The Chinese IPO examination mechanism affected by administrative factors: New evidence from rejected IPO firms

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Abstract

Administrative factors permeate the Chinese financial market. This study provides an insight into the emerging government-dominated IPO market. Using up-to-date data from 520 listed firms and 140 rejected IPO applicants in the Chinese stock market over 2006 to 2012, this study, based on prior analytical framework (Bhattacharya et al., 2010; Hearn, 2013), includes some IPO-related administrative factors into its multivariate regression model. It aims to examine, to some degree, these determinants affect the Chinese IPO examination mechanism. It suggests that the IPO probability is determined by selected administrative factors that are ultimately decided by the authorities, once the IPO applicants satisfy the minimum financial requirements. Those applicants with strong government background are more likely to pass the IPO examination.

Keywords: Chinese stock market, IPO examination mechanism, administrative factors, rejected IPO firms

JEL Classification: G11, G15, G18

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1 Introduction

The most significant institutional feature of the Chinese stock market is that it is government-supervised. It is strictly regulated by the central government in terms of IPO assessment, listing overseas, and IPO pricing, because the Chinese IPO examination is completely supervised by the China Securities Regulatory Commission (CSRC), a state administrative bureau supervising new stock listings and daily trading activities. The IPO applicants need the support and approval from local politicians and party committees. Otherwise, the IPO applications will not be reviewed by the CSRC. The implication is that politicians and their connected IPO firms possess relationships that can impact the listing process (Piotroski and Zhang, 2012). Therefore, this paper tests the impact of the administrative factors on the Chinese IPO examination mechanism, in an effort to provide issuers with an insight into the emerging IPO market.

Figure 1 illustrates the Chinese IPO assessment procedures. The IPO assessment process is completely determined by the CSRC following the listing rules. The IPO applicants that have good relationships with the politicians in the departments are easily able to pass each procedure. This approval process will proceed smoothly and quickly if an IPO applicant has strong political connections (Du, 2011). Some studies suggest that Chinese issuers with strong political connections are keen on taking advantage of this relationship to manipulate their issuing performance to attract more attention (Fan et al., 2007; Hung, et al., 2012). In summary, the listing process in China, especially for state-owned enterprises (SOEs),

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3 According to ‘The Securities Law of People’s Republic of China’, the CSRC is the most supreme authority of Chinese securities markets, which undertakes securities supervision on the two stock exchanges. The principal duties of the CSRC are:
A. In charge of legislation and enaction of the relevant securities regulations (e.g. investor protection, listing requirements, delisting policy) and upgrading trading mechanisms;
B. Scrutinizing and approving the IPO applications, re-issuance of listings, and supervising the transactions of securities;
C. Establishing qualification standards for professionals (such as auditors, lawyers, and stockbrokers) and supervising intermediary institutions (such as investment banks, institutional investors, and sponsor organizations) in the securities industry;
D. Examining and approving domestic firms going public overseas;
E. Overseeing the operations of the stock exchanges.
is affected substantially by many administrative elements (Aharony et al., 2000).

**Figure 1. IPO Assessment Procedures Regulated by the CSRC**

| Procedures   | Departments          | Tasks                                |
|--------------|----------------------|--------------------------------------|
| Screening    | Issuing Dept.        | Accepting IPO application documents  |
|              |                      |                                      |
|              | General Service      | Allocating documents to              |
|              | Center               | Assessment                            |
|              |                      | Sections 1 & 2                        |
|              | Assessment           |                                      |
|              | Section 1 & 2        | Writing an assessment report          |
| Improving    | Issuing Dept.        | Commenting further in detail required |
|              |                      |                                      |
|              | Issuing              | Meeting with the issuer and its sponsors for further |
|              | Assessment           |                                      |
|              | Section 1 & 2        | Checking the progress with sponsors  |
| Publishing   | Issuing Dept.        | Arranging a pre-disclosure of prospectus |
|              |                      |                                      |
|              | All divisions above  | Discussing further details required   |
|              | along with the IPO   | for the final IPO approval meeting   |
|              | Commitee             |                                      |
|              |                      | Making the final decision on IPO applications |
| Decision-    | IPO Commitee         |                                      |
| making      |                      | Drafting supervision advice and       |
| Supervising | Issuing Dept.        | distributing to relevant authorities  |
|              |                      | Announcing IPOs                       |

Source: The raw material is from CSRC official website, and it is reworked and sorted by the author.
This government-based IPO examination mechanism has impacted on the Chinese stock market. Several studies show that the Chinese IPO underpricing rate is more than 8 times of those in the US, UK and Hong Kong markets (Loughran et al., 1994; Loughran and Ritter, 2004). Some studies have attributed this anomalous performance to the Chinese IPO examination system designed by the government (Chen et al, 2000; Kimbro, 2005), which lacks market-oriented factors. Meanwhile, the CSRC has released a wide variety of IPO policies in an effort to perfect this financial market, but all these administrative policies do not work well.

Examining financial performances of the listed firms on the Growth Enterprise Market of China (GEMC), Long and Zhang (2014) argues that the listing requirements of the GEMC lose their IPO-screening functions for the majority of IPO firms. These entry thresholds are unlikely to screen the high quality IPO candidates to go public. Further, looking through the comments for the rejected IPO firms given by the CSRC, I found that all the rejected IPO firms met the quantitative requirements (financial performance), and the majority of them were rejected due to a variety of qualitative requirements (administrative determinants). These IPO comments deliver a strong signal that the authorities have the ultimate and complete discretion over IPO firms. Therefore, this study aims to investigate, to some extent, how these government-oriented qualitative requirements affect the Chinese IPO examination mechanism.

Because of this institutional context, this study employs a log-linear regression model and includes the government-oriented qualitative factors as dummy variables into the model, following the theoretical framework from Hearn (2013) and Bradburn et al. (2003). Based on the 520 listed firms and 140 rejected IPO applicants in the Chinese stock market over 2006 to 2012, the multivariate model clearly demonstrates these administrative factors’ contribution to IPO probability.

This study finds that there is no significant difference of the economic determinants between the listed and rejected firms. Once the IPO applicants meet the listing requirements, their IPO likelihood really depends on their performances on some institutional factors that are ultimately determined by the authorities. Those applicants with strong government background are more likely to pass the IPO examination, because the Chinese government-dominated IPO mechanism was initially designed for the SOEs.
Prior studies based on overseas stock markets concentrate on exploring the political impacts on initial IPO performance and post-IPO survival (Lin and Hsu, 2008; Espenlaub et al., 2012; Hung et al., 2012), rather than the IPO examination mechanism in the emerging stock market of China. Using an up-to-date dataset, this study bridges that gap in contributing to existing literature.

The remaining components of the study are organized as follows: Section 2 describes some government influences in the Chinese stock market. Section 3 is literature review and hypotheses. Section 4 describes the data and interprets the analytical framework. Section 5 presents the results. Section 6 summarizes this study.

2 Government influences in the Chinese financial market

The institutional context is a basis to investigate the IPO decisions in any Chinese listing market (Walter and Howie, 2006). The Chinese economy policies are conferred and made by the Chinese Communist Party every five years, and these polices permeate each economic domain.

2.1 Financial market level

First of all, the financial market is influenced by the Chinese political policies. In the past 20 years, 1990 to 2010, China's macro-industry has experienced major structural adjustments 5 times. As table 1 illustrates, the significant features are:

(1) The proportion of Primary Industry to GDP sharply decreased from 27.1 percent in 1990 to 10.2 percent in 2010;

(2) Secondary Industry dominated China's industrial structure remaining at 45 percent of GDP;

(3) Tertiary Industry's share gradually increased from 31.6 percent to 43 percent in 2010. According to Memedovic and Lapadre (2010), the proportions of the three industries in developed countries account for around 2%, 32%, and 66% respectively. Therefore, the structural features of China's macro-industry are reflected in the Chinese stock market.
As a consequence, the Chinese financial market is affected by these macro-industry orientations. The IPO examination mechanism is inevitably affected by these policy-orientations.

Table 1. Structural adjustments in China’s macro-industry 1990-2010 (%)

| Years | GDP | Primary Industry | Secondary Industry | Tertiary Industry |
|-------|-----|------------------|---------------------|-------------------|
| 1990  | 100.0 | 27.1             | 41.3                | 31.6              |
| 1995  | 100.0 | 19.9             | 47.2                | 32.9              |
| 2000  | 100.0 | 15.1             | 45.9                | 39.0              |
| 2005  | 100.0 | 12.2             | 47.7                | 40.1              |
| 2010  | 100.0 | 10.2             | 46.9                | 43.0              |

Source: Website of National Bureau of Statistics of China (www.stats.gov.cn).

In addition, the government has preference for certain industry sectors. According to ‘the CSRC Notice 2008 No.8’, the CSRC favors supporting emerging industries, particularly new energy, new material, information technology, biomedicine, advanced manufacture, and modern services. By contrast, traditional industries are restrained, including traditional manufacture, civil public utilities, food, and general services.

2.2 Listing requirement level

Secondly, the listing requirements of the Chinese stock market are influenced by political factors. Unlike the listing standards of market-based stock markets, which are mainly determined by some quantitative factors of IPO applicants, China’s political-based listing requirements are dominated by some qualitative factors set by the government. As table 2 shows, the last components are all political-related rules on which the authorities have the ultimate discretion.
Table 2 Listing requirements for the Chinese stock market

| Criteria                  | Primary Stock Market                                                                 | Growth Enterprise Market                                                                 |
|---------------------------|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Main Body Qualification   | A joint stock limited company existing and conforming to the relative for registration capital, and the founders or stockholders have completed the transaction of their assets as part of registration capital. There is not any issue with asset ownership. | Share issuers have fully paid for registration capital, and the founders or stockholders have completed the transaction of their assets as part of registration capital. There is not any issue with asset ownership. |
| Business Years            | At least 3 consecutive business years.                                                | At least 3 consecutive business years.                                                    |
| Profitability             | Positive net profit each financial year in the last three years and its profit of more than RMB ¥10 accumulative net profit above RMB ¥30 million; or Business cash flow keeping growing in the future; of net sum more than RMB ¥50 or Becoming profitable with net million in the last three financial profit of more than RMB ¥5 years, alternatively, at least RMB million from the last year, plus at ¥300 million accumulative income during this period. | Consecutive profitability with net profit of more than RMB ¥10 million in the last two years, and keeping growing in the future; or Becoming profitable with net profit of more than RMB ¥5 million in the last two years, alternatively, at least RMB ¥5 million from the last year, plus at least RMB ¥50 million income and income growth rate above 5%.
| Asset Requirements        | Intangible asset ratio to net assets more than 20% in the last financial statements. | At least RMB ¥20 million net assets by the end of the financial year without any outstanding deficit. |
| Share Amount              | At least RMB ¥50 million stock sum after IPOs. RMB ¥1/share                          | At least RMB ¥30 million stock sum after IPOs. RMB ¥1/share                                |
| Core Business             | Core business unchanged significantly in the last three years.                       | Core business prominent, and IPO for developing core business only.                       |
| Director Board & Executive Managers | No remarkable changes in the last three years.                                       | No remarkable changes in the last two years.                                               |
| De facto Controllers      | De facto controllers unchanged in the last three years.                              | De facto controllers unchanged in the last two years.                                     |
| Horizontal Competition    | No horizontal competition with controlling shareholders, De facto controlling shareholders, De facto controllers and business under their control. | No horizontal competition with controlling shareholders, De facto controlling shareholders, De facto controllers and business under their control. |
| Affiliated Transactions   | No unfairly affiliated transactions.                                                  | No affiliated transactions that impact issuer’s independence.                            |
| Potential Growth Null & Technology Innovation (Industrial Sectors) | Issuers with high growth, and remarkable competence in technology and governance innovation. Conforming to so-called Two High Five New’ standard high technology, high growth, new economy, new services, new energies, new materials, new agriculture. |
|---|---|
| Financing Purposes | Explicit purpose of fundraising for core business. Explicit purpose of fundraising for core business only. |
| Admission Committee | Setting up Admission Committee of Mainboard with twenty-five reviewers Setting up Admission Committee of Growth Enterprise Market, reviewers not allowed to taking a concurrent position in the two committees. |
| Initial Comments | Consulting the State Government and National Development and Reform Commission. Null |
| Superior Approval | Fulfilling supervision obligation consecutively for three years after IPOs |
| Restricted Situations | Dramatic changes in issuers’ business model, a variety of products and services, which impact its sustainable profit negatively; Significant changes with issuers’ industrial position and its business industrial position and its business circumstances, which could lead to circumstances, which could lead dramatic negative impact on continuous profitability; Some significant risks with core assets consisting of trademarks, assets consisting of trademarks, patents, executive technologies and patents, executive technologies franchised rights; Income or net profit relying in the Income or net profit in the last year on affiliated firms and unstable clients; The last year’s net profit mainly coming from other investments rather than the business circumscribed than the core businesses circumscribed in consolidated financial statements; and franchise rights; Continuous profitability in the future. Other negative status that probably impede issuers’ sustainable profitability. |

Source: Collected and sorted from official website of China stock exchange market
Compared to developed countries’ stock markets, the Chinese stock market has very high entry threshold requirements that are designed for big companies’ IPOs rather than startup firms. China’s stock market is a product of the Chinese economic reforms converting a central-planned economy to a market-oriented economy. It provides the Chinese SOEs with a platform to achieve the privatization of state assets. Megginson and Netter (2001) show that the privatization of state assets is widely viewed as an important measure for improving and achieving long run economic growth. According to Chen et al. (2000), the first privatization in China emerged in 1984, but the privatization process proceeded very slowly. The Chinese government established Shanghai Stock Exchange (SHSE) in 1990 and Shenzhen Stock Exchange (SZSE) one year later to accelerate the process. Under this context, the primary stock market is dominated by the Chinese SOEs. As table 3 exhibits, the Top 10 A-shares in issuing volume were overwhelmingly dominated by the SOEs in 2011.

Table 3. Top 10 A-share by issuing volume on Shanghai stock exchange (2011)

| Code   | Issuers                                         | Issued Vol. (Million) | % of the SHSE |
|--------|-------------------------------------------------|-----------------------|---------------|
| 601288 | Agricultural Bank of China*                      | 294,055.29            | 12.6          |
| 601398 | Industrial & Commercial Bank of China**          | 262,225.50            | 11.24         |
| 601988 | Bank of China                                    | 195,525.05            | 8.38          |
| 601857 | China National Petroleum Corporation             | 161,922.08            | 6.94          |
| 600028 | China Petroleum & Chemical Corporation           | 69,922.06             | 3.00          |
| 601818 | China Everbright Bank                            | 40,434.79             | 1.73          |
| 601328 | Bank of Communications                           | 32,709.16             | 1.4           |
| 601998 | China Citic Bank                                 | 31,905.16             | 1.37          |
| 601668 | China State Construction                         | 30,000.00             | 1.29          |
| 600018 | Shanghai International Port                      | 22,755.18             | 0.98          |
| Sum    |                                                 | 1,140,154.17          | 48.92         |
| Total  |                                                 | 2,333,237.21          | 100           |

*) According to Thomson Financial database, this company’s IPO is recorded as the largest IPO in global IPO history by 2010.
**) According to Thomson Financial database, this company retains the second largest IPO in global IPO history by 2010.

Source: Yearbook of Shanghai Stock Exchange 2012

As the table illustrates, the most significant feature is that this group of issuers, including six national banks (601288, 601398, 601988, 601818,
601328, 601998) and two national energy companies (601857, 600028), are owned by the government, apart from the last two ones in Table 3. In addition, the 10 issuers’ share accounts for 48.92 percent of the total volume issued on the SHSE with around 1,000 listed companies. By contrast, the top 10 issuers in the US stock market, even assuming all are national firms, retain around 5.08 percent of total share volume by 4th January 2013. This reflects that China’s primary stock market is a SOEs-dominated listing platform that is designed for the SOEs.

Although an increasing number of non-SOEs have been involved in the stock market, and there has evolved a more diversified ownership structure of listings (Chen et al. 2013), the SOE firms have more privilege from the government than other non-SOE companies. For instance, the SOEs have favorable access to bank loans (Brandt and Li, 2003), lower costs of capital (Borisova and Megginson, 2011), and advantages in monopoly (Li, 2009). Consequently, the SOEs have advantages in policy support and financial subsidies, which are able to promote their IPO performance (Powers and McDougall, 2005).

2.3 Marketization perspective

Thirdly, the Chinese politicians even have the capability to manipulate market rules. It is well known that the Chinese share market has experienced extreme underpricing in the last decade (Liu and Ritter, 2011). Although IPO underpricing is a global phenomenon across countries (see Loughran et al., 1994), China has some unique causes. One of which is the political incentive. The relevant politicians are likely to encourage this sort of underpricing of IPOs because they intend, through these high returns, to attract more prospective new issuers and political media coverage. Receiving wide coverage in top political-media-outlets is vital for these politicians because such visibility may contribute to their political position in the Communist Part of China. As Banyan (2009) suggested, influential media coverage in China is more likely to draw the attention from the national leaders, which may advance these politicians’ careers.

Turning to dividend policy, the Chinese government implements a range of regulations on the dividend policy. The document ‘Constitutional

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4 http://investing.businessweek.com/research/sectorandindustry/overview/sectorlanding.asp?region=us
Instructions for Listed Firms 2006’ issued by the CSRC requires that firms must specify their dividend policy of cash, and maintain it sustainable and stable. The latter document ‘No.3 Information Disclosure of the Firms Publicly Issuing Securities 2007’ stipulates that firms must publicly report their performance of dividend policy. The CSRC requires that all issuers must explicitly state their future annual dividend rate in their IPO prospectus. In October 2008, the CSRC issued ‘Regarding the Decisions of Amending Listed Firm’s Dividend in Cash’. It requires that the aggregate dividend rate in cash in the last three years must be over 30 percent of the average net profit over the period. Therefore, the dividend rate is an important indicator for the GEMC to assess an IPO firm.

3 Literature review and hypotheses

Listing requirements have been studied extensively (e.g. Harris, 2006; Jenkinson and Ljungqvist, 2001; Doidge et al., 2004; Lambert et al., 2007). Harris (2006) defines that the principal function of listing requirements is to facilitate securities trading through verifying, monitoring the minimum listing quality of issuers, which thereby delivers market participants a signal that listed firms have higher quality relative to non-listed companies. In light of this theory, Jenkinson and Ljungqvist (2001) found that exchanges were adept at balancing their listing standards and profit pursuit. Some stock exchanges viewed listings as a significant source of revenue, thereby these exchanges lowered their listing standards or set up new listing platforms for small and high-growth firms, in an effort to encourage them to go public and obtain more income. The authors highlighted that the lower entry criteria enabled more firms to be eligible to be listed there, which in turn increased the exchanges’ revenues. On the other hand, the relaxed listing rules may damage the exchanges’ prestige eventually. Thus, Doidge et al. (2004) discuss that strict listing regulations in a stock exchange considerably affect its cost of capital and the valuation of potential IPO firms. This viewpoint is confirmed by the latter studies by Hail and Leuz (2006), Lambert et al. (2007) as well.

On the contrary, other studies document strict listing regulations are unlikely to help the exchanges to choose higher quality of issuers and
promote their post-issue performance (see Benston, 1973; Baumol and Malkiel, 1993). Consequently, Macey and O Hara (2002) argue that exchanges should constantly adjust and upgrade their listing rules for new demands of a capital market, since listing standards appear not to retain their initial purpose, due to the fact that the exchanges’ fundamental role has changed. They advise that exchanges should avert their concentration from some quantitative elements to qualitative ones, such as board structure, business plans, accounting practices and corporate governance. They encourage adopting some qualitative listing standards instead of quantitative ones, but it does not mean abandoning quantitative criteria. On the other hand, Cheng et al. (2006) do not agree with this viewpoint. Employing a dataset with 386 IPO cases on Hong Kong Stock Exchange over a period from 1986 to 1998, the authors investigate whether changes of listing rules contribute to an issuer’s performance. They suggest there is no significant change in stock price performance after amending the regulations; consequently, the new stringent listing rules are unlikely to be effective to screen out high quality IPO applicants. They further conclude that the rule changes partly promote a reforming scheme to introduce an alternative market with lower listing requirements and attract more Chinese firms to launch their IPOs on Hong Kong stock markets. Similarly, Long (2014) shows that the listing requirements lose IPO-screening functions based on the samples from the Growth Enterprise Market of China.

Listing rules differ across countries and listing markets, and these differences have triggered researchers to examine the various listing regulations in different countries. Hail and Leuz (2006) show the initial and ongoing listing standards differ between the US and Canada, although the quality of securities rules is similar in both countries. They demonstrate Canadian exchanges have very low entry thresholds, even without requirements on revenues and earnings, hence almost any firm is able to go public there. For example, on the TSX Venture (TSXV), one of the major Canadian stock exchanges, more than half of Canadian IPOs have no revenue records. They conclude that there is striking risk of asymmetric information leading to trading uncertainty for new stocks. Consistent with that finding, Carpentier and Suret (2011) show there exist considerable differences on the initial and ongoing listing standards in both nations, because penny stocks dominate the Canadian market, and the IPO firms are particularly young and small. Carpentier et al. (2010) investigating almost 4000 list-
ings on the TSXV during 1986-2007, receive a very similar finding: around 49 percent of IPO firms without revenues. As such, I propose my hypothesis 1 as below:

**Hypothesis 1A:** The listing requirements of the Chinese primary stock market are able to screen high quality firms to go public there.

**Hypothesis 1B:** The listing requirements of the Chinese primary stock market are unable to screen high quality firms to go public there.

Here, the quality of firms going public is measured by some financial performance measures such as profitability, firm size, growth potential, profit rate, and so on. Generally, IPO firms having good performance in these aspects are regarded as high quality firms and can easily meet the listing requirements in major exchanges.

In terms of political factors, studies have shed light on the political impact on financial markets (see Rajan and Zingales, 2003; Roe and Siegel, 2011). Roe and Siegel (2011) argue that political interest, standard of political institutions, and political preferences can all be reflected by investor protection policies. Further, Chen and Hao (2011) suggest that political institutions are subject to a country’s information environment and monitoring ability of shareholders, because an inefficient political regime can impair the quality of the information environment. Bushman et al. (2004) disclose that the political regime in a country strongly affects its financial transparency, particularly, in countries dominated by state ownership of firms, while countries with low state ownership of firms have high financial transparency.

Furthermore, Fan et al. (2007) suggest that political connections negatively affect issuers’ performance, because they observed the Chinese firms having strong political relationship with the government underperformed remarkably after their overseas listings compared to those without these political connections. Employing samples of the Chinese politician-oriented SOEs listed on foreign exchanges during 1992-2005, Hung et al. (2012) show a similar result and give evidence to account for this phenomenon. They suggest that these SOEs are keen on foreign listings on overseas markets because the managers of these firms are pursuing their private political benefits through a foreign listing, and they consequently and fre-
sequently receive political media coverage and promotion in their political position after listing. Meanwhile, the authors identify that the CEOs or presidents from almost half of sampled firms are currently, or formerly, government bureaucrats. As studies suggested, the frequent coverage by the high-ranking political media in China are more likely to advance their political career (e.g. Banyan, 2009; Liebman, 2005). On this basis, I hypothesize that

**Hypothesis 2A:** *The Chinese government-based factors influence its IPO examination mechanism.*

**Hypothesis 2B:** *The Chinese government-based factors have little contribution to its IPO examination mechanism.*

This means that the Chinese IPO examination mechanism is determined by political factors, such as industry preference, SOE-preferred ownership, network with politicians, political policies, information disclosure, and so on. These dummy factors are measured by 1 when they have impact on the IPO examination mechanism, otherwise are 0.

### 4 Data and analytical framework

#### 4.1 Data

The data was collected from two types of firms: the listed companies on China’s stock exchanges, and the rejected ones that failed to issue an IPO. The data on listed firms were collected from their IPO prospectuses that were available on the CSRC official website. The data on rejected firms were piecemeal hand-collected from some financial reports.

The data on all economic variables were sourced from IPO prospectuses and some commercial research reports. In terms of non-economic variables, so-called quantitative variables, were hand-collected and sorted by the author.

As table 4 shows, the CSRC received 1869 IPO applicants during 2006 to 2012, of which 1578 had successful IPO applications, and 290 were re-
jected. The average rejected rate is 15.5%. This study partly received the data from 520 listed firms, and 140 failed IPO firms during this period.

Table 4. Distribution of IPO Candidates by Examination Results

| Year | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 |
|------|------|------|------|------|------|------|------|
| IPO Candidates | 213 | 326 | 405 | 128 | 284 | 354 | 159 |
| Approved | 176 | 265 | 343 | 109 | 250 | 298 | 137 |
| Rejected | 37 | 61 | 62 | 19 | 34 | 55 | 22 |
| % | 17.37 | 18.71 | 15.3 | 14.84 | 11.97 | 15.54 | 13.84 |

Source: hand-collected from the CSRC’s announcements

4.2 Analytical Framework

As table 2 indicates, there are roughly two types of determinants included into the framework: economic and institutional. The economic determinants refer to the quantitative factors that the authority has minimum requirements for firm age (AG), IPO volume (VOL), profitability (PRO), firm size (SIZE), growth potential (GR), profit rate (Rpro), and dividend rate (DIV). The institutional determinants refer to the qualitative ones over which the authority has the ultimate discretion, such as industry preference (IND), SOE-preferred ownership (SOE), network with politicians (NET), political policies (PP), information disclosure (ID), and other qualitative factors (OT) including corporate structure, fundraising purposes etc (IPO assessment on these factors depends on the CSRC’s subjective comments). As such, I take these determinants into account.

To address the second hypothesis, I employ a probit model to investigate the differences of the IPO probability between the two groups of samples. This method has been widely used to test IPO-related questions (Schultz, 1993; Bradley et al., 2006; Demers and Joos, 2007; Bhattacharya et al., 2010). I specify the model as follows:

\[ P(IPO=1) = f(AG,VOL,PRO,SIZE,GR,Rpro,DIV,IND,SOE,PP,ID,OT) \] (1)

Although a successful decision of going public is potentially influenced by various uncertain factors under different circumstances, it is unlikely and unnecessary to consider all of them in a single analytical frame (Pagano et al., 1998). Based on the Chinese listing requirements and its institutional
context, I include these qualitative factors as dummy variables into the model.

In light of prior analytical frameworks using log-linear functions (Hearn, 2013; Hensler et al., 1997), specifically, I develop a multivariate regression model for the listed firms as follows:

\[
Y_a = \eta_0 + \eta_1 \ln AG_a + \eta_2 \ln VOL_a + \eta_3 \ln IN_a + \eta_4 \ln PRO_a + \eta_5 \ln SIZE_a \\
+ \eta_6 GR_a + \eta_7 Rpro_a + \eta_8 DIV_a + \eta_9 IND_a + \eta_{10} SOE_a + \eta_{11} NET_a + \eta_{12} PP_a \\
+ \eta_{13} ID_a + \eta_{14} OT_a + \varepsilon
\]  

where \( \ln AG_a \) is the logarithm of a listed firm age between its inception and IPO date. \( \ln VOL_a \), is the logarithms of a firm s IPO volume. \( \ln IN_a \) and \( \ln PRO_a \) respectively stand for business income and profitability averaged over the last three years prior to its IPO. \( \ln SIZE_a \) means the logarithms of a IPO firm s size, which is measured by the firm s net assets on average over the last three years. \( GR_a \), \( Rpro_a \), and \( DIV_a \) refer to the average growth rate, profit rate, and dividend rate respectively during the same period. The rest are non-economic determinants. \( IND_a \) is a dummy variable being valued 2 for firms that are classified into the supported industry sectors, 1 for general sectors, and 0 for the restrained sectors. \( SOE_a \) is also a dummy variable with the value of 2 for 100% of state owned enterprises, 1 for SOE-related firms, and 0 for all non-SOE-related firms. Dummy variable \( NET_a \) is 1 for firms with frequent media coverage, otherwise is 0. Dummy variable \( PP_a \) is 1 for those with policy support or political background, otherwise is 0. Dummy variables \( ID_a \) and \( OT_a \) are subjectively determined by the authority with 1 or 0.

For those rejected firms, they are unlikely to be influenced by the administrative factors, or they failed to fulfill these requirements, so these dummy variables are excluded from the regression model. Consequently, I define the regression model for the non-listed firms as

\[
Y_r = \eta_0 + \eta_1 \ln AG_r + \eta_2 \ln VOL_r + \eta_3 \ln IN_r + \eta_4 \ln PRO_r + \eta_5 \ln SIZE_r \\
+ \eta_6 GR_r + \eta_7 Rpro_r + \eta_8 DIV_r + \varepsilon
\]

Apparently, if the authority has more satisfaction with these dummy variables of the IPO applicants, it gives a strong IPO recommendation to these firms, and vice versa.
If \[ \sum_{i=1}^{520}(\ln AG_{ai} + \ln VOL_{ai} + \ln PRO_{ai} + \ln SIZE_{ai} + GR_{ai} + Rpro_{ai} + DIV_{ai}) - \sum_{i=1}^{140}(\ln AG_{ri} + \ln VOL_{ri} + \ln IN_{ri} + \ln PRO_{ri} + \ln SIZE_{ri} + GR_{ri} + Rpro_{ri} + DIV_{ri}) \approx 0, \]
it indicates that these rejected firms have closed mean value of these quantitative variables. The result \((Y_a > Y_r)\) is expected, because the listed firms have no difference from the rejected firms in terms of these quantitative variables, but the qualitative factors can subjectively contribute to the result.

According to the general probit model \( P = E[F(Y) = 1] = 1/1 + e^{-Y} \) \((0 \leq P \leq 1)\), it can be expected the values of \( P_a \) standing for the listed firms are generally greater than those of \( P_r \) for rejected firms \((P_a > P_r)\), because \( Y_a > Y_r \). Therefore, these rejected IPO firms had as good financial performance as the listed firms, and they were rejected due to their poor connections with the government. If so, this expected result would support the hypothesis 2A, otherwise, it is rejected.

5 Results

This section presents some results and findings based on the above analytical framework. First of all, Principal Factor Analysis (PFA)\(^5\) empirically verifies that the selected variables are significant to the regression model. Table 5 illustrates the initial values that each variable contributes to the variable group from 4.05 to 0.006. Further, the eight principal factors, which contain full information 100 percent of the variable group, are extracted in the column of the Extraction Sums of Squared Loadings.

Secondly, the descriptive statistics empirically demonstrates there is less difference between the two types of IPO firms in terms of their financial performance. As table 6 shows, there are fewer differences between the mean values for each single variable with the two types of firms, particularly, 80.01-79.91 = 0.1. This result supports the proposition \( \sum_{i=1}^{520}(\ln AG_{ai} + \ln VOL_{ai} + \ln PRO_{ai} + \ln SIZE_{ai} + GR_{ai} + Rpro_{ai} + DIV_{ai}) - \sum_{i=1}^{140}(\ln \)

\(^5\) PFA is often used as a variable reduction technique by retaining only those components with large variances.. The small variances can be just as important as those with large variances in a PCA regression analysis (Jolliffe, 1982), while, there is little to gain from reducing the number of variables given that we have only three country-level variables.
As a consequence, these rejected firms have performed as well as the listed firms in terms of these quantitative determinants. This result responds to hypothesis 1, and supports hypothesis 1B: the listing requirements of the Chinese primary stock market are unable to screen high quality firms to go public.

Table 5. Total variance explained

| Component | Initial Eigenvalues | Extraction Sums of Squared Loadings |
|-----------|---------------------|-------------------------------------|
|           | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1         | 4.05  | 45.004       | 45.004       | 4.05  | 45.004       | 45.004       |
| 2         | 1.669 | 18.544       | 63.548       | 1.669 | 18.544       | 63.548       |
| 3         | 1.505 | 16.721       | 80.269       | 1.505 | 16.721       | 80.269       |
| 4         | .997  | 11.072       | 91.342       | .997  | 11.072       | 91.342       |
| 5         | .594  | 6.598        | 97.939       | .594  | 6.598        | 97.939       |
| 6         | .177  | 1.91         | 99.86        | .177  | 1.96         | 99.86        |
| 7         | .018  | .09          | 99.97        | .018  | .09          | 99.97        |
| 8         | .006  | .03          | 100.00       | .006  | .03          | 100.00       |

The first column is the serial number of the variables. The second column is the eigenvalues assessing the variable significance. Those with eigenvalues beyond 1 are usually viewed as the principal factors. The third column outlines contribution rates \( R = \frac{\lambda_i}{\sum_{i=1}^{k} \lambda_i} \) \((n \leq k)\). The fourth column shows their cumulative rate \( R_c = \frac{\sum_{i=1}^{n} \lambda_i}{\sum_{i=1}^{k} \lambda_i} \) \((n \leq k)\). For those selected principal factors, their cumulative contribution rate is required to be over 90%, otherwise, they may not comprehensively reflect the typical characteristics of the variable group.

Extraction Method: Principal Component Analysis.

Table 6. Descriptive statistics on quantitative factors

| Variables* | Listed Firms | | | | Rejected Firms | | |
|-----------|--------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|           | Max. | Min. | Median | Mean | Max. | Min. | Median | Mean |
| \(\ln AG\) | 3.81 | 1.10 | 2.14 | 2.08 | 3.41 | 1.10 | 2.12 | 2.06 |
| \(\ln VOL\) | 21.66 | 19.12 | 19.87 | 20.28 | 21.79 | 17.85 | 19.31 | 20.22 |
| \(\ln IN\) | 21.19 | 18.09 | 19.15 | 19.32 | 20.89 | 18.72 | 19.01 | 19.16 |
| \(\ln PRO\) | 21.79 | 15.95 | 17.33 | 17.61 | 22.23 | 14.04 | 16.84 | 17.73 |
| \(\ln SIZE\) | 23.89 | 18.65 | 19.92 | 20.01 | 21.56 | 18.66 | 19.53 | 20.07 |
| \(GR\) | 0.65 | -1.40 | 0.18 | 0.24 | 0.61 | -2.38 | 0.22 | 0.27 |
| \(Rpro\) | 3.91 | -2.17 | 0.22 | 0.32 | 3.66 | -2.36 | 0.25 | 0.29 |
| \(DIV\) | 0.18 | 0.05 | 0.13 | 0.15 | 0.22 | 0.06 | 0.78 | 0.11 |
| \(\sum \ln X_i\) | 79.83 | 80.01 | 79.87 | 79.91 |

* firm age \((AG)\), IPO volume \((VOL)\), profitability \((PRO)\), firm size \((SIZE)\), growth potential \((GR)\), profit rate \((Rpro)\), and dividend rate \((DIV)\).
Thirdly, the results are from model analysis. The above analysis implies that the qualitative factors will ultimately affect the IPO assessment. Table 7 presents the two groups of coefficients for the listed and rejected firms. The aforesaid quantitative factors have significant impact on IPO probability of a firm. For instance, the coefficients for $\ln IN$, $\ln PRO$, $\ln SIZE$ are 0.861, 0.962, 0.866 respectively. Even so, they are not yet the critical determinants for the ultimate IPO decision, because the two kinds of firms have very closed coefficients for these quantitative factors.

| Variables** | Coefficients  |
|-------------|---------------|
|             | Model 3 | Model 2 |
| Intercept   | 0.239    | 0.225  |
| $\ln IN$    | 0.861    | 0.855  |
| $R_{pro}$   | 0.008    | 0.006  |
| $\ln PRO$   | 0.962    | 0.924  |
| $GR$        | 0.764    | 0.691  |
| $\ln AG$    | 0.019    | 0.014  |
| $\ln SIZE$  | 0.866    | 0.824  |
| $DIV$       | 0.075    | 0.072  |
| $\ln VOL$   | 0.528    | 0.499  |
| $IND$       | .042     |        |
| $SOE$       | .081     |        |
| $NET$       | .011     |        |
| $PP$        | .003     |        |
| $ID$        | .004     |        |
| $OT$        | .001     |        |
| F-test      | 6.93(0.03*) | 7.02 (0.00*) |
| Observations | 660   | 660    |
| Adjusted R2 | 0.659 (000*) | 0.661(000*) |
| Probit      | 0.882    | 0.925  |

* Significant at 0.05 level.
** firm age ($AG$), IPO volume ($VOL$), profitability ($PRO$), firm size ($SIZE$), growth potential ($GR$), profit rate ($R_{pro}$), dividend rate ($DIV$), industry preference ($IND$), SOE-preferred ownership ($SOE$), network with politicians ($NET$), political policies ($PP$), information disclosure ($ID$), and other qualitative factors ($OT$).

As such, equation 2-equation 3 $> 0$, so $Y_a > Y_r$, accordingly, $P_a > P_r$. Apparently, $0.925 > 0.882$, it means that the listed firms have higher IPO probability than the counterpart due to the contributions of the administrative determinants. Therefore, this result supports the hypothesis
2A: the Chinese government-based factors influence its IPO examination mechanism.

To sum up, these selected factors affect the Chinese IPO examination, and there is no significant difference between the listed firms and rejected companies in terms of their financial performance. Their IPO possibilities ultimately depend on their performance on administrative determinants, such as industry-preference, national ownership, network with politicians, and other policy-related factors.

6 Conclusion

Reviewing the 140 rejected IPO reasons given by the CSRC during 2006-2012, I noticed that the majority of the comments are about qualitative IPO requirements, and all of them have met the minimum quantitative requirements. Combining this phenomenon with the government-supervised context of the Chinese stock market, these authority-dominated qualitative factors determine the Chinese IPO examination system. This proposal motivated me to do this study examining how these administrative determinants affect the Chinese IPO examination mechanism, because unlike the economic (quantitative) factors, these administrative (qualitative) determinants are hard to be objectively measured by a uniform benchmark, but the authorities have the ultimate discretion over these subjective factors.

After reviewing the government influence on the Chinese stock market and prior literature, I propose two hypotheses. Using my unique dataset and regression models to test the hypotheses, I find the listing requirements are unable to screen high quality firms to go public on the Chinese primary stock market. This finding is consistent with Cheng et al. (2006)’s, which suggests that new stringent listing rules are unlikely to be effective to screen out high quality IPO firms in the Hong Kong market. However, my finding is different from those studies based on overseas stock markets (e.g. Harris, 2006; Jenkinson and Ljungqvist, 2001).

I find further that there is no significant difference of the quantitative determinants between the listed and rejected firms. Once the IPO applicants meet the listing requirements, their IPO likelihood really depends on
their performances on some institutional factors that are ultimately determined by the authorities. It implies that Chinese firms with strong government background are more likely to pass the IPO examination, because the Chinese government-dominated IPO mechanism is initially designed for the SOEs. This finding is supported by Macey and O Hara (2002). They suggest exchanges to adopt some qualitative listing standards instead of quantitative ones, but it does not mean abandoning quantitative criteria.

The limitation for this study is lack of comparison of the administrative factors with those from overseas exchanges. These factors need to be investigated further to see how important they are in overseas exchanges. In addition, the Chinese government is in the process of political reform, so these administrative factors are still volatile and changing. Further studies are expected every 5-years, because the new political development scheme is usually conferred by the government in the Communist Party Congress held every 5-years.

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