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Securities Market Regulation and Private Equity Placements in China

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ABSTRACT

The extant literature in securities issuance has documented two important facts on private placements of equity securities (PEP): positive short-term market reaction to PEP announcements and long-term underperformance of issuing firms. In this study, we investigate the impact of PEP regulation on the post-PEP stock performance of Chinese listed firms: whether the more stringent regulation of private equity placements in China serves as a control mechanism that reduces information asymmetry or serves as a friction that results in managerial entrenchment and investment inefficiency. We find that, consistent with previous studies using data mainly from the United States and Europe, Chinese firms' PEPs are issued at a substantial discount and have positive announcement period returns. However, both long-term operating and equity performance of PEP-issuing firms also improve compared to non-issuing firms. More importantly, general investors benefit from private placements when controlling shareholders participate in the deals, and at the same time, long-term returns to controlling shareholders outperform those to non-controlling shareholders. Overall, this evidence suggests that stricter regulation does not necessarily eliminate underpricing and entrenchment, but it does help firms to obtain needed capital and improve investment efficiency in the long run.

I. INTRODUCTION

Private equity placements (PEPs) are shown to have benefits that are related to certification and monitoring by well-informed investors because they could serve as a certification of firm value (Leland and Pyle 1977) as well as an indication of reduced agency problems.. For example, private placements of public equity are associated with positive announcement returns (Hertzel and Smith 1993; Wruck 1989), in contrast to the negative announcement returns in public offerings of equity (e.g., IPOs in Ritter 1991 and Loughran and Ritter 1995). However, the long-run stock price performance of PEP-issuing firms is negative following private placements of equity (e.g., 3-year negative abnormal return in Hertzel et al. 2002). One major problem in this empirical research area is that researchers cannot explain the evidence of the opposing directions of the announcement period and the long-term abnormal returns. In an attempt to reconcile this discrepancy, Krishnamurthy et al. (2005) classify PEPs based on investor identity according to whether the investor is affiliated with the firm (affiliated vs. unaffiliated institutions) and find that the long-term underperformance is confined to firms where PEP shares are placed to unaffiliated investors. The authors find no long-term underperformance following placements for firms with PEPs placed to affiliated investors and attribute the phenomenon to the lower cost of affiliated investors to acquire private information because they can avoid investing in overvalued firms. It should be noted that unlike initial and seasoned public offerings (i.e., IPOs and SEOs) in the U.S., securities that are issued and sold via private placement to sophisticated investors do not need to be registered with the Securities and Exchange Commission (SEC),[1] and hence the issuers are not required to (and often do not) publicly disclose information about the new PEP transactions.[2]

It is one question to ask how agency problems and managerial decisions (e.g., certification effect and SEO vs. PEP) are perceived and reflected in both stock and operating performance. Much research and attention have been devoted to better understand this and we need to know more. It is still another question to ask what if there are appropriate public policy mechanisms to eliminate or at least reduce information asymmetry in the market for private placements of

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[1] The only requirement is that unregistered private placements of equity cannot be resold in the open market, except under provisions of the SEC's rule 144 (the Security Act of 1933). Only after a minimum two-year holding period, these investors holding privately placed equity can sell them to the public (Silber 1991).

[2] This regulatory practice is commonly used in other developed countries, big and small (for example, in Singapore, Chen 2002).

equity: does the role of information acquisition costs and the benefits of certification and monitoring become less pronounced? The rationale behind the rule that allows unregistered offerings in private placements in the U.S. is that sophisticated investors have the knowledge and the resources to independently evaluate investment opportunities of the PEP-issuing firms (Habib and Johnsen 2000). However, this is not always true; therefore, in a securities market where PEP issuance is regulated, if the approval of PEP applications can serve as a confirmation that the better informed investors with the right incentives and ability to monitor the managers have been screened and identified and their real effects on business operations will gradually take place, then we will expect firm performance to improve over time. Unfortunately, stringent rules and regulations in emerging markets are commonly associated with weak legal protection of minority shareholder rights (La Porta et al. 1998; La Porta et al. 2002). Consider the regulatory emphasis placed on promotion of a limited number of "winners" and the fact that firms and large investors under the influence of low government quality often engage in rent-seeking from government (Fisman, 2001), the regulation in this context can potentially add a further perverse incentive in favor of asset appropriation by large shareholders (Johnson et al. 2000; Friedman et al. 2003), although it is admittedly difficult to measure controlling owners' propping and tunneling incentives in emerging securities markets such as China (Fan et al. 2011).

Therefore, in this research, we examine whether the heavy-handed regulation of private placements of equity in China will constrain the PEP-issuing firm's ability to trade off disclosures for issuance, thereby making all investors informed about the true prospects and value of the firm. And the same time, does the appropriation of private benefits becomes more prevalent. Specifically we raise the following questions: Are the long- and short-term effects of private placements in China similar to those of other markets? Did the stringent regulation of private placement in China make a difference in long-term stock returns? And who actually benefited from these highly regulated private placement transactions? Using detailed data of private placement of equity securities in China, we find that PEP-issuing firms perform better than non-issuing firms in three years following private equity placements. In addition, there is a significantly higher announcement market reaction where controlling shareholders participate in the placements, and the long-term abnormal returns to the controlling shareholders outperform those to non-controlling shareholders.

The remainder of the paper is organized as follows. Section II describes the institutional details of private placements of equity and securities market regulation of PEPs in China. Section III reviews the relevant prior research on private placement. Section IV presents the sample data, measurement choice, and empirical method. Section V evaluates the results. Section VI addresses concerns about the potential impact of sample selection bias. Section VII discusses the main concerns and policy implications of these findings and concludes.

II. INSTITUTIONAL BACKGROUND

Scholars and regulators have long advocated the use of public equity markets to serve the interests of both entrepreneurs and investors, as well as that of the larger society, because investment can be valued at asset market prices (Tobin 1982). In a general economy, the market exchanges between buyers and sellers can be seen to provide an institutional solution to the pricing and exchange of goods and services of uncertain value. Similarly, the equity market benefits both financiers and financees if the investment potential, risks and expected returns can be recognized through the valuation (pricing) mechanism of an efficient market. Thus, the viability of an efficient market is critical. It is commonly believed that the market outcome without government intervention, at least in most circumstances, is efficient. The apparent periodic failure of stock markets is often used to justify the remedial introduction of market regulation. Especially when markets are imperfectly rational, there may be need for regulation. For example, in the United States, the purpose of the federal intervention in financial markets in the 1930s, as a response to the Great Depression, was to protect investors from stock price manipulation and fraud, and to enhance market information transparency and fair competition among investors (Romano 1998). Daniel, Hirshleifer and Subrahmanyam (1998) attribute the effectiveness of market regulation to the differences in the biases, incentives and motives of participants in both the political and market spheres: "The political process will surely create inefficiencies, but it may remedy some problems as well." Still, market failures do not necessarily support the general proposition that more government regulation of financial markets makes them more efficient. Even when enlightened market regulation is pursued to prevent market failures, regulation itself can have indirect impact on the economy.

Private equity placement (PEP) is a non-underwritten stock offering sold directly to a single investor or a small group of investors. In the United States, it is exempt from registration with

the Securities and Exchange Commission (SEC) due to the fact it does not involve any public offering, and information about private placement transactions is often limited (Carey, Prowse, Rea and Udell 1994). The market discounts and announcement effects associated with private placements have long been the hot issue in recent corporate finance literature. Previous studies on private placements of equity suggest that, in most markets, private placements have market discounts (Wruck, 1989; Hertzel and Smith, 1993; Chen et al. 2002; Wu et al. 2005), as well as positive announcement effects (Hertzel and Smith, 1993; Kato and Schallheim, 1993; Krishnamurthy et al. 2005; Renneboog et al. 2007), although there are significant differences across markets around the world. The literature attributes the discounts and abnormal announcement returns of private placements to the monitoring effect, asymmetry information, managerial entrenchment, and investor over-optimism.

[Insert Figure 1 Here]

Compared with its Western counterparts, private placement of equity by Chinese firms has shorter history, different characteristics, and more stringent regulation. On May 8, 2006, China Securities Regulatory Commission (CSRC) issued "*The Administration of the Issuance of Securities by Listed Companies*". Since then, private equity placements have become the primary method of equity refinancing for listed firms in China. The figure 1 shows the development of PEPs in the Chinese stock market. In 2014, the completed PEPs has raised 666.573 billion in RMB, which accounts for 97.71% of total refinancing RMB amount of that year in China.[3] Private equity placements in China are highly regulated and have some unique features. For example, in China, 1) PEPs require mandatory approval from CSRC. Once the listed firms receive the result of whether the application is approved or not by the CSRC, they should publicly announce the result the next trading day; 2) PEPs can be sold to a maximum of 10 investors who belong to any type of investor category, including controlling shareholders, institutional investors, wealthy individuals, and other legal investment organizations; 3) The newly issued PEPs stocks are not allowed to be sold within next 12 months irrespective of the category of the investor. If the stocks are bought by the controlling shareholders or any other firm owned by the

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[3] Before 2008, the CSRC report did not separate the total RMB amount of private offering from public offering. From 2008, the CSRC started reporting the detailed RMB amount of private equity issuing. To obtain the first two points in the figure 1, we consider all available PEPs in 2006 and 2007 from Wind dataset, and calculate their total RMB issuing amount deflated by total equity refinancing RMB amount. (Source: http://www.csrc.gov.cn/pub/newsite/sjtj/).

controlling shareholders, they cannot be resold within the next 36 months. Besides the requirements on issuing target and resale block period, CSRC also regulate the PEPs issuing amount, issuing price, issuing purpose, and many others.

However, Chinese policy makers are facing a dilemma. On the one hand, more financial market participation and investment is better than less, because the equity market has become an important source of external funding and effective platform for restructuring the state-owned enterprises (SOEs). The privatization of SOEs through shareholding subjected them to financial constraints and market disciplines, forcing managers to act in the interests of shareholders rather than those of themselves or the state. In other words, it is believed, at least by policy makers, that the stock market can enhance corporate governance and in turn improve management, accountability, transparency, and corruption (Groenewold, Wu, Tang and Fan 2004). Therefore, the policy goal of financial market regulation in China is to increase the opportunities and ability of the companies to obtain financing through public or private placements and, at the same time, lower transaction costs including regulatory costs. This is evidenced by the fact that private placement has become the major method of equity refinancing for publicly traded firms in China. On the other hand, the country does not yet have the necessary institutional infrastructure, including formal and informal rules, distribution of rights, and systems of enforcement, to make equity financing work effectively and efficiently. As a result, the protection of shareholder rights is still poor, insider trading and fraudulent dealing are rampant, and public companies do not intend to maximize shareholder value (Liu 2006; Tam 2002). In fact, the Chinese Supreme Peoples' Court (SPC) acknowledged the problem in its official notice: "Our country's capital markets are in a period of continuous standardization and development and a number of problems have arisen including insider trading, cheating, market manipulation and other behaviors (Pistor and Xu 2005)." Thus, it is understandable that extensive regulation is needed in this inefficient market to protect investors, reduce deceptive information, ensure appropriate allocation of capital, and guarantee long-term stability of economic growth, with particular importance in the private placement market.

III. LITERATURE AND HYPHOTHESES

Noll (1989) categorizes the economics research on market regulation into three areas: corrective action by government to prevent and overcome market failures, the effects of regulatory

policies, and the political causes of government intervention. The current research is closely related to the second theme of research on policy impacts in a financial market that is to prone to market failure (monopoly, imperfect information, scarcity rent, destructive competition, etc.) Specifically we are focused on a financial regulation policy that was enacted in China to protect investors and serve the public interest by ensuring fair and orderly markets. Private equity placement (PEP), also known as non-public offering is defined that listed firms issue stocks to the specific objects using non-public offering. Compared with other refinancing instruments, PEPs have some advantages. For example, listed firms can raise sufficient external capitals from controlling shareholders and institutional investors and using non-public offering; controlling shareholders can inject quality assets into listed firms through private equity placements to enhance the sustainable profitability of listed firms; lower regulatory disclosure of PEPs can also reduce the refinancing cost and save the time and auditing resources. Compared to the developed markets, PEPs in China are still highly regulated by requiring regulatory approval, limited number of participating investors, and different lock-in periods for different investor categories. Fonseka et al. (2014) summarize the CSRC regulations on Chinese private equity placements.

It is well documented in previous studies that IPO issuance is subject to the risk that equity issuers will sell bad securities to the public (La Porta, Lopez-De-Silanes and Shleifer 2006). According to Carpentier, Cumming and Suret (2012), the appropriate level of regulatory requirements and IPO-issuing firms' commitment to regulation reduce information asymmetry and heterogeneity of expectations and hence mispricing. Carpentier et al. (2012) also study the economic effect of stricter regulatory oversight in Canada and evidence a strong effect of the IPO disclosure and listing mode on firm value. However, the ongoing debate in regards to PEPs is whether any regulation is needed to promote fairness, prevent abuse, eliminate mispricing, and enhance firm value in this very special segment of the equity issuance market.

The existing literature of private equity placements focuses on two perspectives: the short-term market reaction to the PEPs announcement and the long-term post-announcement performance to the issuing firms. The existing evidence on private equity placements suggests that, in most markets, private placements have market discounts as well as positive announcement effects. For example, Wruck (1989) shows that the announcement of a private sale of equity is accompanied by a 4.4% average abnormal return and suggests that changes in

ownership concentration can partially explain the positive announcement effect. This phenomenon can be interpreted as the "monitoring effect" that private placements are purchased by investors who can ensure efficient resource allocation and enhance firm value by actively monitoring management. Several other US studies argue private placement discounts and stock price reactions also reflect illiquidity (Silber 1991), resolution of asymmetric information about firm value (Hertzel and Smith 1993). This is consistent with the "certification effect" that informed investors agreeing to purchase a large block of stock via private placements is like putting their stamp of approval on the market's valuation of the firm.

Several studies confirm the positive short-term market reaction to the PEPs announcement in the international markets, including Japan market (e.g., Kato and Schallheim 1996; and Kang et al. 1999), Hongkong market (Wu et al. 2005), and UK market (Renneboog et al. 2007). Recent two studies, Lu et al. (2011) and Fonseka et al. (2014), show that the positive market reaction to private equity issues is also existent in the Chinese stock market. All these empirical findings for the nonnegative stock-price reaction associated with the issue of information-sensitive securities in US and international markets support the view that the private equity issues are not bad news.

The puzzling part of private issuing is the long-term underperformance of private equity placements firms documented in US market (e.g, Hertzel et al. 2002; Krishnamurthy et al. 2005; Barclay et al. 2007; Brophy et al. 2009; and Chen el at. 2010), and in Japan market (Kang et al. 1999). For instance, Hertzel et al. (2002) show that positive announcement period returns are followed by abnormally low post-announcement stock price performance, with -23.8 percent three-year buy-and-hold abnormal returns relative to a size and book-to-market matched sample of control firms in US, and the authors attribute this phenomenon to investor over-optimism. One alternative explanation for the fact that shareholders no longer view private placements as favorable hence the negative long-run return can be managerial entrenchment. For example, managers who want to enhance their control of the firm can place large blocks of stock with passive investors (Barclay et al. 2007). Daniel et al. (1998) introduce the behavioral explanation such as underreaction hypothesis (i.e., investors over-react to private information signals due to overconfidence and under-react to public information signals) to explain the long-term underperformance of seasoned public equity issues (e.g, Loughran and Ritter 1995; and Spiess and Affleck-Graves 1995). However, this hypothesis does not seem

consistent with all the evidence of PEP issuance.

The relatively new and underdeveloped private placement market in China needs an environment of regulatory oversight that is, in a number of ways, much more stringent than those governing the western markets. Such higher level of regulatory requirements can reinforce the effects of monitoring (Wruck 1989), certification (Hertzel and Smith 1993) and reduce information asymmetry and heterogeneity of expectations and hence mispricing (Hertzel et al, 2002), possibly over a longer period of time. In addition, the Chinese equity market is undoubtedly less efficient and with higher degree of information uncertainty than its western counterparts:[4] The less information will be immediately impounded in the stock price at the announcement of a corporate event and the under-reaction is more likely to be found in this PEP issuance. Therefore, firms issuing PEPs under stringent regulations can have positive long-term performance following private equity placements announcements. Based on these arguments, we postulate:

H1. *Chinese issuing firms perform better than non-issuing firms following private equity placements in the long run. In other words, the long-term abnormal returns following private equity placements announcements are positive.*

Monahan (1983) points out that private placement financing arrangements are often associated with detailed contractual agreements and restrictions between the issuer and the buyer to a greater extent than would be found in public offerings. This clearly lowers the liquidity of privately placed securities; however, this problem is mitigated by the clientele effect: The investors of PEPs are mostly long-term institutional investor (Amihud and Mendelson 1986). Krishnamurthy et al. (2005) examine the relation between stock price performance and the identity of investors buying equity privately. They show that the long-term abnormal returns to the affiliated investors outperform those to unaffiliated investors. However, the institutional buyer of the placement can become active in firm affairs following the placement, especially in cases when the PEP participant was affiliated with, can exert a strong influence on, or was a member of the top management team prior to the placement (Barclay et al. 2007). Krishnamurthy et al. (2005) define the affiliated investors belonging the following groups: 1) officers or directors, 2) relatives of officers or directors, 3) consultants or attorneys, 4) current

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[4] According to Bae et al. (2012), China's stock market allows the least access to foreign investors in terms of its degree to which local stocks are open to international investors.

large block shareholders, 5) institutions affiliated with the firm, and 6) companies with product market agreements. Although it is possible and very likely that some affiliated investors, mainly insiders, possess favorable information regarding the firm that is not fully disclosed at the time of a corporate action, and can consume or expropriate corporate resources (Allen 2001; Holderness and Sheehan 1988),[5] other investors holding majority blocks of stock in publicly traded companies often engage in monitoring effort (Shleifer and Vishny 1986). Even for large investors that are considered outsiders (e.g., transient investor), they can still gather costly information about the firm's fundamental value by actively trading the firm's equity and induce managers to undertake efficient real investment with the voting rights associated with their holding (Edmans 2009). Following the argument in Pagano and Roell (1998) that the incentive to issuing equity is closely related to the amount of external funding required, the participation in PEPs by large affiliated shareholders signals both the need of capital to finance the firm's operation and the investors' intention to exert governance and urge better performance, and in turn, minority investors will perceive a change in the firm's strategic priorities. In the context of this paper, we consider those large investors participating in the private placements of firm equity as the controlling shareholders and propose the following hypothesis.

H2. *The long-term abnormal returns to all shareholders are higher when controlling shareholders participate in private placements than the cases when controlling shareholders do not participate.*

It is very likely that the controlling shareholders that participate in private placements are better informed about the firm's operating efficiency and capital investment that characterize the strategic position of the firm. Hertzel et al. (2002) have shown that private equity issues tend to follow periods of relatively poor performance. Given the relatively poor pre-issue operating performance, investors are anticipating an improvement in future operating performance. However, whether a turnaround will actually happen depends critically on the capability and willingness of the PEP participants to play a proactive role in monitoring corporate management to enhance the return of the firm's existing assets in place. The regulatory authority in China approves the PEP application through a tournament-like competition among

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[5] In an attempt to answer the question why some investors benefit more from the transactions of equity issuance and M&A, Bae et al. (2002) find that large shareholders increase their wealth by increasing the value of other group firms. Such phenomenon can be attributed to managerial entrenchment (Barclay et al. 2007) and self-dealing ("tunneling") of affiliated shareholders because they have strong incentives to transfer resources out of the firm to benefit themselves (Johnson et al. 2000; Bertrand et al. 2002; La Porta et al. 2002).

the PEP-issuing firms and PEP-participating investors. Such pre-screening process is likely to reduce the number of PEP participants to those most likely to be the fittest. On the one hand, the applications with PEP-issuing firms paired with participating investors who are best informed and positioned to monitor are likely to be approved. On the other hand, these firms and investors face strong incentives to compete for regulatory approval. As a result, the regulated arrangement of private equity placements in China can improve corporate governance and reduce transaction costs, and in turn strengthen firm operation performance. Therefore, if the positive post-announcement long-term performance of PEPs is observed in China, we expect that the firm's long-term operating performance will improve as well. In light of the above discussions, we propose the following hypothesis:

H3. *For the PEPs issues to the controlling shareholders, the long-term operating performance of issuing firms improves after the private equity placements announcement.*

IV. DATA AND METHOD

Sample Description and Event Study

From the Wind Dataset, we identify all A-share listed firms that had private equity placements from 2006 to 2012. Because CSRC placed the regulatory constraints on PEPs in 2006, our sample period starts from that year. We require at least one year of post-announcement data for most of our analyses; therefore our sample period ends in 2012. We only consider the transactions that A-share listed firms issue A-share. The initial sample includes 846 firm-year observations with successfully completed PEPs (675 firms). We then impose the following criteria on our sample of issuing firms: 1) we eliminate the offerings by utility and finance firms (CSRC industry codes D and I), and Chinese firms dual-listed in Hong Kong; 2) we eliminate the multiple issues in the same month, and observations where the firm has a previous private placement in the last three years; 3) we eliminate firms with insufficient data to calculate other measures discussed in the latter section. The final sample includes 580 firm-year observations (544 firms) that have successfully completed PEPs from 2006 to 2012. Panel A of Appendix Table A1 in the appendix reports the detailed sample selection procedure. Panels B and C show the distribution of sample firms across year and industry. There are more PEPs in the recent year, and in the manufacturing and real estate industry groups. We will control for industry and year fixed-effects in our latter empirical analysis.

[Insert Appendix Table A1 Here]

We obtain the accounting information about the firms from China Stock Market Accounting Research (CSMAR) database. The definitions of the variables are reported in Appendix Table A2. *SIZE* is defined as the market value of equity at the end of the month prior to the private equity placements announcement date. *BM* is defined as the ratio of book value of equity to market value of equity of the previous fiscal year end prior to the issue date. *AGE* is calculated as the year value between IPO date and private equity placements announcement date. *PROCEEDS* is the total RMB value of the private offering. *FRACTION is* calculated *as* the ratio of shares placed to shares outstanding after the issue. *DISCOUT* is the market discount of private equity placements and it is computed by (closing price of 10th day after announcement − placement price)/closing price of 10th day after announcement.

[Insert Appendix Table A2 Here]

We use standard event-study methodology to analyze the short-term market reaction to PEP announcements. Event studies analyze the change in value for the same sample of firms before and after their PEP issuance. As a result, we do not need to control for firm heterogeneity; however, a disadvantage of this approach is that market participants might anticipate the PEP issuance since the application has been filed and approved before the date of actual issuance, in which case our results provide only a partial estimate of the value changes resulting from the benefits of regulatory measures to reduce information asymmetry between issuers and investors. We define *CAR (-3, 0)* as the 4-day interval of cumulative abnormal return around the announcement date. We estimate a market model over a 190-day period starting 250 days prior to the announcement of the private placements and cumulate the average abnormal returns over 4 days around the announcement. We measure the discount-adjusted abnormal returns *CAR (-3, 0)-Adj* using the definition in Wruck (1989) and Hertzel and Smith (1993) as follows:

$$CAR(-3,\ 0)\text{-}Adj = [1/(1 - a)][CAR(-3,\ 0)] + [a/(1 - a)][(Pb - Po)/Pb] \qquad (1)$$

where *CAR(-3, 0)* is the abnormal stock return, *a* is the ratio of shares placed to shares outstanding after the placement, *Pb* is the market price at the end of the day prior to the event window, and *Po* is the placement price.

[Insert Table 1 Here]

Panel A of Table 1 shows that the sample mean value of market equity is RMB 4290.16 million, and book-to-market ratio is 0.64. The average year value between IPO date and private equity placements announcement date is 8.34 year. The average proceeds raised from the private placements in our sample is RMB 1165.88 million. The average fraction of new shares issued as a percentage of total shares outstanding after the issue is 29.75 percent, slightly greater than the percentage in US studies. The private placements in our sample are sold at a mean discount of 23.21 percent, measured relative to the share closing price of 10th day after announcement date. The discount is relatively smaller than Lu et al. (2011), because we include the more recent PEPs in our sample and we find the issuing discount decreases in the recent years. Panel A also reports that the mean value of four-day (-3, 0) announcement period returns and four-day discount-adjusted abnormal returns are 2.05 percent and 12.44 percent, significant at the one percent level. These findings are consistent with previous US and Chinese studies, as summarized in Table 2, that private placements are associated with positive announcement period returns and are issued at a substantial discount. What is more interesting to observe is how close the average short-term abnormal returns found in the Chinese studies (including this one) to that of results reported in the U.S. studies: 2.88% vs. 2.83%.

[Insert Table 2 Here]

An examination of the Pearson correlation matrix (Panel B of Table 1) indicate that issuance size (*PROCEEDS*) is strongly correlated with both the issuing firm's equity size (*SIZE*) and the tradable issues (*FRACTION*) with the coefficients of 0.47. *FRACTION* is also highly correlated with *DISCOUNT* with the coefficient of 0.40. To be cautious, we will include them in separate regression specifications to avoid potential multicollinearity problems.[6]

Measurement of Long-Term Abnormal Stock Price Performance

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[6] We use the type of offering to break down our sample. In China, issuing firms can choose either the fixed price or the action price to issue the equity privately to the certain investors. We find that more than 95% of our observations choose the fixed price mechanism. The results, not reported but available from the authors upon request, remain the same if we exclude the observations that use auctions to offer PEPs.

Following Hertzel et al. (2002), we employ two basic approaches to measure long-term abnormal stock price performance following private equity placements. First, we consider the approach of Barber and Lyon (1997) and Lyon et al. (1999), and use an individual control firm for each firm in our sample (buy-and-hold abnormal returns). Fama (1998) and Mitchell and Stafford (2000) point out that buy-and-hold abnormal returns methodology may be problematic because it does not adequately account for potential cross-sectional dependence in returns. Following their suggestions, we also estimate abnormal returns using the calendar-time portfolio approach used by Mitchell and Stafford (2002).

Similar to Krishnamurthy et al. (2005), we define the buy-and-hold returns to the existing shareholders *not participating* in the private placements for firm *i* from the announcement day (t=0) to *n* days subsequent to the announcement as:

$$BHR_{i,n} = [\prod_{t=0}^{t=n}(1+R_{it})]-1 \tag{2}$$

where R_{it} is the raw return for firm *i* on day *t*. The buy-and-hold abnormal return (BHAR) for firm *i* from day *0* through day *n* is defined as:

$$BHAR(0,n) = BHR_{i,n} - BHR_{control\_i,n} \tag{3}$$

where $BHR_{control\_i,n}$ is the contemporaneous buy-and-hold return on firm *i*'s control firm. We follow Krishnamurthy et al. (2005) to select size and book-to-market ratio matched controls. Specifically, we select the control firms that are in the same size decile as the sample firm and are closest in book-to-market ratio to the sample firm. In addition, the feasible controls include only firms that did not issue equity in the prior three years. The average abnormal buy-and-hold return for a sample of firms is the arithmetic mean of the individual abnormal buy-and-hold returns.

The *participating investor returns* are calculated by compounding the non-participating investor returns and the returns from the offer price to the closing price of the announcement day. We focus the long-term analysis on one-, two-, and three-year holding periods because the PEPs resale restrictions in China specify different resale lock-in periods for different investors.

Following Fama and French (1993) and Kang et al. (1999), we examine the post-issue long-term stock price performance of equity-issuing firms on a risk-adjusted basis using calendar-time regressions. For each month, we form equally- and value-weighted portfolios of all firms that issue equity privately in the previous 36 months.

$$R_{pt} - R_{ft} = \alpha + \beta_m MKT_t + \beta_s SMB_t + \beta_h HML_t + \varepsilon_t \qquad (4)$$

where the dependent variable $R_{pt} - R_{ft}$ in the Fama–French regressions is the return in each month on these portfolios in excess of the monthly risk-free rate. The intercept in regression measures the risk-adjusted abnormal performance of the private equity issuing firms. *MKT*, *SMB*, and *HML* are monthly returns of Fama-French (1993) three factors extracted from CSMAR.

V. RESULTS

Long-Term Buy-and-Hold Abnormal Returns

Table 3 reports the buy-and-hold abnormal returns over one-, two-, and three-year holding periods following the private placements announcements. The results show positive long-term abnormal returns following private equity placements announcements, controlling for size and book-to-market ratio. The findings are different from studies in US market (Hertzel et al. 2002) and Japan market (Kang et al. 1999).[7] Panel A suggests that existing shareholders who do not buy the shares in the private placements (i.e., non-participating shareholders) earn positive abnormal returns over one-, two-, and three-year holding periods following the private placements. Over the three years (one year) following the private placements, the shareholders earn a mean return 10.24 percent (2.13 percent) above the control firms. Panel B reports the average size and book-to-market adjusted returns to the investors buying the shares in the private placements. These participating shareholders earn, on average, 26.86 percent, 31.39 percent, and 38.99 percent over one-, two-, and three-year holding periods following the private placements. The returns to participants are substantially higher than the returns to non-participants because private placements are sold at a mean discount of 23.21 percent in our sample. The t-statistics of the abnormal returns to participants in the private placements are statistically significant at the one percent level. Additionally, the median abnormal returns yield similar positive returns to the mean value.

[Insert Table 3 Here]

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[7] We also examine the results across size matched controls, book-to-market ratio matched controls. Since the results are similar to size and book-to-market ratio matched controls, we only report the size and book-to-market matched results in our tables.

Calendar-Time Abnormal Returns

Following Fama and French (1993) and Kang et al. (1999), we examine the post-issue long-term stock price performance of equity issuing firms on a risk-adjusted basis using calendar-time regressions. In Table 4, we present the Fama–French three-factor time-series regression results for the portfolio of private equity issuing firms as a robustness check. For each month, we form equally- and value-weighted portfolios of all firms that issue equity privately in the previous 36 months. The intercept alpha in regression measures the risk-adjusted abnormal performance of the private equity-issuing firms. For the equally-(value-)weighted private placement portfolios, the intercept is 0.36% (0.42%), which indicates that the private placement firms exhibit the average abnormal returns of 0.36%(0.42%) per month over the 36-month period following the private placements announcement. The equally-(value-) weighted portfolios regression coefficients are statistically significant at the 10 percent level, with t-stat=1.82(t-stat=2.35). This translates to a three-year return of approximately 13.69% $[(1 + 0.0036)^{36} - 1]$ for the equally-weighted portfolios, and 16.16% $[(1 + 0.0042)^{36} - 1]$ for the value-weighted portfolios, similar to the reported returns on the control-firm approach in table 3.

[Insert Table 4 Here]

Does investor identity matter?

In the previous section, we show that Chinese issuing firms perform better than nonissuing firms following the private equity issues in the long run. In fact, the reason why we observe the different pattern from US and Japan markets may be due to the distinctive features in the Chinese stock market. For example, for any type of investor, CSRC regulates at least 12 months resale lock-in period after the private equity issues. If the stocks are bought by the controlling shareholders or any other firm controlled by the real controller, they cannot be resold within the next 36 months. Krishnamurthy et al. (2005) show that the long-term abnormal returns to the affiliated investors outperform those to unaffiliated investors. This motivates us to examine whether investors identity matters to the long-term post-announcement performance. The positive long-term abnormal returns following private equity placements announcements may be mainly attributable to certain type of investors.

Abnormal returns according to private placements investor identity

In this section, we analyze whether investor identity matters among private placements. The Chinese PEPs regulation states PEPs can be sold to any type of investor, including controlling shareholders, institutional investors, natural persons, and other legal investment organizations, subject to different resale lock-in periods. We analyze the long-term abnormal returns by separating the private placements sample into those where shares are bought only by controlling shareholders of the issuing firms and those where shares are bought by non-controlling shareholders of the issuing firms. We collect the investor identity information from the WIND database. With the incorporated investor identity data, we can indentify investors as controlling shareholders, firms controlled by the real controllers, institutional investors, natural persons, and other legal investment organizations.

Out of 580 private placements in our sample, we classify 108 observations as the PEPs bought only by controlling shareholders of the issuing firms or any other firm controlled by the real controller. The remaining 472 placements include 281 observations as the PEPs bought only by non-controlling shareholders, and 191 observations as the PEPs bought by both controlling shareholders and non-controlling shareholders. We classify the remaining 472 placements as the non-controlling subsample because observations in this subsample share the similar PEPs issue- and firm-specific factors. Since controlling shareholders are well informed about the firm fundamental, we expect that the stock price performance in firms where controlling shareholders buy the shares is at least as high as in firms where non-controlling shareholders buy the shares.

Panel A of Table 5 reports the subsample characteristics of the private placements and issuing firms sorted by participating investor type. We show the mean and median characteristics of two subsamples, and report the mean differences between two subsamples. We find that the firms issuing PEPs to controlling shareholders have a significant larger size, higher book to market ratio, and longer age. The mean discount in placements to controlling shareholders is significantly higher (36.50 percent) than that to non-controlling shareholders (20.16 percent). The mean issue size, and fraction placed in placements to controlling shareholders are significantly higher (1863.51 million RMB, and 42.05 percent) than those in placements to non-controlling shareholders (1006.26 million RMB, and 26.93 percent).We also

find a significantly higher announcement period reaction (discount adjusted market reaction) of 2.84 percent (19.95 percent) in placements where controlling shareholders participate, compared to 1.87 percent (10.72 percent) in placements to non-controlling shareholders. The mean differences in characteristics of the private placements and issuing firms between two subsamples are at least significant at the 10 percent level. Taken together, these results imply that the market may view the PEPs to controlling shareholders as a better signal, even if there exits potential insider self-dealing in the form of deeper discounts to controlling shareholders investors.

[Insert Table 5 Here]

Panel B of Table 5 reports the long-term abnormal returns following private placements of equity by participation type: participating investors who received PEP issues vs. non-participating investors who did not. The long-term abnormal returns to the participating shareholders always outperform those to non-participating shareholders, regardless their controlling types, over one-year, two-year and three-year periods. This result supports our second hypothesis that the long-term post-announcement abnormal returns to the participating shareholders are higher than those to non-participating shareholders. This finding of higher returns to participating shareholders is not surprising because the BHAR returns are calculated by compounding the non-participating investor returns and the returns from the offer price to the closing price of the announcement day (i.e., the participating shareholders benefit a significant larger issuing discount than the non-participating shareholders).

We then compare the mean differences in long-term abnormal returns between the two subsamples of controlling and non-controlling shareholders. For non-participating investors, the BHAR mean differences between two subsamples over one-, two-, and three-year holding periods following the private placements are 4.35 percent, 5.50 percent, and 6.97 percent, respectively, which are significant at the 10 percent level. For participating investors, the return differences are 27.94 percent, 28.13 percent, and 31.06 percent, respectively, which are significant at the 1 percent level. This is consistent with the hypothesis H2, suggesting that controlling shareholders can serve as a more effective monitor than do non-controlling shareholders. Whether the long-term operating performance is indeed improved due to this monitoring effect, we will explicitly examine this in the next subsection.

The fact that participating shareholders benefit more than non-participating shareholders from long-term stock returns (e.g., 61.14% vs. 15.6% in 3-year BHAR when controlling shareholders participate and 30.08% vs. 8.63% in 3-year BHAR when non-controlling shareholders participate in PEP transactions) might imply the existence of wealth appropriation by these supposedly large, controlling shareholders as suggested in hypothesis H2a. More interestingly, the return differentials to participating and non-participating investors have been decreasing (Figure 2), and this could mean that the effects of the managerial entrenchment and large shareholders appropriation are gradually diminished over time.

[Insert Figure 2 Here]

In Table 6, we further analyze the difference between the long-term returns in a regression framework that controls for other issue- and firm-specific factors as follows:

Post-issue 3-year abnormal returns =a0+a1*controlling_dummy+a2*log(SIZE)

+a3*log (BM) +a4*log (AGE+1) +a5* FRACTION+a6*DISCOUNT (5)

Where the dependent variable is the three-year post-issue abnormal returns measured using the Fama–French intercepts. For each firm, the FF-intercept is obtained by regressing the firm's excess return on the return on the market, size, and book-to-market ratio in the 36-month period following the private placement. The intercept represents the average monthly abnormal returns for the firm in the three-year period. The independent variables include the dummy variable that captures private placement investor type: controlling_dummy, which is 1 for placements when shares are sold to controlling shareholders of the firm and 0 otherwise. We control firm-specific factors such as *Size*, *BM*, and *AGE* in their logarithm forms. The PEPs issue factors such as *FRACTION* and *DISCOUNT* are also included in the regression equation (5). We drop the issuing size factor(*PROCEEDS*) because Table 1 shows that PROCEEDS is highly correlated with other factors such as *Size, FRACTION* and *DISCOUNT*. In all regressions, we cluster standard errors at the industry and year levels.

[Insert Table 6 Here]

Table 6 shows that the coefficients of the controlling dummy are positive and statistically significant in all three specifications. This suggests that the long-term abnormal returns are higher for placements to controlling shareholders investors once we control for other factors.[8] This supports the view that investor identity does matter and that controlling shareholders do not invest in overvalued firms, confirming the second hypothesis. In addition, controlling shareholders benefit a substantial issuing discount (average 36.50 percent) from PEPs issues.

Operating Performance around Private Placements

In the previous subsection, we show that the long-term post-announcement abnormal returns to controlling shareholders are higher than those to non-controlling shareholders. Following Hertzel et al. (2002), we evaluate the operating performance of our sample firms for the years surrounding the private equity issues. We employ three measure to proxy for operating performance, including the ratio of net income to total assets (*ROA*), the ratio of the market value to book value (*M/B*), and the ratio of capital and R&D expenditures to total assets (*CE + RD/Assets*).The capital expenditures are calculated as the sum of the change in net fixed assets and the change in accumulated depreciations in one fiscal year. R&D expenditures include selling, general and administrative expenses in one fiscal year. We subtract the sample median by the median for the sample firms' industries to obtain the industry-adjusted operating performance measures.

Panel A, B and C of Table 7 report the operating performance around private equity placements of the full sample, the controlling shareholders subsample, non-controlling shareholders subsample, respectively. Panel A shows that private equity issues tend to follow periods of relatively poor operating performance. The industry-adjusted *ROA* of the issuer are substantially lower than the industry median in each of the three years prior to the issues. The operating performance improves after the private equity issues, showing that the *ROA* for the median issuer are substantially higher than the industry median in each of the three years after the issue. Panel B shows that the improvement in *ROA* is much larger in the subsample of private equity issuing to the controlling shareholders than to the non-controlling shareholders in Panel C. The results suggest the strong post-issue stock-price performance can be reflection of operating performance improvement after the placements issues.

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[8] We repeat the analysis using the abnormal returns in the one- and two-year period following private placements as the dependent variable and obtained similar results.

[Insert Table 7 Here]

We find that issuing firms have the relatively lower market-to-book ratios (*M/B*) than the control firms in the years prior to the issues, suggesting that the issuing firms may be undervalued before the private placemats placements. Issuing firms in the controlling shareholders subsample are more undervalued than those in the non-controlling shareholders subsample. After the issues, such undervaluation becomes relieved. The table also shows that the ratio of capital and R&D expenditures to total assets (*CE* + *RD/assets*) for the issuing firms declines surrounding the private placements. The decline in capital and R&D expenditures is much larger in the controlling shareholders subsample than in the non-controlling shareholders subsample.

Overall, we find that firms making private equity placements have poor operating performance in the period prior to the issues, and improve the performance following the issues. This result is consistent with our third hypothesis. The operating performance improvement is more evident in the controlling shareholders subsample, suggesting that private equity placement may reduce related party transactions and similar competition with business groups to enhance the larger controlling shareholders and strengthen firms' operation supervision.

VI. ROBUSTNESS TESTS

Sample Selection Bias

Before jumping to the conclusion that the current shareholders benefit from the issuance of PEPs in the long run because PEP-issuing firms generally perform better than those non-issuing firms following private placements of equity, it is important to know that PEP-issuing firms are "selected" by the regulatory agency to obtain the permission to issue equity privately. It is very likely that the CSRC may not approve applications from firms that do not have a good chance of eventually becoming successful. In other words, the observations in our sample represent the "good" firms that have applied for PEP issuance, received approval, and completed transactions; hence, it is not a randomly selected sample.

In this subsection, we will include additional 325 firm-year observations of firms whose applications were rejected by CSRC or withdrawn by themselves, and employ the Heckman

selection model to address this selection concern. Specifically, we perform a two-stage regression in the following manner:

$PEPs = a_0 + a_1 \times log(SIZE) + a_2 \times log(BM) + a_3 \times log(AGE + 1)$

Post-issue 3-year Abnormal Returns $= b_0 + b_1 \times FRACTION + b_2 \times DISCOUNT$, if *PEPs*=1

where the dependent variable in the first stage is the dummy variable *PEPs* with the value of 1 if the firm received approval and successfully completed PEP issuance and 0 otherwise. The predictors that are used to determine the likelihood of being "selected" (*PEPs*=1) include the logarithms of the firm's equity *Size*, book-to-market (*BM*), and *AGE*. The dependent variable in the second stage is the three-year post-issue abnormal returns estimated using the Fama–French intercepts. The second stage is under the condition that the firm have applied for PPEs and successfully completed transaction. The results of the first stage regression reported in Panel A of Table 8 suggests that the older firms are more likely to obtain regulatory approval and complete the deals. The correlation (Rho) estimate 0.1633 is insignificant (p-value=0.4890), indicating that selection bias is not a big problem in the estimation of long-run performance equation.

[Insert Table 8 Here]

Panel B of Table 8 constructs the calendar-time portfolios returns of all firms that have applied for PPE issuance. The portfolio strategy is the same as Table 4 by using Fama–French three-factor time-series regressions. For each month, we form equally-and value-weighted portfolios of firms that succeeded in or failed in issuing private equity in the previous 36 months. The intercept alpha in regression measures the risk-adjusted abnormal performance of the private equity-issuing firms. This panel reports the portfolios returns, and return differences of two group firms- firms completed PEPs, and firms whose applications were rejected by CSRC or withdrawn by themselves. The equally-(value-) weighted return differences of two groups portfolios regression coefficients are statistically significant at the 10 percent level, with t-stat=1.84(t-stat=1.98). The results of Panel B shows that firms completed PEPs significantly outperform the firms whose applications were rejected by CSRC, suggesting that stricter PEP regulation in China may benefit firms.

For the finding that long-term returns to controlling shareholders outperform those to

non-controlling shareholders, there is also a potential selection bias. The exclusive right of controlling shareholders to receive private placement of equity may be an endogenous outcome of other factors. Again, we perform a two-stage regression as follows:

controlling = a₀ + a₁ × log(SIZE) + a₂ × log(BM) + a₃ × log(AGE + 1)

$controlling = a_0 + a_1 \times log(SIZE) + a_2 \times log(BM) + a_3 \times log(AGE + 1)$

$Post\text{-}issue\ 3\text{-}year\ Abnormal\ Returns = b_0 + b_1 \times FRACTION + b_2 \times DISCOUNT$, if *controlling*=1

where the value of *controlling* is 1 if shares are bought only by controlling shareholders of the issuing firms and 0 if shares are bought by non-controlling shareholders of the issuing firms. The results of the first stage regression shown in Table 9 suggest that firms issuing PEPs to controlling shareholders tend to have higher book to market ratio and older age, consistent with the findings in Panel A of Table 5. The correlation (Rho) estimate 0.0424 is insignificant (p-value= 0.9253), indicating that selection bias is not a big problem in the estimation of long-run performance equation with investor identity.

[Insert Table 8 Here]

VII. DISCUSSION AND CONCLUSION

IPO investors are subject to the risk that equity issuers will sell bad securities to the public, and the appropriate level of regulatory requirements can reduce information asymmetry and in turn eliminate mispricing and enhance firm value. However, for private equity placements (PEPs), it is still an ongoing debate about whether extensive regulatory oversight is needed to prevent abuse and enhance firm value in a special segment of equity issuance market. The research question this paper is attempting to answer is whether the findings about PEPs from developed financial markets still hold in underdeveloped but highly state-controlled markets like China, and specifically, whether the stringent regulation in China has an impact, good or bad, on market participants.

The stock market in China is one of the largest markets in the world. The market capitalization of Shanghai Stock Exchange and Shenzhen Stock Exchange combined is almost five trillion U.S. dollars, more than half as much as the GDP of that country in 2014. Still, it can hardly be considered free and efficient. Due to lack of regulatory experience, rule of law, and

of fully developed market economy, some banking and financing activities in China's equity market are strictly regulated. For example, the market access and pricing of initial public offerings (IPOs) in the primary issue market is under government control. The Dow Jones Report calls it "the only country in which the government completely controls the size of the stock market, the pace of issue and the allocation of resources (Gao 2012)."

In this paper, we use the heavy-handed regulatory oversight of private placements in Chinese stock markets as a case study to assess the real economic influence of equity market regulation. Depending on the nature of the rules and regulations adopted by the authorities, the actual effects of the regulatory policy on firm performance can be ambiguous. If their intent is to reduce the magnitude of information asymmetry problem between investors and firms, the benefits to the informed (i.e., large affiliated) investors are likely to diminish. However, if the policy objective is to promote economic development, such priority treatment policy can benefit the PEP-issuing firms and their controlling shareholders. We collect detailed data of private equity placement issuance in China and investigate whether and how rules and regulations in the PEP market affected firm performance and investor returns by comparing firms issuing PEPs with those not issuing PEPs over the same time period.

PEPs in China are different in many respects from those in Western countries. They are safeguarded by requiring regulatory approval, limited number of participating investors, and different lock-in periods for different investor categories. We find that PEP-issuing firms perform better than non-issuing firms following private equity placements in the long run. General investors benefit more when controlling shareholders participate in the placements. This is precisely what the regulation of PEPs is intended for: forcing publicly-listed companies to maximize shareholder value.

In addition, the long-term abnormal returns to the controlling shareholders outperform those to non-controlling shareholders. This can be explained by the "window of opportunity" hypothesis. The present undervaluation is caused by the firm's overinvestment before PEPs issuance (high expenditures before, and relatively low expenditures after the announcement)

and the firm "time" PEPs issuance to sell undervalued equity to the controlling shareholders. Unfortunately, that some investors benefit more than the others, and that some firms benefit more from participating in PEPs, do not seem to be in line with the principle of fair competition among investors and efficient allocation of capital resources. This result is consistent with the predictions of the "tunneling" theory, i.e., the expropriation of minority shareholders by controlling shareholders (Johnson et al. (2000). One weakness in this area of empirical research is the inability to explicitly identify and link changes in firm value to "tunneling" because of the opaque nature of this activity. Berkman et al. (2009) use the issuance of loan guarantees by Chinese listed firms to its controlling block holder as a observable measure of tunneling and find evidence that tunneling indeed reduces firm value and financial performance. To some extent, the results from this research also provide "direct" evidence that resources are transferred from the firm to the controlling shareholders, potentially through this type of self-dealing transactions. This could well be the unintended consequence of market regulations that are motivated by pro-growth and pro-development considerations, such as the desire to "Let part of us be richer first!" (Deng Xiaoping).[9]

When interpreting the evidence presented in this paper, however, it is important to bear in mind that firms can choose or be chosen to issue PEPs. For example, firms issuing PEPs to controlling shareholders have a significant larger size, higher book to market ratio, longer age, higher issuing discount, higher issue size and fraction placed in placements. It can well be the case that managers of a firm with undervalued assets, who would decline to issue publicly, may choose to negotiate a private placement with a single or small group of investors rather than forgo a profitable investment opportunity, conveying to the market management's belief that the firm is undervalued (Myers and Majluf 1984). It is also interesting to note that firms making private equity placements have poor operating performance in the period prior to the

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[9] The effects of financial market liberalization on long-run economic growth have been extensively studied in the prior empirical literature. For instance, a decline in the cost of capital that is caused by market liberalization led to an investment boom (Henry 2000), and an increase of one percentage point in average GDP growth can be attributed to stock market liberalization (Bekaert et al. 2005). Although financial liberalization leads to faster economic growth, it also causes occasional crises. However, over the long run, the pro-growth effects of greater financial deepening and more investment outweighs the detrimental effects of financial fragility and market crisis (Ranciere et al. 2006).

issues, and improve the performance following the issues. The improvement is even larger in the controlling shareholders subsample. Given the poor performance (low ROA) and substantially high expenditures (of capital and R&D) prior to the issues, investors may anticipate that operating performance of issuing firms will improve in the future.

Finally, it should be cautioned that our results could be a country specific phenomenon because of unique historical, cultural, and behavioral factors associated with the stock market in China. Given the fact that China is the fastest growing economy in the world and its stock market is mainly accessible to large state-owned enterprises, it is not difficult to consider the extensive regulation and its long-term effects on the market as an endogenous outcome of the financial development in response to the demands of economic growth and political ambitions (or constraints).

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Appendix Table A1. Sample Description

Panel A. Private equity placements sample selection procedure

We consider the case that A-share listed firms only issue A-share from year 2006 to 2012.	Initial sample: 846 firm-year observations	
We eliminate the offerings by utility and finance firms and Chinese firms dual-listed in Hong Kong.	91 firm-year observations deducted	755 firm-year observations
We eliminate the multiple issues in the same month and observations where the firm had a previous private placement in the last three years.	121 firm-year observations deducted	634 firm-year observations
We eliminate firms with insufficient data to calculate other measures discussed in the latter section.	54 firm-year observations deducted	Final sample: 580 firm-year observations

Panel B. Distribution of sample firms over time

Year	firm-year observation
2006	40
2007	97
2008	69
2009	77
2010	100
2011	120
2012	77
Total	580

Panel C. Distribution of sample firms across industry

Industry	firm-year observation
Agriculture	10
Mining	26
Manufacturing	368
Construction	18
Transportation	18
Information Technology	31
Wholesales and Retails	30
Real Estate	51
Service	19
Media	6
Conglomerate	3
Total	580

Appendix Table A2. Description of variable

Variable Name	Descriptions
CAR(-3, 0)	4-day interval of cumulative abnormal return around the announcement date; we estimate a market model over the period beginning 250 days prior to the announcement of the private placement and cumulate the average abnormal returns over 4-day window around the announcement.
CAR(-3, 0)-Adj	Discount-adjusted abnormal returns CAR(-3, 0)-Adj using the definition in Wruck (1989) and Hertzel and Smith (1993); CAR(-3, 0)-Adj= [1/(1 - a)][CAR(-3, 0)] + [a/(1 - a)][(Pb - Po)/Pb] where CAR(-3, 0) is the 4-day abnormal stock return, a is the ratio of shares placed to shares outstanding after the placement, Pb is the market price at the end of the day prior to the event window, and Po is the placement price.
SIZE(million)	Market value of equity(in millions) at the end of the month prior to the private equity placements announcement date.
BM	Ratio of book value of equity to market value of equity of the fiscal year end prior to the issue date.
AGE	Years between IPO date and private equity placements announcement date
PROCEEDS(million)	Total RMB value of the private offering in millions
FRACTION	Ratio of shares placed to shares outstanding after the issue
DISCOUT	Market discount of private equity placements and it is computed by (closing price of 10th day after announcement − placement price)/closing price of 10th day after announcement.
BHAR(0, n)	Buy-and-hold abnormal return (BHAR) for firm i from day 0 through day n is defined as: $BHAR(0, n) = BHR_{i,n} - BHR_{control\_i,n}$, where $BHR_{control\_i,n}$ is the contemporaneous buy-and-hold return on firm i's size and book-to-market ratio matched controls
BHAR(0,250)	Average buy-and-hold one-year abnormal return after the private equity placements
BHAR(0,500)	Average buy-and-hold two-year abnormal return after the private equity placements
BHAR(0,750)	Average buy-and-hold three-year abnormal return after the private equity placements
ROA	Ratio of net income to total assets
M/B	Ratio of the market value to book value
(CE + RD)/Assets	Ratio of capital and R&D expenditures to total assets. The capital expenditures are calculated as the sum of the change in net fixed assets and the change in accumulated depreciations in one fiscal year. R&D expenditures include selling, general and administrative expenses in one fiscal year.

Table 1. Description of sample variables

The sample contains 580 firm-year observations that issue equity privately during the period 2006 to 2012. SIZE is defined as the market value of equity at the end of the month prior to the private equity placements announcement date. BM is defined as the ratio of book value of equity to market value of equity of the previous fiscal year end prior to the issue date. AGE is calculated as the year value between IPO date and private equity placements announcement date. PROCEEDS is the total RMB value of the private offering. FRACTION is calculated as the ratio of shares placed to shares outstanding after the issue. DISCOUNT is the market discount of private equity placements and it is computed by (closing price of 10th day after announcement − placement price)/closing price of 10th day after announcement. CAR(-3, 0) is the 4-day window of cumulative abnormal return around the announcement date. CAR(-3, 0)-Adj is the discount-adjusted abnormal returns. Panel A reports the sample characteristics of the private placement and the private placement firms. Panel B reports the Pearson correlations between these characteristics. The correlation coefficients are bold if significant at 10%.

Panel A. Sample characteristics of the private placement and the private placement firms

	Mean	Median	25 percentile	75 percentile
SIZE(million)	4290.16	2726.31	1424.09	5361.07
BM	0.64	0.65	0.43	0.86
AGE	8.34	8.17	4.38	11.96
PROCEEDS(million)	1165.88	638.24	395.37	1377.22
FRACTION(in percentage)	29.75	26.62	15.33	40.24
DISCOUNT(in percentage)	23.21	22.96	6.43	38.88
CAR(-3, 0) (in percentage)	2.05	1.00	-2.00	4.75
CAR(-3, 0)-Adj (in percentage)	12.44	8.91	1.65	24.35

Panel B. Pearson correlations

	BM	AGE	PROCEEDS	FRACTION	DISCOUNT	CAR(-3, 0)	CAR(-3, 0)-Adj
SIZE	-0.14	0.15	0.47	-0.31	-0.01	-0.01	-0.11
BM		-0.15	-0.01	0.16	0.17	0.05	0.17
AGE			0.23	0.11	0.03	0.09	0.11
PROCEEDS				0.47	0.06	0.03	0.23
FRACTION					0.39	0.06	0.61
DISCOUNT						0.12	0.73
CAR(-3, 0)							0.46

Table 2. Comparison of short-term abnormal returns in the literature

Paper Citation	Sample Country	Sample Period	Measure	Mean Return
Wruck (1989)	USA	1979-1985	CAR(-3, 0)	4.41%
Hertzel and Smith (1993)	USA	1980-1987	CAR(-3, 0)	1.72%
Hertzel et al. (2002)	USA	1980-1996	CAR(-3, 0)	2.40%
Krishnamurthy et al. (2005)	USA	1983-1992	CAR(-3, 0)	2.21%
Chen et al. (2010)	USA	1997-2003	CAR(-3, 0)	3.41%
			Average =	2.83%
Lu et al. (2011)	China	2006-2009	CAR(-3, 0)	5.40%
Fonseka et al. (2014)	China	2006-2010	CAR(-3, 0)	1.20%
This paper	China	2006-2012	CAR(-3, 0)	2.05%
			Average =	2.88%

Table 3. Size and BM adjusted returns to non-participating and participating investors in private equity placements

The table reports the buy-and-hold abnormal returns over one-, two-, and three-year holding periods following the private placement announcements. The buy-and-hold abnormal returns are adjusted by size and book-to-market ratio. The sample contains firms that issue equity privately during the period 2006 to 2012. We define the buy-and-hold abnormal return (*BHAR*) to the existing shareholders not participating in the private placement in equation (3): $BHAR(0, n) = BHR_{i,n} - BHR_{control\_i,n}$. The participating investor returns are calculated by compounding the non-participating investor returns and the returns from the offer price to the closing price of the announcement day. *, ** and *** indicate the significance level at the 10%, 5% and 1% levels, respectively.

Panel A. Average returns to existing shareholders not participating in private placements

Period	Obs	BHAR Mean (%)	t-stat	BHAR Median (%)
Panel A: Returns to non-participating investors				
(0, 250)	580	2.13	0.90	-0.86
(0, 500)	548	5.95*	1.69	2.14
(0, 750)	466	10.24**	2.41	7.19
Panel B: Returns to participating investors				
(0, 250)	580	26.85**	2.02	18.57
(0, 500)	548	31.38***	4.10	20.95
(0, 750)	466	38.99***	5.52	29.78

Panel B. Average returns to investors participating in private placements

Period	Obs	BHAR Mean (%)	t-stat	BHAR Median (%)
Panel A: Returns to non-participating investors				
(0, 250)	580	2.13	0.90	-0.86
(0, 500)	548	5.95*	1.69	2.14
(0, 750)	466	10.24**	2.41	7.19
Panel B: Returns to participating investors				
(0, 250)	580	26.85**	2.02	18.57
(0, 500)	548	31.38***	4.10	20.95
(0, 750)	466	38.99***	5.52	29.78

Table 4. Calendar-time portfolios returns

The sample contains firms that issue equity privately during the period 2006 to 2012. For each month, we form equally- and value-weighted portfolios of all firms that issue equity privately in the previous 36 months. The dependent variable $R_{pt} - R_{ft}$ in the Fama–French regressions is the return in each month on these portfolios in excess of the monthly risk-free rate.

$$R_{pt} - R_{ft} = \alpha + \beta_m MKT_t + \beta_s SMB_t + \beta_h HML_t + \varepsilon_t$$

The intercept alpha in regression measures the risk-adjusted abnormal performance of the private equity issuing firms. *MKT*, *SMB*, and *HML* are monthly returns of Fama-French (1993) three factors extracted from CSMAR. The *Implied 3-year AR* [(1 + Intercept) ^ 36 - 1] is the estimated average buy-and-hold return from earning the intercept return every month for 36 months. *, ** and *** indicate the significance level of intercept at the 10%, 5% and 1% levels, respectively.

	Equally- Weighted				Value-Weighted			
	Alpha	MKT	SMB	HML	Alpha	MKT	SMB	HML
coefficient	0.36%*	1.08	0.52	-0.32	0.42%**	1.14	0.14	-0.48
t-stat	1.82	18.93	7.62	-3.78	2.35	19.86	2.16	-5.09
Implied 3-year AR	13.69%				16.16%			

Table 5. Subsample analysis according to private placements investor identity

The table separates the private placements sample into two subsamples. The first subsample contains private placements where shares are bought only by controlling shareholders of the issuing firms; the second one contains those where shares are bought by non-controlling shareholders of the issuing firms. The sample contains firms that issue equity privately during the period 2006 to 2012. Panel A reports the subsample characteristics of the private placements and firms following private placements of equity sorted by participating investor type. The differences in BHAR means between the subsamples and two-sample t-tests are reported with *, ** and *** indicating the significance level at the 10%, 5% and 1% levels, respectively. Panel B reports the long-term abnormal returns (BHAR) following private placements of equity sorted by participating investor type. The differences in BHAR means between the subsamples and two-sample t-tests are reported with *, ** and *** indicating the significance level at the 10%, 5% and 1% levels, respectively.

Panel A. Subsample characteristics of the private placements and issuing firms according to investor identity

	Controlling shareholders (observation=108)		Non-controlling shareholders (observation=472)		Mean differences of controlling *minus* non-controlling	
	Mean	median	Mean	median	Difference in Mean	t-stat
SIZE (million)	4878.85	3141.43	4155.46	2679.86	723.39*	1.64
BM	0.71	0.75	0.62	0.64	0.09***	3.50
AGE	9.60	9.96	8.05	7.63	1.56***	3.43
PROCEEDS ($m)	1863.51	1236.64	1006.26	590.64	857.25***	5.08
FRACTION (%)	42.05	40.27	26.93	23.44	15.11***	7.77
DISCOUNT (%)	36.50	34.43	20.16	20.71	16.34***	4.83
CAR(-3, 0) (%)	2.84	1.84	1.87	0.81	0.97**	2.08
CAR(-3, 0)-Adj (%)	19.95	16.88	10.72	7.36	9.23***	7.64

Panel B. Long-term abnormal returns (BHAR) following private placements according to investor identity

	PEP Participation by Controlling Shareholders			PEP Participation by Non-Controlling Shareholders			Mean Difference and T-test	
	Obs	Mean	Median	Obs	Mean	Median	Difference	t-stat
BHAR to non-participating investors (0, 250)	108	5.59%	3.05%	472	1.34%	-1.64%	4.35%**	2.25
BHAR to non-participating investors (0, 500)	108	10.37%	9.53%	440	4.87%	0.50%	5.50%*	1.84
BHAR to non-participating investors (0, 750)	108	15.60%	12.55%	358	8.63%	5.38%	6.97%*	1.78
BHAR to participating investors(0, 250)	108	47.73%	40.00%	472	19.79%	14.85%	27.94%***	6.02
BHAR to participating investors(0, 500)	108	52.40%	46.01%	440	24.27%	18.64%	28.13%***	5.89
BHAR to participating investors(0, 750)	108	61.14%	50.47%	358	30.08%	26.45%	31.06%***	4.97

Table 6. OLS regressions explaining the long-term abnormal returns around private equity placements

The Table analyzes the difference between the long-term returns in a regression framework that controls for other issue- and firm-specific factors as follows:

Post-issue 3-year abnormal returns =a_0+a_1*controlling_dummy+a_2*log (SIZE)
+a_3*log (BM) +a_4*log (AGE+1) +a_5* FRACTION+a_6*DISCOUNT (5)

The dependent variable is the three-year post-issue abnormal returns measured using the Fama–French intercepts. For each firm, the FF-intercept is obtained by regressing the firm's excess return on the return on the market, size, and book-to-market ratio in the 36-month period following the private placement. The intercept represents the average monthly abnormal returns for the firm in the three-year period. The independent variables include the dummy variable that captures private placement investor type: controlling_dummy, which is 1 for placements when shares are sold to controlling shareholders of the firm and 0 otherwise. We control firm-specific factors such as *Size*, *BM*, and *AGE* in their logarithm forms. Firm-issue factors such as *FRACTION* and *DISCOUNT* are also included in the regression. Standard errors are clustered at the industry and year levels in all specifications. t-statistics are shown in the parentheses with ***, ** and * indicating its statistical significant level of 1%, 5% and 10% respectively.

Dependent Variable: Post-issue 3-year abnormal returns	(1)	(2)	(3)
controlling_dummy	0.54***	0.50**	0.53**
	(2.67)	(2.56)	(2.11)
log(SIZE)	0.26	0.24	0.27
	(1.44)	(1.25)	(1.34)
log(BM)	0.14	0.14	0.14
	(0.34)	(0.36)	(0.33)
log(AGE+1)	-0.07	-0.08	-0.08
	(-0.23)	(-0.24)	(-0.24)
FRACTION	-0.17		0.11
	(-0.72)		(0.10)
DISCOUNT		-0.51	-0.54
		(-0.72)	(-0.71)
Obs	466	466	466
Adj R-square (%)	7.15	7.35	9.30

Table 7. Operating performance around private equity placements

The table reports the samples' median industry-adjusted operating performance (defined as the sample median less the median for the sample firms' industries). The sample contains firms that issue equity privately during the period 2006 to 2012. Year represents the firm's fiscal year relative to the year of the private placement (year 0 is the year of the private placement). We consider three measures. We employ the ratio of net income to total assets (*ROA*), the ratio of the market value to book value (*M/B*), and the ratio of capital and R&D expenditures to total assets (*CE + RD/Assets*). The capital expenditures are calculated as the sum of the change in net fixed assets and the change in accumulated depreciations in one fiscal year. R&D expenditures include selling, general and administrative expenses in one fiscal year. Panel A, B and C report the operating performance around private equity placements of the full sample, the controlling shareholders subsample, non- controlling shareholders subsample, respectively.

Year	ROA (%)	M/B	CE + RD/Assets (%)
Panel A: Full Sample			
-3	-1.04	-0.07	1.81
-3	-1.04	-0.07	1.81
-2	-1.57	-0.18	1.10
-1	-1.20	-0.40	2.52
0	-0.19	-0.37	1.23
1	2.21	0.02	0.43
2	2.09	0.04	0.22
3	1.24	0.19	-1.05
Panel B: Controlling shareholders			
-3	-2.16	-0.12	2.52
-2	-4.28	-0.79	3.40
-1	-5.48	-0.83	7.32
0	-1.42	-0.52	5.32
1	4.38	-0.15	-0.53
2	4.41	-0.05	-2.44
3	2.44	0.00	-1.23
Panel C: Non-controlling shareholders			
-3	-0.83	-0.06	1.52
-2	-1.28	-0.01	0.76
-1	-0.99	-0.26	1.81
0	0.16	-0.32	1.05
1	1.76	0.06	0.78
2	1.54	0.09	0.84
3	0.60	0.24	-0.96

Table 8. Sample including all firms that have applied for PEP issuance

This table investigate the long term performance of all firms have applied for PEP issuance, including firms completed PEPs, and firms whose applications were rejected by CSRC or withdrawn by themselves. The sample contains firms that have applied for PEP issuance during the period 2006 to 2012. t-statistics are shown in the parentheses with ***, ** and * indicating its statistical significant level of 1%, 5% and 10% respectively.

Panel A employs Heckman two-stage selection model to address the sample selection bias. The model is estimated as follows:

$PEPs = a_0 + a_1 \times log(SIZE) + a_2 \times log(BM) + a_3 \times log(AGE + 1)$

$Post\text{-}issue\ 3\text{-}year\ Abnormal\ Returns = b_0 + b_1 \times FRACTION + b_2 \times DISCOUNT$, if $PEPs=1$

The dependent variable in the first stage is the dummy variable *PEPs* with value of 1 if the firm obtained regulatory approval and successfully completed PEPs and 0 otherwise. The factors to determine the firm's likelihood of obtaining approval and complete the deal include the logarithms of *Size*, *BM*, and *AGE*. The dependent variable in the second stage is the three-year post-issue abnormal returns estimated using the Fama–French intercepts. For each firm, the FF-intercept is obtained by regressing the firm's excess return on the return on the market, size, and book-to-market ratio in the 36-month period following the private placement. The intercept represents the average monthly abnormal returns for the firm in the three-year period. The second stage is under the condition if firms have obtained approvals and completed deals.
Panel B constructs the calendar-time portfolios returns of all firms that have applied for PEP issuance. The portfolio strategy is the same as Table 4. This panel reports the portfolios returns, and return differences of two group firms-firms completed PEPs, and firms whose applications were rejected by CSRC or withdrawn by themselves.

Panel A. Sample selection model including all firms that have applied for PEP issuance

Dependent Variable:	1st stage	2nd stage
	PPEs	Post-issue 3-year abnormal returns
log(SIZE)	-0.0036	
	(-0.08)	
log(BM)	0.0270	
	(0.31)	
log(AGE+1)	-0.5500***	
	(-6.73)	
FRACTION		0.1790
		(0.68)
DISCOUNT		0.1676
		(0.88)
Obs	905	
Rho	0.1633 (p-value= 0.4890)	

Panel B. Calendar-time portfolios returns of all firms that have applied for PPE issuance

	PEP completed		PEP rejected		PEP completed minus PEP rejected	
	EW-Alpha	VW-Alpha	EW-Alpha	VW-Alpha	EW-Alpha	VW-Alpha
coefficient	0.36%*	0.42%**	0.08%	0.03%	0.28%*	0.39%**
t-stat	1.82	2.35	0.37	0.21	1.84	1.98

Table 9. Sample selection model including investor identity

The table employ Heckman two-stage selection model to consider the sample selection bias. The model is estimated as follows:

$controlling = a_0 + a_1 \times log(SIZE) + a_2 \times log(BM) + a_3 \times log(AGE + 1)$

$Post\text{-}issue\ 3\text{-}year\ Abnormal\ Returns = b_0 + b_1 \times FRACTION + b_2 \times DISCOUNT$, if $controlling=1$

The dependent variable in the first stage is the dummy variable *controlling* with value of 1 if shares are bought only by controlling shareholders of the issuing firms and 0 otherwise. The factors to determine the firm's likelihood of controlling shareholders receiving exclusive private placement of equity include the logarithms of *Size*, *BM*, and *AGE*. The dependent variable in the second stage is the three-year post-issue abnormal returns estimated using the Fama–French intercepts. For each firm, the FF-intercept is obtained by regressing the firm's excess return on the return on the market, size, and book-to-market ratio in the 36-month period following the private placement. The intercept represents the average monthly abnormal returns for the firm in the three-year period. The second stage is under the condition if shares are bought only by controlling shareholders of the issuing firms. T-statistics are shown in the parentheses with ***, ** and * indicating its statistical significant level of 1%, 5% and 10% respectively.

Dependent Variable:	1st stage *controlling*	2nd stage Post-issue 3-year abnormal returns
log(SIZE)	0.0377 (0.52)	
log(BM)	0.5005*** (3.40)	
log(AGE+1)	0.5901*** (4.30)	
FRACTION		0.3147 (1.53)
DISCOUNT		0.0299 (0.31)
Obs	580	
Rho	0.0424 (p-value= 0.9253)	

Figure 1. The development of private equity placements in China

The bar shows the RMB amount (in billions) of private equity issuing in China by year. The line shows the percentage of private equity placements (PEPs) RMB value accounting for total equity refinancing issuing each year. The annual summary data of PEPs amount and total equity re financing amount are available from the report from China Securities Regulatory Commission (CSRC).
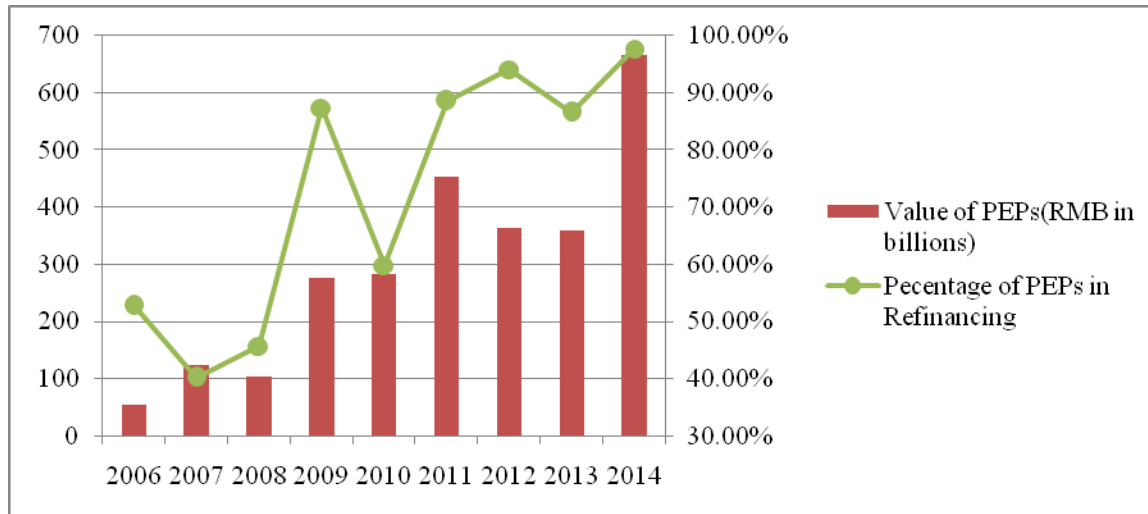(Source: *http://www.csrc.gov.cn/pub/newsite/sjtj/*).

Figure 2. Long-term stork returns of PEP-issuing firms

The blue bars show the 3-year (750 days) BHAR (buy-and-hold abnormal stock return) to investors of the firms issuing PEPs but did not participated in the transactions, whereas the red bars show the 3-year BHAR to investors of the same firms but participated in the placements. The year on the horizontal axis indicates the calendar year when PEPs were first announced.