

# WHY DO INSIDERS SOMETIMES PAY MORE AND SOMETIMES PAY LESS IN PRIVATE PLACEMENTS?

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## ABSTRACT

*This paper explores private placement pricing sold to insiders by considering changes in the control power of the largest shareholders in private placement. We use the Banzhaf power index to reflect the largest shareholder's relative power of influence. The results indicate that, if existing insiders maintain their leading control status, in cases where insiders are the main investors, private placements are issued at deep discounts that benefit themselves. However, in cases where outsiders/new insiders are the main investors, outsiders and new insiders will pay relatively more when existing insiders dominate. Contrarily, if existing insiders fail to retain their leading position and become less powerful after private placement, outsiders and new insiders buy at lower prices. In more than 65% of the sample, the largest shareholders lost their leading control status, and the issuer's ownership structure becomes more concentrated following private placements. Finally, the findings suggest that motivations of private placement issues have a greater influence on pricing than investor types in private placements.*

**JEL :** G1; G3

**KEYWORDS:** Private placement discount, power index, control right, self-dealing, ownership structure

## INTRODUCTION

Over the last few decades, there has been a dramatic increase in the number of equity private placements. From 1995 to 2006, the number of private placements issued by U.S. corporations increased from 127 to 2,720. The total amount of capital raised via private placement also has increased from \$1.87 billion in 1995 to \$88.0 billion in 2006. In Taiwan, from October 2001, publicly listed firms have been able to raise equity capital via private placements. The number of private offerings has been increasing annually, while numbers of public offerings have been decreasing. Some firms even conduct multiple private offerings during a single year in Taiwan. The private placement market has emerged as an important choice among corporations for the issuance of follow-on equity financing. Although extant research has focused primarily on public offerings, private placements have recently attracted considerable attention.

Equity private placements are in general sold at a discount. Empirical research shows the average discount of U.S. private equity issues is -11.3%~-20.14%. The average discount of Taiwanese private offerings is about -20%. Why private placements are issued at relatively large discount to the market price? Past literature on the causes of private placement discount mainly focused on the impact of monitoring, illiquidity, management entrenchment and information asymmetry. However, existing studies have ignored the fact that changes in large shareholders' control over the firm may be a key consideration in determining prices.

Prior studies provide some evidence of the association between private placement discount and investor type. For example, Hertz and Smith (1993) and Barclay, Holderness and Sheehan (2001, 2007), among others, suggested that there is a larger discount for private placement sold to outsiders. The reason for this large discount is to compensate the investors for agency cost or information cost. However, there is no consensus on the discount for private placement sold to insiders. Some studies provide empirical evidence of the *self-dealing hypothesis* where discounts for private placements sold to insiders are higher than discounts for private placements in which insiders do not participate (see Wruck and Wu (2009), Wu (2004), and Hertz et al. (1993)). Insiders can issue private placements at a greater discount to benefit themselves because private placements tend to draw less attention from investors and regulatory agencies,

and therefore, the incentive for insiders to tunnel tends to be strong in private placements. On the other hand, the *control premium hypothesis* provides a contrasting view of the pricing of issues sold to insiders. This hypothesis suggests that insiders can use their power to extract private benefits; therefore private placement is usually sold to insiders at a premium to reflect private benefits accruing exclusively to the insiders. In view of the seemingly conflicting empirical evidences, one may wonder whether the results of previous studies are conditional only. If indeed the price insiders pay varies in private placement, a natural question is under what conditions will insiders pay more (or less) in private placement? Until recently, no empirical research has been available to answer this question.

This paper reconciles the self-dealing and the control premium hypothesis to clarify the questions of private placement pricing. We posit that the changes in existing insider's control is the key in determining whether offer price will be at a premium or at a discount in private placements. In other words, the price insiders pay is conditional on her relative control power change following private placement. To the best of our knowledge, this is the first study explaining the conditions dictating the price insiders pay in private placement from such perspective. Studies on private placement pricing often use ownership or the percentage of board seats as a measure for control. The control measure of prior studies (ownership, board seats, etc) may not fully reflect shareholder's relative influence. We propose an alternative measure, the voting power index (Banzhaf power index), to evaluate the control power of existing shareholders. The reasoning behind this measurement is that a large shareholder's control power in the board relies not only on its own voting strength but also on the structure of vote distribution. For example, by collaborating with other key minority shareholders, real voting power often differs from what ownership alone can manifest. This is the first article that advocates the idea of applying the power index to examine changes in the controlling shareholders' position in private placement issues.

Perhaps the key contribution of the study is identifying the conditions that explain the price insiders pay in private placement. We find that changes in the controlling power of the largest existing shareholder after the private placement issues can clarify the debate on private placement prices that insiders pay. If the existing largest shareholder maintains her leading control status, outsiders and new insiders would pay more (if they are the main investors) while insiders enjoy a significantly large discount (if insiders are main investors). On the contrary, when the existing shareholder loses the leading position, outsiders and new insiders buy at a lower price. The results of this study indicate that insiders would self-deal by setting a lower price to benefit themselves only if they become more powerful following private placement, but not when a new power dominates after placement. There is no evidence to support the control premium hypothesis. The implication of our empirical results is that private placements are likely to be use a self-dealing vehicle when existing insiders remain dominant control, but not so if there is change in control power. The remainder of this paper is organized as follows. The next section offers a literature review. Section 3 describes the procedures for collecting data on private placements and the characteristics of private placement firms. It also provides a more detailed introduction, and discusses the classification of private placement investors and placement motivations, as well as the measurement of power index. Section 4 presents and discusses the empirical results. Finally, Section 5 gives conclusions and implications.

## LITERATURE REVIEW

Several theories have been put forth to explain the potentially sources of private placement discount. First, private placement discounts can be viewed as compensation to the block purchasers for monitoring of management (Wruck, (1989)). However, Barclay, Holderness and Sheehan (2007) argue that pricing discounts reflect implicit compensation to passive investors for helping management solidifying the control of the firm. Sheehan and Swisher (1998) · Silber (1991) point out trading restrictions prevent investors from selling equity, large pricing discount could compensate for the resale restrictions. Finally, Hertz and Smith (1993) suggest that private placement discounts reflect costs incurred by private investors to assess firm value through their negotiations with management.

Furthermore, several studies have observed that the type of investors in private placements significantly influences price discount. Hertzal and Smith (1993) and Barclay et al. (2007), among others, suggested that there is a larger discount for private placement sold to outsiders. However, the two main lines of previous studies on insider's payment in private placement, control premium and self-dealing hypothesis, have contrasting views about insiders premium. The former suggests insiders will pay more, while the latter suggests insiders will pay less. No study has yet been able to identify the conditions that prompt insiders to pay more or less in private placements. A related paper is Wruck and Wu (2009); they show that management and investors with new governance affiliations in private placement receive a higher discount. Two other important and related papers are by Barclay et al. (2007) and Krishnamurthy, Spindt, Subramaniam and Woidtke (2005). Barclay et al. (2007) find that incumbent managers tend to receive the largest discounts in private placements. In contrast, Krishnamurthy et al. (2005) show that the mean discount in placements to affiliated investors (e.g., directors or current large block shareholders of the firm; etc.) is lower than the discount in placements to unaffiliated investors. These papers focus on the announcement effect of private placements; however, they did not address the question when insiders pay less or pay more and why. In this paper, we provide a clear explanation for the pricing of private placements sold to insiders by considering the variation in control power of the largest shareholders in private placements. Moreover, there are several parties (insiders, outsiders and new insiders who become insiders after private placement) involved in a private placement transaction. An interesting question that follows is how is the price determined when both insiders and outsiders are involved? Few studies can be found exploring the bargaining power among various types of investor parties.

This study attempts to address this issue. Large blocks of new shares are usually sold to one large investor or a small group of investors in private placement. The existing shareholders' control can be threatened or challenged by new large block-holders in private placement issues. Past studies have shown that insiders needing to entrench control rights would generally choose a public listing rather than a private placement (e.g., Zingales (1995), Bebchuk (1999)). Barclay and Holderness (1991) found that there are extensive post-trade managerial and board turnovers (about 33%) one year after negotiated blocks transactions. They also found that 50% of the CEOs hired in the first year after a trade are brought in from the outside, significantly exceeding the normal turnover for public corporations not involved in control transactions. Although there are no lack of studies investigating the relationship between ownership and private placement pricing, however, few empirical studies explore the *changes* in insider's control status and ownership structure of the issuing firm around private placement or investigate whether insiders still have significant control over the firm following private placement. A related and unexplored question is whether the ownership structure becomes more or less concentrated as a result of the block transaction in the private placement? This paper adds to the literature by examining how private placement changes the largest shareholder's influence as well as the concentration structure of ownership.

Furthermore, the control measure of prior studies (ownership, board seats, etc) may not fully reflect shareholder's relative influence. We adopt a better measure, Banzhaf power index, to evaluate the control power of existing shareholders. The power index, reflecting a shareholder's ability to use its vote to change the outcome of voting contests by joining a losing coalition and turning it into a winning one, is a better measure of a large shareholder's relative influence. Classical power indices include two common measurements, the Shaply-Shubik index and the Banzhaf index. These two power indices have been widely used in corporate governance research (see Zingales (1994), Nevova (2003), Chen (2004), Crama et al.(2007), Nicodano et al. (2004), Chung and Kim (1999)). As Leech (2002) noted in his empirical comparison of the performance of these power indices, the Banzhaf index of the largest shareholder is more sensitive to the size of the second largest shareholding, and it is more suitable for measuring the extension of shareholders' control. As there are often new block-holders created in private placement, we believe Banzhaf index is a more suitable measure to reflect the large shareholder's control change. Therefore, this paper adopts the Banzhaf index as a measure of controlling power. By observing the variation in the Banzhaf index in the largest *existing* shareholder (S1) before and after private placement, the influence of private placement on the existing controlling shareholder can be estimated. Additionally, the difference in the Banzhaf power index of the largest (w1) and the second largest (w2) shareholder is used as a proxy measure of ownership concentration.

As well as changes in large shareholders' controlling power and investor type, the motivation for private placement may also be a key factor in explaining private placement pricing. Barclay, Holderness and Sheehan (2007) divided the private placement into three types (active, passive and managerial) according to the post-issue relation between the issuer and private placement investors. In their study it is unclear how investor motivation is identified when there is more than one type of participating investor. Also, investor motivation could have been better verified with news (or reports) after as well as *before* the private issues. In this study, we collect all news or reports associated with each private placement *before* and *after* the announcement to verify the motivations for both the issuing firms and the buyers. The motivations are accordingly divided into four categories: "financial distress", "aggressive", "invited" and "financial need".

## DATA AND METHODOLOGY

### Data and Summary Statistics

As of October 2001, publicly listed firms in Taiwan have been able to raise equity capital through private placements. The study period in this investigation ran from January 2002 through to May 2007. Private placement data and the identities of individual investors were obtained from the Taiwan Stock Exchange (TSE) and manually sorted. A total of 204 cases were sampled, involving 146 firms. After eliminating cases with incomplete data, 181 observations remained. Table 1 lists the frequency distribution of the private placements and public equity offerings for each year from 2002 to May 2007. The number of private offerings has been increasing annually, while the number of public offerings has been decreasing. Table 1 also reveals that some firms conduct multiple private offerings during a single year. In Table 2, panel A lists the financial fundamentals of the sample firms before the private offer. Generally, private placement firms exhibit poor financial performance, with the average EPS and ROA both being negative. Further, the average private equity issue percentage is about 23%, representing a considerable portion of firm ownership. Table 2 also shows the discounts of private placement based on two criteria.

They are calculated as the difference between the offer price ( $P_o$ ) and: (A) the market closing price on the first day after the announcement ( $P_{+1}$ ), (B) the average price over the ten trading days before the announcement ( $P_{-10}$ ). The negative discount indicates the offer price is lower than the market price, while the positive discount indicates the offer price is higher than the market price. In measuring the private placement discount, we also use the difference between the offer price and the average price over the ten trading days after the announcement. The discount of this measure is the same as the other two measures. Therefore it is not shown here. In Table 2, the median discounts are both negative, averaging -18%. However, significant variation among issues exists, with one third of the observations displaying an offer price premium rather than a discount.

Table 2, panel B classifies private placements by the number of participating investors. Over half (56%) are sold to five or more investors. Only 18% of placements are sold to a single investor, but these samples represent a large proportion (56%) of the sample proceeds. This indicates that private placement equities being broadly held by participating investors in our samples. This finding differs from prior studies which showed most private placements are sold to a small number of investors. For example, Wruck (1989) found 58% of private placements are sold to a single investor, with very few placements sold to more than 6 investors. Wruck and Wu (2009) also report that 65% of the placements in their sample are sold to a single investor.

### The Measurement of Power Index

The traditional definition of large shareholder's control over the firm lies within their voting weights. However, the control measure of prior studies (ownership, board seats, etc) may not fully reflect shareholder's relative influence. A shareholder's power actually depends not only on its own voting strength but also on the entire structure of votes allocated to all the other shareholders. That is, large shareholder's power cannot in general be captured by the fractional size of ownership, because it depends

on the distribution of shareholdings. We use the voting power index to propose an alternative variable to capture the control power. A power index measures each shareholder’s relative influence over the firm’s decision making in the sense of its ability to use its vote to change a coalition of others from one which is losing to one which satisfies the majority requirement and wins. Therefore a power index is calculated for a shareholder by considering each possible coalition of which he or she is not a member and evaluating the number of swings. The algorithm for the power index is described in Leech (2002).

Table 1: Distribution of Private Placements and Public Equity Offerings by Year

	Private Placements		Public Equity Offerings	
	Number	Firm	Number	Firm
2002	5	4	57	56
2003	12	10	25	25
2004	17	15	26	26
2005	77	58	38	38
2006	88	54	69	69
2007(until May)	5	5	16	16
Total	204	146	231	230

*This table lists the frequency distribution of the private placements and public equity offerings for each year from 2002 to May 2007. The private placement sample includes 204 placements by 146 of TSE (Taiwan Stock Exchange) and OTC firms. The public equity offerings sample includes 231 offerings.*

There are two different “classical” power indices, the Shaply-Shubik index and the Banzhaf index (Shapley and Shubik (1954), Banzhaf (1965)). These two power indices have been extensively used in corporate governance research, especially in the applied measure control premium. Leech (2002) proposed an empirical comparison of the performance of these two power indices. He found that the Banzhaf index is more sensitive to the size of the second largest shareholding and is a more suitable measure of the largest shareholder’s power. The Banzhaf index is based on the idea of counting the number of swings in relation to all the possible voting outcomes. The probability of a swing for player  $i$  is  $\beta'_i = 2^{1-n} \sum_{T_i} 1; i = 1, \dots, n$ , where  $T_i$  are all swings for player  $i$ . The normalized Banzhaf index is used in computation, as follows:  $\beta_i = \beta'_i / \sum_i \beta'_i$ .

To calculate the Banzhaf index, we collect identification and equity ownership data for the top ten shareholders for the year before and follow the private placement from the proxy statements. Knowing both the large shareholder’s identity and their shareholdings, we calculate the Banzhaf power index for the largest and second largest shareholder in the issuing firm using an algorithm described in Leech (2002). To clarify the following analysis, the largest and second largest shareholders are defined as w1, w2, respectively, and the largest existing shareholder is defined as S1. By observing the variation in the Banzhaf index in the largest *existing* shareholder (S1) before and after private placement, the influence of private placement on the existing controlling shareholder can be measured. Besides, the difference in the Banzhaf power index of the largest (w1) and the second largest (w2) shareholder is used as a proxy measure of ownership concentration.

Table 2: Private Placement Characteristics

<b>Panel A Fundamental Data of Private Placement Companies</b>				
	<b>Mean</b>	<b>Median</b>	<b>Maximum</b>	<b>Minimum</b>
EPS (NT dollars)	-1.8	-1.65	12.87	-10.89
Total assets (NT thousand)	8,466,906	1,577,965	276,000,000	104,120
Debt ratio (%)	57.61%	57.62%	105.82%	2.21%
Market value (NT million)	6,071,310	577,020	256,074,467	48,700
Total equity ( NT thousand)	4,129,987	574,714	145,000,000	-40,405
ROE (%)	-74.66%	-19.56%	606.70%	-2541.64%
ROA (%)	-5.23%	-2.72%	46.35%	-57.89%
Book value (per share)	8.88	7.94	33.89	-0.93
Offer price (per share)	9.95	6.73	140.5	0.4
Percentage issued (%)	22.5%	17.51%	78.95%	0.00%
Proceeds (NT millions )	521	116	22,278	807
Discount A (%)	-2.76%	-18.93%	189.66%	-88.58%
Discount B (%)	-2.32%	-18.15%	177.34%	-88.22%

<b>Panel B Number of Investors Participating in the Private Placement</b>					
	<b>1</b>	<b>2~4</b>	<b>5~14</b>	<b>15~30</b>	<b>more than 30</b>
Number of transactions	32	48	73	21	7
(% of placements)	18%	26%	40%	12%	4%
Number of investors	32	131	635	426	233
(% of investors)	20%	9%	44%	29%	16%
Total proceeds(NT millions)	54,454	16,602	18,643	4,828	2,451
(% of sample proceeds)	56%	17%	19%	5%	3%

*Our sample contains 204 private placements of equity by 146 public firms between January 2002 and May 2007. Panel A lists the fundamental data of private placement companies. EPS, total assets, debt ratio, total equity, and book value per share are based on the year before private placement. Market value is the average price thirty trading days before the announcement. ROE is net income after taxes divided by average assets. ROA is income after taxes and before interest and depreciation divided by total assets. Percentage issued is the number of shares issued divided by total outstanding shares one year after issuing. Discount A =  $(P_o - P_{+1})/P_{+1}$ . Discount B =  $(P_o - P_{-10})/P_{-10}$ , where  $P_o$  is the offer price,  $P_{+1}$  is the first day market price,  $P_{-10}$  is the average closing price ten days before the announcement. Table B lists the number of investor participating in the private placement. For 23 cases in our sample, the information of private investors are not available, therefore Table B includes 181 private placement cases.*

### Investor Type and Private Placement Discounts

To clarify whether private placement discounts vary among different types of investors, we assigned the investors of a given placement to one of three categories: “existing insiders”, “new insiders” and “outsiders” according to whether they possess board membership before and after the placements. “Existing insiders” are those who were already insiders (directors) before the private placement. “New insiders” refer to individuals who become insiders after investing in the private offering. Finally, investors who own shares but have no control over the firm are termed “outsiders”. In this paper, “outsiders” include existing and new outside shareholders who invest in a private placement.

As mentioned earlier, 56% of placements are made by five or more investors (see Table 2). These placements have multiple investors, and the investors may be of different types. For these placements, analyzing the control relationship between the issuer and investor is not straightforward. Therefore, we examine all investors involved in each placement to determine a “dominant” or “the main investor” by adopting the following rules. First, a relationship type is dominant if that type purchases more than 50% of the shares offered in the placement. There are 137 placements with a dominant investor under this

criterion. For the remaining 44 placements, since investors who purchase under 50% of shares are categorized under different types of buyers (the largest and the second largest buyer), it is difficult to definitively determine the main investor’s type. We deal with these placements according to the following criteria. If the difference in the purchasing ratio between the largest and the second largest buyer is more than 10%, then the largest buyer is the main investor. There are 14 placements under this criterion. For the placements in which two or more investors have the same purchasing ratio or the difference in their purchasing ratio is less than 10%, we assign the relevant placement to each of the relevant investor categories. There are 30 cases under this criterion.

In short, 151 private placements with a single dominant investor fall into three “pure” categories: “existing insider” (42 placements or 23% of the sample), “new insider” (27 placements or 15% of the sample) and “outsider” (82 placements or 45% of the sample). Note that there are 30 cases with multiple main investors, and these cases are divided into three “mixed” categories: “existing insider and new insider” (2 placements), “existing insider and outsider” (23 placements) and “new insider and outsider” (5 placements). Our definition of the “pure” categories allows us to investigate the variation in private placement discount among different types of investors more accurately. As the samples of the “mixed” categories are negligible, we do not show them in the following empirical results.

Table 3 reveals that the pricing of private placements varies with the type of purchaser. The median discount for “existing insider”, “new insider” and “outsider” are around -4.0%, -26%, and -20%, respectively. Generally, new insiders and outsiders enjoy a large discount for private placement, while existing insiders are willing to pay more compared to new insiders and outsiders. The results can be explained by the information asymmetry argument of Hertz and Smith (1993). They pointed out that outsiders face higher information asymmetry than insiders, and thus they pay less in private placements. Our findings also agree with the entrenchment hypothesis (Barclay, Holderness, and Sheehan (2007)). Under this hypothesis, private equity offers often serve to entrench management through placing shares with passive outside investors at deep discounts. Moreover, our result is consistent with the findings of Median (2006). He pointed out that investors who gain board representation receive a greater discount than other investors, and the larger discount is compensation to investors for participating in the governance process.

Table 3: Private Placement Discount (Premium) by Investor’s Type

	Investor’s Types							
	All Sample		Existing Insider (EXT)		New Insider (NEW)		Outsider (OUT)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
<b>discount</b>								
Discount A	-2.8%	-18.9%	6.2%	-4.3%	-9.4%	-23.3%	-6.6%	-22.1%
Discount B	-2.3%	-18.2%	6.5%	-4.6%	-11.6%	-26.0%	-4.4%	-19.3%
<b>Sample</b>	181		42		27		82	
	Difference Test in Mean (Median) of Private Placement Discount							
	(EXT)=(NEW)		(EXT)=(OUT)		(NEW)=(OUT)		(EXT)=(NEW)=(OUT)	
P-value Mean	(0.09)*		(0.20)		(0.46)		(0.36)	
P-value Median	(0.08)*		(0.13)		(0.52)		(0.28)	

*Discount A = (P<sub>o</sub>-P<sub>+1</sub>)/P<sub>+1</sub>. Discount B = (P<sub>o</sub>-P<sub>-10</sub>)/P<sub>-10</sub>, where P<sub>o</sub> is the offer price, P<sub>+1</sub> is the first day market price, P<sub>-10</sub> is the average closing price ten days before the announcement. “Existing insider” refers to placements in which the main investor was insider before the private placement; “new insider” refers to placements in which the main investor becomes insiders after investing in the private offering. Investors who own shares but have no control over the firm are classified as “outsider”. P-value for the difference test in means and medians are using by discount B. \*, \*\*, and \*\*\* indicate significant at the 10%, 5%, and 1% level respectively.*

A further question is whether the changes in the control power of the largest existing shareholder influences the pricing among different categories of investor. To address this issue, each investor type is

further divided into two groups according to whether the largest *existing* shareholder maintains the leading status or become more powerful after private placements. The results are listed in Table 4. We find that placement discounts sold to new insiders and outsiders are smaller when the largest existing shareholder maintains the leading control status and when they are more powerful following private placement; while the discounts sold to existing insiders are larger in this situation. On the contrary, if the largest shareholder fails to retain the leading position or when they are less powerful after private placements, new insiders and outsiders enjoy a relatively larger discount while existing insiders pay more. A closer examination of the effect of large shareholder's control on private placement pricing is shown in the following empirical analysis.

Table 4: Investor Type, Changes in Control of the Existing Largest Shareholder and Discounts

Panel A: Investor's Types									
	Existing insider (EXT)			New insider (NEW)			Outsider (OUT)		
	Total	Maintained	Transfer	Total	Maintained	Transfer	Total	Maintained	Transfer
Discount A	-4%	-10%	0%	-23%	-18%	-26%	-22%	-6%	-23%
Discount B	-5%	-11%	-2%	-26%	-16%	-30%	-19%	-10%	-22%
Sample	42	25	17	27	8	19	82	23	59

Panel B: Investor's Types									
	Existing insider (EXT)			New insider (NEW)			Outsider (OUT)		
	Total	$\Delta s1 > 0$	$\Delta s1 < 0$	Total	$\Delta s1 > 0$	$\Delta s1 < 0$	Total	$\Delta s1 > 0$	$\Delta s1 < 0$
Discount A	-4%	-19%	3%	-23%	-14%	-23%	-22%	-5%	-23%
Discount B	-5%	-18%	-3%	-26%	-17%	-26%	-19%	-10%	-21%
Sample	42	19	23	27	4	23	82	14	68

*Discount A* =  $(P_o - P_{+1})/P_{+1}$ . *Discount B* =  $(P_o - P_{-10})/P_{-10}$ , where  $P_o$  is the offer price,  $P_{+1}$  is the first day market price,  $P_{-10}$  is the average closing price ten days before the announcement. "Existing insider" refers to placements in which the main investor was insider before the private placement. "New insider" refers to placements in which the main investor becomes insiders after investing in the private offering. Investors who own shares but have no control over the firm are classified as "outsider". In Panel A and Panel B, each investor type further divided into two groups according to whether the largest existing shareholder maintains the leading status or become more powerful after private placements. "Maintained" refers to placements in which the largest shareholder maintains a leading position after private placements. "Transfer" refers to placements in which the largest shareholder failed to retain the leading position after private placements. " $\Delta_s I > 0$ " refers to placements in which the power index of the largest existing shareholder is increased after private placement. " $\Delta_s I < 0$ " refers to placements in which the power index of the largest existing shareholder is decreased after private placement.

### Placement Motivation and Private Placement Discounts

Press announcements associated with private placements raise the possibility that these transactions have various motivations for both the issuing firms and the buyers. Varying motivations may have contributed to the different result of private placement discount. Barclay, Holderness and Sheehan (2007) divided the private placements into three types (active, managerial and passive placements) according to the post-issue relationship between the issuer and private placement investors. There are some shortcomings to this research. First, it is unclear how investor motivation is identified when there is more than one type of participating investor. Second, investor motivation could have been better verified with news or reports after as well as *before* the private issues. We collected all newspaper associated with each private placement *before* and *after* the announcement to verify the motivations for both the issuing firms and the buyers. Based on these motivations, placements are further divided into four groups. Basically, if the goal of the investors is to obtain block control in the private placement for strategic alliance or future M&A actions, these placements are considered to be the "aggressive" type.

The purchasers or an officer of the purchaser (when the purchaser is another corporation) in such cases often joins the board of the issuing firm. In some cases the investors were passively invited by the issuing firm for reasons such as technological cooperation or strategic alliance, and these placements were classified as being "invited". In many cases, the issuing firms were in financial distress; therefore, the purchasers were sought by the distressed firm to provide financial support through private placement. The



placements under this criterion were classified as “financial distress”. Finally, for some firms with healthy financial performance, the motivation of conducting private placement is raising capital for further investment opportunities. These placements are referred to “financial need”. The four categories are mutually exclusive. Since private placements are often the only viable financing choice for firms in financial distress, i.e., non-distressed firms actually have a choice between private and public issues. We expect the influence of motivations to be more relevant in private placement pricing for non-distressed firms.

To analyze whether motivation significantly impacts pricing, we classify placements into four types based on the motivations for both the issuing firms and the buyers. These categories are as follows: “financial distress” (100 placements or 55% of the sample), “aggressive” (22 placements or 12% of the sample), “invited” (13 placements or 7% of the sample) and “financial need” (46 placements or 25% of the sample). Table 5 signals placement motivation significantly influences private placement discount. The “aggressive” placements are made at lower discount (-16%), while “invited” placements and “financial need” placements are made at a larger discount (about -28% and -21%, respectively). The larger discounts seem to compensate the purchasers for their passivity in participating in private placement, or for their financial support for the issuer’s further investment.

Table 5: Private Placement Discount (Premium) by Placement Motivation

	Placement Motivations							
	Distress (DIS)		Aggressive( AGG)		Invited (INV)		Financial Need (NED)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
<b>discount (premium)</b>								
Discount A	5.4%	-12.4%	-7.4%	-16.3%	-30.6%	-35.9%	-10.4%	-21.7%
Discount B	5.8%	-13.0%	-6.4%	-16.0%	-30.1%	-28.2%	-10.2%	-21.4%
Sample	100		22		13		46	
	<b>Difference Test in Mean (Median) of Private Placement Discount</b>							
	(DIS)=(AGG)		(DIS)=(INV)		(DIS)=(NED)		(DIS)=(AGG)=(INV)=(NED)	
P-value Mean	(0.33)		(0.02)**		(0.09)*		(0.05)**	
P-value Median	(0.39)		(0.02)**		(0.25)		(0.10)*	

*Discount A =  $(P_0 - P_{+1}) / P_{+1}$ . Discount B =  $(P_0 - P_{-10}) / P_{-10}$ . All placements are separated into four groups based on the motivation. If the goal of the investors is to obtain block control in the private placement for joint research or future M&A actions, these placements are considered to be the “Aggressive” type. In some cases the investors were passive to be invited by the issuing firm for reasons such as technological cooperation or strategic alliance, and these placements were classified as being “Invited”. In many cases, the issuing firms were in financial distress, therefore, the purchasers were sought by the distressed firm to provide financial support via private placement. The placements under this case were classified as “Financial distress”. Finally, some firms have healthy financial performance, their motivation of conducting private placement are raising capital for further investment opportunities. These placements are referred to “Financial need”. P-value for the difference test in means and medians are using by discount B. \*, \*\*, and \*\*\* indicate significant at the 10%, 5%, and 1% level respectively.*

## EMPIRICAL RESULTS AND DISCUSSION

### Ownership Structure and Control Power around Private Placement

In our samples, the average percentage issued private placement is about 23%. This section intends to examine whether the block of shares issued leads to significant changes in the ownership structure and control status of the large shareholders. We focus on the changes in ownership deviation taking place around private placements. First, is the ownership structure of the issuing firm more concentrated or dispersed following private placement? We use the difference in the Banzhaf power index (and shareholdings) held by the largest (w1) and the second largest shareholder (w2) as a proxy measure of ownership concentration. A larger difference in power index or ownership between the preliminary two

shareholders suggests the ownership structure is more concentrated in the largest shareholder.

The results in Table 6 show that, on average, ownership becomes more concentrated following private placement. The shareholding and Banzhaf index of the largest shareholder both increased after private placement (12.97% up to 18.08% and 0.21 up to 0.32, respectively). Also, the difference in ownership and power index between the first and second largest shareholders ( $w_1$  and  $w_2$ ) increased significantly. The divergence in the preliminary two shareholders' ownership increased from 6.21% to 9.6%.

Table 6: Ownership Structure and Power Indices around Private Placement

	Before Private Placement						After Private Placement					
	Ownership (%)			Banzhaf Index			Ownership (%)			Banzhaf Index		
	$w_1$	$w_2$	$w_1-w_2$	$w_1$	$w_2$	$w_1-w_2$	$w_1$	$w_2$	$w_1-w_2$	$w_1$	$w_2$	$w_1-w_2$
all sample(n=181)	12.97	6.76	6.21	0.21	0.06	0.15	18.08	8.48	9.60***	0.32	0.06	0.26***
Control maintained (n=63)	17.64	7.14	10.50	0.33	0.05	0.28	17.68	8.31	9.36	0.32	0.06	0.26
Control transfer (n=118)	10.48	6.57	3.91	0.15	0.06	0.09	18.30	8.57	9.73***	0.32	0.07	0.26***

*This table reports the change of ownership structure and power index of the issuing firm before and after private placements.  $w_1$  and  $w_2$  indicate the two largest shareholders, respectively  $w_1-w_2$  is the difference of the ownership (or Banzhaf index) between the largest and second largest shareholder. "Control maintained" are placements with the largest shareholders maintain a leading position after private placements. "Control transfer" are placements with the largest shareholders failed to keep the leading position after private placements. We also use mean-different test of the hypothesis that the change in difference of ownership (or Banzhaf index) is not different before and after private placement.*

Besides, the difference in their power index increased from 0.15 to 0.26, indicating shareholding and control power are more concentrated in the largest shareholder following private placement. Our findings agree with Wruck (1989), who found that the shareholding of the largest shareholders increased from 31% to 37% after private placement.

Table 6 categories the sample into "control maintained" and "control transfer" according to whether the largest existing shareholder preserves his or her leading status after private placement. For "control maintained", the difference in ownership and power index between the first and second largest shareholders shows no clear variation around private offerings, but there is a significantly variation for "control transfer" placements. This indicates that, for "control transfer" placements, ownership and control power are remarkably more concentrated in the new largest shareholder.

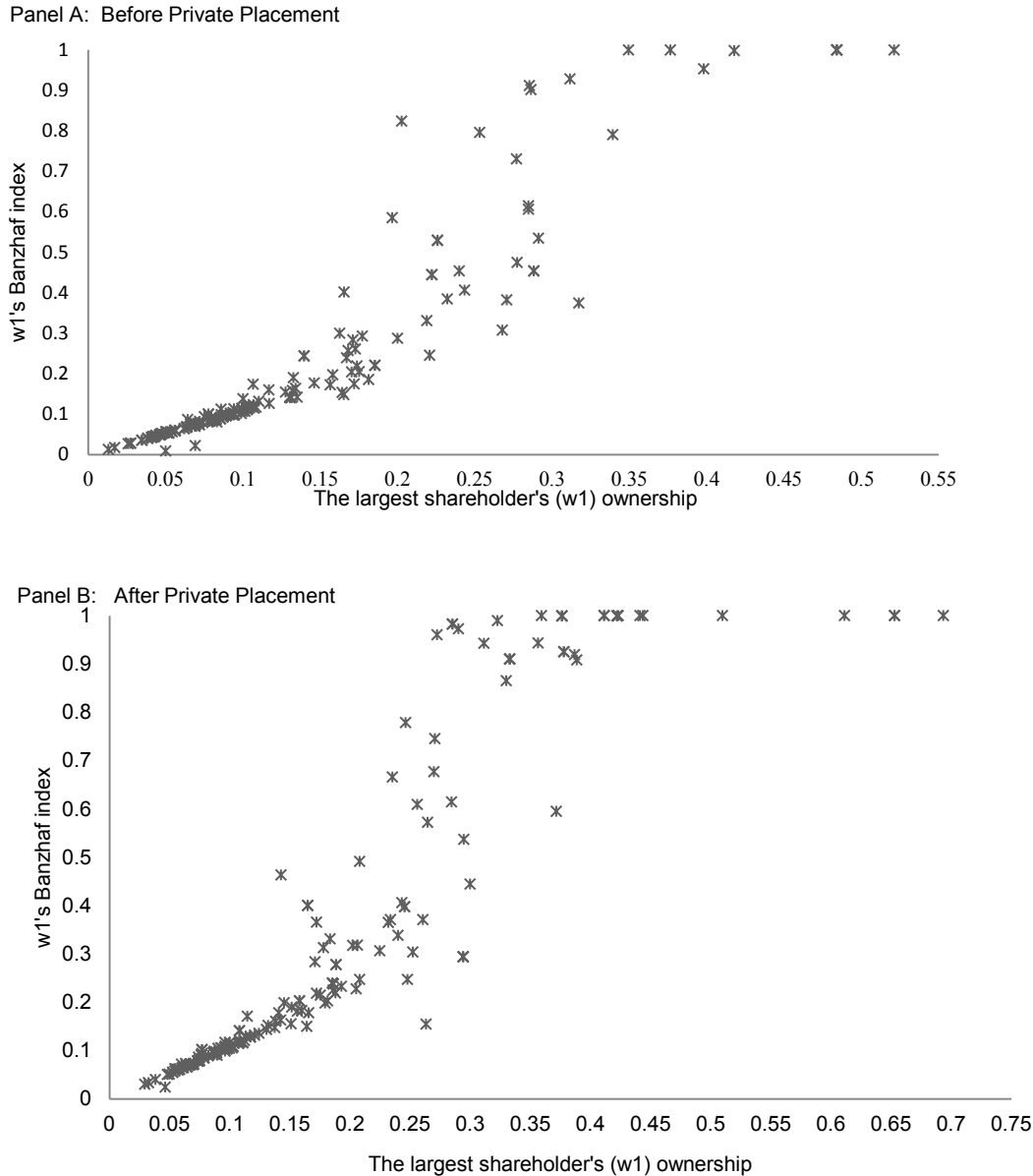
Figure 1 plots the respective power indices for the largest shareholding. It provides a clearly explanation of the largest shareholder's influence over the firm around private placement. The result shows the plot for the power index has a close to simple linear relation when ownership is fewer than 20%; however, it varies widely when ownership is over 20%. The variation is consistent with the view that the power index fully captures the effect of different ownership structures. Panel A and panel B in Figure 1 show absolute power can be obtained at 35% ownership before private placement, but it drops to 27% after private placement. Absolute power means that the Banzhaf index of the largest shareholder is close to 1. The results suggest that the percentage ownership required to maintain control decreases after private placement. This reinforces the results of Table 6, in which control power is more concentrated in the largest shareholder following private placement.

#### The Control Power of the Largest Existing Shareholder around Private Placement

Can the largest *existing* shareholder (S1) maintain his or her influence in the company after private placement? Table 7 lists the changes in ownership and power indices of the largest *existing* shareholder before and after private placement. For all placements, the ownership and power index of the largest *existing* shareholder clearly decreases (from 13% to 10% and from 0.21 to 0.14, respectively). Importantly,

only 35% of the sampled largest shareholders still maintain a leading position after private placement, and in more than 65% of the sample the power of the largest *existing* shareholders declines. The results clearly show a largest shareholder turnover of 65% in the one year following a private placement.

Figure 1: Power Index of Largest Shareholder vs. Shareholding



This figure shows the respective power indices (Banzhaf index) for the largest shareholding before and after private placement.  $w_1$  indicates the largest shareholder of the issuing firm.

Further, samples are classified into “control maintained” and “control transfer”. For placements with “control maintained”, the holdings by the largest existing shareholder averages 18% before the private equity sale, larger than those of “control transfer” (about 10%). Also, the ownership and power index of the largest existing shareholder significantly decline in placements with “control transfer”. This indicates that private placements may bring a new large block-holder and consequently control power transferred from the original large shareholder to a new one in private placement offerings, in particular when the largest shareholder’s ownership is low.

Table 7: Ownership and Power Indices of the Existing Largest Shareholder (S1)

	Before Private Placement		After Private Placement	
	Ownership (%)	Banzhaf index	Ownership (%)	Banzhaf index
all sample(n=181)	12.95	0.21	9.70***	0.14***
	largest shareholder's ownership ranking after placement		sample	percentage
	1		63	35%
	2		38	21%
	3		10	5%
	>3		70	38%
Control maintained (n=63)	17.64	0.33	17.78	0.32
Control transfer (n=118)	10.50	0.15	5.38***	0.04***

This table lists average ownership and power indices (Banzhaf index) of the existing largest shareholder of 181 private placement firms before and after private offering. "Control maintained" are placements with the largest shareholders maintain a leading position after private placements. "Control transfer" are placements with the largest shareholders failed to keep the leading position after private placements. The largest shareholder's ownership ranking after the placement is shown in this table. We also use mean-different test of the hypothesis that the ownership (or Banzhaf index) of the largest shareholder are not different before and after the sale.

Determinant of Private Placement Discount

The following cross-sectional regression is estimated for examining the relationship between private placement discount and the changes in control right to existing shareholders resulting from the offer.

$$\begin{aligned}
 Discount_i = & \alpha + \beta_1 \cdot \Delta(inside\ control\ rights)_i + \beta_2 \cdot \Delta(SI\ power\ index)_i + \beta_3 \cdot \Delta(SI\ ownership)_i + \\
 & \beta_4 \cdot ((w1-w2)_{before})_i + \beta_5 \cdot ((w1-w2)_{after})_i + \beta_6 \cdot (aggressive\ dummy)_i + \\
 & \beta_7 \cdot (invited\ dummy)_i + \beta_8 \cdot (financial\ need\ dummy)_i + \beta_9 \cdot (existing\ insider\ dummy)_i + \quad (1) \\
 & \beta_{10} \cdot (new\ insider\ dummy)_i + \beta_{11} \cdot (outsider\ dummy)_i + \beta_{12} \cdot (placement\ characteristics)_i + \\
 & \beta_{13} \cdot (firm\ characteristics)_i + \beta_{14} \cdot (market\ return) + \beta_{15} \cdot (industry\ dummy) + \epsilon_i
 \end{aligned}$$

*Discount* is negative (positive) if the market price is higher (lower) than the offer price.  $\Delta(inside\ control\ rights)$  denotes the change in the percentage of existing insider board seats before and after the private placement. For example, if the number of existing insider board seats is changed from five to four after private placement, then  $\Delta(inside\ control\ rights)$  is -20%. Control rights can be seen as a broad definition of control in the corporate governance literature. As mentioned above, the power index reflects more in the large shareholder's relative influence over the firm; therefore we use  $\Delta(SI\ power\ index)$  and  $\Delta(SI\ ownership)$  to represent the change in the power index and ownership of the largest existing shareholder before and after private placement. Ownership structure variables included in the regression.  $((w1-w2)_{before})$  and  $((w1-w2)_{after})$  denote the difference in ownership between the largest and second largest shareholder before and after private placement, respectively. Placement characteristics (e.g., percentage size, number of purchasers; etc.) and firm characteristics (e.g., firm size, ROA, firm age and the debt ratio; etc.) are also included as control variables in the regression of the private placement discount. Furthermore, to capture the influence of varying placement motivations and investor types on pricing, motivation dummy and investor type dummy are also included in the regression.

*Market return* denotes the cumulative market return included in the control for the possible market effect. *Industry dummy* is included in the regression analysis because it is also an important factor in determination of private placement discount. Table 8 illustrates the empirical results of the regression of private placement discount in terms of the variation in insider control power. The dependent variable is the pricing discount calculated as the difference between the offer price and the average price over the ten trading days before the announcement and is winsorized at 5%. We also use discount calculated as the difference between the offer price and the market price on the first day after the announcement as dependent variables. The results are similar to the results of Table 8, so they are not shown here. The VIF statistics reveal no collinearity among the explanatory variables. The results in Table 8 indicate the coefficients on  $\Delta(SI\ power\ index)$  and  $\Delta(SI\ ownership)$  are both significantly positive, suggesting there

is a strong, positive association between the increased power (ownership) of the largest *existing* shareholder and private placement discount. This indicates that, when the existing shareholder becomes more powerful, the placements are issued at a higher price. We also find there is no strong relationship between the ownership structure before and after private placement and pricing. The results also suggest that the power index could better reflect the insider's relative influence over the firm because the coefficient of  $\Delta(\textit{insider control rights})$  is insignificant.

Further, we added a motivation dummy and investor type dummy in the regression of Table 8. The motivations of private placement have a greater influence on pricing than investor types. The omitted category is financially distressed placements. Compared to "financially distressed" purchasers, "invited" purchasers pay the least, followed by "financial need" purchasers and then "aggressive" purchasers. The results agree with previous findings in Table 5. Although the investor type dummies are all insignificant, new insiders and outsiders buy at a larger discount for private placement. The sign of the coefficients on percentage issued and number of investors are both negative and significant, meaning as more purchasers participate in the private placement and more shares are issued, the price will decrease. Private placement discount should increase with firm size because larger firms offer potentially larger benefits, both pecuniary and non-pecuniary (Barclay and Holderness (1989)). On the other hand, the costs of being a block-holder also increase with firm size, as larger firms are likely to be monitored more closely by security analysts, government officials, and institutional investors. We measure firm size as the log of total assets. The results in Table 8 show that the effect of firm size on private placement discount is not significant. The size of the debt may affect the size of the private placement discount. Debt can have a negative effect on private benefits by constraining access to free cash flow (Jensen (1986)). In contrast, debt can also increase one's effective control over corporate assets. Table 8 indicates leverage is an insignificant factor. Contrary to the results of previous studies, we find the coefficients of ROA and M/B ratio are all negative and statistically significant, indicating that price discounts are larger for well-performing firms with higher managerial quality. A reasonable explanation for this is, for firms with higher ROA and M/B ratio, their placement motivations may almost belong to "invited" and "financial need", and therefore the discount for these two categories are larger.

#### Investor Type, Changes in Control of the Largest Existing Shareholder and Pricing

The next question is what conditions prompt the insiders to pay more or less in private placement. Table 4 suggests existing insiders pay less when the largest *existing* shareholder maintains the leading position while they pay more when the largest *existing* shareholder loses the leading position. In this section, we use the logit regression to test the impact of the control status or the changes in power index of the largest *existing* shareholder on pricing. In Table 9, the dependent variable equals one if the discount is larger than the median discount of private placement with the same investor type, and zero otherwise. The reason we use a dummy variable rather than the discount level as the dependent variable is we want to verify whether the discount of each placement is larger or smaller than the median discount of the private placement with the same investor type. Table 9 shows that there is a varied effect of control status and changes in the power index of the largest *existing* shareholder on pricing among different types of investors. In Panel A, the coefficient on (*control maintained dummy\*existing insider*) is significantly negative, while the coefficient on (*control maintained dummy\*outsider and new insider*) is positive and statistically significant.

Table 8: Determinant of Private Placements Discounts

	(1)		(2)		(3)		(4)	
	B-value	p-value	B-value	p-value	B-value	p-value	B-value	p-value
Intercept	0.849	0.11	<b>1.007*</b>	0.05	<b>0.929*</b>	0.10	<b>1.091**</b>	0.04
<b>Control variables</b>								
$\Delta$ insider control rights	0.016	0.93	-0.027	0.88	0.020	0.90	-0.025	0.89
$\Delta$ S1 power index					<b>0.359**</b>	0.01	<b>0.359**</b>	0.02
$\Delta$ S1 ownership	<b>1.060**</b>	0.03	<b>1.006*</b>	0.05				
<b>Ownership structure</b>								
(w1-w2) <sub>before</sub>	0.387	0.41	0.402	0.40	0.496	0.31	0.520	0.29
(w1-w2) <sub>after</sub>	-0.084	0.78	-0.046	0.88	-0.062	0.83	-0.018	0.95
<b>Placement motivations</b>								
Aggressive			-0.099	0.33			-0.094	0.35
Invited			<b>-0.191*</b>	0.07			<b>-0.211**</b>	0.04
Financial need			<b>-0.178**</b>	0.02			<b>-0.179**</b>	0.02
<b>Investor types</b>								
Existing insider			0.005	0.96			0.005	0.96
New insider			-0.113	0.36			-0.119	0.33
Outsider			-0.041	0.65			-0.040	0.65
<b>Placement characteristics</b>								
Percentage issued	-0.439	0.19	<b>-0.438*</b>	0.09	<b>-0.483*</b>	0.08	<b>-0.478*</b>	0.08
Number of Investor	-0.007	0.13	<b>-0.007*</b>	0.08	<b>-0.007*</b>	0.06	<b>-0.007*</b>	0.10
<b>Firm characteristics</b>								
ln (Asset)	-0.047	0.16	-0.041	0.21	-0.054	0.13	-0.048	0.17
Debt ratio	0.238	0.33	0.098	0.70	0.234	0.34	0.089	0.72
ROA	<b>-0.954***</b>	0.00	<b>-0.812***</b>	0.01	<b>-0.981***</b>	0.01	<b>-0.827***</b>	0.01
M/B ratio	<b>-0.027***</b>	0.00	<b>-0.026***</b>	0.00	<b>-0.027***</b>	0.00	<b>-0.026***</b>	0.00
Firm age	-0.003	0.49	-0.005	0.34	-0.003	0.62	-0.005	0.42
Market return	0.204	0.86	0.057	0.96	0.136	0.91	0.005	0.88
Industry	Yes		Yes		Yes		Yes	
Adjusted R2	0.10		0.09		0.08		0.09	
Prob(F-statistic)	(0.00)		(0.00)		(0.00)		(0.01)	

This table presents coefficients of ordinary-least-squares regressions of the private discounts associated with 181 private placements between 2002 and May 2007. The dependent variable is the pricing discount which is calculated as the difference between the offer price and the average price over the ten trading days before the private placement and is winsorized at 5% in either tail.  $\Delta$ (insider control rights) is the change in the percentage of existing inside directors before and after private placements,  $\Delta$ (S1 power index) is the change in the largest existing shareholder's Banzhaf index before and after private placements.  $\Delta$ (S1 ownership) is the change in the largest existing shareholder's ownerships before and after private placements. We added placement motivation dummy and investor type dummy in the regression. The omitted category is financially distressed placements. Percentage issued is the number of shares issued divided by total outstanding shares after issuing. Number of investor refers to the number of investor participating in the private placement. ln(Asset) is the natural of log of market value of asset. Firm age is the number of years from the time of incorporation. Debt ratio, ROA and M/B ratio are obtained before the private placement. (Market return) is the cumulative market return. Industry is a dummy variable to control for the industry effects. The superscripts \*, \*\*, and \*\*\* indicate that the value is significantly different from zero at the 10%, 5% and 1% level respectively. The p-values are adjusted for heteroskedasticity using the White (1980) method.

Conversely, the coefficient of (control transfer dummy\* outsider and new insider) is significantly negative, but the coefficient on (control transfer dummy\* existing insider) is insignificant. Although the estimated coefficient of ( $\Delta$ s1 > 0 dummy\* outsider and new insider) is insignificant, the results in Panel B are similar to in Panel A.

We also use the changes in ownership of the largest existing shareholder as a dummy variable, but since the estimated coefficients are not significant, to save space we do not show them in this paper. This result indicates the largest shareholder's influence on pricing can be reflected using the power index rather than ownership, therefore power index is a better measure for control than ownership. The results in Table 9 reveal that if the existing shareholders maintain their leading control status and become more powerful following private placement, in cases where insiders are the main investors, they will issue private placements at deep discounts to benefit themselves; however, in cases where outsiders/new insiders are

the main investors, outsiders and new insiders will pay more when existing insiders dominate. On the contrary, if existing shareholders fail to retain their leading position and become less powerful after private placement, outsiders and new insiders can buy at lower prices. Thus, the changes in control of the largest *existing* shareholder around private placement can explain the puzzle on private placement pricing being sold to insiders. It worth to note that we identify the existing insider buyer and the largest shareholder before private placement are almost have the same identity. This identification allows us to investigate how the insider buyer can grab a larger discount in private placement more accurately. Our results indicate that insiders promptly self-deal by setting a lower price to benefit themselves only if they become more powerful following private placement, but not when a new power dominates after placement. There is no evidence to support the control premium hypothesis whereby insiders are willing to pay more for increased power over the firm.

Table 9: Investor Type, Changes in Control of the Largest Existing Shareholder and Pricing

	(1)		(2)		(3)		(4)	
	B-value	p-value	B-value	p-value	B-value	p-value	B-value	p-value
Intercept	-1.073	0.61	-1.041	0.62	-0.468	0.84	-0.413	0.86
<b>Control variables* investor type</b>								
Control maintained*existing insider	<b>-0.198*</b>	0.07						
Control maintained*mixed existing insider			-0.001	0.98				
Control maintained *outsider and new insider	<b>0.798**</b>	0.04	<b>0.837**</b>	0.04				
Control transfer *existing insider					-0.238	0.69		
Control transfer *mixed existing insider							-0.339	0.46
Control transfer *outsider and new insider					<b>-0.442*</b>	0.08	<b>-0.515*</b>	0.09
<b>Placement characteristics</b>								
Percentage issued	<b>-2.170*</b>	0.09	<b>-2.100*</b>	0.10	<b>-1.993*</b>	0.10	-1.956	0.11
Number of Investor	<b>-0.042*</b>	0.07	<b>-0.042*</b>	0.07	<b>-0.043*</b>	0.06	<b>-0.041*</b>	0.06
<b>Firm characteristics</b>								
ln (Asset)	0.164	0.25	0.156	0.28	0.136	0.39	0.137	0.39
Debt ratio	0.040	0.87	0.205	0.87	0.270	0.80	0.229	0.83
ROA	<b>-4.008***</b>	0.01	<b>-3.992***</b>	0.00	<b>-3.573**</b>	0.02	<b>-3.714***</b>	0.01
M/B ratio	<b>-0.084*</b>	0.08	<b>-0.086*</b>	0.07	<b>-0.010*</b>	0.05	<b>-0.088*</b>	0.06
Firm age	-0.014	0.46	-0.014	0.48	-0.012	0.55	-0.012	0.56
Industry	Yes		Yes		Yes		Yes	
$\chi^2$ -statistic (p-value)	29.19 (0.003)		29.02 (0.00)		26.93 (0.00)		27.31 (0.00)	
McFadden's R-squared	0.116		0.115		0.107		0.108	
Number of observations	181		181		181		181	

Panel A Panel A estimates logit models relating the probability of paying more against the largest shareholder's control power and other potential determinants of pricing. The dependent variable equals one if the discount is larger than the median discount of private placement with the same investor type, and zero otherwise. "Control maintained" is a dummy that equals one when the largest shareholder maintains a leading position after private placements, otherwise zero. "Control transfer" is a dummy that equals one when the largest shareholder failed to keep the leading position after private placements. "Existing insider" is a dummy that take a value of one when the main investor was already insider (director) before the private placement. "outsider and new insider" is a dummy that take a value of one when the main investor who own shares but have no control over the firm or when the main investor was become insider after private placement. Because the sample number of "new insider" placements is rare, "outsider" and "new insider" placements are combined in the logit regression. Finally, "mixed existing insider" is also a dummy that take a value of one when the multiple main investors are classified to "existing insider and outsider" or "existing insider and new insider." Percentage issued is the number of shares issued divided by total outstanding shares after issuing. Number of investor refers to the number of investor participating in the private placement. ln(Asset) is the natural of log of market value of asset. Firm age is the number of years from the time of incorporation. Debt ratio, ROA and M/B ratio are obtained before the private placement. Industry is a dummy variable to control for the industry effects. The superscripts \*, \*\*, and \*\*\* indicate that the value is significantly different from zero at the 10%, 5% and 1% level respectively.

Table 9: (continued)

	(1)		(2)		(3)		(4)	
	B-value	p-value	B-value	p-value	B-value	p-value	B-value	p-value
Intercept	-0.409	0.85	-0.587	0.80	1.824	0.48	1.768	0.49
<b>Control variables* investor type</b>								
$\Delta SI > 0$ dummy*existing insider	<b>-0.645*</b>	0.08						
$\Delta SI > 0$ dummy*mixed existing insider			-0.616	0.20				
$\Delta SI > 0$ dummy*outsider and new insider	0.315	0.55	0.293	0.58				
$\Delta SI < 0$ dummy*existing insider					-0.363	0.52		
$\Delta SI < 0$ dummy*mixed existing insider							-0.196	0.68
$\Delta SI < 0$ dummy*outsider and new insider					<b>-0.577*</b>	0.07	<b>-0.574*</b>	0.09
<b>Placement characteristics</b>								
Percentage issued	<b>-2.084*</b>	0.08	<b>-2.094*</b>	0.08	-1.348	0.28	-1.328	0.29
Number of Investor	<b>-0.039*</b>	0.07	<b>-0.038*</b>	0.08	<b>-0.037*</b>	0.10	-0.034	0.16
<b>Firm characteristics</b>								
ln (Asset)	0.108	0.48	0.118	0.45	-0.005	0.97	-0.001	0.99
Debt ratio	0.080	0.94	-0.097	0.92	0.360	0.74	0.303	0.77
ROA	<b>-2.720**</b>	0.06	<b>-2.814**</b>	0.06	<b>-5.660***</b>	0.00	<b>-5.672***</b>	0.00
M/B ratio	-0.050	0.25	-0.050	0.25	<b>-0.123**</b>	0.04	<b>-0.119*</b>	0.05
Firm age	-0.006	0.75	-0.006	0.77	-0.054	0.65	-0.054	0.68
Industry	Yes		Yes		Yes		Yes	
$\chi^2$ -statistic (p-value)	22.25 (0.03)		22.40 (0.03)		30.56 (0.00)		30.32 (0.00)	
McFadden's R-squared	0.088		0.121		0.130		0.129	
Number of observations	181		181		181		181	

Panel B Panel B estimates logit models relating the probability of paying more against the largest shareholder's control power and other potential determinants of pricing. The dependent variable equals one if the discount is larger than the median discount of private placement with the same investor type, and zero otherwise. " $\Delta SI > 0$  dummy" is a dummy that equals one when the power index of the largest existing shareholder is increased after private placement, and zero otherwise. " $\Delta SI < 0$  dummy" is a dummy that equals one when the power index of the largest existing shareholder is decreased after private placement, and zero otherwise. The definition of other variables is the same as Panel A of Table 9. The superscripts \*, \*\*, and \*\*\* indicate that the value is significantly different from zero at the 10%, 5% and 1% level respectively.

## CONCLUSIONS

Although past studies have observed that the type of investors in private placements significantly influences price discounts, no study has yet been able to identify the conditions determining the prices paid by insiders in private placements. This paper clarifies the debate on prices sold to insiders by considering the variation in control power of the largest shareholders in private placements. Our findings show that changes in the largest *existing* shareholder's power index is the key to explain the price insiders and outsiders pay. Insiders pay less only if they become more controlling, and in which case outsiders and new insiders pay more. That is, self-dealing exists only when existing insiders become more powerful after private placement, but not when a new power dominates after placement. We found no evidence of the control premium hypothesis. Moreover, the motivations of placement have a greater influence on private placement pricing than the main type of participating investors.

The placements with aggressive investors are issued at lower discounts, while placements with passive or financial support investors are issued at larger discounts. The result highlights the fact private placement does not always increase the power of current insiders, and the new block-holders may reshape the ownership structure of the issuing firm, and therefore, the largest *existing* shareholder's real control power. On average, the ownership and power index of the largest *existing* shareholder decreases after private placements. The finding suggests in private placement the *existing* large shareholder is willing to give up some control power, consistent with the argument of Zingales (1995) and Bebchuk (1999) that insiders



wanting to entrench control rights would choose public listings. We also found that the deviation in ownership and control power between the two largest shareholders ( $w_1$  and  $w_2$ ) increases, indicating the issuing firm's ownership structure becomes more concentrated following private placements. The results of this paper provide in-depth analysis of the relationship between pricing and insider's control variations in private placement, and lead to a better understanding of the bargaining power among participants in private placement. The implication of our empirical results is that private placements are likely to be use a self-dealing vehicle when existing insiders remain dominant control, but not so if there is change in control power. It would be interesting to observe the long-run dynamics of the largest shareholder's influence following private placements in future studies.

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