The effects of Private placement on long-term shareholder wealth: empirical evidence from Chinese listed firms

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Abstract: - Cumulative abnormal return (CAR) is estimated as long-term shareholder wealth of private placement, and we propose empirical evidence of the effect of private placement on long-term shareholder wealth. Private placement of listed firms has significantly positive effect on long-term shareholder wealth. Cumulative abnormal return are positively related with offer type of private placement at the confidence of 95% level, and long-term shareholder wealth of private placement subscribed by non-cash assets is better than cash assets, cumulative abnormal returns of private placement are negatively related with the size of total assets and offer type at the significance of 95% level. On the basis of our empirical evidence, we propose the following advices, such as encouraging the subscription of stock shares of private placement, strengthening prominent assets quality of private placement, strengthening supervision and punishment of inner information transaction, and planning industry layout of corporate private placement etc.

Key-Words: - private placement; cumulative abnormal return; shareholder wealth; offer type; listed firms

1 Introduction

Private equity placement, also known as non-pubic offering is defined that listed firms issue stocks to the specific objects using non-public offering. 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. 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-pubic 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.

Compared with other refinancing ways, private equity placement has three unparalleled advantages: Firstly, based on keeping constant expansion pressures of current stock markets and avoiding secondary market shock. Listed firms can raise sufficient external capitals from equity-controlled shareholders, institutional investors and strategic investors using private equity placement. Secondly equity-controlled shareholders can pour quality assets into listed firms through private equity placement and higher-quality stock assets are introduced into capital market, which are helpful to reducing re-investment time and future related party transactions, enhancing sustainable profitability and

independence of listed firms. Thirdly regulatory section need lower information disclosure of private equity placement and implement easy audit procedures, which are helpful to saving financing costs and time and protecting commercial secrets of listed firms, than saving government regulatory resources.

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 controlling shareholders, actual controlled-shareholders and related 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 controlling 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. Hertzel 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]. Hertzel 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]. Hertzel, 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]. Cronpvist 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 controlling 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. Hertzel 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.

The central question of private equity placement is how to determine the issue price of private placement. Rational issue price and price discount are directly related to the vital interests between old and new shareholders, and are related to the successful implement of private placement program. Reasonable pricing of private placement is reflected by price discount level of private placement. 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 controlling 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]. 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 [18]. 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 [19]. 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 [20]. 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 [21]. 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_2 emissions allowances, and estimate the theoretical futures options valuation by using historical market information [22]. Chang et al. (2012) find that term structure of stochastic multi-factors has a significant effect on futures options valuation for CO_2 emission allowances, and estimate the theoretical futures options valuation by using historical market information [23]. Wang, Huang and Chang (2013) use panel data of weekly corporate bond yields and the fixed effect model with variable intercept [24]. 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. Chang (2013) propose the market behavior of convenience yields and examine the options feature of convenience yields for emission allowances, their empirical evidence show market participants can flexibly adjust portfolio policies of emission allowances assets and achieve extra market arbitrage revenues through exchanging emission allowances assets between spot and futures [25]. 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]. 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, share-holding ratio owned by larger controlling shareholders and market reaction of new stock of private placement. Larger controlling 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 controlling shareholders.

Interests tunneling between equity-controlled shareholders and minority shareholders are a hot topic in the field of corporate governance. Johnson and Porta et.al (1999) refer to the transfer of resources out of a company to its controlling shareholder [32]. 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 [33]. 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 [34]. Kim (2009) find that wealth tunneling will occur in low-cash-flow-right firms, but not in high-cash-flow- right firms, to provide support to poorly performing firms [35]. Liu and Lu (2007) examines the relation between earnings management and corporate governance in China introducing a tunneling perspective, their empirical results demonstrate that firms with higher corporate governance levels have lower levels of earnings management, listed firms have strong incentives to manage earnings in order to meet certain return on equity (ROE) thresholds, and earnings management is the most conspicuous[36]. Cheung, Rau and Stouraitis (2006) propose that firms announcing connected transactions earn significantly negative excess returns, significantly lower than firms announcing similar arm's length transactions, and then their results show that limited evidence that firms undertaking connected transactions trade at discounted valuations prior to the expropriation [37]. Dow and McGuire (2009) find evidence of profit tunneling of more weakly affiliated keiretsu firms during strong economic times, the motivation behind strengthened affiliation appears primarily linked to the goal of overcoming financial constraints by accessing the internal capital market of the business group [38]. Peng, Wei and Yang (2011) employ connected transaction data from China to test the implications of Friedman et al. (2003)' model, and find that all of the transaction types in our sample can be used for tunneling or propping depending on different financial situations of the firms, political connection is negatively associated with the announcement effect[39]. Riyanto and Toolsema (2008) links existence of the pyramidal ownership structure to tunneling and propping, their empirical results show that tunneling alone cannot justify the pyramidal structure unless outside investors are myopic, since rational outside investors anticipate tunneling and adjust their willingness-to-pay for the firm's shares [40].Francisco (2009) examine a 6-year sample of controller-dominated, concentrated ownership firms in Chile, his results show that group-affiliated companies, controllers' presence on the board of directors is associated with a strong negative relation between chair and board compensation and controllers' cash-flow rights, controllers of group-affiliated companies prefer to increase chair and board compensation rather than dividends as their cash-flow rights decrease [41].Hájek and Neri(2013), Azzouzi and Neri(2013), Bojkovic and Neri(2013) propose an introduction of spessial issue on computational techniques for trading systems, time series forecasting, stock market modeling, financial assets modeling, advanced control of energy systems, advanced control methods: Theory and application and recent methods on physical polluting agents and environment modeling and simulation [42-46].

Those scholars at home and abroad pay much attention on announcement effects, wealth tunneling or propping stock market reaction and earning management, however few scholar in China pay little attention on long-run shareholders wealth of listed firms after private equity placement, subscribing ways from different private placement objects and firms size are significantly related with long-run shareholding wealth after private placement.

The remainder of our paper is organized as follows. Section 2 presents theoretical analysis anpothesis development. Section 3 shows data source. Section 4 analyses variables definition and model development. Section 5 proposes empirical evidence of the effect of private equity on long-term shareholders wealth. Section 6 provides a brief conclusion.

2. Theoretical analysis and hypothesis development

Private equity placement involve strict constrains in private placement objects and placement shares circulation, placement objects such equity-controlled shareholders, institutional investors and strategic investors seek additional interests compensation for market risks and internal motivation loss. Profitability and shareholder wealth are important factors for listed firms to select private equity and public issuing ways. Corporate governance structure and ownership structure in Chinese capital markets environment have greater divergent, financing ways of listed firms is affected by private equity policy.

Hypothesis 1: Private equity of listed firms has a positive effect on long-term shareholder wealth.

Based on signal delivering theory, inner investors capturing more information deliver related information to outer investors in firms' decision-making process, outer investors who receive related decision information will make reasonable analysis and judgment, and then improve their investment decision. Main private equity object have minority controlling shareholders, related shareholders and

institutional investors, minority larger shareholders and related shareholders can direct and indirect join in operating process of listed firms and understand future development strategy, institutional investors have strong incentive to acquire operating information of listed firms, and then make scientific and corrective investment decision and value judgment. Minority larger shareholders and related shareholders subscribe private equity stock, and transmit positive information for outer investors. Market value of listed firms is seriously undervalued, and this firm has better development potentiality and future profitability, outer investors have strong investment confidence and actively buy stock form secondary stock markets, and then enhance stock prices. On the basis of supervision effect theory, institutional investors have strong incentive to supervise managers and incline agency costs between managers and shareholders, and then increase firms' market value. In brief, listed firms present private equity placement shares, when larger shareholders, related shareholders and institution investors subscribe private palcement shares, main information is transferred. Market value of listed firms is seriouly undervalue, these firms have good future and own most protential investment projects, and their profitability exhibit an increasing trend. Outer investors receive good signals, insrease stock shares , and then promote stock price increasing.

Hypothesis 2: long-term shareholders wealth of private equity subscribed by non-cash ways is better than private equity subscribed by cash ways.

Based on subscription ways, private equity way in China have non-cash subscription and cash subscription. If institution investors pour cash into listed firms and subscribe private placement shares, listed firms invest excellent projects and control shareholders' equity using these cash, and achieve predominant assets and increase their profitability. When minority controlling shareholders and related shareholders pour their predominant assets into listed firms, those original assets may achieve market circulation and reduce law risk and market risk in the operating process. Merged superior assets of related shareholders, listed firms reduce external dependence and improve production and business independence, strengthen the ability of controlling central assets and technology, and then achieve scale affects of corporate development and improve long-run market value of listed firms. Related shareholders may strengthen managers' supervisions, incline agency costs and unnecessary loss with an increase of share-holding ratio. In brief, larger shareholders increase holding-shares ratio using private placement, and pour excellent assets, market value of listed firms have an increasing trend. As a result, we propose long-term shareholder wealth of private placement subscribed non-cash ways has better increasing speed than private equity subscribed by cash ways

3 Data source

Private placement is the most important way for listed firms to refinance equity after share-split reform. In order to examine the effects of private placement on long-run shareholders wealth, we select 324 firms issued private placement as empirical data samples in Chinese Shanghai and Shenzhen exchange platform from June 6, 2006 to June 6, 2010. Data samples are sourced from CSMAR Solution platform in Shenzhen, CNINF Solution platform and GENIUS Finance platform. We filter and delete those data samples in order to feasibility and correctness of empirical evidence. Firstly, we choose private equity sample of Share A for different pricing method among share A , B and H. Secondly, we delete listed firms in finance and assurance industry, their capital source and operating scope have greater difference compared with listed firms in other industries. Thirdly, if listed firms carried out more than twice private placement in the data-covering period, we choose first private placement as sample events. Fourthly, we filter private placement events with data-missing and individually extreme variable. Fifthly, listed firms may not disclose greater events such as shareholders meeting, the broad announcement, annual reporting and bonus plan etc, those events have significant impact on stock price. Sixthly, listed firms carry out private placement without refinance behavior such as rationed shares, convertible bonds etc, those refinancing behaviors have significant effect on stock price.

4 Variables definition and model development

Institution investors pay much attention on long-term development and firms' performance, they can strengthen the constraints of agency behavior for firm managers in order to maintain self-interests. Institution investors have sufficient ability and strong motivation to prevent larger controlling shareholders invade firms interests and to urge senior managers diligence. When institution investors subscribe stock shares after private equity placement, firm managers wish reduce behavior constraints from institution investors. Accordingly

when institution investors subscribe certain stock shares, larger controlling shareholders wish make a higher private placement price in order to decrease shares ratio of institution investors.

When greater price discount subscribed by larger controlling shareholders and institution investors have two wealth effects [17]: firstly, wealth tunneling effect is a way that larger controlling shareholders can transfer wealth from minority shareholders through subscribing greater price discount of private equity placement. Secondly, wealth dilution effect is a way that earnings per share of larger controlling shareholders reduce for equity dilution after private equity placement. From the above analysis theory, larger controlling shareholders have many interests coordination with minority shareholders. Whether wealth transferring effect or wealth dilutting effects is decided by net equity difference between original holding-share ratio and subscribing-share ratio of larger controlling shareholders.Wealth transferring-effect is significant with an increase of original share-holding ratio, while wealth diluting-effect is significant with an increase of subscribing-share ratio.

This paper chooses that cumulative abnormal return (CAR) estimate long-term stock prices of private equity. Offer type defines that market investors select the type of subscribing stock shares in private equity, 1 denotes subscribed using non-cash assets, 0 denotes subscribed using cash assets. Financial leverage (LEV) defines asset-liability ratio of private equity at the previous year-end, listed firms with greater asset-liability ratio reduce agent costs between shareholders and creditors and offset tax and own better financial leverage, market investors believe that greater asset-liability ratio can improve market value of listed firms and inner managers deliver active market signals. Firms' asset size define the nature logarithm of total book value of firms' assets at the previous year-end, market investors can gain more extra market information with an increase of assets size and then decrease information asymmetry and agent costs. Relative size of private equity defines that the ratio of total share quantity of private equity divided by total share quantity owned by listed firms. Listed firms with higher shares quantity of private equity imply greater uncertainty of financial performance in the future, and market investors spend greater information collecting costs. Returns of net assets (ROE) define the ratio of profit after tax divided by net assets at the previous year-end. Book-market value ratio (BM) defines book value of total assets divided by their market value at the previous year-end. Based on the above theoretical analysis, we propose the following model.

$$CAR = \alpha_0 + \alpha_1 Offertype + \alpha_2 Size + \alpha_3 Rsize + \alpha_4 Lev + \alpha_5 Roe + \alpha_6 Bm \quad (1)$$

Where α_0 is the intercept term, $\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5, \alpha_6$ are the coefficients of variables offertype, size, rsize, lev, roe and bm.With an increase of holding-share ratio owned by controlling shareholders and institution investors, lager controlling shareholders and institution investors cannot be restrained by other circulating-stock shareholders in the process of management decisions. In the emerging capital market, market scheme scarcity, share-split problems and inadequate supervision can bring about absonant interests between larger controlling shareholders, institution investors and minority shareholders. From the theoretical analysis, the interests of controlling shareholders and institution investors are closely associated with stock prices of listed firms, accordingly larger controlling shareholders, institution investors and minority shareholders have joint interests. Due to stronger-controlled condition of larger controlling shareholders and institution investors, they have stronger motivation to invade interests of minority shareholders. It is possible for larger controlling shareholders and institution investors to meet self-interest and invade interests of minority shareholders through greater price-discounts of private equity placement.

Share-holding ratio owned by institution investors are diluted and firm wealth owned by institution investors is transferred away by larger controlling shareholders. Accordingly larger controlling shareholders can transfer firm wealth from those institution investors and circulating shareholders outside. When institution investors subscribe overall private placement shares, compared with other two way of subscribing private placement shares, institution investors can attain the greatest wealth-transferring effects from the controlling shareholders and minority shareholders outside. Firm wealth transferring effects owned by larger controlling shareholders exhibit an increasing trend with an increase of price discount ratio and holding-share ratio subscribed by controlling shareholders. In the event of larger controlling shareholders and institution investors participation, wealth transferring effects are closely related with the

greater price discount ratio of private placement and the larger difference between share-subscribing ratio after private placement and original share-holding ratio owned by controlling shareholders and institution investors. Larger controlling shareholders and institution investors have greater incentive to transfer firm wealth through private equity placement with an increase of the degree of interest deviation among larger controlling shareholders, institution investors and minority shareholders outside.

5 empirical evidence of the effect of private placement on long-term shareholder wealth

5.1 Statistical analysis of long-term shareholders wealth

Seen from the table 1, the mean of CAR12 and CAR36 of private placement are 0.157104 and 0.423603, and the mean of CAR12 is less than the mean of CAR36, those results exhibit that private placement issued by listed firms has positive impact with long-term shareholder wealth. The standard deviation of CAR12 and CAR36 are 0.374586 and 0.538203, those results show that private placement lead to larger shareholder wealth, and stock volatility of VAR12 is greater than CAR36. those empirical evidences support hypothesis 1.

Table 1: statistical analysis of cumulative abnormal return of corporate private placement

varriables	CAR12	CAR36
mean	0.157104	0.423603
maximum	1.646904	2.049960
minimum	-0.697936	-0.651652
Standard deviation	0.374586	0.538203
samples	324	324

Note: CAR12 denotes cumulative abnormal return of corporate private placement from previous 1 to 12 months. CAR36 denotes cumulative abnormal return of corporate private placement from previous 1 to 36 months.

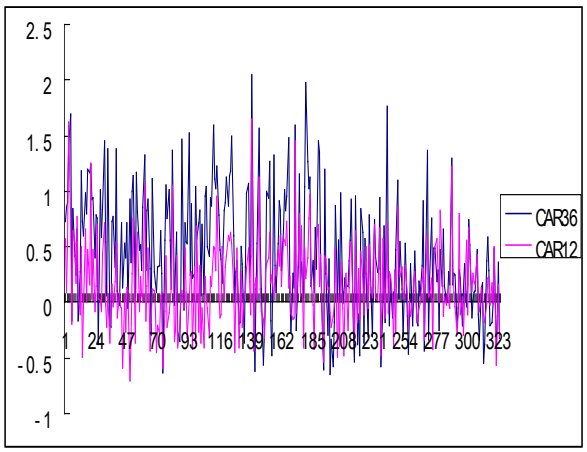

Fig.1 cumulative abnormal return

5.2 The effect of private placement on long-term shareholder wealth

Seen from the table 2, the offer type of private placement are positively related with CAR12 and CAR36, their related coefficients exhibit significant at the confidence of 95% level, those results show that long-term shareholder wealth of private placement subscribed by non-cash assets is better than cash assets, and this empirical evidence supports hypothesis 2. Compared with the offer type of cash assets, the offer type of non-cash assets can pure excellent assets into listed firms, can reduce the problems of related transaction and similar competition. If merged assets are significantly related with upstream and downstream industry of listed firms, listed firms can reduce outer dependence and improve firms' competitive ability. Listed firms poured prominent assets by controlling shareholders can enhance continuable profitability and their long-run market values, those signals can improve long-term shareholders wealth. Cumulative abnormal returns of private placement are negatively related with the size of total assets and offer type at the significance of 95% level, cumulative abnormal return of private placement incline with an increase of assets size and offer type size, and the incline of CAR36 is greater than CAR12.

Table 2: empirical evidence of the effect of private placement on long-term shareholder wealth

Variables	CAR12	CAR36
α_0	1.660507^{***}	3.495082^{***}
	(4.0020)	(5.9299)
α_1	0.055319^{**}	0.022532^{**}
	(2.1465)	(2.3287)
α_2	-0.069111^{***}	-0.139023^{***}
	(-3.6704)	(-5.1976)

α_3	-0.086306**	-0.187890**
	(-2.5842)	(-1.8954)
α_4	-0.059273*	-0.084195*
	(-1.7390)	(-1.7390)
α_5	-0.022883	0.071667
	(-0.3593)	(0.7921)
α_6	-0.017744	0.035432
	(-0.3021)	(0.4246)

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

In the emerging capital market, market scheme scarcity, share-split problems and inadequate supervision can bring about absonant interests between larger controlling shareholders, institution investors and minority shareholders. From the theoretical analysis, the interests of controlling shareholders and institution investors are closely associated with stock prices of listed firms, accordingly larger controlling shareholders, institution investors and minority shareholders have joint interests. Due to stronger-controlled condition of larger controlling shareholders and institution investors, they have stronger motivation to invade interests of minority shareholders. It is possible for larger controlling shareholders and institution investors to meet self-interest and invade interests of minority shareholders through greater price-discounts of private equity placement.

6 conclusion and policy advice

This article present the cumulative abnormal return (CAR) is estimated as long-term shareholder wealth of private placement, and we propose empirical evidence of the effect of private placement on long-term shareholder wealth. Private placement of listed firms has significant impact on long-term shareholder wealth. Based on asymmetric information theory and signal delivery theory, outer investors believe that private placement decided by corporate managerial level exhibit strong development potential and profitability, meanwhile controlling shareholders can capture inner favorable information. Those investors subscribe the stock share of private placement, those signals exhibit that these firms owner excellent market value and investment returns. Cumulative abnormal return are positively related with offer type of private placement at the confidence of 95% level, and those results support hypothesis 1. Minority larger shareholders subscribe private equity sshares, this firm has better development potentiality and future profitability, outer investors actively buy stock form secondary stock markets, and then enhance stock prices. Institutional investors have strong incentive to supervise managers and incline agency costs between managers and shareholders, and then increase firms' market value.

Long-term shareholder wealth of private placement subscribed by non-cash assets is better than cash assets, cumulative abnormal returns of private placement are negatively related with the size of total assets and offer type at the significance of 95% level. The offer type of non-cash assets can pure excellent assets into listed firms, and merged assets are significantly related with upstream and downstream industry, listed firms can reduce outer dependence and improve firms' competitive ability. Minority controlling shareholders pour their predominant assets into listed firms, reduce law risk and market risk in the operating process, incline external dependence and improve production and business independence, strengthen the ability of controlling central assets and technology, and improve long-run market value of listed firms.

On the basis of our empirical evidence, we propose the several following advices. Firstly, our government should encourage that minority controlling shareholders subscribe stock shares of private placement and pour excellent assets into listed firms. Listed firms can enhance long-run market value and strengthen competitive ability and then improve long-term shareholder wealth. Secondly, our government should strengthen prominent assets quality of private placement, should propose profitability forecast and related compensation system, broaden public medals and administrations supervise poured assets quality. Thirdly, our administration should strengthen supervision and punishment of inner information transaction and related information disclosure. Stock exchange platform, supervision institution and intermediary service organizations strengthen inner information supervision, enhance punishment efficiency and improve information disclosure quality. Fourthly, our government should reasonably plan industry layout of corporate private placement..

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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] Hertzel 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] Hertzel M, Rees L. Earning and risk changes around private placements of equity [J]. *Journal of Acounting, Auditing & Finance*, Vol.25, No. 1998, pp 21-35.

[4] Hertzel 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] Cronpvist H, Nilsson M. The choice between rights offerings and private equity placements[J]. *Journal of Financial Economics, Vol.* 78, N0.2, 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: invest -ment 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, AraújoTavares 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] 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.

[19] 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, pp1922–1932.

[20] 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.

[21] 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.

[22] 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.

[23] 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.

[24] 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.

[25] Chang K. Convenience yields and arbitrage revenues of emission allowances between

spot and futures [J]. *WSEAS Transaction on System*, Vol.12, No.11, 2013, PP 551-560.
[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] Johnson S, Porta R L, Silanes L D, et.al. Tunneling [J]. *American Economic Review*, Vol.90, No.2, 2000, pp 22-27.
[33] 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.
[34] 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.
[35] Kim K J. Financial Reporting by Business Groups and the Market's *Ex ante* Valuation of Tunneling:Evidence from Korean Chaebols [J]. *Asia-Pacific Journal of Financial Studies*, Vol. 38, No.4, 2009, pp 575-610.
[36] Liu Q, Lu Z J. Corporate governance and earnings management in the Chinese listed companies: A tunneling perspective [J]. *Journal of Corporate Finance*, Vol.13, No.5, 2007, pp881-906.
[37] Cheung Y L, Rau P R, Stouraitis A. 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.*
[38] Dow S, McGuire J. Propping and tunneling: Empirical evidence from Japanese keiretsu [J]. *Journal of Banking & Finance*, Vol.33, No.10, 2009,pp 1817–1828.
[39] Peng W Q, Wei K C J, Yang Z S. Tunneling or propping: Evidence from connected transactions in China [J]. *Journal of Corporate Finance*, Vol.17, No.2, 2011, pp 306–325.
[40] Riyanto Y E, Toolsema L A. Tunneling and propping: A justification for pyramidal ownership [J]. *Journal of Banking & Finance*, Vol.32, No.10, 2008,pp 2178–2187.
[41] Francisco U I. Too few dividends? Groups' tunneling through chair and board compensation [J]. *Journal of Corporate Finance*, Vol.15, No.2, 2009, pp 245-256.
[42] Hájek P, Neri F. An introduction to the special issue on computational techniques for trading systems, time series forecasting, stock market modeling, financial assets modeling[J]. WSEAS Transactions on Business and Economics, Vol.10,No. 4, 2013, pp. 201-292.
[43] Azzouzi M., Neri F. An introduction to the special issue on advanced control of energy systems[J].WSEAS Transactions on Power Systems, Vol.8,No.3, 2013, p. 103.
[44] Bojkovic Z., Neri F. An introduction to the special issue on advances on interactive multimedia systems[J]. WSEAS Transactions on Systems, Vol.12 ,No.7, 2013, pp. 337-338.
[45] Pekař L, Neri F. An introduction to the special issue on advanced control methods: Theory and application[J].WSEAS Transactions on Systems, Vol.12,No. 6, 2013, pp. 301-303.
[46] Guarnaccia C, Neri F. An introduction to the special issue on recent methods on physical polluting agents and environment modeling and simulation [j].WSEAS Transactions on Systems, Vol.12,No.2, 2013, pp. 53-54.