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Political connections and the process of going public: evidence from China

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The views expressed in this paper are those of the authors and do not necessarily reflect the views of the Bank of Finland or the Office of the Comptroller of the Currency.

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Abstract

We examine how political connections impact the process of going public. Specifically, we test how political connections impact the pricing of newly offered shares, the magnitude of underpricing, and the fixed cost of going public. Based on experiences of the new public firms in the Chinese security markets and using multiple measures of political connections, we find robust evidence that issuing firms with political connections reap significant preferential benefits from going public. To be specific, we find that firms – irrespective of ownership arrangements – with greater political connections have higher offering prices, less underpricing, and lower fixed costs during the going-public process.

Keywords: political connections, IPO, emerging markets

JEL classification numbers: H0, G3, G24, G32, G34, G38

Yritysten poliittiset yhteydet ja listautuminen pörssiin Kiinassa

Suomen Pankin keskustelualoitteita 7/2009

Bill B. Francis – Iftekhar Hasan – Xian Sun
Rahapolitiikka- ja tutkimusosasto

Tiivistelmä

Tässä työssä tarkastellaan poliittisten kytkentöjen vaikutusta yritysten listautumiseen pörssissä. Tutkimuksessa testataan, miten yritysten poliittiset yhteydet vaikuttavat uusien markkinoille tarjottujen osakkeiden hinnoitteluun, alihinnoittelun suuruuteen ja listautumisesta aiheutuviin kiinteisiin kustannuksiin. Uusien kiinalaisten pörssiyhtiöiden listautumisesta saatujen kokemusten ja useiden poliittisia yhteyksiä kuvaavien mittareiden perusteella voidaan sanoa, että läheisiin poliittisiin yhteyksiin päässeitä yrityksiä suositaan listautumisvaiheessa. Tutkimuksen tulokset viittaavat siihen, että yrityksen osakkeiden tarjoushinta on korkeampi, osakkeiden alihinnoittelu vähäisempää ja listautumisesta aiheutuvat kiinteät kustannukset pienemmät, kun yritys vahvistaa poliittisia yhteyksiään.

Avainsanat: poliittiset yhteydet, listautumisanti, kehittyvät taloudet

JEL-luokittelu: H0, G3, G24, G32, G34, G38

Contents

1 Introduction

Political connections are shown to have significant impact on the overall economy and the economic life of individual firms (Claessens, Feijen and Laeven (2008), Bunkanwanicha and Wiwattanakantang (2008), Ferguson and Voth (2008), Khwaja and Mian (2005), Sun and Tong (2003), Qi, Wu and Zhang (2000), Johnson, Kaufmann, McMillan and Christopher (2000), Faccio (2006), Cheung, Jing, Raghavendra and Stouraitis (2005), Fisman (2001), Sapienza (2004), Fan, Wong and Zhang (2007), Faccio, Masulis, McConnell and Offenberg Faccio (2006), and Charumilind, Kali and Wiwattanakantang (2006)). These studies have examined firms' political connections in various aspects, ranging from the firms' terms of borrowing, market valuation, long term performance, bail out events, to the competing for government contracts.

However, how political connections bring value to firms during their respective process of going public – an important corporate event for firms entering capital markets – has not been examined extensively. Our paper attempts to void that gap by investigating the relation between political connections and firm value by examining the effect of political connections on the cost and pricing and therefore the valuation of Chinese firms going public during the 1990s. There are several reasons that make China a suitable laboratory to examine the impact of political connections on firm value in general and, in particular, on the value of firms going public. The first reason is that there are clear quantitative restrictions imposed by the government on firms during the going public process. To be specific, there is a limit on the number of companies that can go public and the maximum number of shares issued in a given year. In addition, the offer price is restricted by the firms' profitability and an assigned multiplier (P/E ratio), which is decreed by the government. The significance of this latter restriction is that it is an important determinant of the offer price and therefore the amount of proceeds that can be raised. These government imposed restrictions on the going public process clearly invite firms to seek values through political connections, therefore making the discussion relevant and important.

A second reason is that given the importance of the emerging Chinese financial markets in the global economy, the accompanying importance of the privatization of state-owned enterprises (SOEs) in general, and the need of firms to raise funds, it is important to have a complete understanding of the impact of political connections in the going public process. Indeed, the fluctuations of Chinese stock markets, often triggered by the government policy changes, are affecting domestic investors and investors in other countries profoundly. For example, on February 27, 2007, because Chinese investors concerned that the government may actively seek to cool China's market, Shanghai's index plunged 8.8%, and this tumble was followed by 1.3% fall on India's Sensitive Index, 3.3%

fall on Russia's RTS Index and by the nearly 400 points fall on the Dow industrials.[1]

Finally, due to the uniqueness of the China's security markets it is possible to identify several proxy measures of political connections. The first of these is the number of ex- and/or current government officials that belong to the board of directors. Most firms going public are state-owned enterprises (or SOEs) and can only be partially privatized so that the state maintains control. Consequently, an important characteristic of these firms for the present paper is that even after going public the board of directors of these firms is dominated by former or current government officials. Thus, although all SOEs are, to some extent, politically connected, those that have important current or ex-government officials on their boards would be characterized by stronger political connections.

The second proxy measure of political connections is the magnitude and strength of an underwriter's political connections. A characteristic of China's capital markets during the 1990s is that all bookrunners are state-owned. That is, most of these bookrunners are sponsored by state councils, the Central Bank or provincial governments. As a proxy for the magnitude and strength of a bookrunner's political connection, we use the extent of their involvement in taking the largest state-owned firms public. There are only about 30 out of approximately one hundred investment banks approved by the Chinese Securities Regulation Committee (CRSC thereafter) that can assume the role of the bookrunner. Importantly, only five of these bookrunners were the lead in 59 of the 100 largest state IPOs, which account for almost 70% of total proceeds raised by these offerings. We make the assumption that it is the investment banks with the strongest political connections that are most likely to attract the most lucrative deals.

For the third proxy measure of political connections we use the types of state ownership. Firms within China are characterized by different state ownership. For example, there is state ownership directly controlled and managed by the government or its authorized agents and state ownership managed by other state-owned enterprises (SOEs). Several studies of share issue privatization have examined the impact of state ownership on firm value (see eg Vickers and Yarrow (1988), Jenkinson and Mayer (1988), Jacquillat (1987), Perroti and Guney (1993), and Dewenter and Malatesta (1997)). However, because of data limitations these studies could not account for the strength of political connections among SOEs. The Chinese experience allows us to address this weakness in the existing literature.

Although we use the types and the amount of state ownership in defining the strength of the firms' political connections, we suggest that one should not link state ownership with political connections directly in Chinese markets given that,

[1] 'Shanghai's 8.8% Tumble Slams Emerging Markets', WSJ, February 28, 2007.

to some extent, all state-owned companies are politically connected. The political connections that we define in this paper would distinguish the firms' ability in extracting values from such relationships, a method which may reveal that those state-owned companies without strong political connections are actually not entitled with significantly higher benefits than those non-state firms.

Using a sample of 423 domestic IPOs during 1994 to 1999, we find that firms' political connections play a statistically significant and economically meaningful role in the process of going public. To be specific, if the issuing firms (i) have board members who in the past- or are currently working for the government at least at a level equal or higher than a city mayor; (ii) use bookrunners that participated actively in the 100 largest state-owned IPOs; (iii) have the majority of shares controlled by the central government or other SOEs; and (iv) have any combination of the three, they are more likely to receive a higher than the median P/E ratio (a multiplier to determine the offering price) from the government. This finding indicates that, all else equal, these firms would get a higher offer price because of their political connections. Importantly, we show that the political connections variables, eg the connected board members and the connected bookrunners, are not redundant measurements of the state ownership. Specifically, we find that without additional political connections, state-owned firms experience almost the same level of underpricing as those of the less connected non-state firms.

Our results indicate that the market recognizes that these connected firms are overpriced relatively to less connected firms, and investors, despite the huge demand for new shares in the Chinese security markets, buy these shares at a price not significantly higher than the offer price thus resulting in lower underpricing. These connected firms also pay relatively lower fees during the going public process. The evidence of the potential benefits of political connections is robust for both state-owned and non-state firms.

The remainder of this paper is organized as follows. Section 2 reviews the related literature. Section 3 briefly discusses the background of China's security markets and the measurements of political connections. Section 4 discusses the data and provides summary statistics. Section 5 presents evidence on the relationship between political connections and the pricing of IPOs, the level of underpricing, and the fees per dollar raised by issuing firms. Section 6 provides concluding remarks.

2 Literature review

Since Krueger's (1974) seminal work, numerous attempts have been undertaken to estimate the value of political connection in a market economy. It has been shown to have significant impact on firms' market values. For example, Fisman (2001) estimates the value of political connections on firms' market value by using the relationship of public firms in Indonesia with the former president Suharto. Consistent with the argument that political connections add value to firms, he finds that connected firms experienced significantly lower abnormal returns at the announcement of the deterioration of Suharto's health. This finding shows that the value added to firms because of political connections drops when there is a possible decline or reduction in the strength of political connections. Bunkanwanicha and Wiwattanakantang (2008) find that Thailand firms experience dramatic market value increases once their owner win the election to run for the top office. They suggest that those elected business owners use their power to shape policies in favor to their firms. Ferguson and Voth (2008) investigate the value of connections between German industry and the Nazi movement in 1933. They find that firms with substantial links with Nazi experienced unusually high stock returns between January and March 1933 when Hitler was appointed Chancellor.

Sapienza (2004) studies the effects of government ownership on bank lending behavior and finds that, state-owned companies receive lower interest rates when borrowin g from state-owned banks and that the stronger is the political party in a given region, the lower is the interest rates charged to connected firms. These results provide evidence that state-owned banks are a mechanism for supplying patronage. Claessens, Feijen, and Laeven (2008) show that connected firms substantially increase their bank leverage after election. Charumilind, Kali and Wiwattanakantang (2006) find that Thailand firms with political connections had greater access to long-term loans with less collateral needed. Khwaja and Mian (2005) show that firms with political connections borrow 45 percent more and have 50 percent higher default rates. On the other hand, Faccio, Masulis, McConnell, and Offenberg (2006) find that politically connected firms are more likely to be bailed out when facing problems than are non-connected firms. Leuz and Oberholzer-Gee (2005) investigate the benefits received by politically connected firms in capital markets by examining their likelihood of global financing. They show that in a market where political intervention is pervasive, firms with fewer political connections have a greater likelihood of going outside the country to raise funds.

There is also evidence in the literature that political connections may destroy firm value. Cheung, Jing, Raghavendra, and Stouraitis (2005) show that political connections are detrimental to minority shareholders, a conclusion that is

consistent with the 'grabbing hand' model of government by Shleifer and Vishny (1998). Johnson, Kaufmann, McMillan, and Woodruff (2000) present evidence that in countries where official corruption is high, firms are more likely to hide output so as to reduce appropriation.

One of the most important corporate financing strategies that is yet to be addressed formally in the political connections literature is the process of going public. As discussed above, the papers that come the closest to address this issue are those belonging to the share issue privatization (SIP) literature, in which they focus on the underpricing of SOEs during privatization. Jenkinson and Mayer (1988), and Perroti and Guney (1993), among others, find that underpricing is greater for IPOs of state-owned issuers than that of privately owned firms. However, Dewenter and Malatesta's (1997), using SOEs from UK, Canada and Malaysia, find no significant difference in underpricing between the privatized SOE firms relative to the private company IPOs. Thus the issue as to the impact of political connections on the underpricing of IPOs is still unresolved.

Fan et al (2007) focus on post-IPO firm performance, examining long-run stock returns, earnings growth and sales growth. They also examine the relationship between politically connected CEOs and the first day stock return. They find that there is a negative relationship between the CEO's political ties and the issuing firms' initial return. They interpret this negative effect as a signal of government intervention, which depresses the initial returns on the first day of trading. Although their interpretation is insightful, the question remains whether and how politically connected CEOs effect the process of going public. Furthermore, government intervention on one hand may reduce the efficiency of the economy as a whole, but on the other hand, it means support to politically connected firms which may alleviate investor fears of bankruptcy. Therefore, it is not necessarily bad news for investors if firms CEOs are politically connected.

3 Political connections and China's security markets

Two decades ago there were only two listed stocks in what today is known as the Shanghai Exchange. Since then, the number of listed stocks has rapidly increased to 1,224 and the cumulative amount of capital raised by listed companies was 882 billion RMB (about 106.65 billion US dollars)[2] by the end of 2002. Included in this number are state-owned firms that have been partially privatized by IPOs. This latter phenomenon is being driven by the need of the government to raise

[2] The exchange rate used is $1=RMB8.27.

capital from the private sector to reform the heavily indebted state-owned enterprises that had become a serious fiscal burden.

Although the rapid growth of China's capital markets is impressive, certain fundamental features have yet to be changed. One of the most important is that the government still plays a significant role in these markets by controlling the going public process. Before describing our measurements of political connections, we briefly explain three distinguishing institutional features of China's security markets.

3.1 Institutional characteristics of China's security markets

3.1.1 Quota

During the sample period, the State Planning Commission, the People's Banks of China, and the CSRC determined the aggregate amount of new shares (quota) that can be issued each year. These shares were distributed to individual provinces and assigned to those companies that were perceived to have an important stake in local economic development.

Most firms in the security markets are state-owned and are relatively older and larger. Although SOEs are usually thought of as being less likely to be successful if they were in a more market-oriented environment, and some of them are indeed disappearing, those that attempt to go public and are therefore willing to be scrutinized by variant stakeholders are likely to be stronger firms. Before going public there are certain thresholds that firms must meet. Applying firms must be limited liability companies (LLCs); they should have no record of any severe violations against laws and 'social welfare'; must have at least three years operating history and positive profits for the past three consecutive years; and after going public the number of shareholders who hold at least 1,000 shares must be no less than 1,000. Meeting these requirements, however, does not guarantee that the applying companies will get approval. This is the case because there are only a limited number of companies that are allowed to go public in a given year. Additionally, given the underlying reasons for the creation of China's security markets and the existence of the quota system, it is very difficult for a non-state firm to compete with their state-owned counterparts for their share of the quota in government controlled capital markets.

3.1.2 Pricing cap

A stock's issuing price is fixed once registration with the stock trading system has occurred.[3] The offer price is chosen months before the market trading starts, and there is no feedback mechanism through market demand that allows adjustments in the offer price. The offer price is suggested by the issuing company and the bookrunner, and then verified by the CSRC. The calculation of the offering price takes the following form

P0 (the offer price) = Profits/Share * P/E ratio (3.1)

As shown in equation (3.1), there are two main determinants of an issuing firm's offer price: the profitability of the issuing company and the P/E ratio, which is a given multiplier determined by the CSRC. The multiplier range during our sample period was 13 to 16.

3.1.3 Untradable shares

Shares in China's security markets are divided in to two broad categories: non-tradable and tradable shares.[4] According to the Administrative Rules of Security Issuings and Trading published in 1993, the number of tradable shares issued to the public at IPO should be no less than the 25% of the total number of issued shares. This requirement may be relaxed for firms with a total number of issued shares more than 400 millions. State-owned shares remain untradable even after the company has gone public. The partial share issue privatization and the required dilution in the ownership of tradable shares secure the controlling position of the state in SOEs after they go public. The fixed supply of shares and

[3] Based on Article 28 of the Securities Law, 'In cases of premium issuance (that is shares are issued at a higher than the face value price), the issuing price shall be negotiated and determined between the issuer and the underwriter, subject to the verification of the securities regulatory agency under the State Council.'

[4] At present Chinese companies going public have the option of issuing A shares, B shares, H shares, N shares and S shares. The differences are where they are listed and who can own and trade them. A shares are domestic shares which mean that they are listed in Shanghai Exchange and Shenzhen Exchange (the only two exchanges in mainland China) and can only be purchased by Chinese citizens residing in mainland China. B shares are those listed in mainland China with RMB facial value but purchased by investors outside of mainland China by US dollars if listed in Shanghai exchange or Hong Kong (HK) dollars if in Shenzhen exchange. H shares are those listed in Hong Kong exchange and can only be purchased by investors outside of mainland China. N shares and S shares are similar to H shares but are listed on the New York Exchange and the Singapore Exchange, respectively. At the end of 1997, 42 companies successfully went public outside of mainland China, of these 31 listed in HK, 6 listed in both HK and NY, 2 in both HK and London, only 2 in NY and 1 in Singapore. The gross proceeds from these listings were about $9.56 billion.

the imposed P/E ratio indicate that government intervention has a significant impact on the going public process.

3.2 Measures of political connections

As mentioned earlier, we measure political connections in three ways. We next describe each.

3.2.1 The political connection of board members

Because the state remains the controlling shareholder following the going public of SOEs, quite often the members of the board of directors are also government officials. According to the Company Code of 1993, the board members of state-owned companies are assigned by State Owned Assets Supervision and Administration Commission of the State Council (SASAC). All boards of directors of state-owned companies are assigned and compensated by SASAC and therefore have a certain level of political connection. In addition, firms with boards that have directors who have or have held government positions would have stronger ties with the government suggesting that these firms would be more politically connected.

Although non-state firms cannot have board members that currently work for the government, they can have retired officers, which because of Chinese culture virtually guarantees them a significant level of political connection. As a result (these) firms are usually very aggressive in recruiting former high ranking officials. The economic benefits provided by this strategy are of interest and will be examined below.

We obtain data on the strength of politically connected boards of directors by manually examining the prospectus of each IPO during the sample period and identify the background of each board member.[5] Board members who used to work for or are currently working for the government at the level of a city mayor or higher are defined as politically connected. The positions and government agencies that are identified in the sample include: city mayor, head of provincial tax bureau, provincial governors, director of the central or local economic planning committee, and director of the central or local SASAC. We are not able to identify in more details which connection is the strongest because even though the central government and its agents have the ultimate power over decisions

[5] Fan et al (2007) define political connections by the background of CEO. We therefore conducted some additional testing based on our sample and re-estimated the entire relevant results using CEO connection as the proxy of political connection rather than the board. We do find significant results that are consistent with the reported result in the text.

made by provincial or local governments, it is the provincial or local governments that have the strongest incentives to help the rent-seeking firms so as to fulfill local fiscal goals. We therefore use a dummy variable equal to 1, if the issuing firm has any politically connected board members, 0 otherwise.[6]

3.2.2 The political connections of bookrunners

It is well known that one of the most important participants in the process of going public is the underwriter. Within China, underwriters are particularly important given the institutional features of the going public process. First, they work with the firms to get the approval from CRSC to get the 'quota'. The process stops if an approval is not obtained. As is the case in other economies, they play a significant role in determining the offer price. However, because of the unique institutional features of China, their role takes on an even greater importance by influencing the P/E ratios.

There are about 90 investment banks in China of which only 32 are allowed to assume the role as bookrunners. They are all state-owned investment banks and we conjecture that state-owned investment banks are a mechanism for supplying patronage in China's security markets, especially during the process of going public. Of the 32 bookrunners, 5 of them were the bookrunners for 59 of the 100 largest state IPOs over our sample period. The parent companies of these five intermediaries are powerful forces in the governmental hierarchy (eg the Central Bank of China, State Council, and Shanghai government) thus implying that these intermediaries would be well connected politically. We therefore make the assumption that the most politically connected investment banks are the ones that participate most frequently in the largest IPOs. As such, we define a politically connected underwriter if it is one of the 5 leading underwriters. Table 1 provides details of the involvement of these 5 banks in the 100 largest state IPOs.

There are several additional reasons why we use the underwriting of the largest state IPOs as a measure of investment banks' political connection. First, the amount of going public fees collected by these five investment banks are estimated to be $271 million dollars during the sample period, more than the aggregated amount of fees earned by the other 27 certified bookrunners. Given that the underwriting process was virtually risk-free business during our sample period because of the tremendous demand for the shares, it is reasonable to believe that only those who have the closest relationship with the government are more likely to get chosen to underwrite the largest offerings. Second, because of the 'quota' system in the primary markets, in periods when the central government intends to tighten the supply of IPOs, they assign limited 'passes' to

[6] We also tried the number of connected members and obtained qualitatively similar results.

those most connected investment banks (the top 5). Therefore, the ranking of underwriters reflects the strength of their relationship with the government and can be used as a measure of political connection.

3.2.3 The strength of political connections of SOEs

During the transition from a centrally controlled economy to a market driven one, China's economy experienced a rapid increase in the involvement of firms belonging to the private sector. Nevertheless it is still the case that most of the listed companies are state-owned enterprises that are partially privatized. Among the IPOs floated in China's stock markets during our sample period, about 70% of the shares were state-owned in the pre-IPO period and 50% in the post-IPO period. An explanation for this dominance of SOEs is that state-owned firms were the initial catalyst for the existence of China's security markets. Further, because the CRSC determines quotas state-owned firms are more likely to receive favorable treatment than non-state owned firms.

To measure the strength of political connections based on the type of ownership, we divide our sample firms according to their controlling shareholders prior to going public into State-Owned and Non-State.[7] To distinguish the strength of political connections among State-Owned IPOs, we break down the sample further into State firms that have the central government or its agents as the controlling shareholder and State-Legal Entity firms that have other SOEs as the controlling shareholder. Both State and State-Legal Entity firms are State-Owned companies and by constitution belong to the central government and should in theory operate in a way that is beneficial to all Chinese citizens. The major difference between State and State-Legal Entity firms is that State-Legal Entity firms can independently allocate the legally delegated state-owned properties. Additionally, the government or its authorities can (and do) send people directly to sit on the board of State firms, while both the board of directors and the top managers of State-Legal Entity firms are assigned by their parent SOEs.

Given that State-Legal Entity firms have the right to allocate the delegated state-owned resources without direct intervention of the government, we believe that they operate more like a firm in a market driven economy than their State counterparts and therefore have fewer political connections. Sun and Tong (2003) also suggest that legal entities behave differently from the state government. Non-State firms experience little intervention (and support) from the government. To identify the type of ownership, we examine the prospectus of all the IPOs in the sample and identify the largest shareholder of the firms prior to the offer date.

[7] The controlling order of the owners does not change in the post IPO stage.

During our sample period, the number of non-tradable shares accounts for 70% of the total number of shares of the listed companies. Table 2 illustrates the ownership structure of issuing firms prior to and subsequent to the IPO. Panel B of table 2 shows that the percentage of non-tradable shares is allocated in the following manner: (1) shares owned by the State accounts for 48.3%, of which the number of shares owned by the central government accounts for 17.5% and the number of shares owned by other State-Legal Entity (parent SOEs) accounts for 30.8% and (2) shares owned by Non-State firms accounts for 21.7%.

The empirical evidence from the share issue privatization literature indicates that state-owned enterprises are not more underpriced at the initial public offering than their private sector counterparts (see eg Jenkinson and Mayer (1988), Perroti and Guney (1993), and Dewenter and Malatesta (1997)). However, we expect SOEs going public in China to be less underpriced for several reasons.

First, as mentioned earlier, China's security markets were created to solve the financing problems of SOEs. The traditional subsidized loans, in most cases disbursed to the state sectors, had created a significant fiscal burden to the government and resulted in many bad debts. Both financial officials and political leaders were looking for a way out. It is therefore highly unlikely that security markets designed by the state to meet such fiscal needs would be ready to discount its own companies more significantly than others.

Second, state-owned managers do not necessarily have fewer incentives to reduce underpricing. As the agent of the people's assets both prior to and after the process of going public, state-owned managers would enjoy higher managerial discretion with reduced underpricing or increased capital. Just as managers of public companies in developed markets may prefer to issue seasoned equity offerings so as to reduce their firms' leverage ratio and increase managerial discretion, China's State-Owned company managers may also want to reduce underpricing in initial public offerings. Furthermore, in a socialistic system where politics and the management of State-Owned properties are not clearly distinguished, managing a bigger corporation adds political clout.

Therefore, we expect that firms with political connections should, all else equal, experience relatively higher offering prices, less underpricing and lower fixed costs in the process of going public. Also, if we take State-Legal Entity firms as a product of the transition from the old central-planned economy, we expect the benefits received by them to be somewhere in between State IPOs and Non-State ones.

4 Data and summary statistics

4.1 Data

The list of companies going public is obtained from the New Issues of the Security Data Corporation (SDC). We exclude IPOs by financial institutions and mutual funds. The data for board members, ownership variables and firm specific characteristics are collected manually from the individual prospectus of the IPO firms. In addition, the variables taken from the SDC database are cross-checked by comparing them with the information on the prospectuses. The final sample is comprised of 423 firm commitment IPOs of A-share common stocks over the 1994 to 1999 time period. We choose this time period because there were no drastic regulatory changes in the security markets,[8] especially the method of calculating the IPO offer price. Because the offer price is determined by the issuing firm's profits per share and a given P/E ratio (multiplier) and because we also use the level of the given P/E ratio to analyze the strength of the firm's political connections, to get a clean measure of this variable we restrict our sample to this time period.[9]

As discussed earlier, to facilitate the understanding of the impact of political connections on the going public process, we divide the sample into three groups according to their controlling shareholder prior to the IPO: State, State-Legal Entity and Non-State IPOs. Table 3 presents the distribution by industry of IPOs by State, State-Legal Entity and Non-State firms. Among the sample of 423 IPOs, 159 (38%) are issued by State firms, 213 (50%) by State-Legal Entity firms, and 51 (12%) by Non-State firms. State-Owned enterprises, including both State and State-Legal Entity ones, account for 88% of the total issuing firms in the sample period. The majority of the issuing firms are from manufacturing industries which accounts for about 66% of the total sample. State-Owned firms dominate IPOs from industries such as electronic service, natural resource and telephone communication, which is a reflection of policy preference of the state.

[8] Prior to 1994 shares were issued at RMB 1. As pointed out by Su et al (1999) and others, this led to extremely large amount of underpricing. The government relaxed restrictions on pricing (eg removing the restrictions on the range of the P/E ratio) after 1999.

[9] As mentioned earlier, the offer price is restricted by the firms' profitability and an assigned multiplier (P/E ratio), which is decreed by the government. The profitability is measured by considering firms' historical profitability as well as the projected ones. To make the results comparable, we estimate and use the firms' historical profitability for the whole sample.

4.2 Summary statistics

Table 4 presents summary statistics by the type of issuing firms. Columns 1 to 3 report the average value of each variable for the three types of firms: State, State-Legal Entity and Non-State firms. The t-statistics of the difference between the groups are reported in columns 4 to 6. Columns 7 to 11 report the summary statistics for the total sample.

Panel A in table 4 reports the statistics for the political connection measurements. Almost half of the State-Owned IPOs have at least one board member who used to work for or is currently working for the government or its authorities. For Non-State IPOs, only about 20% have connected board members. The difference in the percentage of politically connected board members between these IPOs and those of each of the other two groupings is significant at the 1% level. Interestingly, there is no significant difference in the use of connected bookrunners between the different types of IPOs ownership. This finding is probably due to the fact that about 50% of each group has connected investment banks as its bookrunners. It seems that although investment banks are state-owned, they also work with Non-State IPOs. The important issue then is whether they treat State-Owned firms differently from Non-State ones in the process of going public with regards to the pricing of shares, the level of underpricing and the spread. This issue will be discussed below. For both types of State-Owned IPOs, ownership is highly concentrated with the majority owners being either the central government or the parent SOEs prior to the offering. The percentage of shares owned by these institutions for each type of State-Owned IPOs accounts for 68.6% and 85.4% respectively, prior to going public.

Finally, to get an overall measure of political connection for each firm, we create a Political Connection Index, which is a summation of the three different measures of political connections. Because all of the individual political connection measures are binominal, the political connections index ranges in value from 0 to 3, where 0 indicates the lowest level of political connections and 3 the highest. As shown in the bottom row of Panel A, the State IPOs have an average connection of 1.931 and State-Legal Entity IPOs have a value of 2.014. For the Non-State IPO firms, the mean value of the political connection index is less than one, with the difference between the other ownership groups being significant at the 1% level.

Panel B reports firm specific summary statistics. State-Legal Entity IPOs have the highest average value of assets prior to the offering at $96.1 million US dollars and Non-State IPOs have the lowest at $43.4 million US dollars with the difference being significant at the 1% level. While larger in size, State-Owned IPOs also have higher leverage ratios. Both types of State-Owned IPOs have leverage ratios over 50% while Non-State IPOs have below 50% and the

difference is statistically significant at convention levels as shown in columns 5 and 6. The significantly higher debt ratio between State-Owned and Non-State IPOs is consistent with one of the arguments made earlier for the development of the stock market in China – the financing of heavily indebted SOEs. Thus, given that one of the goals of the creation of the security markets is to reduce the fiscal burden created by the borrowings of the SOEs, the extent to which they are leveraged should therefore be an important factor in determining the impact of political connections on the going public process. It is therefore expected that because the government significantly effects the IPO offer price, firms with higher debt ratios should, all else equal, get a higher offer price. We attempt to answer this question below with cross-sectional analysis of the determinants of the offer price.

Panel C reports the summary statistics related to the offerings. We see that controlling for size differences, the average amount of proceeds raised is significantly smaller for Non-State IPOs than that of State-Owned IPOs. State-Legal Entity IPOs raised the highest proceeds of $42.8 million U.S. dollars and Non-State IPOs raised the lowest at $30 million. Additionally, State-Owned IPOs pay significantly lower fees per dollar raised than do Non-State ones. Specifically, both State and State-Legal Entity IPOs paid about $ 0.036 per dollar raised, while Non-State ones paid $ 0.040 with the difference in fees being statistically significant at the 1% level. These results provide the first set of evidence that State-Owned IPOs might have benefited from their political connections.[10]

One of the unique characteristics of the process of going public in China is the lottery drawing in the case of oversubscription. According to the 'Interim Directive for Securities Issuings and Subscription by Chinese Securities Regulation Committee' issued on December 26th, 1996, if there are oversubscriptions, a lottery will be used to determine the allocation of new shares. During the sample period, state-owned or not, almost all IPOs were oversubscribed.[11] Using the level of oversubscription as a proxy for the demand of an IPO we expect that, ceteris paribus, there is a positive relationship between the level of underpricing and oversubscription. This is the case because higher demand is likely to bid up the first day trading price therefore leading to a higher level of underpricing. Next we describe in detail our measure of oversubscription.

In China's A-shares market, all domestic investors can register to buy a certain amount of new shares.[12] The most popular purchasing method during the sample period is for investors to subscribe through the internet. If the number of

[10] Note that this may not be entirely due to economics of scale since there is no difference in costs between 'State' and 'State-Legal Entity' IPOs despite that 'State-Legal Entity' having substantially larger amounts of funds.

[11] There is only one observation in the sample that is not oversubscribed, which is 'Bai Da Corporation'.

[12] They must be the multiple of 1,000 and can not exceed one thousandth of the total number of shares issued to the public.

shares subscribed is exactly equal to the amount of shares offered to the public, every investor gets exactly the amount of shares they requested. If the number of shares requested is less than the number of shares offered then each investor gets the requested number of shares and the rest of the offer is taken by the investment bank. Finally, if the number of shares requested is higher than the total amount issued, the computers at the listing exchanges would generate continuous numbers for each 1,000 shares and randomly draw 'winning' numbers. The odds would be the ratio of the total number of shares issued to the total number of shares requested. Hence, the investors requesting the most shares, within the limit, gets the most drawing numbers and is therefore most likely to beat the odds. It should be noted however, that under this method of share allocation there is no guarantee that all investors who requested shares would end up receiving shares.

There are two other kinds of purchasing methods and the difference between these methods and that of purchasing via the internet is that each subscriber is allocated some shares according to the odds ratio. However, irrespective of the purchase method used, the odd, which is the ratio of the number of shares issued to the number of shares requested, can be referred to as a measure of the 'popularity' of a particular stock. Since there is a cap on the shares that can be requested per investor, a higher number of registrations results in a higher number of oversubscriptions and a lower number for the Lottery ratio, which therefore indicates higher demand for a particular IPO.

Panel C of Table 4 shows that the odds of getting a share of Non-State IPOs are significantly lower than for both types of State-Owned IPOs. Specifically, the odds for Non-State IPOs are 9 in a thousand and are 26 in a thousand for State ones. The significantly different Lottery ratios suggest that investors have a preference for Non-State IPOs compared to State-Owned ones. In sum, the summary statistics reported in Table 4 suggest that State-Owned IPOs have stronger political connections, are larger in size, have a higher debt level, and have significantly less demand than do Non-State IPOs.

We pointed out earlier that the offer price is determined by the offering firm's profitability and a given P/E ratio. The CRSC specifies that 'a P/E ratio from a comparable public firm should be the method used to determine the appropriate P/E ratio'. Although there might be some variation in the P/E ratios a firm can get, they have to fall into the range determined by the CRSC. During the sample period, all IPOs are assigned a P/E ratio ranging from 13 to 16. Rather than measuring risks and growth as is generally the case for developed markets, the P/E ratio that is used to determine the offer price in China's security markets can be thought of as a multiplier that the government uses to control the issuing price of IPOs. Therefore, the amount of capital that a firm can raise when it goes public depends heavily on the P/E ratio it gets, given its level of prior profitability.

To provide evidence on how political connections impact the pricing of newly offered shares, we examine how often firms get a higher than the median

multiplier and how much higher it is from the median. It is important to realize that during the sample period, the definition of profitability used to calculate the offer price changed several times. During the period prior to 1997, forecasted profitability is used to determine the offer price and recorded in the prospectus; while from 1997 to 1998, historical profitability over the past three years was used to determine the offer price and after 1999, a combination of both is applied. To make the results comparable over the sample period, we collected the historical profitability of all the firms over the three years prior to the issuance and divided the offer price with this measure to get the actual P/E ratios that firms received.

The following example illustrates the calculation. Northwest Bearing went public in 1996 and as written in its prospectus, its offer price is RMB 4.15, determined by a projected profitability of RMB 0.306 per share and a multiplier (given P/E ratio) of 13.07. To make its reported P/E ratio comparable with those determined by historical profitability, we collected its profitability from its annual reports in the past three years. According to its annual reports from 1993 to 1995, the historical profitability of this firm was 0.320 0.328, and 0.205 respectively per share.[13] The average historical profitability therefore is 0.284, which implies that the actual multiplier Northwest Bearing gets to issue at RMB 4.15 per share should have been 14.61 if historical profitability method is used. Since the median of the government suggested P/E ratio is 14.5 (of a range from 13 to 16), Northwest Bearing gets a higher than median P/E ratio.

Panel A of Table 5 reports the summary statistics of the level of underpricing and its related variables for the total sample of IPOs. The average degree of underpricing is 116.2% and the average offer price is RMB 6.088. The average three year profits per share are RMB 0.359 and the actual P/E ratio is 18.808 if the historical profitability were applied to all firms instead of the projected one. About 76% of IPOs have a higher than median P/E ratio. The mean deviation of the actual P/E ratio from the median is 4.248.

Panel B of Table 5 reports the summary statistics for underpricing for the type of firms. Average values are reported in columns (1) to (3) and t-statistics for the difference between the means are reported in the last three columns. Non-State IPOs experience a significantly higher level of underpricing than State-Owned IPOs. Specifically, Non-State IPOs experience 130.5% underpricing while State and State-Legal Entity IPOs experience 114.2% and 114.3%, respectively. The difference is significant at the 5% significance level. The historical profitability of Non-State IPOs is RMB 0.475 per share which is significantly higher than that for State (0.335) and State-Legal Entity (0.349) IPOs. Nevertheless they receive a significantly lower multiplier (P/E ratio) in determining the offer price. To be specific, Non-State IPOs have an average P/E ratio of 16.9, whereas State and

[13] The number of shares to calculate historical profits is the number of shares existing prior to the issuing.

State-Legal Entity IPOs have P/E ratios of 19.8 and 18.6, respectively. Similarly, a much smaller percentage of Non-State IPOs (52.9%) receive P/E ratios above the median when compared to State IPOs (81.8%) and State-Legal Entity IPOs (77.5%), a difference that is significant at the 1% level. Taken together, these results provide additional evidence that firms that are politically connected receive significant benefits in the going public process as evidenced by being priced more aggressively in terms of P/E ratios.

Finally, we report in Panel C univariate results of the level of underpricing between the more- and the less-connected IPOs. We define More Connected IPOs to be those that have at least two forms (the median value of our Connection Index variable in the full sample) of political connections identified in this paper and Less Connected to be those that have one or no connections. Therefore, More Connected state-owned IPOs would refer to those state-owned firms that have Connected Bookrunner or Connected Board or both. And More Connected non-State IPOs refer to those non-State firms that have both Connected Bookrunner and Connected Board. Results reported in column 1 and 2 show that More Connected firms experience an average underpricing of 104.7%, 32.6% lower than those Less Connected firms at 1% significance level. Furthermore, with significantly lower prior profits, those More Connected firms were able to get an average Actual P/E ratio of 19.504, significantly higher than those Less Connected ones.

State-owned firms are not entitled to all the benefits that may be brought by political connections. As shown in column 3 and 4, More Connected state-owned firms experience an average underpricing of 104.6%, 34.7% lower than those Less Connected state-owned ones. In fact, without strong political connections, state-owned firms experience almost same level of underpricing as those Less Connected non-state IPOs do (139.3% vs. 132.9%). We also show that non-state IPOs with more connections are better off than those with fewer connections, although the difference is not significant in several comparisons due to the fact that there are only 5 non-State IPOs that have two forms of political connections.

Summarizing, Table 5 indicates that political connections tend to increase the offer price a firm going public can receive by enabling them to obtain a higher than median value P/E multiplier, thereby contributing to a lower level of underpricing and thus leaving less money on the table. The univariate analysis also provides evidence indicating that political connections are not redundant measurements of ownership in exploring the process of the going public because we show that without strong political connections, state-owned firms are not treated significantly differently from non-State firms. However, these results should be interpreted cautiously given that these are univariate results and we have not controlled for known determinants of IPO underpricing. We next turn to cross-sectional analysis.

5 Regression analysis

5.1 Political connections and the pricing of IPOs

To examine the impact of political connections on the pricing of IPOs, we estimate a logit model to determine the probability of a firm getting a higher than median P/E ratio. Results are reported in Table 6. The dependent variable is a dummy variable that takes the value of one if the issuing firm gets a higher P/E ratio than the median value (14.5), and zero otherwise. Models 1 to 5 report the results from the logit analysis for each measure of political connections. Models 6 to 10 report the results when we add control variables to the regressions. Finally, model 11 reports the results for the sub-sample of Non-State IPOs. The marginal effect of each variable is reported in the brackets below the p-value.

We find that there is a positive and statistically significant probability of getting a higher than the median P/E ratio if firms are politically connected.[14] This relation holds irrespective of the measure of political connections used. Specifically, having connected board members increase the likelihood of getting a higher P/E ratio by 16.3%, and using connected bookrunners increase the likelihood by 9.3%. State-owned firms have a 10.9% higher likelihood of getting a higher multiplier, and firms controlled by the central government have a slightly higher likelihood of getting a higher P/E ratio than firms that are controlled by other SOEs. Finally, the connection index variable shows that the increase in average connectedness by one percent increases the likelihood of getting a higher than the median P/E by 13.3%.

We conjectured earlier that given that one of the goals of the creation of the security markets is to raise funds for indebted State-Owned firms, all else equal, firms with higher leverage ratios would be more likely to get a relatively higher offer price. To test this conjecture, we include the total debt ratio in the regression equation. We also include a Hi-Tech dummy variable[15] so as to control the potential impact that being a hi-tech firm could have on the offer price. To control for the effect of size we include the logarithm of the total assets. We also include Tradable Shares in the regression, which are the shares that are freely tradable in the secondary markets. The results show that leverage has a positive and significant impact on the firms' likelihood of getting a higher P/E ratio. Specifically, we find that a 1% increase in the leverage ratio has an impact that ranges from a low of 21% (model 6) to a high of 29% (model 10). For Non-State IPOs, having any one of the two forms of political connections increases the likelihood of getting a higher P/E ratio by 23.5%. In contrast to their State-Owned

[14] The results hold if we include year dummies.
[15] The results remain quantitatively same if replacing the Hi-Tech with industry dummy variable.

counterparts leverage does not help Non-State IPOs in gaining a higher multiplier for their offer price.

Lowry and Schwert (2004) analyze the efficiency of the IPO pricing process in the US market, where after an initial range of offering prices is set by the underwriters, the offer price is determined subsequent to the road show and prior to the issuing date. Although the process of IPO pricing is totally different in China's security markets, underwriters also play a very important role in the going public process. Instead of an offering price range, as pointed out earlier there is a P/E ratio range that is used to calculate the offering price, which is preset by the government. Investment banks, which are also state-owned in China, influence the pricing of IPOs through their impact on the assigned P/E ratio. We find that connected bookrunners help issuing firms get relatively higher P/E ratios and therefore higher offer prices which lead to a larger amount of capital being raised. This is particular the case for state-owned firms. This result provides support for the assertion that one of the goals of the government in the development of the capital markets is to be able to fund the state-owned firms thus alleviating their massive debt burdens. In general, the results that state owned firms benefit the most from connected investment banks are similar to those of Sapienza's (2004) who finds that state-owned commercial banks provide a mechanism through which patronage is supplied in security markets.

5.2 Political connections and the degree of underpricing

Table 7 presents OLS regression analysis of the impact of political connections on underpricing. The dependent variable is initial returns measured as the percentage change between the closing price of the first trading day and the offer price.[16] Models 1 to 5 report the results of underpricing on the different measures of political connections. All results are corrected for heteroscadasticity using White's correction. The results indicate that irrespective of the measure used, political connections have a statistically significant and economically meaningful negative relationship with the level of underpricing. As expected, State shares that are under the control of the central government and its agents reduce the level of underpricing more significantly than their State-Legal Entity counterparts. This is consistent with our earlier arguments that state-owned firms in which the tie with the central government is not as strong, will receive less support during the going public process.

To examine if the relation between the level of underpricing and political connections hold after including control variables, in Models 6 to 12 we report

[16] The results hold if we use the percentage change between the closing pricing of the 7th trading day/15th trading day and the offer price.

regressions with additional independent variables. Hi-Tech takes the value of one if the issuing firm is from the hi-tech industry. Standard deviation (STDV) is our proxy for risk. Oversubscription is a measurement of the demand of a particular stock, and is expected to have a positive effect on underpricing. ΔActual P/E is the difference between the actual P/E ratio that a firm gets to determine its offer price and the median value of the range of P/E ratio suggested by the government during the sample period. The higher is the ΔActual P/E, the more likely it is that for a given level of profitability the issued shares are priced above the median. If investors in the secondary market realize this information and bid accordingly on the first trading day, they might bid less vigorously for those that are already priced higher than the median. Additionally, we also consider Tradable Shares in the estimation.[17]

The results indicate that the observed relationships between the level of underpricing and the political connections hold even when the control variables are included in the regressions. Hi-Tech IPOs and IPOs with more uncertainty have a higher level of underpricing. Consistent with our expectations, oversubscription is significant and positive, while ΔActual P/E has a negative and significant relationship. Interestingly, the proportion of the amount of tradable shares has significant and positive relationship with the level of underpricing and the results suggest that it mainly driven by state-owned firms. Since we have shown in table 6 that Tradable Shares do not impact the P/E ratio a firm obtains (that determines the offering price), the significant and positive relationship between Tradable Shares and underpricing indicates that more shares of a firm, especially a state-owned firm, are issued to the public, higher the first day trading price is, given everything else equal.

Model 11 reports the estimation results for Non-State IPOs, among which, the ones with political connections experience significantly lower underpricing. The results indicate that political connections also have a negative effect on the underpricing of Non-State IPOs. In un-tabulated results we rerun the Non-State regression with only STDV as the independent variable. We also ran a similar regression for the entire sample. We find that for the entire sample the adjusted R-square is only 3.3%. In contrast, for the Non-State IPO sample the adjusted R-square is 13.5%. The finding that STDV explains the variation in underpricing better in Non-State IPOs than it does in State-Owned IPOs is consistent with the notion that shares of State-Owned firms provide a less risky investment opportunity because it is customary for the government to bail-out or subsidize SOEs when they are in trouble.

[17] Since the conjecture about the impact of political connections on the process of going public suggests that the offering size may be endogenous, in the unreported table, we show that the sign and magnitude of the coefficients hold when we include the instrumented size variable as a regressor.

5.3 Political connections and the cost of going public

We collected issuing cost information from the individual prospectuses. Most of the issuing firms report their issuing costs as a lump sum and only a few provide detailed information. By examining those who do report detailed costs we find that most of the fees (about 60%) are paid to the underwriting syndicates.[18] Thus, unlike in the US where the underwriter spread is 7% (Chen and Ritter (2000)), there is no evidence of a 7% spread (or any particular number) when firms go public in China. Because we are not able to get syndicate fees for each IPO, we use the total issuing costs as a proxy for the underwriting fees in the analysis that follows.

Table 8 presents the regressions of the issuing costs as a percentage of the total proceeds raised. Models 1 to 5 report regression results on political connections. Connected board and both types of State-Owned shares significantly reduce the total cost of going public. Connected bookrunners are also related to lower percentage of fees paid although only at marginal significance levels. It is reasonable to assume that although connected bookrunners might reduce their clients' average cost of going public there is still great demand for their services. This suggests that having a connected bookrunner would only have a modest impact on reducing the costs of going public. Consistent with our previous conjecture we find that being a State firm reduces the cost of going public more so than State-Legal Entity firms. However, the economic impact is modest as reflected in the size of the coefficient.

Models 6 to 10 report regression results when we add control variables. We use a relative size measure defined as issue size over total assets prior to going public to control for any possible size effect. In the analysis of the pricing process of IPOs, the results suggest that politically connected bookrunners may increase the P/E ratio an issuing firm gets so as to increase the offer price. Here we investigate whether firms with lower profitability pay higher issuing costs to investment banks so as to get a higher P/E ratio. We find that there is a negative and significant relation between profits and issuing costs. To be specific, we find that a one dollar increase in profits per share reduce issuing cost per dollar raised by 0.017 dollar. We also find that firms with lower issuing size relative to total assets prior to the offering tend to pay higher costs of going public. Importantly, the political connections variables are still significant after we control for size and the quality of the issuing firms. Model 11 reports the regression for Non-State

[18] For example, for stock 'Yun Tian Hua', ticker code '600096', among the 14 million RMB of issuing costs, 8.52 million (60%) is paid to the underwriting syndicate, 0.58 million (4%) to the accounting firms, 0.55 million (3.9%) to asset evaluation firms, 0.4 million (2.9%) to law firms, 0.6 million (4.3%) to the sponsor of going public, 0.2 million (1.4%) to financial consultants, 0.32 million (2.3%) to registration office, 0.8 million (5.7%) traveling fees, and 2 million (14.3%) other fees.

IPOs only. Similar to the results for State-Owned, all else equal, Non-State IPOs with political connections tend to pay less issuing costs.

5.4 Robustness test

The analysis of the pricing of IPOs, the level of underpricing, and the cost of going public indicate that IPOs with less political connections are treated less preferentially during the process of going public than those with more connections. A relevant question then is if they were politically more connected, at what offer price would they issue shares given the same characteristics and how much underpricing would they experience? To examine these questions, we perform OLS regressions to determine which factors might impact the actual P/E ratios received by More Connected IPOs and use the coefficients from these regressions to predict the P/E ratios that Less Connected IPOs would have received if they were strongly connected. The regression that we use to estimate the actual P/E ratios for More Connected IPOs is as follows

$$\begin{aligned} P/E = \; & 31.014 - 40.650 * \text{Prior Profits/Share} + 0.221 * \text{Debt/Asset} \\ & + 30.334 * \text{Issuing Costs/Proceeds} + 0.066 * \text{Exchange} \\ & - 0.493 * \text{Hi-Tech} + \varepsilon \end{aligned} \tag{5.1}$$

Using the coefficients from equation (5.1), we predict the P/E ratio that Less Connected IPOs would have received if they were treated like their More Connected counterparts. Table 9 reports the results from these predictions. The average of the predicted P/E ratios for Less Connected IPOs is 28.018, about 10.488 higher than the actual P/E ratio they received and the differences is significant at the 1% level. The increased P/E ratios would lead to a higher average offering price of RMB 9.352, which is RMB 3.056 higher than the actual offer price and the difference is significant at the 1% level. The increased offer price would reduce Less Connected IPOs' underpricing by 73.5% to 63.9%. The decrease is significant at the 1% level. These results indicate that if Less Connected IPOs were treated the same as their More Connected counterparts, they would have received a higher P/E ratio, which would lead to a higher offer price and hence, all else equal, a significantly lower degree of underpricing.

When breaking down the sample into State, State-Legal Entity, and non-State firms by the strength of the connection, the evidence suggests that less connected State and State-Legal Entity firms would have received significantly higher P/E ratios if treated as their more connected counterparts, resulting in significantly higher offer price and therefore lower underpricing. The same pattern exists in non-State firms however the differences are not statistically significant primarily

due to the fact that only 5 of the 51 non-State sample firms are more connected relative to others thus contributing to the insignificant statistical results.

6 Concluding remarks

The extant literature has shown that political connections impact firm value. Specifically, researchers have attempted to quantify the value that political connections help to create or destroy for firms from the perspective of borrowing terms, bail-outs from bankruptcy, long-run performance and financing strategies. Yet one of the most important decisions in the life of a firm, the going public process, has not been formally addressed. Our paper tries to fill this void by examining the role of political connections in firms' going public process. Specifically we examine the pricing of IPOs, the level of underpricing and the fixed cost of going public.

This study extends this literature not only by introducing explicit measures of political connections but also by linking these connections to the going public process. We use the experience of newly public companies in China's security markets, where the market environment, the intermediation process, regulations, and practices are most suitable for such an empirical test. The evidence reveals that political connections play a very important role in the going public process. To be specific, political connections have a statistically significant and economically meaningful effect on the formation of the offer price, the degree of underpricing and the other costs associated with going public. These results are robust to different measures of political connections and to both State-owned and Non-State firms.

Our study indicates that political connections are valuable to firms. This implies that firms that lack political connections may have to accept less preferable treatment or seek other costly options in order to relax capital constraints. We therefore provide an explanation for the findings of Leuz and Oberholzer-Gee (2005) that non-connected firms are more inclined to seek global financing than well-connected firms. The magnitude of the impact of connections on the value of the economy as a whole, however, cannot be deduced from the results of this study. The costs may include but not limited to the resources that are applied to pursue and maintain the political connections and the costs of alternative means to create firm value.

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Tables 1–9

Table 1 **Political connections of underwriters**

This Table presents the top 5 ranked underwriters according to their participation in the 100 largest government IPOs. The ranking and sales data are based on information from 1994 to 1999 and are collected from Securities Data Corporation League Table. Total Proceeds Raised is denominated in US dollars. Involvement in the 100 Largest Government IPOs refers to the amount of proceeds raised by those underwriters as a percentage of the total proceeds raised of the 100 largest government IPOs; Number of the 100 Largest State-Owned IPOs Underwritten refers to the number of the 100 largest government IPOs that the underwriter acts as the bookrunner; and Main Owner refers to the controlling owner of the underwriters.

Underwriters	Total proceeds ($mil.)	Involvement in the 100 largest government IPOs	Number of the 100 largest state-owned IPOs underwritten	Main owner
Guo Tai Jun An	1809.35	21.73%	20	Central bank
Zhong Xin	1306.38	15.69%	11	State council
Shen Yin Wang Guo	982.97	11.81%	11	Shanghai government
Guang Da	449.09	5.39%	5	State council
Nang Fang	406.95	4.89%	5	Central bank
Total	**5528.27**	**66.39%**	**59**	

Table 2 **Ownership structures of IPO firms prior to an after issuings**

This figure shows the types of ownership of IPO firms prior to and after the initial public offerings. Panel A presents the ownership structure prior to the issuings. State-Owned refers to shares owned by the State in total. There are two types of State-Owned shares: State and State-Legal Entity. State shares refer to shares owned and managed by the government agencies or authorized institutions, eg 'State owned assets supervision and administration commission'. State-Legal Entity shares refer to shares managed by State-Owned companies. Panel B shows the ownership structure after the issuings. All State-Owned and Non-State shares are not tradable. Tradable shares refer to the shares that are freely tradable in the secondary markets. Initial Public Offerings refer to the shares offered when the firms go public.

Panel A. Prior to the issuance.

Ownership type	Percentage of shares controlled
State	25%
State-legal entity	44%
Subtotal: state-owned	69%
Non-state	31%
Total	**100%**

Panel B. After the issuings

Ownership type	Publicly tradable	Percentage of shares controlled
State	No	17.5%
State-legal entity	No	30.8%
Subtotal: state-owned	**No**	**48.3%**
Non-state	No	21.7%
InitialpPublic offerings	Yes	30%
Total		**100%**

Table 3 **The distribution of industrial A-share IPOs from 1994 to 1999**

This Table presents the distribution of IPOs included in the sample by industry and by firm type. The sample does not include IPOs by financial firms. State refers to IPOs issued by firms with controlling shares owned by central government or its authorized agents; State-Legal Entity refers to IPOs issued by firms with controlling shares owned by State-Owned enterprises; Non-State refers to IPOs issued by firms with controlling shares owned by Non-State enterprises. The industry information is retrieved from SDC.

Industry	*State*	*State-legal entity*	*Non-state*	Sum
Agriculture	2	7	2	11
Construction	4	5	0	9
Electric service	2	2	1	5
Manufacturing	106	138	35	279
Natural resource	1	8	0	9
Pers/bus/rep svc	7	6	2	15
Radio/TV/Telecom	1	1	0	2
Real estate	0	1	0	1
Regional agency	0	0	1	1
Restaurant/hotel	2	1	1	4
Retail	1	2	0	3
Telephone communication	0	1	0	1
Transportation	5	10	2	17
Wholesale	28	31	7	66
Grand total	159	213	51	423

Table 4 **Summary statistics**

State refers to IPOs issued by firms with the central government as the controlling shareholder; State-Legal Entity refers to IPOs by firms with other SOEs as the controlling shareholder; Non-State refers to IPOs by firms with Non-State enterprises as the controlling shareholder. Panel A. reports the statistics for the political connection measurements. Connected Board is a dummy variable and it is one if any of the board members used to work for or is currently employed by the government at a city level or higher; Connected Bookrunner is a dummy variable and it is one if the issuing firms' bookrunner is one of the five investment banks that we identify as most connected in Table 1; State-Owned is a dummy variable and it is one if the issuing firms are either State or State-Legal Entity controlled prior to the offering; State refers to firms that are controlled by the central government or its agents prior to the offering; State-Legal Entity refers to firms that are controlled by State-Owned companies; Connection Index is a continuous integer measurement of political connections ranging from 0 to 3 and it is a summation of Connected Board, Connected Bookrunner, State and State-Legal Entity, where firms with 0 have the least political connections and firms with 3 have the most political connections. Panel B reports the statistics of issuing firms. Asset refers to the amount of total assets of the issuing firms prior to the issuings denominated in US dollars by 8.27 direct exchange rate; Debt/Asset is the ratio of total debts to total assets in the year prior to going public; PriorProfits/Share refers to the average net earning (income after interest and tax) per share (existing shares prior to the issuing) of three years prior to the issuings; Hi-Tech is a dummy variable and it is one if the issuing firms are in the high technology industry. It is defined similar to Ritter's (2000) high-tech industry definition; STDV denotes the dispersion of the returns of each IPO in its first 30-day trading in the secondary market. Panel C. reports the statistics for the characteristics related to the issuing. Proceeds refers to the amount of capital raised by the issuing firms, which is denominated in million US dollars at the exchange rate of 8.27; Issuing Costs/Proceeds the fees paid to go public per dollar raised; Lottery is the drawing odds for oversubscription; and Tradable Shares refers to the shares that are freely tradable in the secondary markets.

	Total sample					Sub samples of three types of issuing firms					
	Mean	Median	Stdev.	Minimum	Maximum	State	State-legal	Non-state	Diff.	Diff.	Diff.
Obs.	423	423	423	423	423	159	213	51	(7)–(6)	(8)–(6)	(8)–(7)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Panel A. Political connections											
Connected board	0.435	0	0.496	n/m	n/m	0.447	0.484	0.196	0.037	-0.250***	-0.287***
Connected bookrunner	0.513	1.000	0.500	n/m	n/m	0.484	0.531	0.529	0.046	0.045	-0.001
State-owned shares	69.0%	76.0%	33.2%	0%	100%	68.6%	85.4%	1.3%	16.8%***	-67.3%***	-84.1%***
State shares	24.6%	0%	35.3%	0%	100%	64.4%	0.7%	0.7%	-63.7%***	-63.7%***	0.000
State-legal entity shares	44.3%	41.0%	44.1%	0%	100%	4.3%	84.7%	0.6%	80.5%***	-3.6%*	-84.1%***
Connection index	1.827	2.000	0.827	0	3.000	1.931	2.014	0.725	0.083	-1.205***	-1.289***

	Total sample					Sub samples of three types of issuing firms					
	Mean	Median	Stdev.	Minimum	Maximum	State	State-legal	Non-state	Diff.	Diff.	Diff.
Obs.	423	423	423	423	423	159	213	51	(7)–(6)	(8)–(6)	(8)–(7)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Panel B. Firm characteristics											
Asset ($ mil.)	78.300	45.600	172.000	5.660	2,950	65.700	96.100	43.400	30.400*	-22.300**	-52.700***
Debt/asset	0.536	0.570	0.157	0	0.890	0.550	0.537	0.484	-0.012	-0.066***	-0.053**
Hi-tech	0.106	0	0.309	n/m	n/m	0.075	0.127	0.118	0.051*	0.042	-0.009
STDV	0.034	0.033	0.012	0.013	0.100	0.035	0.035	0.033	0.000	-0.002	-0.002
Panel C. Issuing characteristics											
Proceeds ($ mil.)	38.900	29.000	36.400	4.680	318.000	36.600	42.800	30.000	6.204*	-6.600*	-12.800***
Issuing costs/proceeds	0.037	0.035	0.012	0.010	0.078	0.037	0.036	0.040	-0.001	0.003**	0.004***
Lottery	0.019	0.008	0.059	0.0001	1.000	0.026	0.015	0.009	-0.011**	-0.017**	-0.006**
Tradable shares	0.300	0.284	0.071	0.085	0.584	0.300	0.300	0.288	0.000	-0.002	-0.002

‘***’, ‘**’ and ‘*’ indicate significance at the 1% level, 5% level, and 10% level, respectively.

Table 5 **Underpricing and political connections**

Underpricing is the percentage of the changes between the closing first trading price and the offer price; Offer Price the is the price at which the shares are issued at the primary market and it is calculated by a product of the issuing firms' profitability and a multiplier (or P/E ratio); Prior Profits/Share refers to the average earning (income after tax) per share (existing shares prior going public) of past three years, Actual P/E is the multiplier that IPO firms use to determine the offer price if PriorProfits/Share is used and it is calculated by dividing the offer price by the issuing firms' prior profitability; Prob. of above Median P/E (14.5) refers to the probability that the issuing firm gets a higher than the median value multiplier (P/E ratio) to determine the offer price; ΔActual P/E refers to the difference between the actual P/E ratio calculated by dividing the offer price by the issuing firms' prior profitability and the median value of the range of P/E ratio suggested by the government during the sample period; State refers to IPOs issued by firms with major shares controlled by central government or its agents; State-Legal Entity refers to IPOs issued by firms with major shares controlled by State-Owned enterprises; Non-State refers to IPOs issued by firms with major shares controlled by Non-State enterprises; More connected splits the IPO firms at the median value of Connection Index of 2 and More connected firms refer to those that have at least two out of the three forms of connections. Less Connected refers to firms with one or no political connection.

Panel A. Summary of underpricing of all IPOs in the sample.

	Observations	Mean	Standard deviation	Minimum	Maximum
Underpricing	423	116.2%	68%	0.64%	340%
Offer price (RMB)	423	6.088	1.748	2.450	14.770
Prior profits/share(RMB)	423	0.359	0.157	0.070	2.010
Actual P/E	423	18.808	7.649	5.433	67.580
Prob. of above median P/E (14.5)	423	0.761	0.427	Nm	Nm
ΔActual P/E	423	4.248	7.650	-9.067	53.08

Panel B. Summary of underpricing by the type of issuing firms.

	State	State-legal entity	Non-state	Difference of means		
	(1)	(2)	(3)	(2)–(1)	(3)–(1)	(3)–(2)
Underpricing	114.2%	114.3%	130.5%	0.001	0.163**	0.162**
Offer price (RMB)	5.966	5.934	7.094	-0.028	1.128***	1.156***
Prior profits/share(RMB)	0.335	0.349	0.475	0.014	0.140***	0.126***
Actual P/E	19.751	18.562	16.895	-1.189*	-2.856***	-1.667*
Prob. of above median P/E (14.5)	81.8%	77.5%	52.9%	-4.3%*	-28.9%***	-24.6%***
ΔActual P/E	5.148	4.021	2.385	-1.127*	-2.762***	-1.636*
Obs.	159	213	51			

Panel C. Summary of Underpricing by the Level of Connections.

	All			State-Owned			Non-State		
	More connected	Less connected	Diff.	More connected	Less connected	Diff.	More connected	Less connected	Diff.
	(1)	(2)	(1)–(2)	(3)	(4)	(3)–(4)	(5)	(6)	(5)–(6)
Underpricing	104.7%	137.3%	-32.6%****	104.6%	139.3%	-34.7%***	108.0%	132.9%	-24.9%
P0	5.975	6.296	-0.321**	5.950	5.949	0.001	7.312	7.070	0.242
Prior profits/share(RMB)	0.338	0.397	-0.059***	0.336	0.361	-0.024**	0.441	0.479	-0.037
Actual P/E	19.504	17.530	1.974***	19.555	17.805	-1.751**	16.717	16.914	-0.198
Prob. of above median P/E (14.5)	82.8%	63.8%	19.1%***	82.9%	69.9%	13.0%***	80.0%	50.0%	30.0%*
ΔActual P/E	4.963	2.932	2.032***	5.014	3.167	1.847**	2.217	2.404	-0.187
Obs.	274	149		269	103		5	46	

'***', '**' and '*' indicate significance at the 1% level, 5% level, and 10% level, respectively.

Table 6 **Probability of receiving a high P/E ratio and political connections**

This table presents the probability that the issuing firms get a higher actual P/E ratio in calculating the offer price than the median value, which is 14.5 during the sample period 1994–1999. Connected Board is a dummy variable and it is one if any of the board members used to work for or is currently employed by the government at a city level or higher; Connected Bookrunner is a dummy variable and it is one if the issuing firms' bookrunner is one of the five investment banks that we identify as most connected in Table 1; State-Owned is a dummy variable and it is one if the issuing firms are either State or State-Legal Entity controlled prior to the offering; State refers to firms that are controlled by the central government or its agents prior to the offering; State-Legal Entity refers to firms that are controlled by State-Owned companies; Connection Index is a continuous integer measurement of political connections ranging from 0 to 3 and it is a summation of Connected Board, Connected Bookrunner, State and State-Legal Entity, where firms with 0 have the least political connections and firms with 3 have the most political connections; Debt/Asset is the ratio of total debts to total assets in the year prior to going public; LnAsset is the logarithm of the total assets prior to the issuing; Hi-Tech is a dummy variable and it is one if the issuing firms are in the high technology industry; and Tradable Shares refers to the shares that are freely tradable in the secondary markets in percentage term. It is defined similar to Ritter's (2000) high-tech industry definition; P-value of the coefficients is reported in the brackets and White's (1980) test is used to correct for heteroscedasticity.

	All IPOs										Non-state
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
Constant	0.802***	0.913***	0.118	0.118	-0.148	9.839***	6.587***	6.711***	6.565***	9.893***	9.446
	(0.000)	(0.000)	(0.675)	(0.675)	(0.577)	(0.000)	(0.006)	(0.005)	(0.006)	(0.000)	(0.250)
Connected board	0.959***					1.254***					
	(0.000)					(0.000)					
	[16.3%]					[20.5%]					
Connected bookrunner		0.514**					0.608***				
		(0.026)					(0.010)				
		[9.3%]					[10.8%]				
State-owned			1.225***					0.697**			
			(0.000)					(0.044)			
			[10.9%]					[12.4%]			
State				1.382***					0.850*		
				(0.000)					(0.060)		
				[22.3%]					[15.1%]		

	All IPOs										Non-state
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
State-legal entity				1.117***					0.663**		
				(0.001)					(0.050)		
				[19.8%]					[11.8%]		
Connections index					0.770***					0.974***	0.918*
					(0.000)					(0.000)	(0.076)
					[13.3%]					[16.1%]	[22.9%]
Debt/asset						1.796**	1.583**	1.293*	1.261*	1.754**	1.443
						(0.017)	(0.033)	(0.078)	(0.087)	(0.025)	(0.435)
						[20.9%]	[27.9%]	[23.0%]	[22.4%]	[29.0%]	[36.0%]
Ln asset						-	-0.345**	-	-	-0.609***	-0.386
						0.528***	(0.011)	0.350***	0.348***	(0.000)	(0.450)
						(0.000)	[-6.0%]	(0.010)	(0.010)	[10.1%]	[-9.6%]
						[-9.0%]		[-6.2%]	[-6.2%]		
Hi-tech						-0.570	-0.558	-0.520	-0.504	-0.613*	-0.926
						(0.116)	(0.115)	(0.139)	(0.153)	(0.098)	(0.272)
						[-10.9%]	[-11.0%]	[-10.2%]	[-9.9%]	[-11.5%]	[-22.4%]
Tradable shares										-0.002	-0.050
										(0.930)	(0.472)
										[-0.1%]	[-1.2%]
Obs.	423	423	423	423	423	423	423	423	423	423	51
Pseudo R2	0.034	0.011	0.033	0.035	0.062	0.073	0.035	0.029	0.029	0.106	0.088
Prob.	0.000	0.025	0.000	0.000	0.000	0.000	0.003	0.000	0.018	0.000	0.000

'***', '**' and '*' indicate significance at the 1% level, 5% level, and 10% level, respectively.

Table 7 **Cross-section analysis of underpricing**

This Table presents results on the underpricing and political connections. The dependent variable is initial returns. Connected Board is a dummy variable and it is one if any of the board members used to work for or is currently employed by the government at a city level or higher; Connected Bookrunner is a dummy variable and it is one if the issuing firms' bookrunner is one of the five investment banks that we identify as most connected in Table 1; State-Owned is a dummy variable and it is one if the issuing firms are either State or State-Legal Entity controlled prior to the offering; State refers to firms that are controlled by the central government or its agents prior to the offering; State-Legal Entity refers to firms that are controlled by State-Owned companies; Connection Index is a continuous integer measurement of political connections ranging from 0 to 3 and it is a summation of Connected Board, Connected Bookrunner, State and State-Legal Entity, where firms with 0 have the least political connections and firms with 3 have the most political connections; Hi-Tech is a dummy variable and it is one if the issuing firms are in the high technology industry. It is defined similar to Ritter's (2000) high-tech industry definition; STDV denotes the dispersion of the returns of each IPO in its first 30-day trading in the secondary market; Oversubscription is natural logarithm of the inverse of the drawing odds; ΔActual P/E refers to the difference between the actual P/E ratio calculated by dividing the offer price by the issuing firms' prior profitability and the median value of the range of P/E ratio suggested by the government during the sample period;; and Tradable Shares refers to the shares that are freely tradable in the secondary markets in percentage term. P-value of the coefficients is reported in the brackets and White's (1980) test is used to correct heteroscedasticity.

	All IPOs										Non-state
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
Constant	1.310***	1.284***	1.327***	1.343***	1.591***	0.520***	0.391***	0.862***	0.416***	0.451*	0.546
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.058)	(0.382)
Connected	-0.340***					-0.275***					
Board	(0.000)					(0.000)					
Connected		-0.238***					-0.188***				
Bookrunner		(0.000)					(0.000)				
State-Owned			-0.239***					-0.181**			
Shares			(0.009)					(0.038)			
State Shares				-0.352***					-0.226**		
				(0.001)					(0.033)		
State-Legal				-0.214**					-0.172*		
Entity Shares				(0.025)					(0.056)		
Connections					-0.235***					-0.189***	-0.291**
Index					(0.000)					(0.000)	(0.011)

	All IPOs										Non-state
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
Hi-Tech						0.499***	0.513***	0.500***	0.495***	0.503***	-0.164
						(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.509)
STDV						11.233***	12.560***	12.746***	12.644***	11.019***	23.710***
						(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.009)
Oversubscriptio						0.080***	0.091***	0.096**	0.095***	0.072**	0.128
n						(0.007)	(0.003)	(0.002)	(0.002)	(0.015)	(0.189)
ΔActual P/E						-0.014***	-0.013***	-0.015**	-0.015***	-0.010***	-0.038***
						(0.000)	(0.001)	(0.000)	(0.000)	(0.005)	(0.006)
Tradable Shares										1.092***	-1.200
										(0.005)	(0.126)
Obs.	423	423	423	423	423	423	423	423	423	423	51
Adjusted R^2	0.062	0.031	0.014	0.019	0.082	0.178	0.158	0.147	0.148	0.203	0.345
Prob.	0.000	0.000	0.009	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.002

‘***’, ‘**’ and ‘*’ indicate significance at the 1% level, 5% level, and 10% level, respectively.

Table 8 **Issuing cost and political connections**

The dependent variable is the issuing fees as a percentage of total proceeds raised. Connected Board is a dummy variable and it is one if any of the board members used to work for or is currently employed by the government at a city level or higher; Connected Bookrunner is a dummy variable and it is one if the issuing firms' bookrunner is one of the five investment banks that we identify as most connected in Table 1; State-Owned is a dummy variable and it is one if the issuing firms are either State or State-Legal Entity controlled prior to the offering; State refers to firms that are controlled by the central government or its agents prior to the offering; State-Legal Entity refers to firms that are controlled by State-Owned companies; Connection Index is a continuous integer measurement of political connections ranging from 0 to 3 and it is a summation of Connected Board, Connected Bookrunner, State and State-Legal Entity, where firms with 0 have the least political connections and firms with 3 have the most political connections; Relative Size is the percentage of the proceeds raised over the total assets; Prior Profits/Share refers to the average earning (income after tax) per share (existing shares prior going public) of past three years; and Tradable Shares refers to the shares that are freely tradable in the secondary markets in percentage term. P-value of the coefficients is reported in the brackets and White's (1980) test is used to correct heteroscedasticity.

	Total Sample										Non-state
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
Constant	0.040***	0.038***	0.041***	0.042***	0.044***	0.049***	0.046***	0.051***	0.051***	0.054***	0.058***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Connected board	-0.007***					-0.008***					
	(0.000)					(0.000)					
Connected bookrunner		-0.002*					-0.002*				
		(0.100)					(0.073)				
State-owned shares			-0.007***					-0.008***			
			(0.000)					(0.000)			
State shares				-0.008***					-0.009***		
				(0.000)					(0.000)		
State-legal entity shares				-0.006***					-0.007***		
				(0.000)					(0.000)		
Connections index					-0.004***					-0.005***	-0.003*
					(0.000)					(0.000)	(0.090)
Relative size						-0.004***	-0.003***	-0.003***	-0.003***	-0.004***	-0.010***
						(0.001)	(0.003)	(0.000)	(0.006)	(0.000)	(0.001)
Prior profits/share						-0.017***	-0.015***	-0.018***	-0.018***	-0.019***	-0.015***
						(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.007)
Tradable shares										0.004	0.0001
										(0.602)	(0.995)

	Total Sample										Non-state
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
Obs.	423	423	423	423	423	423	423	423	423	423	51
Adjusted R^2	0.087	0.010	0.035	0.036	0.070	0.168	0.074	0.112	0.165	0.165	0.334
Prob>F	0.000	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

'***', '**' and '*' indicate significance at the 1% level, 5% level, and 10% level, respectively.

Table 9 **Estimated less connected IPO firms' underpricing by more connected IPOs**

This Table presents the estimated underpricing of less connected IPOs by using information of more connected IPOs. More connected splits the IPO firms at the median value of connection index of 2 and more connected firms refer to those that have at least two out of the three forms of connections. Less connected refers to firms with one or no political connection. Specifically, the table presents the estimated underpricing of less connected IPOs by using the predicted P/E ratio or the multiplier that is used to calculate offer price in China's security markets. Using more connected IPOs' information and the following model: P/E = 31.014 – 40.650* prior profits/share + 0.221* debt/asset + 30.334* issuing costs/proceeds + 0.066* exchange – 0.493*hi-tech + ε., estimated P/E ratios of less connected IPOs are presented in (3). Offer price therefore is the product of estimated P/E ratios and the IPO firms' three year average profits per share prior to the issuings.

	More connected (n.=274)	Less connected (n=149)		t-test of differences	
	Actual	Actual	Estimated		
	(1)	(2)	(3)	(3)–(2)	(3)–(1)
All (n=423)					
Actual P/E	19.503	17.530	28.018	10.488***	8.514***
P0	5.975	6.296	9.352	3.056***	3.377***
Underpricing	104.7%	137.3%	63.9%	73.5%***	-40.8%***
State (n=159)					
Actual P/E	20.716	17.766	29.729	11.963***	9.013***
P0	5.980	5.937	9.994	4.057***	4.014***
Underpricing	103.9%	135.4%	44.6%	-90.8%***	-59.3%***
State-Legal Entity (n=213)					
Actual P/E	18.789	17.844	30.208	12.364***	11.419***
P0	5.930	5.962	10.188	4.226***	4.258***
Underpricing	105.1%	143.3%	44.8%	-98.5%***	-60.3%***
Non- state (n=51)					
Actual P/E	16.717	16.914	23.654	6.740***	6.937
P0	7.312	7.070	7.698	0.627	0.386
Underpricing	108.0%	132.9%	106.8%	-26.1%	-1.2%

'***', '**' and '*' indicate significance at the 1% level, 5% level, and 10% level, respectively.

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