard law enforcement mechanisms.

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Table 1
Summary of Results for Regions with Information on Absolute or Relative Pre-listing SOE Performance

Province Name	SOE performance measures	Year	# of SOEs	Sign of est. coeff., sig.
Anhui	Industrial production value per worker, Total sales per worker	1991	192	+, significant
Beijing	Total sales ranking, profits and taxes ranking, capital profits ranking; (lower scores mean higher ranking)	1991	100	-, significant
Fujian	Industrial production value per worker, total sales per worker	1991	198	+, significant
Guangzhou	Enterprise ranking order (lower score means higher ranking)	1991	100	-, significant
Hainan	Industrial production value per worker, total sales per worker, profits and taxes per worker	1989	53	+, significant
Inner Mongolia/Baotou	Enterprise profits and taxes contribution per worker, net industrial production value per worker	1991	33	+, significant
Jiangsu	Industrial production value per worker, total sales per worker	1991	85	+, significant
Jiangxi	Industrial production value per worker, total sales per worker, profits and taxes per worker	1991	352	+, significant
Jilin/Changchun	Profit growth rate from preceding year	1987	30	+, significant
Shaanxi	Industrial production value per worker, profits per worker	1993	49	+, significant
Shandong	Industrial production value per worker, total sales per worker, profits and taxes per worker	1991	181	+, significant
Shanghai	Industrial production value per worker, sales per worker	1991	915	+, significant
Shenzhen	Labor productivity per worker	1991	90	+, significant
Sichuan (including Chongqing)	Profits and taxes contribution ranking (lower score means higher ranking)	1992	100	-, significant
Xinjiang	Industrial production value per worker, value added per worker, total sales per worker, profits and taxes per worker	1995	166	+, significant

Table 2
Regional Governments' Selection of SOEs for Listing --- Cases of Beijing and Shanghai

This set of tables contains logistic regression analysis for Beijing and Shanghai. The dependent variable is the dummy variable taking value one if an SOE gets listed and zero if otherwise. Robust standard errors are reported in the parentheses. Superscripts a, b, c and d indicate statistical significance at the 1%, 5%, 10%, and 15% levels respectively.

Beijing

Total Sales Ranking	-0.028 [c]	-0.038 [c]				
	(0.016)	(0.021)				
Profits and Taxes Ranking			-0.044 [c]	-0.043 [c]		
			(0.023)	(0.024)		
Capital Profits Ranking					-0.029 [b]	-0.035 [b]
					(0.013)	(0.017)
Industry dummies Included?	No	Yes	No	Yes	No	Yes
Log Pseudo-Likelihood	-31.98	-24.34	-25.02	-24.55	-17.43	-15.09
Pseudo R-squared	0.077	0.30	0.11	0.13	0.079	0.20
Number of Obs.	100	100	100	100	100	100

Shanghai

	(1)	(2)	(3)	(4)
Industrial Value per Worker	2.67e-8 [a]		2.79e-8 [a]	
	(1.03e-08)		(1.05e-8)	
Sales per Worker		2.93e-8 [a]		3.10e-8 [a]
		(1.05e-8)		(1.07e-8)
Industry dummies Included?	No	No	Yes	Yes
Log Pseudo-Likelihood	-171.22	-170.28	-165.41	-164.51
Pseudo R-squared	0.030	0.035	0.063	0.067
Number of Obs.	915	914	915	914

Table 3
Regional Governments' Selection of SOEs for Listing --- Other Regions

This set of tables contains logistic regression analysis for 13 provinces and major cities. The dependent variable is the dummy variable taking value one if an SOE gets listed and zero if otherwise. Robust standard errors are reported in the parentheses. Superscripts a, b, c and d indicate statistical significance at the 1%, 5%, 10%, and 15% levels respectively.

Anhui

Industrial Production Value Per worker	0.085 [a] (0.030)	0.15 [a] (0.046)		
Total Sales per Worker			0.076 [b] (0.034)	0.15 [a] (0.048)
Industry dummies Included?	No	Yes	No	Yes
Log Pseudo-Likelihood	-52.60	-41.34	-53.36	-41.80
Pseudo R-squared	0.045	0.25	0.031	0.24
Number of Obs.	192	192	192	192

Chongqing and Sichuan

Enterprise Profits and Taxes Contribution Ranking	-0.016 [c] (0.0088)	-0.025 [b] (0.012)
Industry dummies Included?	No	Yes
Log Pseudo-Likelihood	-53.21	-45.64
Pseudo R-squared	0.034	0.17
Number of Obs.	100	100

Fujian

Industrial Value per Worker	0.016 [b] (0.0066)	0.021 [a] (0.0083)		
Total Sales			0.015 [b]	0.020 [b]

per Worker			(0.0066)	(0.0080)
Industry dummies Included?	No	Yes	No	Yes
Log Pseudo-Likelihood	-37.90	-27.86	-38.00	-28.02
Pseudo R-squared	0.043	0.30	0.040	0.29
Number of Obs.	198	198	198	198

Guangzhou

Enterprise Ranking Order	-0.050 [a] (0.019)	-0.042 [b] (0.019)
Industry Effects Included?	No	Yes
Log Pseudo-Likelihood	-16.75	-9.67
Pseudo R-squared	0.16	0.51
Number of Obs.	100	100

Shenzhen

Labor Productivity per Worker	4.48e-06 [c] (2.37e-06)	7.22e-06 [c] (3.77e-06)
Industry Effects Included?	No	Yes
Log Pseudo-Likelihood	-32.09	-23.72
Pseudo R-squared	0.040	0.29
Number of Obs.	90	90

Hainan

Industrial Value per Worker	0.33 [a] (0.095)		
Total Sales per Worker		0.36 [a] (0.13)	
Profits and Taxes			0.097 [d]

per Worker			(0.068)
Industry dummies Included?			
Log Pseudo-Likelihood	-4.34	-3.92	-8.35
Pseudo R-squared	0.49	0.54	0.019
Number of Obs.	53	53	53

Note: Because only 2 firms out of 53 firms finally become listed companies, and these two firms belong to the same industry category, industry dummies are not used in the regressions.

Inner Mongolia

Enterprise Profits and Taxes Contribution per worker	1.38 [b] (0.57)	
Net Industrial Value per Worker		2.50 [a] (0.74)
Log Pseudo-Likelihood	-4.20	-3.83
Pseudo R-squared	0.062	0.15
Number of Obs.	33	33

Note: Because only two out of 33 firms are listed finally and they belong to the same industry, industry effects are not considered.

Jilin

Profit Growth Rate from Preceding Year	0.0067 [c] (0.0035)
Industry dummies Included?	No
Log Pseudo-Likelihood	-4.28
Pseudo R-squared	0.023
Number of Obs.	30

Note: Only 1 out of 30 firms is listed finally. No industry variation. Industry effects are not evident.

Jiangsu

Industrial Value per Worker	0.045 [b] (0.019)	0.040 [c] (0.021)		
Total Sales per Worker			0.049 [b] (0.026)	0.044 [d] (0.029)
Industry dummies Included?	No	Yes	No	Yes
Log Pseudo-Likelihood	-42.60	-36.33	-43.42	-36.72
Pseudo R-squared	0.057	0.20	0.054	0.19
Number of Obs.	85	85	85	85

Jiangxi

Industrial Value per Worker	0.0075 [a] (0.0027)	0.074 [b] (0.033)				
Total Sales per Worker			0.092 [a] (0.033)	0.099 [a] (0.034)		
Profits and Taxes per Worker					0.19 [b] (0.083)	0.22 [d] (0.15)
Industry dummies Included?	No	Yes	No	Yes	No	Yes
Log Pseudo-Likelihood	-50.29	-41.20	-49.84	-40.78	-51.36	-42.05
Pseudo R-squared	0.043	0.21	0.047	0.22	0.018	0.20
Number of Obs.	352	352	351	351	351	351

Shaanxi

Industrial Value per Worker	0.065 [b] (0.027)	0.068 [b] (0.028)		
Profits per Worker			1.50 [b] (0.66)	1.88 [b] (0.90)
Industry dummies Included?	No	Yes	No	Yes

Log Pseudo-Likelihood	-21.82	-20.51	-16.88	-14.74
Pseudo R-squared	0.12	0.13	0.32	0.41
Number of Obs.	49	49	49	49

Shandong

Industrial Value per Worker	0.059 [b] (0.024)	0.065 [a] (0.025)				
Total Sales per Worker			0.051 [b] (0.022)	0.059 [b] (0.024)		
Profits and Taxes per Worker					0.57 [a] (0.15)	0.61 [a] (0.15)
Industry dummies Included?	No	Yes	No	Yes	No	Yes
Log Pseudo-Likelihood	-78.39	-75.06	-78.80	-75.36	-75.57	-72.15
Pseudo R-squared	0.036	0.077	0.031	0.073	0.070	0.11
Number of Obs.	181	181	181	181	181	181

Xinjiang

Industrial Value per Worker	0.020 [b] (0.0099)	0.026 [c] (0.016)		
Value Added per Worker			0.058 [b] (0.024)	0.067 [d] (0.047)
Industry dummies Included?	No	Yes	No	Yes
Log Pseudo-Likelihood	-30.14	-25.71	-29.58	-25.61
Pseudo R-squared	0.060	0.20	0.077	0.20
Number of Obs.	166	166	166	166

Total Sales per Worker	0.020 [b] (0.0086)	0.025 [c] (0.014)		
Profits and Taxes per Worker			0.056 [b] (0.025)	0.026 [c] (0.016)
Industry dummies Included?	No	Yes	No	Yes

Log Pseudo-Likelihood	-29.74	-25.34	-29.71	-25.71
Pseudo R-squared	0.073	0.21	0.073	0.20
Number of Obs.	166	166	166	166

Table 4
Evidence on the Group of Provinces with Award Winning SOE Performance Information

Province Name	Year	# of Listed Companies with Manufacturing Predecessors	# of Listed Companies with excellent or model manufacturing predecessors (%)
Guangxi	1995	3	1 (33.3%)
Hebei	1993	6	3 (50.0%)
Heilongjiang	1993	7	4 (57.1%)
Hubei	1995	11	3 (27.3%)
Hunan	1995	12	8 (75.0%)
Liaoning	1993	19	8 (42.1%)
Tianjin	1993	8	6 (75.0%)
Yunnan	1992	7	2 (28.6%)