

Market timing in private placements of equity

Yong Huang

*Graduate School of Economics, Kyushu University
6-19-1, Hakozaki, Higashiku, Fukuoka 812-8581 Japan*

Konari Uchida*

*Faculty of Economics, Kyushu University
6-19-1, Hakozaki, Higashiku, Fukuoka 812-8581 Japan*

Daolin Zha

*School of Economics and Management, China University of Geosciences
388 Lumo Road, Wuhan, Hubei 430074 China*

Abstract

In Chinese equity issues, long-term interval exists between initial announcement and execution due to regulatory process. Meanwhile, issuance prices of private placements are regulated not to fall below 90% of market prices at the announcement. We argue that Chinese firms conduct private placements as well as public offerings to issue overpriced shares. Consistent with the hypothesis, we find that firms conducting private placements are more overvalued at the announcement and execution than non-equity issuers. Those firms experience significant stock price run-ups preceding the announcement and long-term underperformance following the execution. Meanwhile, private placements offer significantly greater discounts than public offerings do. Accordingly, firms with large overvaluation prefer public offerings to private placements. The finding suggests that Chinese firms encounter tradeoff between guarantee of issuance price and discount costs in their choice of equity issue mode. Finally, we find that private issuers with large overvaluation can decrease discounts, while those firms substantially discount issue price from the market price at the announcement.

Keywords: Seasoned equity issuance; Market timing; Private placement; Public offering; Discount; Regulation

JEL Classification Codes: G14; G18; G32

* Corresponding author (Konari Uchida): Faculty of Economics, Kyushu University 6-19-1, Hakozaki, Higashiku, Fukuoka 812-8581 Japan. Tel: +81-92-642-2463 E-mail: kuchida@econ.kyushu-u.ac.jp

1 Introduction

This paper investigates whether market timing motivates private placements of equity under specific regulatory environments. It is well-documented that firms conduct public offerings of equity when the firm's stocks are overvalued (Ritter, 1991; Dong, Loncarski, Horst, and Veld, 2012; Gomes and Phillips, 2012). In contrast, previous studies suggest that private placements are mainly motivated by different factors, such as last resort financing for firms without access to public market, modification of undervaluation, and demands for effective monitoring (Wruck, 1989; Cronqvist and Nilsson, 2005; Krishnamurthy, Spindt, Subramaniam, and Woitke, 2005; Wruck and Wu, 2009; Chen, Dai, and Schatzberg, 2010; Gomes and Phillips, 2012; Huang and Chan, 2013). Generally, managers who pursue market timing prefer public offerings, since participating investors in private placements have strong negotiation power and thus require substantial discounts. Besides, participants in private placements are sophisticated and unlikely exploited by issuing firms (Kang, Kim, and Stulz, 1999; Demiralp, D'Mello, Schlingemann, Subramaniam, 2011). However, offering prices of private placements are generally linked to market prices. Firms should utilize private placements for market timing if they encounter significant obstacles to issue overpriced shares by public offerings.

We explore the possibility of market timing in private placements by using Chinese data. Equity issues in China are subject to unique regulations. A remarkable characteristic is that issuing firms need to wait for about one year to execute equity issues from initial announcement (both in public and private issues), since they need to receive formal approval from the China Securities Regulatory Commission (CSRC) before execution (Huang, Uchida, and Zha, 2016). Market timing in Chinese equity issues is extremely difficult, since managers need to anticipate overvaluation of one year later to successfully issue overpriced shares. Meanwhile, CSRC stipulates that the issue price of private placements should be no less than 90% of the market price at the announcement (accurately, average prices over the 20 days before the benchmark day). Although the regulation attempts to prevent wealth transfer from existing shareholders to participating investors, it should tempt market timing managers to conduct private placements by effectively providing guarantee on issue price.

We investigate private placements of equity by Chinese listed companies during 2006 to 2014. We find that firms issuing equity privately have significantly greater market-to-book ratios than non-equity issuers do. To accurately examine overvaluation, we employ the methodology proposed by Rhodes-Kropf, Robinson, and Viswanathan (2005) to decompose market-to-book ratio into firm-level misvaluation, sector-level misvaluation, and growth opportunities. We find significant overvaluation for private placement firms in aggregate misvaluation measure (aggregate of firm- and sector-level misvaluation) at the announcement and execution. In addition, we find that private placement firms experience significantly negative excess returns during three years following the execution. These results clearly show that market timing is an important motivation of private placements in China. We also compute the aggregate misvaluation measure by using the actual issue price, and find that the actual issue price is also overvalued.

Investors participating in private placements are generally sophisticated. A natural concern on our argument is why those investors are willing to subscribe overvalued shares. We examine actual issue prices to address the concern and find that private placements offer significantly greater discounts (from the market price at the execution) than public offerings (29.4% in private placements versus 6.7% in public offerings), which is consistent with existing findings for other markets. As a result, participating investors of private placements can make excess gains if they sell the shares immediately after the end of lock-up period (one-year for non-controlling shareholders). The significant discount should substantially diminish attractiveness of private placements for market timing issuers, and make them encounter tradeoff between discount costs and guarantee of issuance price. We examine Chinese firms' choices of the equity issue mode and find that public offering firms are more overvalued than private placement companies. The result suggests that managers choose public offerings to avoid significant discount costs when they can expect future overvaluation. Taken all together, Chinese managers seek to issue overpriced shares both in private placements and public offerings. Finally, we find that overvaluation at the announcement is negatively associated with discounts of private placements, while overvalued private issuers substantially discount offer price from the market price at announcement. In sum, overvaluation at the announcement enables firms to decrease discounts either by choosing public offerings or using the overvalued stock price as benchmark for issuance price determination (private placements).

Our study has several important contributions to the literature. To the best of our knowledge, this is the first study to show robust evidence that firms conduct private placement to take advantage of overvaluation. This argument sharply contrasts previous US studies that stress undervaluation as an important motive for private placements (Hertzel and Smith, 1993; Wruck, 1989; Cronqvist and Nilsson, 2005). We argue that firms pursue market timing whenever they can issue overpriced shares, irrespective of equity issue mode. Some studies suggest that firms conducting private placements are overvalued. Hertzel et al. (2002) and Krishnamurthy et al. (2005) find that firms issuing equity privately have poor long-run stock returns. Brown et al. (2006) find that Australian firms conducting private placements show greater pre-announcement overvaluation and inferior post-announcement performance than those conducting rights issues. We present a convincing mechanism through which overvalued firms issue equity privately by taking advantage of the Chinese institutional setting.

We also shed light on novel trade-off regarding the choice between public offerings and private placements: guarantee of issuance price versus discount costs. Put differently, firms are willing to incur discount costs associated with private placements, when private placements are advantageous to issue overpriced shares. This argument accords with the Hertzel et al.'s (2002) view that private placement discounts reflect overvaluation. Finally, our results offer a convincing explanation on the fact that private placements dominate public offerings in China. Our database finds more than 900 private placements during the sample period while there are only about 100 public offerings. This fact sharply contrasts with the relative frequency in US equity issues (Chen et al., 2010; Gomes and Phillips, 2012).¹ Under the Chinese regulatory environment, private placements are more advantageous for market timing than public offerings, which encounter significant uncertainty on issue prices. We argue that Chinese managers hesitate to announce public offerings due to the difficulty of issuing overpriced shares.

This paper is organized as follows. Section 2 briefly introduces the institutional uniqueness for equity issues in China. Section 3 presents literature review and hypothesis. Section 4 describes sample selection and data. Section 5 presents empirical evidence. Section 6 concludes our research.

¹ Of the 13000 issues, including equity, debt and convertibles, examined by Gomes and Phillips (2012), more than half are in the private market, while 51% of equity issues and convertibles are in the private market. In Chen et al. (2010), they identify 148 traditional private placements, 1780 PIPEs and 1734 SEOs over the period 1996-2006 in the US.

2 Regulatory environment for equity issues in China

Private placements are new stock issuance to a relatively small number of selected investors. Since 1990s, private placements have been widely used in many countries, such as the UK and the US (Armitage 2010; Chen et al., 2010; Dai et al., 2010; Floros and Sapp, 2012). As for China, rights issues had been the only one equity issue mode until 1998. Public offering of seasoned equity was first introduced in 1998, and the CSRC issued the “Tentative regulation on listed firms issuing shares to the public” in May 2000, which made public offering of seasoned equity available to most listed firms. As a result, more than 100 listed firms announced sizable public offerings in 2000. In 2001, the CSRC introduced requirements of financial ratios for firms conducting public offerings, given the concern that public issuers exploit the opportunity to hoard cash.

Meanwhile, the split-share structure reform at 2005 made private placements predominant equity issue mode, because many controlling shareholders used private placements to compensate holders of non-tradable shares in exchange for converting their non-tradable shares to tradable. Since CSRC published “Regulatory Measures of Securities Issuance for Listed Companies” in 2006, private placements have been surging and now dominate rights issues and public offerings in terms of frequency as well as the amount of proceeds.

In China, private placements and public offerings of A-share listed companies are subject to strict regulation. The process of equity issues starts with the announcement by board of directors, which is made after the establishment of initial plan. Then, terms and conditions of equity issue are presented to the shareholder meeting for approval. After these steps, firms submit the equity issue plan to the CSRC for regulatory approval. Once the firm successfully received approval from CRSC, the firm is allowed to conduct equity issues within six months. Huang et al. (2016) point out that CSRC spends several months for screening some equity issue plans. As a result of the regulatory process, firms need to spend more than one year on average from initial announcement to final execution.

Offering price of newly issued shares is also subject to regulation.² For private placements, issuance price shall not be lower than 90% of the average market price over the 20 trading days preceding the benchmark date. In practice, the announcement day (by board of directors) is set as the benchmark day in majority of private placements, while shareholder meeting day and the date of the letter inviting subscription can be also adopted.³ In contrast, the benchmark day for public offerings is the announcement day of prospectus publication, which is generally close to actual execution. Specifically, CSRC stipulates that the issuance price of public offerings should not be lower than the average price over the 20 transaction days or one day before the announcement of prospectus. Under the regulation, announcements of public offerings are accompanied by significant uncertainty of issuance price, since managers cannot assure that benchmark price is overvalued at the time of announcement. Market timing in public offerings is difficult in China.

As mentioned, CSRC requires applicants of public offerings to show profitability sustainability. According to the Administrative Measures for the Issuance of Securities by Listed Companies (AMISLC), the weighted average of return on net assets over the latest three years shall not be lower than 6%.⁴ In contrast, there is no compulsory requirement on profitability of applicants of private placements.

3 Literature review and hypothesis

In the perfect and frictionless market, the Modigliani and Miller (1958) theorem suggests that the choice of financing method is irrelevant to shareholder wealth. However, the imperfect capital market enables corporate managers to issue overvalued shares (Baker and Wurgler, 2002; Graham and Harvey, 2001). Empirical studies suggest that market timing motivates firms to issue equity (Loughran and Ritter 1995; Spiess and Affleck-Graves, 1995; Baker and Wurgler, 2002; Henderson et al., 2006). At the individual firm level, Loughran and Ritter (1995) and Spiess and Affleck-Graves (1995) suggest that firms are likely to issue new equity when they are overvalued. At the aggregate level, Baker and Wurgler (2002) find that aggregate equity issues, including both

² Neither the US or New Zealand, for example has regulatory restriction on pricing. In Singapore, the maximum discount of 10% is based on the current market prices instead of the historical prices (Anderson et al., 2006).

³ Firms are allowed to change their benchmark date of pricing after the initial announcement if the firm encounters unexpected unfavorable conditions. But the benchmark date change is not common.

⁴ See http://www.fdi.gov.cn/1800000121_39_4505_0_7.html (English version).

initial public offerings (IPOs) and seasoned equity offerings (SEOs), predict market returns in the US. They also argue that corporate capital structure is the cumulative outcome of past attempts of market timing. By using international data, Henderson et al. (2006) find that firms all around the world are more likely to issue equity preceding low market returns. More recently, Warusawitharana and Whited (2015) construct a dynamic theoretical model to quantify the effects of market timing on various firm policies. They report that misvaluation has stronger effects on financial decisions than on real investment decisions.

Note that predominant studies on managerial market timing focus on public offerings of seasoned equity (Taggart, 1977; Marsh, 1982; Jung, Kim, and Stulz, 1996; Hovakimian, Opler, and Titman, 2001) and initial public offerings (Loughran, Ritter, and Rydqvist, 1994; Lerner, 1994; Pagano, Panetta, and Zingales, 1998). Although market timing (overvaluation) is commonly viewed as a significant motive of public offerings, most previous studies suggest that signaling (undervaluation) incentivizes private placements. Cronqvist and Nilsson (2005) argue that firms announce private placements to signal undervaluation, given that the willingness of informed investors to participate private placements conveys undervaluation to the stock market. Chen et al. (2010) also document that firms are likely to place equity privately when they are undervalued. The stock market also views announcements of private placements as a signal of undervaluation and shows positive reactions (Hertzel and Smith 1993; Janney and Folta, 2003; Kato and Schallheim, 1993; Deng, Li, and Wu, 2011; Wruck, 1989).⁵ Since private placements significantly increase ownership of informed investors, firms issue shares privately to strengthen monitoring of management (Shleifer and Vishny, 1986; Wruck, 1989; Cronqvist and Nilsson, 2005; Wruck and Wu, 2009; Gomes and Phillips, 2012; Huang and Chan, 2013).⁶

Previous studies also examine determinants of firms' choice between public offerings and private placements. Investigating 1,596 US technology firms during the period of 1986 to 1997, Wu (2004) finds that information asymmetry is a primary determinant of technology firms' choice of equity issue mode. Chen et al. (2010) investigate the choice between private investments in

⁵ Managers of overvalued firms may use private placements to falsely signal that the firm is undervalued (Ferreira and Brooks, 1999; Hertzel, Lemmon, Linck, Rees, 2002). Chou, Gombola, and Liu (2009) argue that the positive reaction is simply because investors are overly optimistic about the prospects of high growth firms.

⁶ Meanwhile, Barclay, Holderness, and Sheehan (2007) and Wu (2004) argue the private placements could not improve monitoring on the management since they are generally made to passive investors.

public equity (PIPEs) and public offerings for US companies (without limiting their attention to a specific industry). They find that firms choose PIPEs mainly due to unavailability of public issue due to information asymmetry, poor operating performance, and issuance costs. In sum, previous studies suggest that private placements are motivated by significantly different factors from those of public offerings.

However, managers who identify overvaluation of their firms' shares should be able to issue overpriced shares even in private placements, to the degree that the issuance price is determined based on market price. Since private placements generally offer significant discounts due to strong negotiation power of participating investors, firms will choose public offerings rather than private placements to benefit from overvaluation.⁷ However, this equilibrium will be violated if market timing by public offering accompanies substantial costs (or market timing by private placements generates significant benefits on issuers). This is the case for Chinese equity issues. In China, issuing firms need to encounter very long (more than one year) interval between initial announcement and execution due to regulatory process (Huang et al., 2016). The long regulatory process indicates that firms need to announce equity issues with significant uncertainty on market price at the execution. Importantly, CSRC stipulates significantly different regulations on issuance price between public offerings and private placements, and offering price of private placements should not be less than 90% of the market price preceding initial announcement. This regulation effectively provides overvalued issuers with guarantee on offering price and thereby substantially reduces the uncertainty, despite the long period between announcement and execution. In contrast, issuance price of public offerings does not depend on market price at the announcement. CSRC just stipulates that the issuance price should not be lower than 90% of market price preceding the release of prospectus. Public issuers encounter significant uncertainty on issuance price when they announce SEOs. Accordingly, Chinese firms are likely to conduct private placements for the sake of market timing.

Hypothesis: *Firms announcing private placements of seasoned equity are overvalued.*

⁷ The discount may be compensation for monitoring (Wruck, 1989), illiquidity (Silber, 1991), or valuation costs (Hertzel and Smith, 1993). Krishnamurthy et al. (2005) and Barclay, Holderness, and Sheehan (2007) find evidence that participating investors buy newly issued shares at a discount price that compensates them for the subsequent decline in stock prices.

4 Sample selection and data

This paper investigates private placements and public offerings of equity, which were announced and executed by Chinese listed firms (Shanghai Stock Exchange or the Shenzhen Stock Exchange) during the period from January 1, 2006 through December 31, 2014. We obtain both issuance and financial data from the China Stock Market & Accounting Research Database (CSMAR). When the dates of initial announcement and final execution are missing, we manually collect the data from the website of the *China Securities Journal*, China's equivalent of the *Wall Street Journal*. When necessary data are not available, the equity issues are removed from the analysis. Private placements can be conducted for acquisitions. This study only includes private placements for fund raising for comparability with public offerings.⁸ Equity issues by financial institutions and utilities are also dropped.

These selection procedures leave us a sample with 818 private placements and 97 public offerings of primary common shares. It is noticeable that private placements overwhelm public offerings in frequency in China. Table 1 shows year distribution of our sample. About half of public offerings are announced in 2007, the year before the global financial crisis. For year 2009 and onward, private placements dominate public offerings. Huang et al. (2016) report that the mean (median) interval between initial announcement to execution for their public offering firms is 316 (255) trading days. For our private placement sample, the mean (median) interval between initial announcement and execution is 325 (303) trading days. Due to the regulatory process, Chinese equity issuers need to wait for a long time to sell their shares after the initial announcement (Huang et al., 2016). Our dataset also includes 16,229 firm-years that do not issue equities.

[Insert Table 1 about here]

5 Empirical results

⁸ In an examination of seasoned equity issuance by Chinese firms, Bo, Huang, and Wang (2011) exclude private placements from their sample because of the concern that firms use private placement for M&As rather than fund raising. This procedure also eliminates private placements for the split-share structure reform, which generally aim for asset restructuring.

5.1 Are private placement firms overvalued?

To test our hypothesis, this section investigates whether firms conducting private placements are overvalued. This analysis needs to accurately measure mispricing of sample companies. Measurement of misvaluation has been a subject of long debate (Fama, 1970, 1998). Although the market-to-book ratio is frequently employed as a proxy for equity valuation (Kim and Weisbach, 2008; Huang et al., 2011), its validity as a proxy for overvaluation receives considerable criticism since it also represents growth opportunities (Warr, Elliott, Koeter-Kant, Öztekin, 2012). In a study of mergers and equity mispricing, Rhodes–Kropf et al. (2005) propose a method to decompose the market-to-book ratio into mispricing and intrinsic values (growth options) by using accounting information. Thereafter, many studies have applied this approach in their estimation of mispricing (Elliott, Koeter-Kant, and Warr, 2007, 2008; DeAngelo, DeAngelo, and Stulz, 2010; Hertz and Li, 2010). We follow these previous studies and employ model 3 of Rhodes–Kropf et al. (2005) to compute the misvaluation measures for our sample companies.

Specifically, we estimate the following model (i.e., model 3 of Rhodes-Kropf et al. (2005)) for each industry and month during the period from January 2000 to December 2014.⁹

$$\ln(M)_{it} = \alpha_{0jt} + \alpha_{1jt}\ln(B)_{it} + \alpha_{2jt}\ln(NI)_{it}^+ + \alpha_{3jt}I_{(<0)}\ln(NI)_{it}^+ + \alpha_{4jt}LEV_{it} + \varepsilon_{it} \quad (1)$$

where M is market value of equity; B is book value of equity; NI^+ is the absolute value of net income; I is an indicator for firms with negative net income; LEV is leverage. Subscripts i , j , and t indicate firm, industry, and month, respectively. After running the cross-sectional regressions, we compute the industry- and nation-wide average of coefficient ($\bar{\alpha}_j$ and $\bar{\alpha}$) for each independent variable:

$$\bar{\alpha}_j = \frac{1}{T_j} \sum_{t=1}^{T_j} \alpha_{jt}, \quad \bar{\alpha} = \frac{1}{N} \sum_{j=1}^N \sum_{t=1}^{T_j} \frac{1}{T_j} \alpha_{jt}, \quad (2)$$

where T_j is the number of months for which we estimate for industry j , and N is the number of industries in our dataset. Expected market-to-book ratio computed by using $\bar{\alpha}$ is defined as the

⁹ We follow CSRC's industry classification.

firm's growth options (Growth). Then, we estimate sector-level misvaluation (SecMv) by subtracting Growth from the expected market-to-book ratio computed by using $\bar{\alpha}_j$. Similarly, firm-specific misvaluation (FirMv) is computed as the difference between the actual market-to-book ratio and the expected market-to-book ratio computed by using $\bar{\alpha}_j$. We adopt the aggregate misvaluation measure (AggMv) as our key overvaluation measure, which is sum of FirMv and SecMv (see Table 2 for definitions of variable).

[Insert Table 2 about here]

Table 3 indicates the aggregate misvaluation measure as well as simple market-to-book ratio (M/B ratio) preceding the announcement and execution. Adjusted values are also presented, which is calculated as the raw variable minus the median of the variable among non-issuing companies from the same industry. Panels A and C show that the adjusted market-to-book ratio is significantly positive during one-year periods preceding announcement and execution. This result serves as preliminary evidence that firms conducting private placements are overvalued. Panels B and D show the aggregate misvaluation measure (AggMv) and its adjusted value. Positive and significant values of the raw misvaluation measure suggest that private placement firms are overvalued. In addition, the adjusted misvaluation measure is positive and significant, suggesting that private placement firms are overvalued more than non-issuing companies.

[Insert Table 3 about here]

We then run logit regressions to examine whether firms conducting private placements are overvalued after controlling for various factors. The primary independent variable is the aggregate misvaluation measure (AggMv). Given that our dataset includes many non-issuing companies, we adopt AggMv at the end of fiscal year. The growth option component (Growth) is also included in the independent variable (see Table 3 for definition of variable). Several control variables are adopted. Pecking order theory suggests that firms with serious information asymmetry will not go to equity market (Myers and Majluf, 1984). Meanwhile, private placements are advantageous for those companies. We adopt firm the natural logarithm of sales (FirmSize), the number of years from the firm's foundation (FirmAge), standard deviation of stock return (Volatility), and the log of difference between the median analyst forecasts and realized value of net income (AnalystDev) as a measure of information asymmetry. Trade-off theory of capital structure suggests that highly

leveraged firms are likely to issue new equities to rearrange their capital structures. Poorly-performing companies are also likely to issue new shares to improve their financial status (Hovakimian, Hovakimian, Tehranian, 2004). We employ the weighted average of return on equity (ROEs) in the two years preceding the initial announcement (Profitability). Since most Chinese listed firms are state-owned enterprises (SOEs), and conflicts of interest are likely to exist between controlling shareholders and minority shareholders. We include the percentage state ownership to control potential impacts of state control. One-year lagged data are used for AggMv, Growth, FirmSize, AnalystDev, and SOEs.

Table 4 reports the descriptive statistics. Compared to non-issuers, private placement firms have higher leverage. Consistent with the view that firms with serious information asymmetry do not go to the equity market, those firms are significantly larger and have smaller AnalystDev than non-issuers. On the contrary, private firms are significantly younger than non-issuers. The median Profitability is significantly greater for private placement firms than for non-issuers. This finding does not support the view that poorly-performing firms conduct private placements.

[Insert Table 4 about here]

Our hypothesis does not rule out the possibility that firms conduct public offerings to issue overpriced shares. Indeed, Bo et al. (2011) and Huang et al. (2016) show evidence that market timing is an important motive of Chinese SEOs. Accordingly, we treat both private placements and public offerings as equity issue sample in the early part of this research. Table 3 also presents descriptive statistics for firm-years of public offerings. Public offerings firms are also significantly larger, younger, and more leveraged than non-issuers.

Logit regression results are presented in Table 5. The dependent variable takes on a value of one for firm-years conducting equity issues (public offerings or private placements) and zero for non-issuers. All the models control for both year and industry fixed effects. Model (1) engenders an insignificant coefficient on the simple M/B ratio. When we decompose the market-to-book ratio into components of misvaluation and growth options, however, MisMv has a positive and significant coefficient (Models (2) and (4)). This result supports the market timing hypothesis, suggesting that the higher the level of misvaluation, the higher the likelihood of a firm raising equity capital. Models (3) and (4) do not engender a positive and significant coefficient on Growth.

[Insert Table 5 about here]

With respect to control variables, the coefficient on Leverage is consistently positive and significant. Consistent with the trade-off theory of capital structure, firms with higher debt ratios are more likely to issue equity to rearrange their capital structures. Although many existing studies on Chinese equity issue suggest that controlling (state) shareholders exploit minority shareholder in equity issues (Aharony, Lee, and Wong 2000; Chen, Ke, and Yang, 2013; Pan, Xia, and Yu, 2008), our models find a negative relation between state-ownership and the probability of announcing equity issues. This might be because our sample includes significant number of private placements, which set 36-month lock-up period for controlling shareholders (lock-up period is 12 months for non-controlling shareholders). Equity issuers have significantly smaller AnalystDev, but are significantly younger than non-issuers.

Although the aforementioned result is consistent with our hypothesis, it might be driven by public offerings included in the equity issue observation, given that previous studies commonly consider market timing as a significant motivation for public offerings. To present pure evidence of our hypothesis, we replicate the logit regression by excluding firm-years conducting public offerings. Again, Table 5 engenders a positive and significant coefficient on MisMv, suggesting that the former logit regression results are not mainly driven by public issuers. Consistent with our hypothesis, overvalued firms are likely to announce private placements. With respect to control variables, private placement firms are younger than non-issuers, but have significantly smaller AnalystDev. In addition, FirmSize and Volatility do not have a significant coefficient. Our analysis does not present robust evidence that firms with serious information asymmetry issue equity privately. Table 5 also suggests that highly-levered firms tend to conduct private placements, and rich growth opportunities do not motivate private placements.

[Insert Table 5 about here]

5.2 Stock price movements surrounding the announcement of private placement

Previous studies commonly show evidence that announcements of public offerings follow a sharp stock price run-up, which then results in negative market reactions (Asquith and Mullins, 1986; Loughran and Ritter, 1995; Mikkelsen and Partch, 1986). Such a stock price movement is

commonly considered as evidence of overvaluation. To further examine our hypothesis, we investigate stock price movements surrounding the announcement of private placements, by using event study methodology. We present abnormal returns computed by subtraction of index return, standard market model, and Fama and French's (1993) 3-factor model. Since stock prices may show relatively long-term upward trend preceding announcement, we estimate model parameters by using 250-day stock return data beginning at 21day after the announcement. In this research, $AnnDay\ t$ ($AnnIssue\ t$) indicates day t relative to the announcement (issuance). We assume that one calendar month has 21 trading days, and denote $AnnDay\ -21$ by $AnnMonth\ -1$, and denote $AnnDay\ -252$ by $AnnYear\ -1$ for simplicity.

Panel A of Table 7 presents CARs for the pre-announcement period. Except for the 3-year and 1-year CARs (market model and 3-factor model), all the methods generate positive CARs at the one percent significance level, indicating that stock prices of private placement firms go up before announcement. The result is consistent with our market timing hypothesis. On the other hand, Panel B of Table 7 also shows that CARs are positive and significant, regardless of computation methods, suggesting that the stock market still shows upward trend at least in a few days following the announcement. The Panel B result appears to be inconsistent with our hypothesis.

[Insert Table 7 about here]

There are several potential explanations on the post-announcement stock price run-up under our overvaluation hypothesis. Ferreira and Brooks (1999) and Hertz and Smith (1993) describe that management may use private placements to send a wrong signal that the firm is undervalued. This story is possible if investors commonly believe that participating investors are sophisticated and will not buy overvalued stocks. Given that participating investors encounter lock-up period, investors may also predict that strengthened monitoring will increase firm value beyond the current level (Janney and Folta, 2003).

As mentioned, Table 2 indicates that the stock price of private placement firms is overvalued at the announcement. Panel B of Table 7 suggests that the stock price further increases following the announcement. Untabulated analyses suggest that private placement firms do not experience negative abnormal returns during the period from announcement to execution. In conjunction with the finding that the stock price is overvalued at the execution (Table 2), results suggest that overvaluation exists for a long time in the process of private placements. The Chinese stock market

fails to correct overvaluation at least at the time of announcement of private placements. Some previous studies suggest that participating investors are not able to correct for the overvaluation at announcement, even though they are sophisticated (Wu, 2004; Barclay, Holderness, Sheehan, 2007). Chen et al. (2010) argue that issuers manage earnings upward in the quarter right before announcements and investors fail to ask for a fair discount from the issuing firms. Barclay et al. (2007) present evidence showing that private placement investors are passive investors.

5.3 Post-execution long-term stock price performance

Previous studies report long-term underperformance during the post-SEO period, which also supports the overvaluation hypothesis (Loughran and Ritter, 1995; Spiess and Affleck-Graves, 1995; Kang et al., 1999). To further examine our market timing hypothesis, we examine long-term stock price performance following the execution of private placements. Assuming that one month has 21 days, we compute buy-and-hold returns (BHRs) for 6, 12, 24, and 36 months from the execution day by using daily stock price data. Then, adjusted BHR (BHAR) is computed by the sample firm's BHR minus matching firm's BHR. We adopt two matching strategies. Firstly, we select as a matching firm a same industry firm that is closest in firm size to the private placement firm. Matching firms are required not to have issued seasoned equity during 7 years surrounding the matching year (the year of private placement execution by the sample firm). Secondly, each private placement firm is matched with a same industry firm that is in same size quintile and closest in M/B ratio.

Panel A of Table 8 presents BHARs. Similar to Hertz et al. (2002), both mean and median BHARs are significantly negative in the post-issue period, with the median issuer underperforming the matching non-issuer by 20 percent over the subsequent 3 years. Although we find a short-term positive stock price reaction at the announcement of private placements, the long-term stock price underperformance supports our view that stocks of private placement companies are overvalued at the execution. In untabulated analyses, we calculate the BHARs by subtracting the market index return (i.e., the SSE A Share Index and the SZSE A Share Index) from the firm's raw return in the same investment horizon. The long-term market excess return is significantly negative in the long run. Taken all together, we show robust evidence that private placement firms are overvalued.

[Insert Table 8 about here]

Our argument will raise a question of why sophisticated investors participate in overvalued private placements. To address the concern, we examine discounts (percentage difference between the closing price on the day before issuance and the offer price) since private placements generally offer significant discounts which attract investors. As shown in Panel A of Table 9, the mean (median) private placement firm offers a discount of about 30 (20) percent, while the public offering discount is about 5-7 percent. Although Table 9 suggests private placements are less costly in direct costs (fees paid to underwriters and other intermediaries as a percentage of the gross proceeds; denoted by DirectCost), issuers need to incur significant discount costs, by which participating investors may make excess returns.

[Insert Table 9 about here]

Panel B of Table 8 attempts to compute BHARs for participating investors, by replacing the market price at execution by offering price. Remarkably, BHARs are positive and significant for 6- and 12-month investment horizon, irrespective of matching strategy. The 24-month BHAR is still not significantly negative in most cases. Given that RMSIIC requires private placements to have 12-month lock-up period for non-controlling shareholders, the result suggests that participating investors can make excess returns due to the significant discount. Hertz et al. (2002) suggest that discounts in private placement reflect overvaluation. Our results support their argument by taking advantage of the Chinese institutional setting, and suggest that the discount enables market timing in private placements.

Given the significant discount, it is important to examine whether the actual issuance price is also overvalued. We recalculate AggMv at the execution by replacing the market price by actual issuance price. Panel E of Table 2 suggests that AggMv is still positive and significant, and significantly greater than that of industry peers. Taken all together, private placements in China successfully issue overpriced shares.

We also compare the long-term stock return between private placements and public offerings. Each private-placement firm is matched with a public-offering firm from the same industry, which is closest in asset size, or which belongs to the same asset quintile and is closest in M/B ratio (Krishnamurthy et al., 2005). Regardless of the length of holding period, Panel C of Table 8 shows that private-placement firms generate significantly higher returns. This result may suggest that public offering firms are more overvalued than private placement companies. We will discuss the issue in the following section.

5.4 Overvaluation and firms' choice between private placements and public offerings

Market timing is generally examined in the context of public offerings, and Huang et al. (2016) document that Chinese managers can successfully time the market in public offerings. Meanwhile, our results suggest that firms are also overvalued at the announcement and execution of private placements. Those findings raise a natural question of what affects the overvalued firms' choice between public offerings and private placements. Although both private placements and public offerings are motivated by overvaluation in China, each mode will have its costs and benefits. Private placements provide guarantee on offering price, while issuers need to offer substantial discounts. In contrast, companies cannot assure issuance of overpriced shares when they announce public offerings, while they do not need to offer large discounts. Given the trade-off problem, we predict that managers announce public offerings when they can expect that overvaluation will continue to execution. Specifically, managers are likely to choose public offerings when overvaluation is particularly high.

To test the prediction, we implement logit regressions, in which the dependent variable takes on a value of one for firm-years announcing private placements and zero for those announcing public offerings. Since our hypothesis premises that large concurrent overvaluation is an important factor for the managerial choice, we use *AggMv* at the month before announcement as our key independent variable.

We control for conventional determinants of the choice documented in previous studies. Previous studies commonly argue that firms with high information asymmetry are inclined to choose private placements (Gomes and Phillips, 2012; Hertz and Smith, 1993; Wu, 2004). This analysis adopts *FirmSize*, *FirmAge*, *Volatility*, and the log of difference between the median analyst forecasts and realized value of net income (*AnalystDev*). Hodrick (1999) argues that stock price elasticity is an important determinant of corporate financial decisions. Chen et al. (2010) show that PIPE firms display significantly higher elasticity than SEO firms do. Following Chen et al. (2010), the elasticity is calculated as the natural logarithm of the ratio of issuance discount to the fraction of newly issued shares over the total outstanding shares ($\text{Ln}(\text{Inverse Elasticity})$). Chen et al. (2010) and Dunbar (1995) suggest that firms consider offering costs in the choice of equity issue mode. Song (2014) argues that private placements in China are associated with low direct cost but high discounts and high state ownership. Accordingly, we also include the *DirectCost*.

Finally, the probability of conducting equity issues, estimated from Model (4) of Table 5, to control for firm characteristics associated with equity issues.

The univariate analysis (Table 4) suggests that firms announcing private placements are significantly smaller but older than those announcing public offerings. Consistent with Chen et al. (2010), $\text{Ln}(\text{InverseElasticity})$ is significantly larger for private placement firms. Private placement companies significantly underperform public offering firms. This finding is attributable to the performance requirements on public offerings as well as to the conventional wisdom that poorly performing firms tend to choose private placements.

Table 10 presents logit regression results. Models (1) to (3) include all issuers in the analysis, and Model (1) engenders a positive and significant coefficient on AggMv at the month before announcement. Consistent with our hypothesis, this result suggests that managers who identify large overvaluation tends to announce public offerings at the next month rather than private placements. This argument is also supported by the fact that private placement firms outperform public offering companies in long-term post-execution stock price performance (Panel C of Table 8). Importantly, Model (3) of Table 10 engenders an insignificant coefficient on the AggMV at the six month before announcement, while AggMV at the 3 month before announcement has a negative and significant coefficient (Model (2)). Consistent with our hypothesis, those results suggest that near-term overvaluation affects managerial choice between private placements and public offerings. In contrast, growth opportunities (Growth) do not significantly affect the managerial choice. In untabulated analyses we adopt Growth at 12, 24, and 36 months before announcement, but those variables still have an insignificant coefficient. Given that public offerings need to satisfy minimum performance standard, Models (4) to (6) remove private issuers who are not eligible to public offerings. The first two models still engender a negative and significant coefficient on AggMV . Those results support our hypothesis that managers who identify large overvaluation choose public offerings with a hope that overvaluation will continue to the time of execution.

[Insert Table 10 about here]

With respect to control variables, private issuers are larger and more volatile in stock return than public offering companies. FirmAge and AnalystDev do not have a significant coefficient. Taken together, our analyses do not find strong evidence that information asymmetry is related to firms' choice between public offerings and private placements. Consistent with Chen et al. (2010),

Ln(InverseElasticity) is positively associated with the probability of firms' choosing private placements. Direct cost has a negative and significant cost, suggesting that private issuers pay significantly smaller direct costs (Chen et al., 2010; Dunbar, 1995; Song, 2014).¹⁰ An interesting finding is that Stat ownership has a positive and significant coefficient. One potential interpretation is that state-owned enterprises do not desire to sell control rights to the public. Finally, Models (4) to (6) find an insignificant coefficient on Profitability. Among firms eligible to public offerings, operating performance is not a significant factor affecting the choice of equity issue mode.

Previous studies show that stock price performance and market condition preceding announcement affects the choice of equity issue mode. We do not include those variables because we employ AggMv as our proxy for overvaluation. In untabulated analyses, we add BHR of the firm's market excess return, BHR of market index, and industry median market-to-book ratio over the six months preceding announcement. The result suggests that those variables do not have a significant coefficient except the BHR of the firm's market excess return in Models (4) and (5). AggMv still has a negative and significant coefficient in the analysis.

5.5 Overvaluation and discount

The previous section suggests that firms with high overvaluation choose public offerings to significantly decrease discounts. This section examines how overvaluation at the announcement affects discounts that private placement firms pay. Although private placements are generally associated with high discounts, issuance price of private placements will never fall below 90% of market price at the announcement. This price floor should help issuers reduce discounts. To test this idea, we estimate an OLS regression of discounts for private placements. Table 11 carries a negative and significant coefficient on the AggMv (Model (2)) as well as on M/B ratio (Model (1)). Consistent with our prediction, private issuers incur relatively low discount costs if they announce private placements when overvaluation is high. Taken together, Chinese equity issuers with large overvaluation can significantly decrease discounts, either by choosing public offerings or by utilizing the high market price as benchmark for offer price (choose private placements).

¹⁰ A potential concern on the inclusion of Ln(Inverse Elasticity) and Direct cost is that those variables are computed by using variables realized after the announcement (e.g., fees, proceeds, and discounts). We also recognize that Direct cost is a consequence rather than a cause of the choice of equity issue mode. Given those concerns, we rerun the logit regressions by deleting Ln(Inverse Elasticity) and Direct cost. Our main results are qualitatively unchanged.

[Insert Table 11 about here]

Differently from public offerings, private placements determine offer price based on market price at announcement. Private issuers may accept low issuance price relative to the market price at announcement, if it is highly overvalued. In other words, firms with small overvaluation cannot afford to incur significant discounts from the benchmark price. Models (3) and (4) of Table 11 conduct regressions of the percentage difference between the closing price on the day before announcement and the offer price (discount from the market price at the announcement). Contrary with Models (1) and (2), those models engender a negative and significant coefficient on M/B ratio and AggMv. Private issuers offer large discounts from the benchmark price, if they identify large overvaluation at the announcement. In sum, Table 11 suggests that announcements of private placements with overvaluation enable firms to substantially decrease discounts (from the market price at execution) in exchange for large discounts from the overvalued benchmark price.

6 Conclusion

Large body of literature suggests that firms conduct private placements to modify undervaluation while overvaluation motivates managers to conduct public offerings of seasoned equity. However, firms should be able to issue overvalued shares by private placements, to the degree that offer price of private placements is determined based on market price. Although managers generally prefer public offerings as an instrument of market timing due to substantial discounts in private placements, this equilibrium should be violated if private placements provide substantial benefits to market timing managers. We argue that is the case in Chinese institutional setting. In Chinese equity issues, prolonged interval exists between initial announcement and execution due to regulatory screening, and thereby it is extremely difficult to time the market by public offerings. Meanwhile, there is lower limit for offer price of private placements, which is determined by the market price at announcement. The price floor effectively provides overvalued firms with guarantee of issuance of overvalued shares. Accordingly, private placements will be motivated by overvaluation in China.

To test the hypothesis, we examine 818 private placements and 97 public offerings announced and executed in China during the period from 2006 to through 2014. We find that firms issuing

equity privately are more overvalued than non-equity issuers. In addition, private placement firms experience significantly negative excess returns during three years following the execution. These results clearly show that market timing is an important motivation of private placements in China. Although private placements offer large discounts to compensate participating investors, we confirm that the actual issue price is also overvalued. We also find that firms with substantial overvaluation tend to announce public offerings rather than private placements. Those results suggest that Chinese equity issuers encounter tradeoff between guarantee of offer price and discount costs. Finally, we find that overvaluation at the announcement is negatively associated with discounts, while overvalued firms significantly discount offer price from the market price at announcement.

Our analyses make important contributions. To the best of our knowledge, this is the first study to show robust evidence that firms conduct private placement to take advantage of overvaluation. We also shed light on novel trade-off regarding the choice between public offerings and private placements: guarantee of issuance price versus discount costs. Put differently, firms are willing to incur discount costs associated with private placements, when private placements are advantageous to issue overpriced shares. Finally, our results offer a convincing explanation on the fact that private placements dominate public offerings in China.

References

- Aharony, J., Lee, C.-W. J., & Wong, T. J., 2000. Financial packaging of IPO firms in China. *Journal of Accounting Research*, 38(1), 103-126.
- Anderson, H. D., Rose, L. C., & Cahan, S. F., 2006. Differential shareholder wealth and volume effects surrounding private equity placements in New Zealand. *Pacific Basin Finance Journal*, 14(4), 367–394.
- Armitage, S., 2010. Block buying and choice of issue method in UK seasoned equity offers. *Journal of Business Finance and Accounting*, 37(3-4), 422–448.
- Asquith, P., & Mullins, D. W., 1986. Signalling with dividends, stock repurchases, and equity issues. *Financial Management*, 15(3), 27–44.
- Baker, M., & Wurgler, J., 2002. Market timing and capital structure. *Journal of Finance*, 57(1), 1–32.
- Barclay, M. J., Holderness, C. G., & Sheehan, D. P., 2007. Private placements and managerial entrenchment. *Journal of Corporate Finance*, 13(4), 461–484.
- Bo, H., Huang, Z., & Wang, C., 2011. Understanding seasoned equity offerings of Chinese firms. *Journal of Banking & Finance*, 35(5), 1143–1157.
- Brown, P., Gallery, G., & Goei, O., 2006. Does market misvaluation help explain share market long-run underperformance following a seasoned equity issue? *Accounting and Finance*, 46(2), 191–219.
- Chen, A. S., Cheng, L. Y., Cheng, K. F., & Chih, S. W., 2010. Earnings management, market discounts and the performance of private equity placements. *Journal of Banking and Finance*, 34(8), 1922–1932.
- Chen, H.-C., Dai, N., & Schatzberg, J. D., 2010. The choice of equity selling mechanisms: PIPEs versus SEOs. *Journal of Corporate Finance*, 16(1), 104–119.
- Chen, Z., Ke, B., & Yang, Z., 2013. Minority shareholders' control rights and the quality of corporate decisions in weak investor protection countries: A natural experiment from China. *Accounting Review*, 88(4), 1211–1238.
- Chou, D. W., Gombola, M., & Liu, F. Y., 2009. Long-run underperformance following private equity placements: The role of growth opportunities. *Quarterly Review of Economics and Finance*, 49(3), 1113–1128.
- Cronqvist, H., & Nilsson, M., 2005. The choice between rights offerings and private equity placements. *Journal of Financial Economics*, 78(2), 375–407.
- Dai, N., Jo, H., & Schatzberg, J. D., 2010. The quality and price of investment banks' service: Evidence from the PIPE market. *Financial Management*, 39(2), 585–612.
- DeAngelo, H., DeAngelo, L., & Stulz, R. M., 2010. Seasoned equity offerings, market timing, and the corporate lifecycle. *Journal of Financial Economics*, 95(3), 275–295.

- Demiralp, I., D’Mello, R., Schlingemann, F. P., & Subramaniam, V., 2011. Are there monitoring benefits to institutional ownership? Evidence from seasoned equity offerings. *Journal of Corporate Finance*, 17(5), 1340–1359.
- Deng, L., Li, I., & Wu, W., 2011. Market discounts and announcement effects of private placements: Evidence from China. *Applied Economics Letters*, 18(15), 1411–1414.
- Dong, M., Loncarski, I., Horst, J., & Veld, C., 2012. What drives security issuance decisions: Market timing, pecking order, or both? *Financial Management*, 41(1984), 637–663.
- Dunbar, C. G., 1995. The use of warrants as underwriter compensation in initial public offerings. *Journal of Finance Economics*, 38(1), 59–78.
- Elliott, W. B., Koëter-Kant, J., & Warr, R. S., 2007. A valuation-based test of market timing. *Journal of Corporate Finance*, 13(1), 112–128.
- Elliott, W. B., Koëter-Kant, J., & Warr, R. S., 2008. Market timing and the debt–equity choice. *Journal of Financial Intermediation*, 17(2), 175–197.
- Fama, E. F., 1970. Efficient capital markets: A review of theory and empirical work. *Journal of Finance*, 25(2), 383–417.
- Fama, E. F., 1998. Market efficiency, long-term returns, and behavioral finance. *Journal of Financial Economics*, 49(3), 283–306.
- Fama, E. F., & French, K. R., 1993. Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics*, 33(1), 3–56.
- Ferreira, E. J., & Brooks, L. D., 1999. Evidence on equity private placements and going-out-of-business information release. *Journal of Economics and Business*, 51(5), 377–394.
- Floros, I. V., & Sapp, T. R. A., 2012. Why do firms issue private equity repeatedly? On the motives and information content of multiple PIPE offerings. *Journal of Banking & Finance*, 36(12), 3469–3481.
- Fong, W. M., 2009. Speculative trading and stock returns: A stochastic dominance analysis of the Chinese A-share market. *Journal of International Financial Markets, Institutions and Money*, 19(4), 712–727.
- Gomes, A., & Phillips, G., 2012. Why do public firms issue private and public securities? *Journal of Financial Intermediation*, 21(4), 619–658.
- Graham, J. R., & Harvey, C. R., 2001. The theory and practice of corporate finance: Evidence from the field. *Journal of Financial Economics*, 60(2-3), 187–243.
- Henderson, B. J., Jegadeesh, N., & Weisbach, M. S., 2006. World markets for raising new capital. *Journal of Financial Economics*, 82(1), 63–101.

- Hertzel, M. G., & Li, Z., 2010. Behavioral and rational explanations of stock price performance around SEOs: Evidence from a decomposition of market-to-book ratios. *Journal of Financial and Quantitative Analysis*, 45(4), 935–958.
- Hertzel, M., Lemmon, M., Linck, J. S., & Rees, L., 2002. Long-run performance following private placements of equity. *Journal of Finance*, 57(6), 2595–2617.
- Hertzel, M., & Li, Z., 2010. Behavioral and rational explanations of stock price performance around SEOs: Evidence from a decomposition of market-to-book ratios. *Journal of Financial and Quantitative Analysis*, 45(4), 935–958.
- Hertzel, M., & Smith, R. L., 1993. Market discounts and shareholder gains for placing equity privately. *Journal of Finance*, 48(2), 459–485.
- Hodrick, L. S., 1999. Does stock price elasticity affect corporate financial decisions? *Journal of Financial Economics*, 52(2), 225–256.
- Hovakimian, A., Hovakimian, G., & Tehranian, H., 2004. Determinants of target capital structure: The case of dual debt and equity issues. *Journal of Financial Economics*, 71(3), 517–540.
- Hovakimian, A., Opler, T., & Titman, S., 2001. The debt-equity choice. *Journal of Financial and Quantitative Analysis*, 36(1), 1–24.
- Huang, H. H., & Chan, M. L., 2013. The initial private placement of equity and changes in operating performance in Taiwan. *Accounting and Finance*, 53(3), 711–730.
- Huang, Y., Uchida, K., & Zha, D., 2016. Market timing of season equity offerings with long regulative process. *Journal of Corporate Finance*, 39(1), 278–294.
- Janney, J. J., & Folta, T. B., 2003. Signaling through private equity placements and its impact on the valuation of biotechnology firms. *Journal of Business Venturing*, 18(3), 361–380.
- Jung, K., Kim, Y.-C., & Stulz, R. M., 1996. Timing, investment opportunities, managerial discretion and the security issue decision. *Journal of Financial Economics*, 42(2), 159–185.
- Kang, J.-K., Kim, Y.-C., & Stulz, R. M., 1999. The underreaction hypothesis and the new issue puzzle: Evidence from Japan. *Review of Financial Studies*, 12(3), 519–534.
- Kato, K., & Schallheim, J. S., 1993. Private equity financings in Japan and corporate grouping (keiretsu). *Pacific-Basin Finance Journal*, 1(3), 287–307.
- Kim, W., & Weisbach, M. S., 2008. Motivations for public equity offers: An international perspective. *Journal of Financial Economics*, 87(2), 281–307.

- Krishnamurthy, S., Spindt, P., Subramaniam, V., & Woidtke, T., 2005. Does investor identity matter in equity issues? Evidence from private placements. *Journal of Financial Intermediation*, 14(2), 210–238.
- Lerner, J., 1994. Venture capitalists and the decision to go public. *Journal of Financial Economics*, 35(3), 293–316.
- Loughran, T., & Ritter, J. R., 1995. The new issues puzzle. *Journal of Finance*, 50(1), 23–51.
- Loughran, T., Ritter, J. R., & Rydqvist, K., 1994. Initial public offerings: International insights. *Pacific-Basin Finance Journal*, 2(2-3), 165–199.
- Marsh, P., 1982. The choice between equity and debt: An empirical study. *Journal of Finance*, 37(1), 121–144.
- Mikkelson, W. H., & Partch, M. M., 1986. Valuation effects of security offerings and the issuance process. *Journal of Financial Economics*, 15(1-2), 31–60.
- Pagano, M., Panetta, F., & Zingales, L., 1998. Why do companies go public? An empirical analysis. *Journal of Finance*, 53(1), 27–64.
- Pan, H., Xia, X., & Yu, M., 2008. Expropriation: Evidence from rights issues in China. *Emerging Markets Finance and Trade*, 44(1), 5–20.
- Rhodes-Kropf, M., Robinson, D. T., & Viswanathan, S., 2005. Valuation waves and merger activity: The empirical evidence. *Journal of Financial Economics*, 77(3), 561–603.
- Ritter, J. R., 1991. The long-run performance of initial public offerings. *Journal of Finance*, 46(1), 3–27.
- Shleifer, A., & Vishny, R. W., 1986. Large shareholders and corporate control. *Journal of Political Economy*, 94(3), 461–488.
- Silber, W. L., 1991. Discounts on restricted stock: The impact of illiquidity on stock prices. *Financial Analysts Journal*, 47(4), 60–64.
- Song, P., 2014. *Private placement of public equity in China*. Springer.
- Spiess, D. K., & Affleck-Graves, J., 1995. Underperformance in long-run stock returns following seasoned equity offerings. *Journal of Financial Economics*, 38(3), 243–267.
- Taggart, R. A., 1977. A model of corporate financing decisions. *Journal of Finance*, 32(5), 1467–1484.
- Warr, R. S., Elliott, W. B., Koeter-Kant, J., & Öztekin, Ö., 2012. Equity mispricing and leverage adjustment costs. *Journal of Financial and Quantitative Analysis*, 47(03), 589–616.
- Warusawitharana, M., & Whited, T. M., 2015. Equity market misvaluation, financing, and investment. *Review of Financial Studies*, 29(3), 603–654.

- Wruck, K. H., 1989. Equity ownership concentration and firm value: Evidence from private equity financings. *Journal of Financial Economics*, 23(1), 3–28.
- Wruck, K. H., & Wu, Y., 2009. Relationships, corporate governance, and performance: Evidence from private placements of common stock. *Journal of Corporate Finance*, 15(1), 30–47.
- Wu, Y., 2004. The choice of equity-selling mechanisms. *Journal of Financial Economics*, 74(1), 93–119.

Table 1**Sample distribution**

This table displays the annual distribution of the private placements and public offerings in our sample.

Year	Private placements		Public offerings	
	Announcement (%)	Issuance (%)	Announcement (%)	Issuance (%)
2006	95 (11.61)	36 (4.40)	6 (6.19)	2 (2.06)
2007	58 (7.09)	78 (9.54)	50 (51.55)	27 (27.84)
2008	36 (4.40)	42 (5.13)	10 (10.31)	27 (27.84)
2009	110 (13.45)	61 (7.46)	8 (8.25)	12 (12.37)
2010	110 (13.45)	102 (12.47)	11 (11.34)	9 (9.28)
2011	113 (13.81)	97 (11.86)	6 (6.19)	8 (8.25)
2012	119 (14.55)	81 (9.90)	6 (6.19)	6 (6.19)
2013	144 (17.60)	141 (17.24)	0 (0.00)	5 (5.15)
2014	33 (4.03)	180 (22.00)	0 (0.00)	1 (1.03)
Total	818	818	97	97

Table 2**Definition of variables**

This table indicates definition of variables.

Variable	Definition
M/B ratio	The market value of equity over the book value of equity.
AggMv	Aggregate misvaluation measure, which is sum of firm-specific and sector-specific misvaluation measures, estimated from Rhodes-Kropf et al. (2005).
Growth	Component of market-to-book ratio, which represents the firm's growth opportunities, estimated from model 3 of Rhodes-Kropf et al. (2005).
FirmSize	The natural logarithm of sales.
FirmAge (Yrs)	The number of years from establishment.
Leverage	The ratio of book liability over book assets.
Profitability	The weighted average ROEs over the past two years.
Volatility	The standard deviation of daily stock returns in the past 12 months.
State Ownership (%)	The percentage ownership by the state over the total number of outstanding shares.
Ln (InverseElasticity)	The natural logarithm of the ratio of the discount to the fraction of the offered shares over the firm's outstanding shares after the equity issue. The discount is defined as the percentage difference between the closing price one day before the offering and the issue price.
AnalystDev	The logarithm of the absolute difference between the median analyst forecast and realized net profit.
Discount	The percentage difference between the closing price on the day before issuance and the offer price.
DirecrCost	Fees paid to underwriters and other intermediaries as a percentage of gross proceeds.
IssueSize	Natural logarithm of gross proceeds.

Table 3**Misvaluation surrounding initial announcement and execution of private placements**

This table shows M/B ratio (Panels A and C) and AggMv (aggregate misvaluation measure; Panels B and D) preceding initial announcement (Panels A and B) and execution (Panels C and D) of private placements in our sample. AggMv is computed by using equation (1) (model 3 of RKRv (2005)). Panel E presents M/B ratio and AggMv computed by using actual issue price instead of market price at the execution. Adjusted values are computed by subtracting the median value among same industry non-equity issuers from the issuing firm's value. AnnMonth x (IssueMonth x) indicates month x relative to the announcement (issuance) date. We assume one calendar month has 21 trading days, and AnnMonth -1 indicates -21 day before the announcement.

	Raw values		Adjusted values		N
	Mean	Median	Mean (T-value)	Median (Z-value)	
Panel A: M/B ratios before announcement					
AnnMonth -12	4.04	2.96	1.29*** (10.65)	0.32*** (9.39)	794
AnnMonth -6	3.80	2.96	1.09*** (10.93)	0.29*** (9.39)	797
AnnMonth -3	3.83	3.02	1.06*** (10.71)	0.34*** (9.46)	797
AnnMonth -2	3.80	3.03	1.04*** (10.85)	0.28*** (9.17)	792
AnnMonth -1	3.97	3.12	1.17*** (11.22)	0.35*** (9.84)	792
AnnMonth 0	4.20	3.31	1.36*** (12.48)	0.49*** (11.46)	811
Panel B: Aggregate misvaluation (AggMv) before announcement					
AnnMonth -12	0.20*** (8.97)	0.18*** (8.16)	0.17*** (9.58)	0.12*** (7.99)	770
AnnMonth -6	0.23*** (10.87)	0.22*** (9.82)	0.18*** (10.74)	0.13*** (9.18)	790
AnnMonth -3	0.28*** (13.85)	0.26*** (12.44)	0.19*** (11.28)	0.15*** (9.59)	796
AnnMonth -2	0.29*** (14.42)	0.26*** (12.87)	0.19*** (11.29)	0.15*** (9.59)	792
AnnMonth -1	0.32*** (16.04)	0.30*** (14.14)	0.21*** (12.10)	0.16*** (10.33)	792
AnnMonth 0	0.38*** (19.10)	0.36*** (16.27)	0.25*** (14.23)	0.17*** (12.13)	811
Panel C: M/B ratios before issuance					
IssueMonth -12	3.90	3.00	1.19*** (11.24)	0.39*** (10.16)	801
IssueMonth -6	4.10	3.13	1.33*** (12.57)	0.44*** (11.04)	808
IssueMonth -3	4.35	3.41	1.47*** (13.21)	0.61*** (11.99)	812
IssueMonth -2	4.46	3.48	1.55*** (13.60)	0.66*** (12.63)	812
IssueMonth -1	4.59	3.61	1.63*** (13.82)	0.72*** (13.01)	812
IssueMonth 0	5.31	4.20	2.32*** (17.63)	1.26*** (17.39)	812
Panel D: Aggregate misvaluation (AggMv) before issuance					
IssueMonth -12	0.28*** (13.99)	0.26*** (12.32)	0.21*** (12.44)	0.16*** (10.59)	798
IssueMonth -6	0.35*** (17.40)	0.33*** (15.02)	0.24*** (13.81)	0.16*** (11.67)	808
IssueMonth -3	0.42*** (21.75)	0.38*** (17.83)	0.26*** (14.76)	0.21*** (12.61)	812
IssueMonth -2	0.45*** (23.19)	0.41*** (18.64)	0.27*** (15.30)	0.21*** (13.17)	812
IssueMonth -1	0.49*** (25.20)	0.44*** (19.80)	0.29*** (15.95)	0.23*** (13.73)	812
IssueMonth 0	0.64*** (33.11)	0.60*** (22.54)	0.43*** (23.97)	0.37*** (19.32)	812
Panel E: Actual issue price					
IssuePrice/B Ratio	4.47	3.38	1.62*** (8.84)	0.61*** (11.15)	807
AggMv:IssuePrice	0.41*** (21.20)	0.39*** (17.71)	0.28*** (14.17)	0.22*** (12.61)	807

***, **, *: Significant at the 1%, 5%, and 10% levels, respectively.

Table 4**Summary statistics**

This table presents the summary statistics for private placements and public offerings in our sample. FirmSize is the natural logarithm of sales. FirmAge is the number of years from establishment. Leverage is the ratio of book liability over book assets. Profitability is the weighted average ROEs over the past two years. Volatility is the standard deviation of daily stock returns in the past 12 months. State Ownership is the percentage ownership by the state over the total number of outstanding shares. AnalystDev is the natural logarithm of the absolute difference between the median analyst forecast and realized value of net profit. Ln (InverseElasticity) is the natural logarithm of the ratio of the discount to the fraction of offered shares over outstanding shares after the issuance. Asterisks indicate statistical significance for the mean and median difference tests with the next category (e.g., private placements versus public offerings in the column of private placements). Asterisks in the column of non-issuers indicate significance for mean and median difference tests between non-issuers and private placements.

Variables	Private placements			Public offerings			Non-Issuers		
	Mean	Median	N	Mean	Median	N	Mean	Median	N
FirmSize	21.28***	21.11***	811	21.73***	21.59***	96	21.10***	21.01***	14797
FirmAge (Yrs)	12.36**	12.00***	818	11.18***	10.00***	97	13.15***	13.00***	16229
Leverage	0.55	0.55	809	0.55	0.56***	97	0.49***	0.49***	14265
Profitability	0.09**	0.09***	711	0.15	0.14***	80	0.13	0.07***	12243
Volatility	0.04	0.03	816	0.03	0.03**	97	0.03**	0.03***	14856
State Ownership (%)	12.94**	0.00**	818	18.12**	0.47**	97	13.48	0.00	14452
AnalystDev	17.34	17.40	724	17.10***	16.98***	94	17.66***	17.76***	13002
Ln (InverseElasticity)	13.54***	13.53***	745	12.39	12.44	86	-	-	-

***, **, *: Significant at the 1%, 5%, and 10% levels, respectively.

Table 5**Logit regression of the announcement of equity issuance**

This table presents results of logit regressions in which the dependent variable takes on one for firm-years conducting private placements or public offerings and zero for non-equity issuing firm-years. M/B ratio is the market value of equity over the book value of equity. AggMv is the aggregate misvaluation measure, which is sum of firm-specific and sector-specific misvaluation measures. Growth is the component of market-to-book ratio, which represents the firm's growth opportunities. AggMv and Growth are estimated from model 3 of Rhodes-Kropf et al. (2005). FirmSize is the natural logarithm of sales. FirmAge is the number of years from establishment. Leverage is the ratio of book liability over book assets. Profitability is the weighted average ROEs over the past two years. Volatility is the standard deviation of daily stock returns in the past 12 months. State Ownership is the percentage ownership by the state over the total number of outstanding shares. AnalystDev is the natural logarithm of the absolute difference between the median analyst forecast and realized value of net profit. One-year lagged data are used for M/B ratio, AggMv, Growth, Size, Leverage, Profitability, State ownership, and AnalystDev. Industry and year dummies are included. Z-statistics computed by using heteroskedasticity-robust standard errors are reported in parentheses.

	(1)	(2)	(3)	(4)
M/B Ratio	0.022 (1.638)			
AggMv		0.347*** (4.550)		0.347*** (4.568)
Growth			-0.020 (-0.132)	0.025 (0.172)
Size	-0.007 (-0.206)	-0.034 (-1.085)	-0.029 (-0.633)	-0.029 (-0.654)
Firm Age	-0.052*** (-4.749)	-0.051*** (-4.660)	-0.052*** (-4.724)	-0.051*** (-4.643)
Leverage	2.049*** (8.991)	2.004*** (9.016)	2.122*** (9.413)	2.001*** (8.946)
Profitability	-0.200* (-1.722)	-0.198* (-1.788)	-0.191 (-1.544)	-0.200* (-1.818)
Volatility	0.629 (0.738)	0.274 (0.291)	0.845 (0.981)	0.273 (0.291)
State Ownership	-0.005** (-2.187)	-0.005** (-2.453)	-0.004** (-2.118)	-0.005** (-2.429)
AnalystDev	-0.099*** (-4.272)	-0.103*** (-4.499)	-0.099*** (-4.225)	-0.102*** (-4.370)
Constant	-0.775 (-1.079)	0.061 (0.091)	-0.323 (-0.297)	-0.077 (-0.074)
Pseudo R ²	0.058	0.061	0.057	0.061
N	8490	8490	8490	8490

***, **, *: Significant at the 1%, 5%, and 10% levels, respectively.

Table 6**Logit regression of the announcement of private placements**

This table presents results of logit regressions in which the dependent variable takes on one for firm-years conducting private placements and zero for non-equity issuing firm-years. M/B ratio is the market value of equity over the book value of equity. AggMv is the aggregate misvaluation measure, which is sum of firm-specific and sector-specific misvaluation measures. Growth is the component of market-to-book ratio, which represents the firm's growth opportunities. AggMv and Growth are estimated from model 3 of Rhodes-Kropf et al. (2005). FirmSize is the natural logarithm of sales. FirmAge is the number of years from establishment. Leverage is the ratio of book liability over book assets. Profitability is the weighted average ROEs over the past two years. Volatility is the standard deviation of daily stock returns in the past 12 months. State Ownership is the percentage ownership by the state over the total number of outstanding shares. AnalystDev is the natural logarithm of the absolute difference between the median analyst forecast and realized value of net profit. One-year lagged data are used for M/B ratio, AggMv, Growth, Size, Leverage, Profitability, State ownership, and AnalystDev. Firm-years conducting public offerings are removed from the analysis. Industry and year dummies are included. Z-statistics computed by using heteroskedasticity-robust standard errors are reported in parentheses.

	(1)	(2)	(3)	(4)
M/B Ratio	0.015 (0.945)			
AggMv		0.279*** (3.249)		0.279*** (3.256)
Growth			-0.034 (-0.207)	0.001 (0.008)
Size	-0.022 (-0.572)	-0.041 (-1.153)	-0.042 (-0.813)	-0.040 (-0.815)
Firm Age	-0.057*** (-4.803)	-0.056*** (-4.741)	-0.057*** (-4.784)	-0.056*** (-4.728)
Leverage	2.302*** (9.315)	2.249*** (9.434)	2.357*** (9.720)	2.249*** (9.331)
Profitability	-0.209 (-1.560)	-0.206 (-1.604)	-0.204 (-1.439)	-0.206 (-1.598)
Volatility	0.838 (0.983)	0.583 (0.655)	0.970 (1.129)	0.583 (0.655)
State Ownership	-0.003 (-1.164)	-0.003 (-1.375)	-0.003 (-1.126)	-0.003 (-1.361)
AnalystDev	-0.106*** (-4.347)	-0.109*** (-4.514)	-0.107*** (-4.329)	-0.109*** (-4.436)
Constant	-0.766 (-0.972)	-0.157 (-0.213)	-0.343 (-0.288)	-0.164 (-0.142)
Pseudo R2	0.063	0.065	0.063	0.065
N	8427	8427	8427	8427

***, **, *: Significant at the 1%, 5%, and 10% levels, respectively.

Table 7**Stock price movement surrounding the announcement of private placements**

This table shows cumulative abnormal return (CAR) computed by using market adjusted return, market model, and Fama and French's 3-factor (FF-3F) model. Parameters of the market model and FF-3F model are estimated by using daily stock returns over a 250-day period starting from day 21 relative to announcement. AnnDay x, AnnMonth x, AnnYear x indicate day x, month x, and year x relative to the announcement date, respectively. We assume one calendar month has 21 trading days, and AnnMonth -1 corresponds to AnnDay -21.

CARs	Statistics	Market-adjusted Return	Market Model	FF-3F Model
Panel A: Stock performance prior to announcement				
CAR(AnnYear -3, AnnDay -1)	Mean	20.01***	-0.33	8.16*
	Median	12.15***	1.28	-2.83
CAR(AnnYear -1, AnnDay -1)	Mean	9.47***	1.92	6.44***
	Median	4.67***	-0.03	3.68**
CAR(AnnMonth -6, AnnDay -1)	Mean	6.78***	2.92**	4.73***
	Median	4.15***	1.17	3.28***
CAR(AnnMonth -3, AnnDay -1)	Mean	4.86***	2.90***	3.89***
	Median	3.23***	2.31***	3.07***
CAR(AnnMonth -1, AnnDay -1)	Mean	4.30***	3.53***	3.75***
	Median	3.86***	3.18***	3.34***
CAR(AnnDay -5, AnnDay -1)	Mean	3.62***	3.40***	3.32***
	Median	2.96***	2.73***	2.77***
CAR(AnnDay -3, AnnDay -1)	Mean	3.10***	2.99***	2.91***
	Median	2.14***	2.02***	2.14***
CAR(AnnDay -2, AnnDay -1)	Mean	2.59***	2.52***	2.47***
	Median	1.80***	1.78***	1.75***
Panel B: Announcement effect				
CAR(AnnDay 0, AnnDay +1)	Mean	1.73***	1.68***	1.68***
	Median	0.81***	0.78***	0.78***
CAR(AnnDay 0, AnnDay +2)	Mean	1.84***	1.75***	1.75***
	Median	0.52***	0.44***	0.44***
CAR(AnnDay 0, AnnDay +3)	Mean	1.99***	1.87***	1.87***
	Median	0.80***	0.59***	0.59***
CAR(AnnDay 0, AnnDay +5)	Mean	1.93***	1.73***	1.73***
	Median	0.34***	0.03**	0.03**

***, **, *: Significant at the 1%, 5%, and 10% levels, respectively.

Table 8**Long-term abnormal returns following the execution private placements**

Panel A reports mean and median of post-execution buy-and-hold abnormal returns (BHARs) for firms executing private placements. Panel B computes the BHARs for participating investors by replacing the market price at execution day by actual issue prices. Panel C adjusts BHARs of private placement firms by using public offerings firms as control companies. In the first set of columns, a control firm is the same industry company which is closest in assets at the previous year to the private placement firm. In the second set of columns, a control firm is the same industry company which belongs to the same asset quintile and is closest in M/B ratios at the previous year to the private placement firm. IssueDay x and IssueMonth indicate day x and month x relative to the issuance day, respectively. We assume that one calendar month has 21 trading days. IssueMonth +6 corresponds to IssueDay +126.

Buy-and-hold abnormal returns (BHARs)	Industry and size adjusted returns			Industry, size and M/B adjusted returns		
	Mean	Median	N	Mean	Median	N
Panel A: BHARs						
BHAR(IssueDay 0, IssueMonth +6)	-12.20*** (-5.43)	-8.27*** (-6.04)	717	-4.96** (-2.35)	-1.50** (-2.49)	688
BHAR(IssueDay 0, IssueMonth +12)	-18.42*** (-6.05)	-14.68*** (-7.83)	659	-10.51*** (-4.09)	-9.45*** (-5.33)	647
BHAR(IssueDay 0, IssueMonth +24)	-29.08*** (-7.36)	-22.08*** (-9.63)	512	-25.61*** (-6.75)	-16.19*** (-8.17)	494
BHAR(IssueDay 0, IssueMonth +36)	-39.70*** (-9.22)	-23.55*** (-9.79)	393	-36.00*** (-8.50)	-22.31*** (-9.14)	380
Panel B: BHARs for participating investors						
BHAR(IssueDay 0, IssueMonth +6)	19.58*** (6.40)	12.30*** (7.61)	712	26.03*** (8.60)	19.97*** (9.96)	683
BHAR(IssueDay 0, IssueMonth +12)	9.86** (2.57)	4.18** (2.36)	655	15.81*** (4.95)	10.47*** (5.09)	642
BHAR(IssueDay 0, IssueMonth +24)	-5.72 (-1.24)	-8.66** (-2.22)	508	-3.68 (-0.89)	-2.09 (-1.11)	490
BHAR(IssueDay 0, IssueMonth +36)	-16.18*** (-3.42)	-9.14*** (-3.22)	389	-12.56*** (-2.71)	-5.75*** (-2.74)	376
Panel C: BHARs adjusted by a public offering firm						
BHAR(IssueDay 0, IssueMonth +6)	27.44*** (14.13)	22.29*** (13.84)	579	26.36*** (10.59)	22.15*** (10.19)	410
BHAR(IssueDay 0, IssueMonth +12)	30.72*** (8.87)	21.14*** (12.32)	490	29.03*** (9.76)	19.14*** (10.11)	374
BHAR(IssueDay 0, IssueMonth +24)	20.66*** (6.95)	13.81*** (7.69)	336	16.26*** (5.95)	9.79*** (5.97)	292
BHAR(IssueDay 0, IssueMonth +36)	17.25*** (5.94)	7.93*** (4.92)	323	9.35*** (3.16)	3.79** (2.35)	285

***, **, *: Significant at the 1%, 5%, and 10% levels, respectively.

Table 9**Issuance costs**

This table presents discounts (the percentage difference between the closing price on the day before issuance and the offer price) as well as DirectCost (%), which is the fees paid to underwriters and other intermediaries as a percentage of the gross proceeds.

Variables	Private placements			Public offerings		
	Mean	Median	N	Mean	Median	N
Discount (%)	29.37***	21.47***	813	6.74	5.27	97
DirectCost (%)	3.01***	2.85***	790	3.63	3.16	97

***, **, *: Significant at the 1%, 5%, and 10% levels, respectively.

Table 10**Logit regression of choosing private placements over public offerings**

This table presents results of logit regressions in which the dependent variable takes on a value of one for firms conducting private placements and zero for those conducting public offerings. Non-equity issuers are not included in the analysis. AggMv is the aggregate misvaluation measure, which is sum of firm-specific and sector-specific misvaluation measures. Growth is the component of market-to-book ratio, which represents the firm's growth opportunities. AggMv and Growth are estimated from model 3 of Rhodes-Kropf et al. (2005). FirmSize is the natural logarithm of sales. FirmAge is the number of years from establishment. Leverage is the ratio of book liability over book assets. Profitability is the weighted average ROEs over the past two years. Volatility is the standard deviation of daily stock returns in the past 12 months. State Ownership is the percentage ownership by the state over the total number of outstanding shares. AnalystDev is the natural logarithm of the absolute difference between the median analyst forecast and realized value of net profit. Ln (InverseElasticity) is the natural logarithm of the ratio of the discount to the fraction of the offered shares over the shares outstanding after the issuance. One-year lagged data are used for M/B ratio, AggMv, Growth, Size, Leverage, Profitability, State ownership, and AnalystDev. DirectCost is fees paid to underwriters and other intermediaries as a percentage of gross proceeds. Month x for AggMv and Growth indicates relative month to the announcement (e.g., Month -6 indicates six month before the announcement). ProbAnn is the probability for a firm-year to announce equity issues, which is computed from the Model (4) of Table 5. Models (1) to (3) show results for all equity issuers in our sample while Models (4) to (6) removes firms whose weighted average of ROE over the three years prior to issuance is lower than 6%. Industry and year dummies are included. T-statistics computed by using heteroscedasticity-consistent standard errors are reported in parentheses.

	All equity issuers			Issuers who are eligible to public offerings		
	(1)	(2)	(3)	(4)	(5)	(6)
AggMv: Month -1	-1.718*** (-3.504)			-1.358*** (-2.715)		
Growth: Month -1	-0.241 (-0.349)			0.295 (0.413)		
AggMv: Month -3		-1.488*** (-3.216)			-1.401*** (-2.877)	
Growth: Month -3		-0.532 (-0.629)			0.382 (0.450)	
AggMv: Month -6			-0.717 (-1.551)			-0.607 (-1.336)
Growth: Month -6			-0.576 (-0.652)			0.347 (0.338)
Firm Size	-0.778*** (-3.026)	-0.858*** (-3.061)	-0.859*** (-2.857)	-0.613*** (-2.643)	-0.587** (-2.236)	-0.546* (-1.846)
Firm Age	-0.016 (-0.214)	-0.032 (-0.422)	-0.073 (-1.011)	-0.062 (-0.758)	-0.064 (-0.790)	-0.118 (-1.589)
Profitability	-1.653* (-1.877)	-1.126 (-1.339)	-1.640** (-2.076)	-0.812 (-1.076)	-0.041 (-0.052)	-0.585 (-0.866)
Volatility	101.424*** (2.776)	98.752*** (2.662)	88.880** (2.340)	79.334** (2.208)	78.138** (2.166)	66.957* (1.837)
State Ownership	0.025** (2.435)	0.024** (2.424)	0.021** (2.038)	0.020* (1.913)	0.020** (2.011)	0.016 (1.515)
Ln (InverseElasticity)	1.373*** (4.549)	1.378*** (4.596)	1.386*** (4.676)	1.412*** (3.907)	1.443*** (3.987)	1.443*** (4.022)

Table 10 (Continued)

DirectCost	-0.650*** (-4.371)	-0.631*** (-4.082)	-0.558*** (-3.848)	-0.634*** (-3.743)	-0.638*** (-3.611)	-0.568*** (-3.048)
AnalystDev	0.085 (0.601)	0.087 (0.581)	0.091 (0.639)	0.027 (0.172)	0.022 (0.144)	0.020 (0.130)
ProbAnn	15.787 (1.428)	11.558 (1.106)	2.376 (0.221)	12.080 (1.075)	10.156 (0.947)	-0.504 (-0.047)
Constant	-3.025 (-0.431)	-0.879 (-0.114)	0.815 (0.099)	-5.095 (-0.719)	-6.153 (-0.765)	-4.802 (-0.554)
Pseudo R ²	0.549	0.548	0.530	0.549	0.555	0.537
N	469	469	469	365	365	365

***, **, *: Significant at the 1%, 5%, and 10% levels, respectively.

Table 11**Regression of discount for private placements**

This table shows results of OLS regression of discounts. Models (1) and (2) adopt Discount, which the percentage difference between the closing price on the day before issuance and the offer price, as a dependent variable. Models (3) and (4) use the discount from the market price at the announcement (percentage difference between the closing price on the day before announcement and the offer price) as a dependent variable. M/B ratio is the market value of equity over the book value of equity. AggMv is the aggregate misvaluation measure, which is sum of firm-specific and sector-specific misvaluation measures. Growth is the component of market-to-book ratio, which represents the firm's growth opportunities. AggMv and Growth are estimated from model 3 of Rhodes-Kropf et al. (2005). FirmSize is the natural logarithm of sales. Leverage is the ratio of book liability over book assets. Profitability is the weighted average ROEs over the past two years. IssueSize is the natural logarithm of gross proceeds. Volatility is the standard deviation of daily stock returns in the past 12 months. State Ownership is the percentage ownership by the state over the total number of outstanding shares. Data at the month before announcement (Month -1) are used for M/B ratio and AggMv. One-year lagged data are used for FirmSize, Leverage, Profitability, and State Ownership. Both year and industry fixed effects are included. T-statistics in parentheses are computed by using heteroscedasticity-consistent standard errors.

	Discount		Discount from the market price at the announcement	
	(1)	(2)	(3)	(4)
M/B ratio: Month -1	-1.538*** (-3.063)		2.285** (2.454)	
AggMv: Month -1		-10.898*** (-3.855)		17.294*** (3.959)
Growth: Month -1		-3.666 (-0.524)		-5.155 (-0.926)
FirmSize	-6.466*** (-4.103)	-5.866*** (-2.876)	3.520** (2.118)	0.636 (0.349)
Leverage	8.502 (1.069)	6.813 (0.889)	-23.903*** (-2.666)	-21.209** (-2.519)
IssueSize	7.364*** (3.081)	8.263*** (2.721)	-1.467 (-0.609)	-4.528* (-1.730)
Profitability	-2.349 (-0.511)	-3.047 (-0.698)	-2.622 (-0.685)	-0.146 (-0.054)
Volatility	-23.162 (-1.132)	-24.709 (-1.508)	-113.527*** (-4.347)	-98.732*** (-3.415)
State Ownership	-0.147 (-1.519)	-0.143 (-1.480)	0.067 (0.713)	0.057 (0.614)
Constant	152.047*** (5.129)	133.016** (2.361)	-61.659** (-2.247)	27.108 (0.654)
Adjusted R ²	0.130	0.134	0.168	0.181
N	681	681	681	681

***, **, *: Significant at the 1%, 5%, and 10% levels, respectively.