

# Price Discount of Private Equity Placement and Interests Transferring Subscribed by Larger Shareholders in China

SU-SHENG WANG, MIN-CHENG XU

Shenzhen Graduate School

Harbin Institute of Technology

Shenzhen University Town in Shenzhen City

The People's Republic of Chinese, 086-518055

wangsusheng@gmail.com; xmcbest@126.com;

*Abstract:* - We examine the effects of subscription behavior and wealth transferring controlled by larger shareholders on price discount of private placement. Price discount of private placement and wealth transferring effect exhibits a significant trend when larger shareholders subscribe more private placement shares. Shares proportion subscribed by larger shareholders, shares size of private placement and total assets size are positively related with price discount of private placement at the 5% confidence level, Interests transferring and share-holding increase before and after private placement are positively related with price discount of private placement at the 10% significance level, larger shareholders have strong incentive to transfer wealth from medium-small shareholders.

*Key-Words:* - private placement; price discount; larger shareholders; interests transferring;

## 1 Introduction

Initial Public offering and private equity placement are the most important ways for listed firms to issue new shares. Since 2005, refinancing ways of listed firms had undergone a significant change with the completion of equity-split reform, the refinancing appetite of listed firms had shifted private equity placement from initial public offering and new equity-matching ways. Private equity placement, also known as non-public offering is defined that listed firms issue stocks to the specific objects using non-public offering. Private equity placement is an important and growing part of the worldwide capital markets, those business groups dominate private-sector industrial activity in economies such as American, Brazil, Chile, Hong Kong, India, Indonesia, Malaysia, Pakistan, South Africa, South Korea and Taiwan etc.

Private equity placement is a flexible and resilient financing way, it had become one of the most important ways of equity refinancing for listed firms in China. Based on private placement ways, private placement objects are divided into three types in China: first objects are larger shareholders, concluded actual controlled-shareholders and related-transaction strategic shareholders, this object of private placement is to acquire the superiorly physical assets of related parties and to achieve the overall public offering of business groups. Second objects are institution investors in order to introduce strategic cooperators outside, such as securities

investment fund corporate, trust investment corporate, insurance corporate, qualified foreign institution investors and other institution investors. Third objects are institution investors and larger shareholders.

Early foreign scholars find private equity placement has a positive announcement effects on average abnormal stock returns [1-6]. Wruck (1989) examine that stock public offering has a significantly negative announcement on average abnormal stock returns, while private equity placement has a significant positive announcement on average abnormal stock returns [1]. Cross-sectional empirical analysis indicates that firm value change at the announcement of private placement is strongly correlated with the change in ownership concentration. Hertz and Smith (1993) find that price discounts of private placement reflect information costs borne by private investors and abnormal returns reflect favorable information about firm value, information effects appear to be relatively more important than ownership effects for the smaller firms [2]. Hertz and Rees (1998) propose that private equity placement conveys favorable new information to investors and that the information reflects the changes of future earnings [3]. Hertz, Lemmon and Linck et al. (2002) propose that private equity placement experiences positive announcements effects and negative post-announcement on stock price [4]. Tang, Chun and Tong (2002) examine positive announcement effect

of seasoned equity issues in Singapore, and they find that higher abnormal returns for firm undertaken larger issues, this issue size reflects the magnitude of favorable news on the issuing firms' earning prospects [5]. Cronqvist and Nilsson (2005) suggest that private placements are often made to passive investors, thereby helping management solidify their control of the firm [6]. Price discounts of private placement, stock-price reactions, post-placement activities of the purchasers, and large blocks of stock favor managerial entrenchment as the explanation for many private placements. Private equity placement provides favorable market information, introduces institution investors and strategic investors with a strong incentive and monitoring ability to supervise firms managers and larger shareholders, reduce agency cost of managers, accordingly private placement can improve market reaction of stock returns and firms' financial performance.

However private equity placement firms typically experience negative long-run performance following the placements in Singapore and New Zealand. Hertz et al (2002) find that the mean three-year buy-and-hold abnormal return after private equity placement reduces -23.78%, this pattern is caused by over-optimism investors about the firm prospects at the announcement of private placement sale. Since private investors appear to be overly optimistic about the potential performance improved in the future [4]. If they feel disappointed that such an improvement fails to materialize, there is little direct evidence on the overly optimistic expectations explanation for this underperformance. Chen et al. (2002) examine institutional characteristics and the wealth effects of private equity placements in Singapore, their findings show that private placements in Singapore generally result in a negative wealth effect and a reduction in ownership concentration, at high levels of ownership concentration, the relation between abnormal returns and changes in ownership concentration is significantly negative, market reacts less favorably to placements in which management ownership falls below 50%, but more favorably to issues to single investors [7]. Barclay et al. (2007) suggests that private placements are often made to passive investors, and placement price discounts, stock-price reactions, the post-placement activities of the purchasers, large blocks of stock favor managerial entrenchment as the explanation for many private placements [8]. The above scholars consider that private equity placement in Singapore and New Zealand cannot be sold to directors and related controlling shareholders, this issuing way of

private placement will reduce firms' ownership concentration, and the dilution of share-holding ratio of original controlling shareholders and firms managers will transmit a negative market signal, accordingly these signals lead to a negative announcement and wealth effects.

Kaplan and Schoar (2005) investigates the performance and capital inflows of private equity partnerships, their results show that better performing partnerships are more likely to raise follow-on funds and larger funds, and top performing partnerships grow proportionally less than average performers [9]. Krohmer, Lauterbach and Calanog (2009) examine the investment performance and the varying motivation of private equity firms, and they find that staging has a positive effect on investment returns in the beginning of the investment decisions, however staging appears to be negatively associated with returns when used prior to the exit decision [10]. Huang and Chan (2012) propose that outside blockholders arising from private equity placement have a significantly positive effect on operation performance of listed firms with poor corporate governance [11]. Wilson et al. (2012) find that listed firms in U.K. backed buyouts by private equity portfolio fund achieved superior economic and financial performance in the period before and during the recent global recession, relative to comparable firms that did not experience such transactions, listed firms imply positive differentials of 5–15% in productivity and approximately 3–5% in profitability for buyout firms, relative to non-buyout firms [12]. Franzoni, Nowak and Phalippou (2012) find that when diversification benefits provided by private equity may be lower than anticipated investment returns, private equity suffers from significant exposure to the same liquidity risk factor, their empirical results show the link between private equity returns and overall market liquidity occurs via a funding liquidity channel [13]. Minardi et al. (2013) verify that Private equity (PE) backed IPOs have higher average CAR than non-PE backed IPOs in both periods, PE investment has a positive relation to CAR for IPOs issued in 2004–2006, however PE backed IPOs issued during 2007–2008 were not a significant relation [14]. Cumming and Zambelli (2013) investigates the impact of excessive regulation on private equity (PE) returns and firm performance, their results show that extreme regulation and prohibition reduces the quality of capital and fund involvement for value-added investors such as PE funds, extreme regulation reduces not only the supply of capital, but also PE returns and firm performance, as well as the

likelihood of an IPO exit [15]. Lin et al. (2013) examine that financial analysts do tend to make over-optimistic forecasts at the time of private equity placements, such over-optimistic forecasts can lead to investors erroneously overstating the value of placement firms, resulting in subsequent revisions of their valuations over time, and long-run performance of private equity placement has a negative correlation with over-optimistic forecasts of financial analysts [16]. Private equity placement is helpful for listed firms to introduce strategic investors to achieve overall public offering and financial restructuring, to extend the industrial chain of listed firms, to reduce related-party transactions and similar competition with business groups, to enhance the larger shareholders and strengthen firms operation supervision, accordingly these factors prompt and improve long-term performance and stock market reaction of listed firms.

The existing literatures provide much direct evidence on the relationship between overvaluation and earning management. Goh et al. (1999) examine that earnings forecast revisions by analysts subsequent to the announcement of private equity placements, their empirical results show that analysts make significant upward revisions to their forecasts for current-year earnings, these forecast revisions are significantly related to announcement-period abnormal returns, and private equity placements convey favorable information about future earnings [17]. Johnson and Porta et.al (2000) refer to the transfer of resources out of a company to its controlling shareholder [18]. Beuselinck, Deloof and Manigart (2009) examine the relation between private equity (PE) investors' involvement and their portfolio firms' earnings quality, PE involvement increases a firm's willingness to recognize losses more timely compared with industry, size and life-cycle [19]. Chen et al. (2010) propose that issuing firms of private placement overstate their earnings in the quarter preceding private equity placement announcements and sophisticated investors do not ask for a fair discount when purchasing the shares of the private issuing firms [20]. Hsu et al. (2011) find that firms have incentives to engage in earnings management before the announcement date of private equity offerings, and management tended to manage reported earnings upward when the private placement was subscribed by non-insiders; whereas management tended to downward manage earnings when the private placement was subscribed by insiders [21]. Earning management can boost earnings relative to cash flows, can make private equity placement overprices, however earning management can also be used to induce

undervaluation. Adams et al. (2009) find that managers of mutual use discretionary choices to reduce reported earnings prior to the demutualization to help justify a lower initial valuation for demutualizing firms [22]. Chang and Wang et al. (2012) propose a new N-factor affine term structure model for CO<sub>2</sub> futures price and their empirical results show that CO<sub>2</sub> futures prices and convenience yields follow significant mean-reversion process in the Kyoto phase [23]. Chang et al. (2012) propose a general model of futures options valuation under the term structure of stochastic multi factors, their empirical results show term structure of stochastic multi-factors has a significant effect on futures options valuation for CO<sub>2</sub> emissions allowances, and estimate the theoretical futures options valuation by using historical market information [24]. Wang, Huang and Chang (2013) use panel data of weekly corporate bond yields and the fixed effect model with variable intercept [25]. The factors which affect corporate bond spread mainly include bond market complex index, stock market complex index, CPI, bond idiosyncratic volatility and stock idiosyncratic volatility. Li (2008) presents that American options can be exercised at any time during their lifetime, and addresses the optimal stopping time of several kinds of American call options [26]. Shao and Wang (2010) consider the statistical properties of chain reaction of stock indices, the theory of interacting systems and statistical physics are applied to describe and study the fluctuations of two stock indices in a stock market, and the properties of the interacting reaction of the two indices are investigated in the present paper [27]. Athina's (2012) intention of this research is to understand the behavior of the Cyprus Stock Market, his empirical findings of FTSE/CySE 20 show that return distribution takes the shape of a Gaussian distribution at 345 days and the tails appear to become less heavy for less frequent series [28]. Petr (2012) applies several prototype generation classifiers to predict the trend of the NASDAQ Composite index and demonstrates that prototype generation classifiers outperform support vector machines and neural networks considering the hit ratio of correctly predicted trend directions [29]. Neri (2012) proposes an introduction to the special issue on computational techniques for trading systems, time series forecasting, stock market modeling, and financial assets modelling [30]. Neri (2012) discusses a computational simulation technique based on agent based modeling and learning to closely approximate the SP500 and DJIA indexes over many periods and under several

experimental set ups [31]. They proposal that wealth tunneling comes in two forms: First, a equity-controlled shareholder can simply transfer resources from the firm for his own benefit through self-dealing transactions, including outright theft or fraud, asset sales and contracts such as transfer pricing advantageous to the controlling shareholders, excessive executive compensation, loan guarantees, expropriation of corporate opportunity. Second, the controlling shareholders can increase their shares of the firm without transferring any assets through dilutive shares issues, minority freeze-outs, insider trading, creeping acquisitions, or other financial transactions that discriminate against minorities. Bae, Kang and Kim (2002) examine whether firms belonging to Korean business groups benefit from acquisitions they make or whether such acquisitions provide a way for controlling shareholders to increase their wealth by increasing the value of other group firms [32]. While minority shareholders of a chaebol-affiliated firm making an acquisition lose, these controlling shareholders of listed firm on average benefits because the acquisition enhances the value of other firms in the group. Bertrand, Mehta and Mullainathan (2002) propose a general methodology to measure the extent of tunneling activities, propagate of earnings shocks across firms within a group, expropriate by minority shareholders through tunneling resources from firms with low cash rights [33]. Listed firms have a strong incentive to earning management before private equity placement, and the ways of earning management is significantly related with private placement objects, shareholding ratio owned by larger shareholders and market reaction of new stock of private placement. Larger shareholders enhance positive earning management before private equity placement in order to improve financial performance of listed firms, and then have a more strong motivation to increase private placement price, the final goal of earning management is to wealth tunneling or propping for larger shareholders.

Those scholars at home and abroad pay much attention on announcement effects, wealth tunneling or propping stock market reaction and earning management, however few scholars in China pay little attention on the effects of interest transferring on price discount of private equity placement with the subscription behavior of larger shareholders. Listed firms in China can give investors subscribed private equity placement some degree of price discount. Interest conflicts between larger shareholders and medium and small shareholders are directly related with rational private placement

pricing. In the process of private equity placement, subscription proportion of private placement controlled larger shareholders, subscribing ways and behaviors of larger shareholders have directly significant impacts with price discount of private placement and interests transferring.

The remainder of our paper is organized as follows. Section 2 presents theoretical analysis and research hypothesis. Section 3 proposes research design. Section 4 preopose empirical results analysis and discussion. Section 5 provides a brief conclusion and policy advices.

## 2 Theoretical Analysis and Research Hypothesis

Greater ownership concentration is the major feature of listed firms in China, larger shareholders have greater options to effectively control private placement price and time. Interests owned by institution investors are consistent with larger shareholders, their alliance is a rational choice. Underdeveloped investors' legal protection, poor-efficient legal rules and supervisory system in China are easy for larger shareholders to invade the medium-small shareholders interests.

**Hypothesis 1 Price discount of private placement is positively related with share- subscribing ratio of larger shareholders.**

The investors subscribed private placement have lower average cost of gaining shares of listed firms with an incline of price discount of private placement, they can attain more shares on the condition of certain capital of private placement, as a result, these investors can gain the greater share-claim revenues in the future. Securities regulatory commission in China stipulate that private equity placement has certain lock-up period, lock-up period subscribed by larger controlling period is three years, lock-up period subscribed by institution investors is one year. Larger shareholders can achieve greater stock returns through stocks arbitrage when the ban-rid of luck-up period. Larger shareholders require greater price discount of private placement with an increase of subscription ratio. Greater price discount of private placement may affect share-holding value of old shareholders, and then damage the existing interests of larger shareholders, which have some constraint of price formation of private equity placement.

**Hypothesis 2 Price discount ratio of private equity placement is positively related with the difference between subscription ratios and original share-holding ratios, larger shareholders**

### **may transfer more interests from abnormal stock returns.**

Share-holding ratio owned by larger shareholders decides the degree of interest separation between larger shareholders and medium-small shareholders, it has a significant effect on the final decision-making options. Larger controlling shareholders may achieve greater stock returns from purchasing lower private placement price and reduce share-holding interest loss with an increase of their difference, larger shareholders have strong incentive to squeeze private placement price down, and then they may achieve interests transfer from those shareholders without gaining private placement options. If larger shareholders own greater share-holding ratio before private placement, they own more strong control ability and greater opportunity to transfer interests with an increase of share-subscribing ratio.

### **Hypothesis 3 When larger shareholders subscribe private equity placement, price discount ratios of private placement are greater due to potential motivation of interests transferring with an increase of subscription ratio of private placement.**

Barclay et al. (2007) suggests that private placements are often made to passive investors, thereby helping management level solidify their control of listed firm [8]. These passive investors cannot join in firms' management, and they require the firm to give certain interests compensation of price discount of private placement in order to offset firms' control loss. From the opportunism of management level, larger shareholders may transfer potential wealth using private placement. In addition, securities regulatory commission in China require lower monitoring and certification, lower information disclosure, process, approval process of private placement is more simple than initial public offering, the incline of information transparency make larger shareholders create more secrete ways of wealth transferring.

### **Hypothesis 4 Price discount ratio of private equity placement is greater with an increase of private placement size.**

Based on information asymmetry theory, Hertz and Smith (1993) propose that information asymmetry has a significant effect on price discount of private placement [2]. Firstly, the channel of information delivery is simpler for minority objects of private equity placement, price discount of private placement is lower with the lower cost of information transmission and the minor compensation of investment returns. Secondly, institution investors require the different

information costs of estimating and measuring private placement due to different size of private placement, accordingly these investors claim different price discount of private placement. Information asymmetry is higher with an increase of private placement sizes, price discount ratio of private placement is greater with an increase of information cost. We can estimate information asymmetry of private placement using private placement size and total assets size of listed firm.

## **3 Research Design**

### **3.1 Data Source**

Private equity placement is one of the most important ways for listed firms to refinance equity after share-split reform. In order to examine the effects of price discount of private placement and financial performance on wealth transferring, we select listed firms implemented private equity placement as empirical samples in Chinese Shanghai and Shenzhen share A Stock Exchange from 2006 to 2010. Data sample are sourced from CSMAR Solution platform in Shenzhen and GENIUS Finance platform. Sectional variable, such as share-holding ratio subscribed by larger shareholders before and after private placement, are sourced from listing announcement of non-public-offering share issuing and related reports published by listed firms in CNINF solution platform. Data samples selected in this paper are listed firms completed private equity placement and larger shareholders subscribe sectional or total private placement shares in these data samples, and thereby private placement shares can freely circulate in the ban-rid of three-year period. We filter these data samples according to following procedure:(1) If listed firms carried out more than two private placement in the data-covering period, we select first private placement as sample events. (2) We filter private placement samples in finance and assurance industry. (3) We filter private placement events with data-missing and individually extreme variable. (4) We filter those samples with price-premium private placement. Listed firms meeting the above criteria have 136 private placement events.

### **3.2 Variable Definition**

Price discount ratio (Discount) is used to estimating price-discount degree of private placement. Based

on Baek's (2006) method [34], we calculate that price-discount ratio is equal to the difference between settlement price on the announcement date and private placement price divided into settlement price on the announcement date. Based on Barclay's (2007) method, price-discount ratio is equal to the difference between settlement price on the pre-announcement date and private placement price divided into settlement price on the pre-announcement date.

Subscription proportion (Proportion) denotes subscription proportion of private placement by larger controlling shareholders. In the process of private equity placement, larger controlling shareholders can strengthen management control position with an increase of subscription proportion, and then interest deviation between larger shareholders and minority shareholders is greater, thereby larger controlling shareholders have a stronger incentive to invade wealth from minority shareholders. Larger controlling shareholders may reduce private placement price with an increase of subscription proportion, and then they can achieve greater investment returns at the end of lock-up period.

Wealth transferring (Transferring) denotes that subscription proportion in the process of private placement subtracts share-holding ratio before private placement. share-holding increase denotes share-holding ratio after private placement subtract share-holding ratio before private placement [35].

Private placement size (Fraction) denotes that stock shares of private placement are divided into total quantity of equity-shares after private placement. The size of investment opportunity enhances with an increase of private placement size, larger shareholders may have greater difficulty of risk estimation, and then they require greater discount compensation.

Firm size (SIZE) denotes the logarithm of annual total assets. Investors can gain more market information with an increase of firm size, the information asymmetry is lower, and then price discount ratio of private placement is lower.

Returns of equity (ROE) denote quality level of firm assets and future profitability anticipation. The firm profitability improves with an increase of ROE, investors will purchase shares at higher prices, the stock value will increase in the future.

Financial leverage (LEV) denotes refinancing state of listed firm. Listed firms have greater pressure of repaying debts with an increase of financial leverage, the possibility of financial distress is greater, and larger shareholders require

higher price discount in order to protect their interests.

Table 1 the definition of major variable

<i>variable</i>	Definition and calculating method
Discount	1-private placement price/settlement price on the announcement date
Discount <sub>-1</sub>	1-private placement price/settlement price on the pre-announcement date
Proportion	Stock shares subscribed by larger shareholders/total stock shares of private placement
Transferring	subscription proportion in the process of private placement - Share-holding ratio before private placement
Increase	share-holding ratio after private placement-share-holding ratio before private placement
Fraction	total stock shares of private placement/total stock shares after private placement
Size	the logarithm of total assets value, ln Size
ROE	Net profit/ net total assets
LEV	Total debts/total assets

### 3.3 Model Estimation

Based on the above hypothesis and theoretical analysis, we propose the following model in order to examine the effects of subscription behavior of larger shareholders and price discount of private placement on wealth transferring.

$$X_i = \alpha_0 + \alpha_1 \text{Proportion} + \alpha_2 Y_j + \alpha_3 \text{Fraction} + \alpha_4 \text{Size} + \alpha_5 \text{ROE} + \alpha_6 \text{LEV}$$

(1)

X denotes interpreted variable,  $i = 1, 2$ , when  $i = 1$ , X denotes Discount, when  $i = 2$ , X denoted Discount<sub>-1</sub>. Y denotes interpreting variable,  $j = 1, 2$ , when  $j = 1$ , Y denotes Transferring, when  $j = 2$ , Y denotes Increase.

## 4 Empirical Results Analysis

### 4.1 Statistical Analysis of Each Variable

In the table 2, when larger shareholders subscribe private placement shares, the mean of price discount ratio of private placement is 37.26%, the maximum

of price discount ratio is 84.56%, these signs show that the issuing price of private placement is much lower than settlement price on the private placement announcement date, price discount ratio of private placement participated by larger shareholders is greater. The mean of share-holding increase before and after private placement is 8.69%, its maximum is 52.15%, these signs show that share-holding ratio after private placement exhibits an increasing trend, larger shareholders strengthen their control ability after private placement, their share-holding ratios aren't diluted after private placement. the mean of wealth transferring after private placement is 24.74%, its maximum is 86.27%, wealth transferring effect exhibits a significant trend when larger shareholders subscribe more private placement shares.

Table 2 statistical analysis of each variable

<i>variable</i>	Mean	minimum	maximum	Standards deviation
Discount	0.3726	0.0704	0.8456	0.2042
Discount <sub>-1</sub>	0.3680	0.0704	0.8379	0.2030
Proportion	0.6135	0.0104	1.0000	0.4008
Transferring	0.2474	-0.5107	0.8627	0.3879
Increase	0.0869	-0.0972	0.5215	0.1323
Fraction	0.2396	0.0132	0.8381	0.1699
Size	22.2444	19.6558	25.1421	1.3004
ROE	0.1447	-0.5124	0.7689	0.1526
LEV	0.5669	0.0954	1.1512	0.1979

#### 4.2 Empirical Results of Regression Analysis

In the table 3, price discount ratios of private placement on the announcement and pre-announcement date are positively related with shares proportion subscribed by larger shareholders at the 5% confidence level. Price discount of private placement exhibits an increasing trend with an increase of shares proportion subscribed by larger shareholders, which support hypothesis 1. Shares size of private placement and total assets size have significant impacts on price discount of private placement at the 5% confidence level, private placement size conveys positive signals for outside investors, and then strengthen investors' confidence. When information asymmetry between insider larger shareholders and outside institution investors increase before private placement, information efficiency induced by private placement is more obvious, and then price discount is higher. Hertz and Smith (1993) consider that those investors in the process of private placement observe the intrinsic firm value induced by asymmetry

information, greater price discount is required compensation cost of investor confidence [2]. Information asymmetry significantly affects price discount in the process of private placement size, and larger shareholders have greater difficulty to estimate assets risk in the lock-up period, and then these larger shareholders require greater price discount in the process of private placement, this result supports hypothesis 3 and 4. Interests transferring and share-holding increase before and after private placement are positively related with price discount of private placement at the 10% significance level, this empirical result show that larger shareholders have strong incentive to transfer wealth from medium-small shareholders through greater price discount in the process of private placement, and this result support hypothesis 2. Price discount ratio of private placement is not negatively related at the 10% confidence level with an increase of returns of equity before private equity placement. Securities regulatory commission in China stipulates that shares subscribed by larger shareholders cannot circulate due to the three-year constraints of lock-up period of private placement. Investors cannot forecast that stock price exhibit a call or put trend in the lock-up period of private placement. Investors can indirectly estimate the future prospect of listed firm using returns of equity (ROE). The future value of stock is greater with an increase of ROE before private placement, and then investors will pay the higher private placement price, as a result price discount ratio of private placement is lower. In addition, larger shareholders have greater rent-seeking space in the process of private placement because of serious disconnect between market pricing of shares A and secondary market pricing. Higher ROE denote that expected price of firm stock in the future increase, outside investors will pay greater private placement price.

Table 3 regression coefficients and empirical results

<i>Variable</i>	(1)	(2)
Proportion	0.2603** (1.4333)	0.1580** (1.3982)
Transferring	0.4213*** (2.8140)	
Increase		0.2423* (1.5204)
Fraction	0.2182** (1.3526)	0.4716** (1.8385)
Size	0.0196*** (3.8367)	0.0122*** (2.1965)
ROE	-0.2279 (-1.4092)	-0.2507 (-1.4875)

LEV	-0.0526 (-0.3934)	-0.0959 (-0.6965)
Variable	(3)	(4)
Proportion	0.2854** (1.5993)	0.1441** (1.2885)
Transferring	0.4454*** (2.3502)	
Increase		0.1908* (1.4141)
Fraction	0.2212** (1.3951)	0.4602*** (1.8121)
Size	0.0198*** (3.9433)	0.0124*** (2.2576)
ROE	-0.2299 (-1.4470)	-0.2562 (-1.5352)
LEV	-0.0520 (-0.3959)	-0.0988 (-0.7246)

Note: \*\*\*, \*\*, \* denote the confidence 99% , 95% and 90% level, the number in the parentheses is t-statistic values.

## 5 Conclusion and Policy Advices

Private equity placement is an important and growing part of the worldwide capital markets, the refinancing appetite of listed firms had shifted private equity placement from initial public offering and new equity-matching ways since the completion of equity-split reform in 2005 in China. We examine the effects of subscription behavior and interest transferring controlled by larger shareholders on price discount of private placement, we propose the following results. Share-holding ratio after private placement exhibits an increasing trend and larger shareholders strengthen their control ability after private placement, price discount of private placement and wealth transferring effect exhibits a significant trend when larger shareholders subscribe more private placement shares. Shares proportion subscribed by larger shareholders, shares size of private placement and total assets size exhibit significantly positive impacts on price discount of private placement at the 5% significance level, these empirical results support hypothesis 1, 3 and 4. Interests transferring and share-holding increase before and after private placement are positively related with price discount of private placement at the 10% significance level, larger shareholders have strong incentive to transfer wealth from medium-small shareholders, and this result supports hypothesis 2. Asymmetry information and serious disconnect between market pricing of shares A and secondary market pricing provoke private placement

demand of listed firms and induce greater tent-seeking space, accordingly price discount of private placement and wealth transferring are special phenomenon in the process of private placement. These phenomenon are contrary to the fair and justice principals of capital market operation, and to invade wealth of medium-small investors outside.

We propose the several following advices in order to improve behavior criterions of private placement, protect interests both outside investors and medium-small shareholders. Firstly, government regulatory commission actively promote institution investors participate private placement, improve governance structure and market schemes of listed firms, encourage institution investors to subscribe more private placement shares from the regulatory policies, and then achieve the equilibrium of private placement objects and controlling interests of larger shareholders. Secondly, regulatory commission should strengthen the behavior supervision of earning management after private placement, build traceability mechanism and establish the confiscation items of executives' rewards and revenues, and then prevent the behavior of earning management. Thirdly, regulatory commission should further improve the provisions of pricing benchmark of private placement, obviously define selection criterion of pricing benchmark. Fourth, regulatory commission should play price reporting system and the principle of price priority, limit shares proportion subscribed by larger shareholders, link with private placement price and market price, and refined ownership structure before and after private placement etc.

## Acknowledgements

The authors are grateful for research support from National Natural Science Foundation of China (71103050); Research Planning Foundation on Humanities and Social Sciences of Ministry of Education (11YJA790152); Planning Foundation on Philosophy and Social Science in Shenzhen city(125A002).

## References

- [1] Wruck K H. Equity ownership concentration and firm value: evidence from private equity financings [J]. *Journal of Financial Economics*, Vol.23, No.1, 1989, pp 3-28.
- [2] Hertz M, Smith R L. Market discounts and shareholder gains for placing equity privately



- [J]. *Journal of Finance*, Vol.48, No.2, 1993, pp 459-485.
- [3] Hertz M, Rees L. Earning and risk changes around private placements of equity [J]. *Journal of Accounting, Auditing & Finance*, Vol.25, No. 1998, pp 21-35.
- [4] Hertz M, Lemmon M, Linck J, et al. Long-run performance following private placements of equity [J]. *Journal of Finance*, Vol.57, No.6, 2002, pp 2595-2617.
- [5] Tang R S K, Chun P L, Tong Y H. Private placements and rights issues in Singapore [J]. *Pacific-Basin Finance Journal*, Vol.10, No.1, 2002, pp 29-54.
- [6] Cronqvist H, Nilsson M. The choice between rights offerings and private equity placements [J]. *Journal of Financial Economics*, Vol. 78, No.2, 2005, pp 375-407.
- [7] Chen S S, Ho K W, Lee C F, et al. Wealth effects of private equity placements: evidence from Singapore [J]. *The Financial Review*, Vol.37, No.2, 2002, pp 165-183.
- [8] Barclay M J, Holderness C G, Sheehan D P. Private placements and managerial entrenchment [J]. *Journal of Corporate Finance*, Vol.13, No.4, 2007, pp 461-484.
- [9] Kaplan SN, Schoar A. Private equity performance: returns, persistence, and capital flows [J]. *Journal of Finance*, Vol.60, No.4, 2005, pp 1791-1823.
- [10] Krohmer P, Lauterbach R, Calanog V. The bright and dark side of staging: investment performance and the varying motivations of private equity firms [J]. *Journal of Banking & Finance*, Vol.33, No.9, 2009, pp 1597-1609.
- [11] Huang H H, Chan M L. The initial private placement of equity and changes in operating performance in Taiwan [J]. *Accounting & Finance*, Vol.5, 2012, pp 1-20.
- [12] Wilson N, Wright M, Siegel D S, et al. Private equity portfolio company performance during the global recession [J]. *Journal of Corporate Finance*, Vol.18, No.1, 2012, pp 193-205.
- [13] Franzoni F, Nowak E, Phalippou L. Private equity performance and liquidity risk [J]. *Journal of Finance*, Vol.67, No.6, 2012, pp 2341-2373.
- [14] Minardi A M A F, Ferrari G L, Araújo Tavares P C. Performances of Brazilian IPOs backed by private equity [J]. *Journal of Business Research*, Vol.66, No.3, 2013, pp 448-445.
- [15] Cumming D, Zambelli S. Private equity performance under extreme regulation [J]. *Journal of Banking & Finance*, Vol.37, No.5, 2013, pp 1508-1523.
- [16] Lin W C, Chang S C, Chen S S, et al. The over-optimism of financial analysts and the long-run performance of firms following private placements of equity [J]. *Finance Research Letters*, Vol.10, No.2, 2013, pp 82-92.
- [17] Goh J, Gombola M J, Lee H W, et al. Private placement of common equity and earnings expectations [J]. *The Financial Review*, Vol.34, No.3, 1999, pp 19-32.
- [18] Johnson S, Porta R L, Silanes L D, et al. Tunneling [J]. *American Economic Review*, Vol.90, No.2, 2000, pp 22-27.
- [19] Beuselinck C, Deloof M, Manigart S. Private equity involvement and earnings quality [J]. *Journal of Business Finance & Accounting*, Vol. 35, No.5, 2009, pp 587-615.
- [20] Chen A S, Cheng L Y, Cheng K F, et al. Earnings management, market discounts and the performance of private equity placements [J]. *Journal of Banking & Finance*, Vol.34, No.8, 2010, pp 1922-1932.
- [21] Hsu Y S, Chen C H, Liou C H. Insiders' subscription and the earnings management behavior of private equity offerings [J]. *African Journal of Business Management*, Vol.5, No. 11, 2011, pp 4531-4541.
- [22] Adams B, Carow K, Perry T. Earning management and initial public offering: the case of deposition industry [J]. *Journal of Banking and Finance*, Vol.33, No.12, 2009, pp 2363-2372.
- [23] Chang K, Wang S S, Huang J M. A New N-Factor Affine Term Structure Model of Futures Price for CO2 Emissions Allowances: Empirical Evidence from the EU ETS, *WSEAS Transactions on Business and Economics*, Vol.9, No.2, 2012, pp 81-88.
- [24] Chang K, Wang S S, Peng K, et al. The Valuation of Futures Options for Emissions Allowances under the Term Structure of Stochastic Multi-factors [J]. *WSEAS Transaction on System*, Vol.11, No.12, 2012, pp 661-670.
- [25] Wang S S, Huang J M, Chang K, et al. Idiosyncratic Volatility has an Impact on Corporate Bond Spreads: Empirical Evidence from Chinese Bond Markets [J]. *WSEAS Transaction on System*, Vol.12, No.5, 2013, pp 280-289.
- [26] Li G Q. The Optimal Stopping Times of American Call Options with Dividend-paying and Placing Stocks [J]. *WSEAS Transaction on Mathematics*, Vol.7, No.9, 2008, pp 569-578.
- [27] Shao J G, Wang J. Analysis of Chain Reaction between Two Stock Indices Fluctuations by

- Statistical Physics Systems [J]. *WSEAS Transaction on Mathematics*, Vol.9, No.11, 2010, pp 830-839.
- [28] Athina B. Modeling Cyprus Stock Market [J]. *WSEAS Transaction on Mathematics*, Vol.11, No.12, 2012, pp 1076-1084.
- [29] Petr H. Forecasting stock market trend using prototype generation classifiers [J]. *WSEAS Transaction on System*, Vol.11, No.12, 2012, pp.671-680.
- [30] Neri F. An introduction to the special issue on computational techniques for trading systems, time series forecasting, stock market modeling, and financial assets modelling [J]. *WSEAS Transaction on System*, Vol.11, No.12, 2012, pp. 659-660.
- [31] Neri F. Quantitative estimation of market sentiment: a discussion of two alternatives[J]. *WSEAS Transactions on Systems*, Vol.11, No. 12, 2012, pp. 691-702.
- [32] Bae K H, Kang J K, Kim J M. Tunneling or Value Added? Evidence from Mergers by Korean Business Groups [J]. *Journal of Finance*, Vol.57, No.5, 2002, pp 2695 -2740.
- [33] Bertrand B, Mehta M, Mullainathan S. Ferreting Out Tunneling: An Application to Indian Business Groups [J]. *Quarterly Journal of Economics*, Vol.117, No.1, 2002, pp 121-148.
- [34] Baek J S, Kang J K, Lee I. Business groups and tunneling: evidence from private securities offerings by Korean chaebols [J]. *Journal of Finance*, Vol.61, No.5, 2006, pp 2415-2449.
- [35] Cheung Y L, Rau P R. Tunneling, propping, and expropriation: evidence from connected party transactions in Hong Kong[J]. *Journal of Financial Economics*, Vol.82, No.2, 2006, pp. 343 -386.