Over-issuance, IPO Anomalies, and Investment Efficiency: Evidence from China

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Abstract:

In this study we explore how over-issuance for IPO firms in China affects the IPO anomalies (i.e. short-run high initial return and long-run underperformance), investment inefficiency and investment-cash flow sensitivity in sampling period of 1993-2014. The result indicates that over-issuance has insignificant impact on the long-run underperformance, investment efficiency and investment-cash flow sensitivity for SOEs. However, for private IPO firms the investment-cash flow sensitivity and long-run underperformance are attenuated and for low degree of over issuance but accentuated for high degree of over issuance. The result implies that moderate over-issuance help ameliorate the adverse impact of the information asymmetry between issuing firms and outsiders. In contrast, extreme over- issuance aggravates the agency costs embedded in free cash flow from over- issuance.

1. Introduction

The Chinese stock market has been strictly controlled ever since its inception of the Shanghai Stock Exchange in 1990 and the Shanghai Stock Exchange in 1991. The highly regulated market has been constantly noted by enormous initial returns and long-run underperformance. These anomalies associated with IPOs in China are not only attributed to market imperfection that includes information asymmetry and overreaction but also governmental interventions including quota system and the limit for offer price setting. At that time it was not unusual to find that listing firms engage in earnings management for the purpose of higher offer price. The quota system and the limit for offer price setting were abolished in 1999. The abolishment somewhat ameliorates the enormous initial returns. However, the average initial return remains 50%, significantly higher than those of other markets. A recent anomaly that has drawn public attentions but has not been fully explored in academics is over financing, meaning that issuers raise much more than their planned investment. One of the main reasons why over financing has not been fully investigated is that in the western societies there is no strict regulation to examine whether the use is concordant with the claimed use of funds from IPOs.

Over-issuance means that issuers raise funds much more than their planned investment. The phenomenon has drawn public attentions. For raising more funds from IPO, issuers are willing to pay higher fees and an even much higher fee for the portion of over-issuance. This motivates underwriters to pursue high issuing prices and raise more proceeds than the issuer's need. The splendid natural experiment allows us to see how the overflow of fund into a firm would affect its follow-on

policies. Specifically, in this study we investigate the impact of over issuance on investment-cash flow sensitivity that was firstly illustrated by Fazzari, Hubbard, and Petersen (1988).

According to Fazzari et al. (1988), the close linkage between a firm's investment and cash flow is based on the premise that internal and external capital are not perfect substitutes in the sense that internal funds have a cost advantage over external fund. Under this circumstance, firms' investment and financing decisions are interdependent. In fact the inflow of unexpected fund engenders two issues: amelioration of financial constraint and aggregation of free cash flow. The former reduces the possibility of underinvestment while the latter increases the possibility of overinvestment[1]. If the cash overflow from IPO over issuance help ameliorate underinvestment problems or mitigate the adverse impact of financial constraint, we would expect that IPO over issuance helps attenuate the positive investment-cash flow sensitivity. In contrast, if the overflow of cash happens to give chances for managers to squander more money in value-destroying projects, the IPO over issuance might accentuate the positive investment-cash flow sensitivity. Which one would prevail remains an empirical issue.

Chinese IPO provides a splendid platform to investigate this issue, and that is mainly indebted to the unique feature of Chinese IPO mechanism. In our sampling period, all Chinese IPO issuers have to obtain the permission from the Chinese

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[1] The overinvestment hypothesis, firstly indicated by Jensen (1986), suggests that managers who are subjected to agency problems might over utilize their discretion as to overinvest in value-destroying projects. The underinvestment hypothesis, based on the asymmetric information between issuing firms and external investors, indicate that financially-constrained firms might forsake positive NPV project due to the restriction of locating external financial sources (Jensen, 1986; Jensen and Meckling, 1976; Myers and Majluf, 1984; Stiglitz and Weiss, 1981).

Securities Regulation Committee (CSRC). They need to clearly specify the expected dollar amount of investment, the expected raised fund for investment, and the number of shares expected to be sold in this issuance. This information has been available from the CSRC website since 2009. After permission, underwriters do the roadshows and engage in the bookbuilding process. The final proceeds are obtained from the multiplication of final issuing price and the number of issuing shares. Therefore, over-issuance could be alternatively defined by comparing IPO proceeds with expected investment or expected raised fund.

As compared to prior studies, the use of the forum of Chinese IPOs is associated with the following advantages. First, excessive fundraising is a global phenomenon (Loughran et al., 1994) and over-issuance is commonly seen in Chinese IPO market. Our empirical results could provide readers a systematic understanding of the possible impact of overflow of cash on the firm's policies. Second, our empirical results could possibly disentangle or contrast the favorable impact of low-level over-issuance that help ameliorate the adverse impact of financial constraint from the adverse impact of high-level over-issuance that punctuates the self-dealing manager's agency problem. Third, the overflow of cash might be endogenously related to the firm's level of investment. Our selection of the IPO firms could substantially reduce the endogeneity concern because for these IPO firms that are with little prior information for outside investors to smear the value of the claimed investment, the overflow of cash is less likely to be affected by the claimed investment.

Our empirical results could be easily summarized as follows. First, in general

over-issuance has insignificant impact on the investment-cash flow sensitivity for SOEs. This is probably due to the fact that SOEs were highly regulated and less financially constrained in the first place. Therefore, the overflow of cash has little impact on them. Second, for private IPOs the sensitivity is attenuated for IPOs with low-level over-issuance but accentuated for IPOs with high-level over-issuance. The result implies that moderate over-financing help ameliorate the adverse impact of the information asymmetry between issuing firms and outsiders. In other words, low-level over-issuance in a certain sense creates the value of financial slack, documented in Myers and Majluf (1984), so as to mitigate the underinvestment problems that are attributed to information asymmetry. In contrast, high-level over-issuance aggravates the agency costs embedded in free cash flow, and therefore accentuate the investment-cash flow sensitivity.

2. Institutional Background of China IPO

China stock market has been striking a dedicated balance between planned and market mechanisms. Ever since the inception of the Shanghai stock market in 1990 and the Shenzhen stock market in 1991 the government has imposed different forms of intervention including quota system, the limit for offer price setting, the split-share structure allowing the coexistence of tradable and non-tradable shares[2].

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[2] The spilt-share structure denotes a particular phenomenon in which tradable and non-tradable shares coexist in the market. The existence of non-tradable shares is due to the following two reasons. First, the government partially privatized some SOEs in early 1990s. To prevent assets loss or control dilution, the government stipulates that non-tradable shares mainly held in the hands of the government and its affiliates are not allowed to trade in the market. Moreover, the Company Law also stipulates that the original shareholders of private companies are associated with a vest period of three years. The spilt-share structure has not been reformed until April 2005. The reform allows non-tradable shareholders to bargain with and pay "compensation" to tradable shareholders for gaining the right to trade.

Moreover, the IPO market could be suspended due to a downturn market[3], a reduction of governmental shareholding[4], share reform program[5], financial crisis[6], and financial inspection[7]. The risk associated with the China IPO market results in enormous honeymoon effect. The initial returns for the UK or US IPOs is lower than 20%[8], which is incomparable to 247% associated with China's IPOs in the period of 1992-2004 (Tian, 2011)[9].

Even though over-issuance was a long-run phenomenon, it has not been widely noted until the Growth Enterprise Markets (GEM) was initially inducted on October 30, 2009. The IPO shares listed in GEM was noted for their high offer price, high price-to-earnings ratio, and high IPO proceeds. It is not unusual to find that the proceeds collected from GEM IPOs almost 1.5 times of the claimed investment. The phenomenon of over-issuance has drawn serious public concerns. How bad is the phenomenon? According to Wan (2014), among 934 IPOs since 2009, there were 824 IPOs (88.22%) characterized as over-issuance. The over-issuance of 406.4 billion RMB amounts to 40% of the proceeds collected from IPOs. Almost 40% of the

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[3] For example, the IPO market unexpectedly stopped due to a significant drop of 339 in the Shanghai Composite Index in July 28, 1994.

[4] The stock market experienced a significant drop in index from 2245 in June to 1520 in October 20 when the State Council announced the rules of reducing SOE shareholdings in June 22, 2001. The IPO market again stopped in October 22.

[5] The IPO market stopped during the period of launching the share reform program taking place between May 25, 2005 and June 2, 2006.

[6] The event of the Lehman Brother Inc. taking place in September 2008 results in the global financial crisis and a significant drop in the market index from 6124 to 1664. The IPO market stops for almost one year from September 2008 to July 2009.

[7] In December 2012 the China Securities Regulatory Commission announced there will be a significant regulatory change after examining the financial reports of IPO firms. The stock prices of A and B shares significantly declined. Inasmuch, the IPO market was tentatively suspended in the period from November 2012 through January 16 2014.

[8] Liu and Ritter (2010) investigate US IPOs in the period of 2001-2008 and find that the average initial return is 12%. Chambers and Dimson (2009) find that the average return for UK IPOs in the period of 1987-2007 is 19%.

[9] Other than Tian(2011), Mok and Hui (1998), Su and Fleisher(1999), Chan et al.(2004), and Chang et al.(2008) also indicate the enormous initial returns associated with China's IPOs in the range of 142%~949%.

overissuing dollar amount has not been fully utilized after 4-5 years post IPO.

What might cause the phenomenon of over-issuance? Some indicate that it closely related to market cyclicality (e.g. Li, 2010; Jiang and Li, 2010). Over-issuance is more likely to occur in bullish markets than in bearish markets. Suffice that the offer price is not preset and jointly determined by participants, the real proceeds would be higher than the planned investment in bullish markets. Moreover, there were many industry-leading IPOs after the reopen of IPO market in June 2009. These IPOs were associated with growth potentials and highly appraised by investors. Investors were zealous for these IPOs even though the average price-to-earnings ratio has been 42 in the mainboard market, 50 in the small board market, and 68 in the growth enterprises market. The oversubcription was once as high as 173.64 times for the small board market. For comparison, the oversubsription of more than 10 times is quite unusual in other sophisticated markets.

Although over-issuance is a global phenomenon (Loughran et al., 1994), it serves as a major channel for Chinese listed firms to mitigate financial constraints[10]. The Shanghai and Shenzhen stock markets, established in 1990 and 1991, have covered 1,834 listed firms with the total market capitalization of around 6 trillion USD, according to the statistics from World Bank in the recent period of 2011-2015. The number of listed firms almost doubled in one decade, from 1,224 in 2002 to 2,342 in 2011.

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[10] Most Chinese firms have limited access to formal financial sources (Hallward-Driemeier et al., 2003; Allen et al., 2009; Ding et al., 2013). The inaccessibility of adequate financial sources is more pronounced found in privately owned firms. In fact, China was ranked by the World Business Environment Survey (WBES) the top three countries that private firms encounter financial constraints.

Despite its remarkable development, China's stock market has long been criticized for being highly regulated. All IPOs are primary share offerings since the regulation 1993 stipulates that initiators' shares shall not be transferred within one year as of the day of the firm's corporation. After the abolishment of quota system in July 1999 all IPO firms need to engage an investment banker and with its help submit IPO applications. The application should contain detailed information regarding the issue price, the number of primary shares to be sold, planned investment, and the amount of capital required for investment projects. Once the IPO is approved, this information will be disclosed in the IPO prospectus. The reviewing process of CSRC usually takes 3 to 9 months. The CSRC would set a P/E cap that is much lower than the contemporary market P/E so as to attract investors into the primary market.

Starting at 2005, bookbuilding became the mandatory underwriting procedure for every IPO. Theoretically, issue prices should be determined after a bookbuilding period. However, the CSRC remained to set P/E cap at 30 for IPO firms (Gao, 2010). A true reform took place in June 2009, when the CSRC totally left the determination of the issue price to issuers, investment banks, and investors.

After obtaining approval from the CSRC, the bookbuilding procedure proceeds by inquiring institutional investors of the possible prices and number of shares they are willing to subscribe. The final issue price and the number of shares to be issued are finally determined by the issuer and the associated underwriter. The number of issuing shares should not exceed the number that has been approved by the CSRC. That is, once the application is approved, issuers can only decide to issue fewer shares than what has been authorized. The issue price is not allowed for adjustment.

Before June 2009 when P/E cap was still applied, the issue price was known at the time of submitting IPO application so that total proceeds were nailed down at the application and would not largely exceed the amount planned to be raised. However, after June 2009 when the issuing P/E cap was lifted, the issue price was not known until the end of bookbuilding procedure. When the price indicated by investors in the price inquiry largely exceeded that estimated by issuers, issuing shares at the planned number will result in much more capital than what is needed- over-issuance. Though issuers could reduce the number of issuing shares, all issuers in practice would not do this.

Not until, every IPO issuer was required to select an investment bank as the lead underwriter. The lead underwriter has to organize the whole IPO process, including condition consultation, validation of the accuracy of submitted materials, and together with issuers on the decision of the issue price and the number of issuing shares. Underwriters usually would promise to follow up the issuing firms after listing. The first noted difference from the Western market is that underwriters in China have no discretion to allocate the newly issued shares. Another difference is that at least 50% of the newly issued shares need to be sold to individual investors. This is in sharp contrast with the Western markets where more than 70% of the newly issued shares are sold to institutional investors.

As to underwriting fee, the CSRC mandated the range of 1.5%-3% of total gross IPO proceeds in 1996. In March 2004, the fee restriction was released to be freely negotiated by issuers and underwriters. The fee could be flat, a function of actual capital raised or of over-issuance.

State-owned enterprises (SOE) comprise most of Chinese domestic stock market in the early years[11]. Private firms gradually pick up the pace and finally dominate the IPO market in recent years. 2003 was the first year that the number of private IPOs firstly exceeded that of SOE IPOs. After 2003, private IPOs became the major composition of the Chinese IPO market.

3. Literature Review and Hypothesis Development

The over-issuance phenomenon has not drawn wide attention until the induction of SME market on October 30, 2009, especially for the witness of the controversial three "highs"- high offer price, high price-to-earnings ratio, and high amount of IPO proceeds. The over-issuance could be 1.5 times of the planned investment illustrated in firm's prospectus. How serious is the over-issuance problem in China? According to Wan (2014), among 934 IPOs since 2009 there were 824 IPOs (88.22%) are associated with over-issuance. The over-issuance amounts to 406.4 billion RMB in total, and is equivalent to 40% over the issuance proceeds. A further trace of the post-IPO investment indicates that almost 40% of the proceeds have not fully used.

3.1 Over-issuance and Shot-term Initial Returns

The phenomenon of high initial returns associated with Chinese IPOs has been noted before 2009. Though it has mildly reduced since 2009, people's attention was redirected to the new three "highs" phenomenon- high offer price, high price-to-earnings ratio, and high IPO proceeds. According to the rules of IPO in China,

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[11] Till the end of 2005, 93% of IPOs in China were initiated by SOEs (Huyghebaert and Quan, 2009).

all IPO firms need to explicitly specify the items and the planned dollar amount of investment. The maximum number of issuing shares has to be explicitly identified in the prospectus. Over-issuance is therefore defined as the difference between the real dollar amount of issuance and the planned dollar amount of financing:

IPO over-issuance = real dollar amount of issuance − planned amount of financing

= (offer price * real shares of issuance − planned offer price *

planned maximum number of shares issuance)

Over-issuance ratio is further defined as follow:

IPO over-issuance ratio = (real dollar amount of issuance − planned dollar amount of

financing)/ planned amount of financing

The planned offer price is obtained by dividing the planned dollar amount of financing by the maximum number of shares issuance. In other words, if the real number of shares issuance equals to the planned maximum number of share issuance[12] ，the over-issuance ratio could be redefined as follow.

IPO over-issuance ratio = (real offer price − planned offer price) / planned offer price

The over-issuance ratio is higher when the offer price is higher and/or the planned offer price is lower. The initial return is defined as the difference between initial price (that is the price of the first listing day) and the offer price divided by offer price.

Initial return = (initial price − offer price)/ offer price

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[12] There are 1719 (95.4%) out of the 1802 IPOs used in this study showing that the real number of shares issuance equals to the maximum number of shares issuance.

The initial return is higher when the offer price is lower and/or the initial price is higher. The higher initial return could be due to the lower offer price and/or the higher initial price. It could be due to the bias of higher initial price is much more the bias of higher real offer price. Moreover, the higher over-issuance ratio could be due to the lower of planned offer price and/or the higher real offer price. It could be due to the bias of higher offer price is much more than the bias of higher planned offer price.

The process of IPO application could be tediously long[13]. In the period of IPO application, the unexpected change in the underwriting market makes it possible for issuers and underwriters to set a lower planned offer price. If the real offer price has not be fully adjusted, it is very likely to have a high initial return, which benefits IPO investors. By contrast, if the real offer price could be tuned to be higher, this would results in over issuance and that benefits issuing firms. In other words, if the change in market far beyond the expectation of issuing firms and the associated underwriters, we would expect to find initial return and IPO over-issuance are substitute. The existence of over-issuance indicates that the real offer price has been increased so that initial return is expected to be lower.

Hypothesis 1：IPO over-issuance ratio is negatively correlated with initial return.

3.2. Chinese IPO Over-issuance and Investment-Cash Flow Sensitivity

Whether a firm holds excess cash is beneficial or detrimental remains a debatable issue. The free cash flow hypothesis indicates that managers might misuse the excess

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[13] According to the finding of Li (2010), the majority of IPOs listed in the second half of 2009 had their IPO applications before March 2008 and had been through the eligibility review way before 2007.

cash for their own benefit at the expense of share value of minority shareholders. The manifests could be versatile, such as empire building (Jensen, 1986; Blanchard et al., 1994; Harford, 1999). This could be true for firms in developed financial market with less financial constraints (Guariglia, 2008). However, firms in underdeveloped financial markets might encounter financial constraints. If the financial constraints are too severe, firms might forgo profitable investment opportunities (Love, 2003; Islam and Mozumdar, 2007; Cull et al., 2015).

A positive link between a firm's investment and its cash flow was initially indicated by Fazzari et al. (1988) under the premise of imperfect capital market. This argument has received pervasive support from previous studies. The extant of market imperfections would result in the link between a firm's investment and its financing ability, or more precisely, the availability of internally generated funds. Nevertheless, the investment-cash flow sensitivity remains a controversial issue (Hovakimian, 2009; Hovakimian and Hovakimian, 2009).

Given this positive relation between investment and cash flow, prior studies investigate what factors might moderate the positive relation. For example, some investigate whether corporate governance could control the agency problems and/or market imperfection so as to attenuate the positive investment-cash flow sensitivity. For example, the sensitivity could be alleviated by insider ownership (Hadlock, 1998) and large institutional investors (Goergen and Renneboog, 2001).

The essence of the positive link between investment and cash flow is indebted to two explanations: agency problems and information asymmetry. We firstly briefly

review the related literature and prior studies using the case of China, and then illustrate how the inflow of cash is related agency problems and information asymmetry and therefore affects the investment-cash flow sensitivity.

Agency costs stem from the separation of corporate ownership and control. They could exhibit in firms with free cash flow that motivates managers to invest in suboptimal projects (Jensen, 1986 and Stulz, 1990). These suboptimal projects might benefit managers while at the expense of shareholders' wealth. Richardson (2006) indicates that overinvestment is concentrated in firms with the highest levels of free cash flow.

As for the case of China, Su, Fung, Huang, and Shen (2014) find that firms that pay less in cash dividends are associated with more related-party transactions, which implies wealth expropriation from general stockholders. Moreover, politically connected firms pay higher cash dividends than non-politically connected firms. Liu, Luo, and Tian (2016) indicate that non-SOEs lose their competitive advantages in MandA market due to political corruption. These bribing non-SOEs are associated with a reduction of the ability to access local and state-owned targets. They pay to hefty MandA premium and are associated with worse post-MandA performance. Chen, Sun, and Xu (2016) find that Chinese firms' over-investment is more sensitive to current free cash flow and that over-investment is more pronounced in firms with positive free cash flows.

In fact, the case of over-issuance in China represents one of the clearest manifests of free cash flow. Because of the regulation in China, we have the reported

information of IPO proceeds, planned investment, and planned fund. With these, we are able to identify over-issuance and therefore free cash flow that is the cash not being planned in the foreseeable future. Hence, the overflow of cash represents a clear manifest of agency problems, especially when the IPO proceeds far exceed the planned investment.   We therefore expect that high-level of over-issuance from IPO would aggregate agency problems associated with free cash flow. For these over-issuance firms, they will have an inclination to overinvest to suboptimal level, and the overinvestment is more pronounced for firms with positive free cash flow (Chen, Sun, and Xu, 2016). Moreover, as indicated in Liu, Luo, and Tian (2016), the inclination of overinvestment is more saliently found in non-SOE firms.

Hypothesis 2.1: High-level of over-issuance accentuates the positive investment-cash flow relationship, and the impact is more saliently found in non-SOEs than SOEs.

For the information asymmetry explanation, Myers and Majluf (1984) show that information asymmetries increase the cost of capital and it is costly for firms to raise external finance. Hence, external financing constraints force firms to reduce feasible investments and to invest more in the presence of internally generated free cash flows due to its lower cost of capital (Fazzari et al., 1988, Hoshi et al., 1991, Whited, 1992 and Hubbard, 1998).

As for the case of China, an underdeveloped financial market, there are severe financial constraints for local firms (Allen et al., 2005; Guariglia et al., 2011; Ding et al., 2013), and that impedes them from taking profitable investment or pursuing

growth opportunities. In other words, most firms in China confront severe financial constraint. The overflow of cash could help these firms alleviate the adverse impact of underinvestment. We therefore expect to find the investment-cash flow sensitivity could be attenuated for financially constrained firms. For these firms, the excess cash inflow plays the role of financial slack, documented in Myers and Majluf (1984), to prevent financially constrained firms from forsaking profitable opportunities. Moreover, Cull, Li, Sun, and Xu (2015) indicate that for Chinese firms government connections are associated with substantially less severe financial constraints, and the sensitivity of investment to internal cash flows is higher for firms that report greater obstacles to obtaining external funds[14]. In other words, financial constraint is highly related to government or political connections. We therefore expect that the moderating effect would be more pronounced for non-SOE IPOs than for SOEs.

Hypothesis 2.2: Low-level of over-issuance attenuates the positive investment-cash flow relationship, and the impact is more saliently found in non-SOEs than SOEs.

3.3 Chinese IPO Over-issuance and Long-term Performance

The relation between IPO over-issuance and long-term performance could be decomposed into two parts. First, as aforementioned argument, over-issuance might result in heightened investment-cash flow sensitivity, which is associated with investment inefficiency and therefore long-term underperformance. As compared to

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[14] Other related studies such as Allen et al. (2005), Lins et al. (2005), Lu et al. (2012) and Cull et al. (2015) indicate that the positive effect of excess IPO funds on post-IPO operating performance is more pronounced in politically unconnected firms, bank unconnected firms or non-cross-listed firms, which tend to face more severe financial constraints in China's weak institutions.

SOEs, non-SOEs are more likely to confront the deficiency in external financing. It is reasonable to argue that the impact of over-issuance is more salient for non-SOEs than SOEs. That is, the negative impact of over-issuance on investment inefficiency is more saliently found in non-SOEs than in SOEs.

Hypothesis 3.1: IPO firms with high-level of over-issuance will have worse long-run performance, and the impact is more saliently found in non-SOEs than SOEs.

Hypothesis 3.2: IPO firms with low-level of over-issuance will have better long-run performance, and the impact is more saliently found in non-SOEs than SOEs.

On top of this, Xu and Xia (2012) indicate that underwriting fee is closely related to IPO proceeds, which motivates underwriters to beat the drum for over-issuance. The enthusiasm of underwriters will entice investors' frenzy and that further raises the initial price. In other words, issuers and underwriters are aligned in interest in having higher prices. However, this might not be consistent with the interest of investors or the true market mechanism. Even though the offer price is set rationally; the frenzy aroused by underwriters and fueled by high investor's sentiment might further raise the initial price, resulting in high initial return. However, the price will gradually reduce to its rational level when investors ultimately calm down. This will result in long-term underperformance.

Hypothesis 3.3： IPO over-issuance and long-term underperformance would be more exacerbated when in the market is hot and that was driven by underwriters and investors' sentiment.

4. Data and Models

Our sample consisting of 1,803 Chinese IPOs in the sampling period of 1993-2014 is collected from China Stock Market and Accounting Research (CSMAR). In order to identify over-issuance, we hand collect the data of planned amount of investment, planned amount of fund needed, and final amount of fund raised in this IPO from IPO prospectuses and annual reports. The data of accounting and financial information and ownership are collected from the CSMAR database. Financial firms that are subject to different regulation are excluded from the sample.

Table 1 reports the distribution of over-issuance (OF) that is defined as the difference between the final amounts of fund raised from IPO and the planned amount of investment divided by the planned amount of investment. The results from alternative definition that is gauged with respect to expected amount of fund raised rather than expected amount of investment are qualitative similar, and would be provided upon request. The result shows that over-issuance indeed exhibits a significant surge beginning in 2006, the year when the regulation of P/E cap was released. For example, the average over-issuance is 25.95% in 2006, implying that IPO firms obtaining about 26% funds more than their planned investment. The average over-issuance surges to 172.25% in 2010 and 118.16% in 2011. This implies IPO firms in the two years obtained funds that are more than double than their planned investment. We note that although over-issuance exhibits a significant increase beginning in 2006, there were sporadic cases showing the phenomenon of over-issuance. For example, the average over-issuance is 82.79% in 1994. Our sample

that extensively covers over-issuance prior to 2006 could provide a comprehensive picture. The results from focusing on the subsample beginning in 2006 are qualitatively similar and would be provided upon request.

We also report the percentage of IPO firms that exhibit over-issuance (D_OF). The over-issuance ratio has exceeded 90% since 2009, and it was even as high as 97.63% in 2010.　Cases of over-issuance were sporadically seen in some years other than 1995 and 2005. The average over-issuance ratio is around 50% in the period of 2006-2008.

In response to the over-heated IPO market that result in a high percentage of firms raising much more funds than their planned investment, the Chinese regulatory entity cools down the market by suspending the approval of IPO applications in 2013. After the reopen of IPO applications in 2014, there were no IPO firms exhibiting a high degree of over-issuance. The overall average over-issuance percentage is 59.84% throughout the sampling period.

The last column of Table 1 reports the percentage of IPOs by state-owned enterprises (SOE). It shows that the percentage of SOE IPOs gradually decreases as the passage of time. The percentage reduces from 80% in 1993 to 4.36% in 2011.

<<Insert Table 1 Here>>

Table 2 reports the summary statistics of variables. Panel A reports the short-term and long-run performance measures of IPOs in the sampling period. The mean initial return and mean market-adjusted initial return are 78.06% and 76.61%, respectively.

The mean honeymoon effect, measured by the difference between initial open price and offer price divided by offer price, is 73.41%. The mean initial-day return, being defined as the difference between the close price and open price divided the open price of the initial trading day, is 4.75%. For the long-run performance measure, we refer to the wealth relative measure proposed by Ritter (1991), and that is calculated as the buy-and-hold return 1 through 3 years post IPO divided by the corresponding market returns. The mean wealth relative measures of 1 through 3 years are in the narrow range of 0.9429- 0.9200, indicating these IPO firms are slightly lower than the corresponding market index returns.

Panel B reports over-issuance. We alternatively define over-issuance by comparing IPO proceeds with expected investment (OF). The average over-issuance, being defined with respect to expected investment, is 60.75%, implying that IPO firms in general raise 60.75% more funds than their planned investment. We also explore the condition of over-issuance (D_OF, being defined as a dummy that is assigned the value 1 when the IPO proceeds exceed the expected investment and 0 otherwise), and high-level (low-level) of over-issuance (D_{high_OF}, D_{low_OF}) that is a dummy that is assigned the value 1 when the OF is in the top (bottom) 30%. The cutoff for high-over-issuance dummy is 0.87723 and that for low-over-issuance dummy is -0.04721. On average, 59.84% IPO firms in our sample are associated with over-issuance, and 30.01% (30.01%) IPO firms are characterized as high-level (low-level) over-issuance.

Panel C reports the statistics for testing investment-cash flow sensitivity. Both

investment (Inv) and cash flow (Cash) are deflated by beginning total assets, and are 8.25% and 7.43% on average. Leverage (Lev) being defined as the total debts divided by total assets is 35.69% on average. Size denotes the natural logarithm of total assets and is 8.87 on average. Liquidity (Liq) being defined as current assets divided by total assets is 74.01% on average. Wedge being defined as the difference between controlling owner's voting rights from cash flow rights is 4.36% on average. P/B denotes the ratio of price to book value is 3.64 on average. We also calculate free cash flow indicated by Jensen (1986) as (working capital - capital expenditure + cash from selling plant, property and equipment)/total assets. The average value of it is -0.05.

Panel D reports the control variables of underwriting and characteristics of IPO firms. The selection of these variables is jointly referred to prior studies (e.g., Boubakri and Cosset, 1998; Sun and Tong, 2003; Fan et al., 2007). The mean age of IPO firms, measured by years since firm's inception, is 6.56 years. The mean underwriting expense per share is 1.13 RMB. For the corporate governance variables, the statistics show that the board on average consists of 8.78 directors. Tobin's Q, being calculated as the sum of the market value of equity and the book value of liabilities divided by the book value of assets, is 2.84 on average. We propose two measures to determine whether offer prices and post-IPO prices are set too high or too low[15]: PE_{offer_1yr} being defined as the ratio of PE in offering to the PE one year post IPO and PE_{IPO_1yr} which is the ratio of PE in the first listing day to the PE one year post IPO. We find that the average PE_{offer_1yr} and PE_{IPO_1yr} are 1.083 and 1.684,

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[15] If the PE ratio one year post IPO could be deemed as the rational or real price, PE_{offer_1yr} could be used to judge whether the offer price was too high. Similarily, PE_{IPO_1yr} could be used to judge whether the initial price was too high or not.

respectively. This implies that both offer price and post-IPO prices are too high. However, post-IPO prices are even much higher than the offer price. Among the total sample of Chinese IPOs, 26% of them are from SOEs. As shown in Table 1, the percentage of SOE IPOs exhibits a decrease as the passage of time.

<<Insert Table 2 Here>>

5. Empirical Results

First of all, in panel A of Table 3 we test whether over-issuance, offer price and volume, initial return, and long-term performance are different between SOEs and NSOEs. The results from panel A show that NSOEs are significantly higher than SOEs in over-issuance ratio, the dummy of over-issuance, and the dummy of high over-issuance.   However, the main cause resulting in over-issuance of NSOE is not from issuing shares. Rather, it is from setting higher offer price. It is also because of the higher offer price, NSOEs are also associated with lower initial returns.   This could be verified by the evidence that the mean PE_{offer_1yr} is higher than 1 (median of 1) for NSOEs while it is merely 0.871 (median of 0.611) for SOEs.

We conduct test in differences of variables between IPO firms with high-level (low-level) over-issuance and those without. The results from panel B show that firms with high-level over-issuance are associated with significantly lower short-term performance measures as shown in initial returns, market-adjusted initial returns, honeymoon effect, and the first-day returns than those without. For example, the mean (median) initial return of 36.8% (26.6%) for IPO firms with high-level

over-issuance is significantly lower than the mean (median) initial return of 95.7% (69.5%) for those without. In panel C we find that IPO firms with low-level of over-issuance are associated with higher short-term performance measures than those without. The mean (median) initial return of 110.9% (86.8%) for firms with low-level over-issuance is significantly higher than the mean (median) initial return of 64.0% (44.0%) for firms without. In general, the market attaches higher value for IPO firms with low-level over-issuance while lower value for IPO firms with high-level over-issuance. The results are consistent with the postulation that low-level over-issuance help IPO firms alleviate the adverse impact of financial constraint, while high-level over-issuance engenders the possibility that IPO firms squander or abuse the free cash flow from high-level over-issuance.

For high over-issuance IPOs, the offer price was overestimated at 1.6 times of its rational value. The real issuing shares were also equivalent to the maximum issuing shares indicated in prospectus. The post-IPO prices remain as high as 1.936 times of the rational value. By contrast, for low over-issuance IPOs, the offer price was set too low; only 0.644 of the rational value. However, from the perspective of over- (under-) issuance could only detect how the setting of offer price and real issuing shares affect the short-term initial returns. The impact of over- (under-) issuance on long-run performance needs to be coupled with how the funds are used and the post-IPO investment efficiency.

<<Insert Table 3 Here>>

In Table 4 we conduct the regression of investment on cash flow, over-issuance, and the interaction between cash flow and over-issuance. Specifically, the coefficient of the interaction between cash flow and over-issuance is of interest. We conduct the regression for prior-IPO period (t-2 to t) and for post-IPO period (t+1 to t+3), respectively. Moreover, for contrasting high- and low-level over-issuance, we use the dummy of high-level financing (D_{high_OF}) and the dummy of low-level financing (D_{low_OF1}) in the interaction between cash flow and over-issuance.

The results indicate that the regression coefficient of the interaction between cash flow and high-level financing (Cash * D_{high_OF}) is insignificant prior to IPO and becomes significantly positive after IPO. In other words, high-level over-issuance punctuates the adverse impact of free cash flow in the sense that firms obtaining more-than-adequate cash inflow would overinvest in less profitable projects.. In contrast, the regression coefficient of the interaction between cash flow and low-level financing (Cash * D_{low_OF}) is significantly positive prior to IPO and becomes insignificant after IPO. That is, low-level over-issuance reduces the positive investment-cash flow sensitivity. The reduction in the investment-cash flow sensitivity is indebted to the fact that the inflow of cash from IPO ameliorates the adverse impact of information asymmetry that lead to underinvestment problems (Myers and Majluf, 1984)

<<Insert Table 4 Here>>

In Table 5 we segregate the sample into SOE and non-SOE subsamples and conduct the regressions of investment-cash flow sensitivity, respectively. Again, the

interactive term between cash flow and high/low over-issuance dummy is of interest. We find that the impact of over-issuance on investment-cash flow sensitivity is more saliently found in non-SOE than SOE IPO firms. For non-SOE IPO firms the interaction between high-over-issuance dummy and cash flow is insignificant prior to IPOs and becomes significantly positive after IPOs. The interaction between low-over-issuance dummy and cash flow is significantly positive prior to IPOs and becomes insignificant after IPOs. However, this is not the case for SOE IPO firms. The interaction between high-over-issuance (low-over-issuance) dummy and cash flow is insignificant before and after IPOs.

Why would the moderating effect of over-issuance only sustain for non-SOE but not SOE IPO firms? One possibility is that SOE firms are highly regulated by government. The regulation implies that the threat of financial constraints and the agency problems are relatively mild.

<<Insert Table 5 Here>>

In Table 3 we find that low-level (high-level) over-issuance is associated with higher (lower) short-term performance than their counterparts. In Table 6 we conduct short-term performance regressions by additionally including other control variables. The results summarized in Table 6 indicate that high-level over-issuance (D_{high_OF}) negatively affects short-term performance measures, namely, initial returns and market-adjusted initial returns. In contrast, low-level over-issuance (D_{low_OF}) positively correlated with the short-term performance measures. This indicates that the market seems to function well by recognizing that low-level over-issuance reduces

underinvestment problems due to information asymmetry while high-level over-issuance aggravates overinvestment problems due to agency concern.

<<Insert Table 6 Here>>

From Table 5 we know that the impact of high- versus low-level over-issuance effects only on non-SOE but not SOE firms in terms of investment-cash flow sensitivity. In Table 7 we further explore the impact of high- versus low-level over-issuance on short-term performance measures with respect to non-SOE (Panel A) and SOE (Panel B) firms, respectively. The results indicate that high-level over-issuance (D_{high_OF}) is negatively correlated with the short-term performance measures both for non-SOE firms and SOE firms. Moreover, low-level over-issuance ($D_{low\text{-}OF}$) is positively correlated with the short-term performance measures both for non-SOE firms and SOE firms. The impact is symmetric and consistent for both SOE and non-SOE IPO firms.

<<Insert Table 7 Here>>

In Table 8 we investigate the impact of over-issuance on long-run performance of IPO firms. The aforementioned findings indicate that low-level over-issuance provides buffer for financially constrained firms while high-level over-issuance provides additional funds for managers squandering overflowed cash. In other words, low-level over-issuance is expected to be value enhancing while high-level over-issuance is value detrimental. We use the wealth relative measure up to three years after IPO (Ritter, 1991) as the proxy of long-run performance measure. The

results show that the regression coefficient of the high-over-issuance dummy is negatively correlated with the long-run performance measures after other factors have been controlled in the regression. In contrast, the regression coefficient of the low-overfinancig dummy (D_{low_OF}) is positive albeit insignificant. The results basically support our postulation that high-level over-issuance aggregates the free-cash-flow agency problems.

<<**Insert Table 8 Here**>>

In Table 9 we examine the impact of high- and low-level over-issuance on long-run performance of IPO firms with respect to non-SOE subsample (Panel A) and SOE subsample (Panel B), respectively. The results show that the positive impact of low-level over-issuance and the negative impact of high-level over-issuance are more saliently found in non-SOE IPOs. The impact of over-issuance is less significant for the subsample of SEO IPOs. This is consistent with our prior findings that private firms are more sensitive to the overflow of cash in the sense that low-level over-issuance reduces the adverse impact of underinvestment while high-level over-issuance aggravates the adverse impact of overinvestment. In contrast, SOE firms are subject to tight governmental regulation, which means that the major funds for investment are from government budget. For these SOE firms, underfunded problems are less severe. Also, tight budget control means that the space for managers to squander additional money is also limited. This probably explains the reason why the impact of high- versus low-level over-issuance is more salient for non-SOE firms than SOE firms.

In Table 10 we explore how over-issuance affects investment inefficiency for non-SOE and SOE IPO firms, respectively. Referring to Richardson (2006) we conduct the following regression of investment.

$$INV = \alpha + \beta_1 Cash_{i,t} + \beta_2 Lev_{i,t} + \beta_3 Liq_{i,t} + \beta_4 EPS_{i,t} + \beta_5 Sales\_Gr._{i,t} + \beta_6 IPO\_year_{i,t} + \varepsilon_{i,t.}$$

The absolute value of the residual term is used to gauge investment inefficiency, which includes overinvestment and overinvestment. The following regression is adopted to investigate how high- versus low-level over-issuance affects investment inefficiency.

$$| \varepsilon_{it} | = \alpha + \beta_1 Compensation_{i,t} + \beta_2 Ind.\_Dir_{i,t} + \beta_3 Own\_Con._{i,t} + \beta_4 Size_{i,t} + \beta_5 Cash_{i,t} + \beta_6 Lev_{i,t} +$$

$$\beta_7 Liq_{i,t} + \beta_8 Sales\_Gr._{i,t} + \beta_9 EPS_{i,t} + \beta_{10} D_{high\_OF_{i,t}} + \beta_{11} D_{low\_OF1_{i,t}} + v_{i,t,}$$

Where *Compensation* denotes the natural logarithm of the top three managers' compensation, *Ind_Dir* denotes the percentage of independent directors, *Own_Con* denotes ownership concentration and is gauged by the percentage of shareholding held by the top five shareholders, *Sale_Gr* denotes sales growth. The results summarized in Table 10 indicate that for non-SOE IPO firms, the impact of the low-level over-issuance (D_{low_OF}) on investment inefficiency was significant at the time of IPO (the regression coefficient of 0.07) wile becomes insignificant after IPO (the regression coefficient of 0.002). That is, low-level over-issuance provides sufficient fund for firms to avoid underinvestment problems and therefore to reduce investment inefficiency. In contrast, for SOE firms the impact of high-level

over-issuance on investment inefficiency was insignificant at the time of IPO (the regression coefficient of 0.004) and became significantly positive after IPO (the regression coefficient of 0.009). In other words, the inflow of high-level overfunded cash results in manager's tendency of investment and therefore an increase in investment inefficiency.

<<Insert Table 10 Here>>

6. Concluding Remarks

This study explores a recent issue of over-issuance in the Chinese market. This market provides a splendid forum to examine how overflow of cash affects IPO firm's investment, and the short- and long-run performance. Our findings are easily summarized as follows. First, investors seem to apprehend the possible impact of over-issuance as to attach higher valuation for low-level over-issuance that helps reduce the impact of underinvestment due to information asymmetry while attach lower valuation for high-level over-issuance that engenders additional agency problems embedded in free cash flow. Second, low-level over-issuance attenuates investment-cash flow sensitivity while high-level over-issuance accentuates investment-cash flow sensitivity. Third, low-over-issuance is beneficial while high-level over-issuance is detrimental to long-run performance measures of IPO firms. Forth, the impact of high- and low-over-issuance on investment-cash flow sensitivity as well as IPO firm's long-run performance is more saliently found in non-SOE than SOE IPOs.

Our empirical findings from Chinese IPOs directly address both the free cash

flow hypothesis and costly external financing hypothesis, and bridge the gap between cash holding and IPO performance streams of literature. Moreover, we systematically explore how the market in general perceives the value of overflow of cash to IPO firms, and the follow-on impact on investment, and therefore performance. The high-PE phenomenon attracts wide attentions and therefore results in a series of stringent rules imposed by the Chinese government, aiming for discouraging excessive fundraising. Our findings could provide policy implication for regulatory entities to strike a dedicated balance on this regard.

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Table 1: Sample Distribution

Over-issuance (**OF**) is defined as the difference between proceeds raised from IPO and the expected investment illustrated in prospectus divided by the expected investment. **D_OF** is a dummy that is assigned the value 1 when the IPO proceeds exceed the expected investment and 0 otherwise. **SOE** denotes IPOs by state-owned enterprises.

	No.	OF (%)	D_OF (%)	SOE (%)
1993	10	-14.25	20.00	80.00
1994	24	82.79	20.83	62.50
1995	2	-56.86	**0.00**	50.00
1996	48	-6.02	22.92	53.19
1997	63	6.51	34.92	60.32
1998	35	-22.89	14.29	65.71
1999	31	3.69	16.13	51.61
2000	84	1.00	39.29	52.38
2001	61	-8.35	31.15	59.02
2002	65	-17.88	15.38	56.92
2003	60	-19.34	18.33	46.67
2004	89	-11.88	23.60	39.33
2005	13	-21.72	**0.00**	53.85
2006	54	25.95	50.00	40.74
2007	109	14.27	55.05	28.44
2008	74	-0.98	44.59	20.27
2009	97	101.65	94.85	14.43
2010	338	172.25	97.63	12.17
2011	276	118.16	91.30	4.36
2012	149	68.53	83.89	6.85
2013	0	--	--	--
2014	121	-11.09	13.22	10.34
Total	1803	60.75	59.84	26.23

Table 2: Summary Statistics

Panel A reports short-term and long-run performance. Initial return (**IR**) is defined as the difference between initial price and offer price divided by offer price. Market-adjusted initial return (**market-adjusted IR**) is the difference between initial return and the corresponding market index return. **Honeymoon** effect is defined as the difference between initial open price and offer price divided by offer price. **Initial-day return** is the difference between the close price and open price of the initial trading day divided the open price of the initial trading day ($(close_1\text{-}open_1)/open_1$). Wealth relatives (**WR**), according to Ritter(1991)，is calculated as $$WR(n) = \frac{\prod\limits_{t=1}^{12*n}\left(1+R_{i,t}\right)}{\prod\limits_{t=1}^{12*n}\left(1+R_{m,t}\right)}., n = 1, 2, \cdots 5.$$, where $R_{i,t}$ denotes the return of IPO firm i in month t, and $R_{m,t}$ denotes the corresponding market return in month t.

Panel B reports over-issuance, which is alternatively defined: **OF** is the difference between proceeds from IPO and expected investment revealed in prospectus divided by expected investment ((IPO proceeds – expected investment)/ expected investment); **D_OF** is a dummy that is assigned the value 1 when the IPO proceeds exceed the expected investment and 0 otherwise. $\mathbf{D_{high\_OF}}$ ($\mathbf{D_{low\_OF}}$) is a dummy that is assigned the value 1 when the OF1 is in the top (bottom) 30%.

Panel C reports variables regarding investment-cash flow sensitivity. Investment (**Inv)** denotes total capital expenditure divided by total assets. **Cash** denotes the cash flow divided by total assets. Leverage (**Lev**) denotes total debt divided by total assets. **Size** is the natural logarithm of yearend total assets. Liquidity (**Liq**) denotes current assets divided by total assets. **Wedge** is the difference controlling owner's voting rights from cash flow rights. **P/B** denotes the close price divided by book value per share at the yearend. Free cash flow (**FCF**) denotes working capital - capital expenditure + cash from selling plant, property and equipment. Ownership concentration (**Own_Con**) denotes the top

five shareholders' shareholdings. **Compensation** denotes the natural logarithm of the top 3 managers' compensation. Independent directors (**Ind_Dir)** denote the percentage of independent directors. Sales growth (**Sales_Gr)** denotes the sales growth rate in two consecutive quarters. **EPS** denotes the earnings per share.

Panel D reports factors that affect long-run performance. **Age** denotes the number of years from inception to IPO. **Board size** denotes the number of directors and supervisors. **Tobin's Q** is defined as the sum of the market value of equity and the book value of liabilities divided by the book value of assets. **Expense** denotes the total issuing fees divided by number of shares issuance. **Duration** is the number of days from IPO announcement to listing. **Turnover** is the turnover rate of the listing day. **Real_Issue** denotes the real issuing shares divided by the maximum number of issuing shares in prospectus. PE_{offer_1yr} is the ratio of PE in offering to the PE one year post IPO. PE_{IPO_1yr} is the ratio of PE in the first listing day to the PE one year post IPO. **SOE** is a dummy that is assigned the value 1 when the IPO firm is a state-owned enterprise. **Exchange** is a dummy that is assigned the value 1 when the IPO firm is listed in Shanghai Stock Exchange and 0 when the IPO firm is listed in Shenzhen Stock Exchange.

	No.	Mean	Median	Min.	Max.	S.D.
A. Short-term and long-run performance						
IR	1,803	0.7806	0.4953	-0.2633	12.7885	0.8487
$IR_{Market-adjusted}$	1,792	0.7661	0.5013	-0.5761	6.0802	0.7902
WR_{1-year}	1,776	0.9429	0.8773	0.2966	3.5587	0.3376
WR_{2-year}	1,678	0.9200	0.8239	0.1920	4.6229	0.4589
WR_{3-year}	1,621	0.9214	0.7728	0.1080	6.4458	0.5800
B. Over-issuance						
OF	1,803	0.6075	0.1304	-0.9923	24.8356	1.3032
D_OF	1,803	0.5984	1.0000	0.0000	1.0000	0.4903
D_{low_OF}	1,803	0.3001	0	0	1	0.4584
D_{high_OF}	1,803	0.3001	0	0	1	0.4584
C. Investment-cash flow sensitivity						
Inv	6,683	0.0825	0.0647	0	0.749	0.0687
Cash	6,669	0.0743	0.7138	-1.793	0.877	0.0619
Lev	8,380	0.3569	0.3401	-0.13	2.28	0.19908
Size	7,112	8.8706	8.7973	6.843	12.166	0.5347
Liq	8,006	0.7401	0.6505	0	78.77	1.51612
Wedge	5,631	0.0436	0	0	0.5342	0.0757
P/B	6,805	3.6427	3.0228	-21.3413	289.2623	4.5304
FCF	10,728	-0.0501	-0.0364	-0.65	0.42	0.10513
Own_Con	6,114	63.0104	64.4518	9.8857	97.8901	12.4459
Compensation	6,750	5.9106	5.9629	4.024	7.3353	0.3952
Ind_Dir	7,201	0.368	0.3333	0	0.8	0.0569
Growth	8,468	0.4492	0	-8.3593	1294.219	14.7326
EPS	8,566	0.2345	0	-3.93	4.9	0.4139
D. Underwriting and firm's characteristics						
Age	1,803	6.733	6.047	0.005	27.441	4.960
Board size	1,803	8.778	8.701	7.418	11.922	0.512
Tobin's Q	1,788	2.846	2.561	0.198	12.844	1.561
Expense (NTD)	1,803	1.131	0.850	0.003	7.700	1.014
Duration (days)	1,803	19.312	13.000	7.000	3385.0	88.64
Turnover	1,803	0.630	0.680	0.000	2.690	0.244
Real_Issue	1,802	0.993	1.000	0.231	1.000	0.043
PE_{offer_1yr}	1,473	1.083	0.896	-13.740	15.358	1.140
PE_{IPO_1yr}	1,668	1.684	1.559	-44.398	23.423	2.420
SOE	1,792	0.262	0.000	0.000	1.000	0.440
Exchange	1,803	1.611	2.000	1.000	2.000	0.4877

Table 3: Test in Differences

A. Difference between NSOEs and SOEs

	NSOE			SOE			Test	
	No.	Mean	Median	No.	Mean	Median	T	Z
OF	1,322	**0.772**	**0.396**	470	0.143	-0.076	8.095**	15.293**
OF_D	1,322	**0.685**	**1.000**	470	0.353	0.000	13.024	12.611**
D_{low_OF}	1,322	0.219	0.000	470	**0.530**	**1.000**	-12.076	-12.601**
D_{high_OF}	1,322	**0.371**	**0.000**	470	0.100	0.000	14.099**	10.998**
Real_Issue	1,321	0.992	1.000	470	0.994	**1.000**	-0.841	-1.855*
PE_{offer_1yr}	1,106	**1.156**	**0.997**	361	0.871	0.611	4.147**	7.985**
PE_{IPO_1yr}	1,208	1.622	1.546	454	1.860	1.605	-1.570	-0.816
IR	1,322	0.681	0.440	470	**1.072**	**0.890**	-8.916**	-11.687**
$IR_{market\_adjusted}$	1,318	0.659	0.414	463	**1.082**	**0.888**	-9.781**	-12.146**
$WR_{1\text{-}year}$	1,312	0.940	0.871	453	0.952	0.903	-0.688	-1.412
$WR_{2\text{-}year}$	1,236	0.911	0.809	433	0.948	**0.856**	-1.465	-2.175**
$WR_{3\text{-}year}$	1,190	0.914	0.765	425	0.941	0.791	-0.811	-0.959

B. Difference between IPO firms with high over-issuance and others

	D_{high_OF} (OF_70>0.87723)						Test in	
	No			Yes			Mean	Median
	No.	Mean	Median	No.	Mean	Median	T	Z
IR	1,262	**0.957**	**0.695**	541	0.368	0.266	18.417**	16.766**
$IR_{market\_adjusted}$	1,252	**0.938**	**0.705**	540	0.366	0.262	19.020**	16.683**
$WR_{1\text{-}year}$	1,236	0.945	0.874	540	0.939	0.883	0.342	-0.238
$WR_{2\text{-}year}$	1,138	0.929	**0.837**	540	0.901	0.787	1.187	1.773*
$WR_{3\text{-}year}$	1,082	0.911	0.780	539	0.943	0.761	-0.987	-0.327
Real_Issue	1,261	0.990	1.000	541	**1.000**	**1.000**	-6.769**	-5.630**
PE_{offer_1yr}	936	0.786	0.648	537	**1.600**	**1.488**	-13.139**	-18.550**
PE_{IPO_1yr}	1,127	1.563	1.417	541	**1.936**	**1.837**	-3.510**	-7.023**

C. Difference between IPO firms with low over-issuance and others

	D_{low_OF} (OF_30<-0.04721)						Test in	
	No			Yes			Mean	Median
	No.	Mean	Median	No.	Mean	Median	T	Z
IR	1,262	0.640	0.440	541	**1.109**	**0.868**	-9.791**	-12.737**
$IR_{market\_adjusted}$	1,260	0.631	0.398	532	**1.087**	**0.846**	-10.568**	-12.728**
$WR_{1\text{-}year}$	1,252	0.938	0.884	524	0.954	0.871	-0.845	-0.075
$WR_{2\text{-}year}$	1,200	0.909	0.807	478	0.947	0.844	-1.513	-1.498
$WR_{3\text{-}year}$	1,162	0.921	0.764	459	0.922	0.795	-0.038	-0.749
Real_Issue	1,262	0.993	1.000	540	0.994	**1.000**	-0.411	-1.687*
PE_{offer_1yr}	1,100	**1.233**	**1.074**	373	0.640	0.544	11.090**	13.379**
PE_{IPO_1yr}	1,177	1.681	1.594	491	**1.691**	1.436	-0.079	-2.587**

Table 4: The Impact of Over-issuance on Investment-Cash Flow Sensitivity

	Pre-IPO (t-2 to t)		Post-IPO (t+1 to t+3)	
	Beta	t	Beta	t
Constant	**7.811**	7.505***	1.155	1.535
D$_{high\_OF}$*CASH	0.004	0.08	**0.068**	2.206**
p-value for equality test		[0.152]		
D$_{low\_OF}$ * CASH	**0.107**	2.436**	0.024	0.846
p-value for equality test		[0.054]		
CASH	**0.637**	11.359***	**0.167**	7.559***
OF	0.000	0.09	**-0.004**	-3.243***
FCF	**-0.381**	-26.873***	**-0.054**	-5.137***
Lev	**0.028**	2.174**	**0.021**	2.716***
Liq	**-0.043**	-9.418***	**-0.013**	-7.863***
SIZE	**-0.006**	-1.779*	**-0.011**	-4.554***
Wedge	0.000	-0.95	-7.58E-05	-0.563
P/B	-0.001	-1.349	**-0.001**	-3.484***
Year	Yes		Yes	
Industry	Yes		No	
No.	1,351		3,926	
Adjusted R^2	0.462		0.066	

Table 5: The Impact of Over-issuance on Investment-Cash Flow Sensitivity— SOE v.s Non-SOE

		Non-SOE				SOE		
		Pre-IPO		Post-IPO		Pre-IPO		Post-IPO	
		Beta	t	Beta	t	Beta	t	Beta	t
Constant		**7.278**	6.08***	**1.684**	1.774*	**8.166**	3.138***	1.204	0.761
D_{high_OF}* CASH		0.00	-0.004	**0.088**	2.647***	0.096	0.63	0.013	0.153
	p-value for equality test			[0.079]				[0.310]	
D_{low_OF} * CASH		**0.113**	2.3**	0.02	0.6	0.061	0.638	0.041	0.729
	p-value for equality test			[0.061]				[0.394]	
CASH		**0.631**	10.304***	**0.131**	5.392***	**0.687**	4.967***	**0.391**	6.654***
OF1		0.001	0.38	**-0.005**	-3.829***	0	-0.103	-4.26E-05	-0.017
FCF		**-0.348**	-22.595***	**-0.056**	-4.52***	**-0.537**	-14.95***	**-0.052**	-2.440**
Lev		**0.038**	2.639**	**0.020**	2.194***	0.025	0.868	**0.048**	3.021***
Liq		**-0.037**	-7.916***	**-0.014**	-7.214***	**-0.087**	-5.838***	**-0.011**	-2.785***
SIZE		**-0.014**	-3.148***	**-0.013**	-3.784***	0.002	0.235	**-0.013**	-3.064***
Wedge		0.000	-0.688	9.99E-06	0.067	0.000	-0.426	**-0.001**	-2.179**
P/B		**-0.002**	-2.556**	**-0.001**	-3.54***	**0.003**	1.654*	-0.001	-0.862
Year		Yes		Yes		No		No	
Industry		Yes		No		Yes		No	
No.		1,123		2,993		214		838	
Adjusted R^2		0.431		0.065		0.606		0.1	

Table 6: The Impact of Over-issuance on Short-run Performance- High vs. Low Over-issuance

	IR				$IR_{market\_adjusted}$			
	Beta	t	Beta	t	Beta	t	Beta	t
Constant	**80.074**	5.831	**86.8**	6.262	**80.568**	5.864**	**86.911**	6.276**
D_{high_OF}	**-0.359**	-8.545**			**-0.343**	-8.225**		
D_{low_OF}			**0.258**	6.005**			**0.253**	5.922**
PE_{offer_1yr}	**-0.118**	-5.379**	**-0.141**	-6.447**	**-0.124**	-5.662**	**-0.146**	-6.707**
PE_{IPO_1yr}	**0.036**	3.401**	**0.039**	3.666**	**0.043**	4.046**	**0.047**	4.324**
Board size	**0.013**	2.015**	0.01	1.466	**0.014**	2.185**	**0.011**	1.648*
size	**-0.152**	-3.858**	**-0.153**	-3.839**	**-0.156**	-3.97**	**-0.157**	-3.951**
Liq	**-0.039**	-1.852*	**-0.042**	-1.966*	**-0.039**	-1.822*	**-0.042**	-1.954*
L **Own_Con**	-0.103	-1.361	-0.07	-0.923	**-0.138**	-1.662*	-0.104	-1.239
Expense	**-0.125**	-5.205**	**-0.173**	-7.421**	**-0.114**	-4.761**	**-0.159**	-6.872**
Age	0.002	0.611	0.003	0.902	0.001	0.322	0.002	0.609
Duration	-0.001	-0.396	-0.001	-1.056	0.001	0.93	0.000	0.358
Turnover	**0.76**	9.146**	**0.767**	9.111**	**0.739**	8.722**	**0.742**	8.647**
Tobin's Q	**0.205**	18.678**	**0.206**	18.332**	**0.182**	16.632**	**0.184**	16.367**
Real_Issue	**-1.978**	-5.024**	**-2.131**	-5.354**	**-1.837**	-4.699**	**-1.979**	-5.017**
Wedge	-0.001	-0.501	-0.001	-0.354	-0.002	-0.854	-0.002	-0.714
D(GME)	**-0.186**	-4.034**	**-0.213**	-4.579**	**-0.198**	-4.317**	**-0.223**	-4.829**
D(listing)	0.054	0.903	0.052	0.867	0.072	1.222	0.072	1.205
Year	YES		YES		YES		YES	
Industry	NO		NO		NO		NO	
N	1455		1455		1448		1448	
Adjusted R^2	0.533		0.521		0.521		0.511	
F	93.172**		88.936**		88.609**		84.952**	

Table 7: The Impact of Over-issuance on Short-run Performance- SOE vs. Non-SOE and Low vs. High Over-issuance

	IR				IR$_{market\_adjusted}$			
	Beta	t	Beta	t	Beta	t	Beta	t
Panel A: Non-SOE subsample								
Constant	**114.056**	6.767**	**124.091**	7.301**	**115.424**	6.881**	**124.293**	7.37**
D$_{high\_OF}$	**-0.336**	-7.683**			**-0.322**	-7.457**		
D$_{low\_OF}$			**0.280**	5.255**			**0.291**	5.535**
PE$_{offer\_1yr}$	**-0.133**	-4.894**	**-0.161**	-5.933**	**-0.146**	-5.376**	**-0.173**	-6.418**
PE$_{IPO\_1yr}$	**0.029**	2.247**	**0.035**	2.655**	**0.039**	3.004**	**0.045**	3.448**
Board size	0.013	1.456	0.011	1.207	0.014	1.553	0.012	1.326
size	**-0.147**	-2.992**	**-0.143**	-2.866**	**-0.140**	-2.89**	**-0.137**	-2.785**
Liq	-0.034	-1.423	-0.032	-1.325	-0.03	-1.276	-0.029	-1.218
L **Own_Con**	-0.065	-0.761	-0.021	-0.247	-0.149	-1.563	-0.104	-1.077
Expense	**-0.099**	-4.096**	**-0.138**	-5.813**	**-0.088**	-3.684**	**-0.124**	-5.304**
Age	0.002	0.432	0.004	0.869	0.001	0.209	0.003	0.64
Duration	-0.001	-0.388	-0.001	-0.662	0.000	-0.198	-0.001	-0.42
Turnover	**0.62**	7.066**	**0.631**	7.095**	**0.582**	6.53**	**0.587**	6.518**
Tobin's Q	**0.191**	15.396**	**0.19**	15.005**	**0.168**	13.595**	**0.168**	13.326**
Real_Issue	**-2.271**	-4.809**	**-2.368**	-4.948**	**-2.121**	-4.556**	**-2.202**	-4.68**
Wedge	-0.002	-0.853	-0.002	-0.761	-0.003	-1.153	-0.003	-1.071
D(GEM)	**-0.171**	-3.648**	**-0.188**	-3.956**	**-0.175**	-3.787**	**-0.190**	-4.056**
D(listing)	**0.178**	2.545**	**0.194**	2.737**	**0.189**	2.736**	**0.206**	2.951**
Year	YES		YES		YES		YES	
Industry	NO		NO		NO		NO	
No.	1095		1095		1091		1091	
Adjusted R^2	0.543		0.53		0.527		0.516	
F	73.352**		69.668**		68.523**		65.686**	

	Beta	t	Beta	t	Beta	t	Beta	t
Panel B: SOE subsample								
Constant	31.071	1.168	25.824	0.971	34.848	1.29	30.074	1.112
D_{high_OF}	**-0.317**	-2.458**			**-0.306**	-2.353**		
D_{low_OF}			**0.171**	2.286**			**0.141**	1.866*
PE_{offer_1yr}	**-0.11**	-2.798**	**-0.122**	-3.179**	**-0.106**	-2.69**	**-0.119**	-3.077**
PE_{IPO_1yr}	**0.056**	2.916**	**0.055**	2.836**	**0.059**	3.05**	**0.059**	2.996**
Board size	0.004	0.357	0.001	0.084	0.004	0.322	0.001	0.08
size	**-0.234**	-3.153**	**-0.258**	-3.534**	**-0.254**	-3.384**	**-0.278**	-3.761**
Liq	**-0.089**	-1.877*	**-0.108**	-2.263**	**-0.093**	-1.951*	**-0.11**	-2.277**
L **Own_Con**	-0.272	-1.548	-0.257	-1.463	-0.194	-1.095	-0.18	-1.013
Expense	**-0.515**	-3.942**	**-0.588**	-4.805**	**-0.454**	-3.451**	**-0.532**	-4.306**
Age	**0.025**	2.155**	**0.024**	2.076**	**0.021**	1.831*	**0.02**	1.77*
Duration	0.000	-0.163	-0.001	-0.54	0.002	0.945	0.001	0.66
Turnover	**1.444**	6.256**	**1.378**	5.986**	**1.483**	6.297**	**1.419**	6.027**
Tobin's Q	**0.235**	9.744**	**0.239**	9.738**	**0.216**	8.878*	**0.218**	8.79**
Real_Issue	-0.449	-0.615	-0.593	-0.815	-0.415	-0.566	-0.552	-0.751
Wedge	0.016	1.617	**0.018**	1.838*	0.016	1.572	**0.018**	1.783*
D(GEM)	-0.063	-0.25	-0.167	-0.665	-0.111	-0.439	-0.207	-0.818
D(listing)	-0.069	-0.565	-0.094	-0.772	-0.053	-0.428	-0.075	-0.606
Year	NO		NO		NO		NO	
Industry	NO		NO		NO		NO	
No.	354		354		351		351	
Adjusted R^2	0.454		0.453		0.446		0.443	
F	17.309**		17.223**		16.665**		16.451**	

Table 8: The Impact of Over-issuance on Long-run Performance- High vs. Low Over-issuance

	WR1				WR2				WR3			
	Beta	t	Beta	t	Beta	t	Beta	t	Beta	t	Beta	t
Constant	0.402	0.114	1.235	0.35	-1.475	-0.313	-0.084	-0.018	2.876	0.498	2.513	0.436
D_{high_OF}	**-0.019**	-1.751*			**-0.04**	-2.766**			0.002	0.129		
D_{low_OF}			0.001	0.061			0.011	0.76			0.007	0.403
PE_{offer_1yr}	**0.018**	2.891**	**0.015**	2.578**	**0.014**	1.767*	0.01	1.306	0.014	1.376	0.014	1.467
PE_{IPO_1yr}	-0.003	-1.125	-0.003	-0.937	0.001	0.302	0.002	0.535	0.004	0.807	0.003	0.753
Board size	-0.003	-1.552	-0.003	-1.577	**-0.005**	-2.222**	**-0.005**	-2.305**	**-0.006**	-2.062**	**-0.006**	-2.08**
size	0.005	0.504	0.005	0.493	**-0.030**	-2.23**	**-0.030**	-2.242**	**-0.032**	-1.935*	**-0.032**	-1.933*
Liq	-0.003	-0.616	-0.003	-0.57	-0.004	-0.53	-0.004	-0.5	-0.004	-0.499	-0.005	-0.527
L **Own_Con**	0.021	1.071	0.023	1.17	0.026	1.003	0.03	1.149	0.051	1.613	0.05	1.605
Expense	0.008	1.309	0.005	0.83	**0.015**	1.808*	0.009	1.104	**0.024**	2.444**	**0.025**	2.623**
Age	0.001	0.83	0.001	0.881	**0.002**	1.649*	**0.002**	1.734*	0.002	1.238	0.002	1.24
Duration	**0.001**	2.116**	**0.001**	2.009**	0.000	0.719	0.000	0.527	0.000	-0.268	0.000	-0.276
Turnover	**-0.081**	-3.838**	**-0.079**	-3.748**	**-0.055**	-1.937*	**-0.052**	-1.832*	-0.023	-0.67	-0.024	-0.699
Tobin's Q	**0.016**	5.654**	**0.015**	5.357**	0.006	1.63	0.005	1.38	0.003	0.666	0.004	0.758
Real_Issue	**0.201**	2.005**	**0.190**	1.892*	**0.391**	2.871**	**0.371**	2.719**	**0.512**	3.052**	**0.516**	3.08**
Wedge	-0.001	-1.205	-0.001	-1.192	-0.001	-1.356	-0.001	-1.33	-0.001	-1.307	-0.001	-1.302
D(GEM)	**0.029**	2.47**	**0.027**	2.291**	**0.035**	2.244**	**0.031**	1.991**	**-0.062**	-3.25**	**-0.062**	-3.227**
D(listing)	**-0.060**	-3.982**	**-0.061**	-4.004**	**-0.105**	-5.161**	**-0.105**	-5.179**	**-0.071**	-2.857**	**-0.071**	-2.846**
Year	NO		NO		NO		NO		NO		NO	
Industry	YES		YES		YES		YES		YES		YES	
N	1434		1434		1430		1430		1422		1422	
Adjusted R^2	0.074		0.072		0.073		0.068		0.05		0.05	
F	7.337**		7.151**		7.241**		6.814**		5.516**		5.165**	

Table 9: The Impact of Over-issuance on Long-run Performance- SOE v.s. Non-SOE and Low v.s. High Over-issuance

	WR1				WR2				WR3			
	Beta	t	Beta	t	Beta	t	Beta	t	Beta	t	Beta	t
Panel A: Non-SOE subsample												
Constant	-3.348	-0.741	-2.565	-0.571	**-10.864**	-1.822*	-9.152	-1.54	-8.571	-1.186	-9.533	-1.329
D_{high_OF}	**-0.021**	-1.811*			**-0.054**	-3.481**			-0.01	-0.513		
D_{low_OF}			0.015	1.037			**0.044**	2.331**			**0.039**	1.723*
PE_{offer_1yr}	**0.025**	3.453**	**0.023**	3.236**	0.016	1.643	0.011	1.187	0.008	0.725	0.010	0.833
PE_{IPO_1yr}	**-0.008**	-2.183**	**-0.007**	-2.062**	0.000	0.044	0.001	0.254	0.005	0.862	0.004	0.749
Board size	**-0.005**	-1.991**	**-0.005**	-2.034**	**-0.008**	-2.439**	**-0.008**	-2.529**	-0.006	-1.508	-0.006	-1.578
size	0.019	1.399	0.019	1.403	-0.006	-0.368	-0.006	-0.36	-0.033	-1.548	-0.033	-1.568
Liq	0.005	0.739	0.005	0.758	0.003	0.351	0.003	0.379	0.004	0.355	0.003	0.319
Ln(Own_Con)	0.016	0.685	0.018	0.802	0.014	0.453	0.021	0.679	**0.064**	1.733*	**0.065**	1.784*
Expense	0.003	0.541	0.001	0.151	0.009	1.111	0.003	0.391	**0.02**	1.917*	**0.020**	1.992**
Age	0.001	0.475	0.001	0.58	0.001	0.638	0.001	0.843	0.002	1.094	0.002	1.148
Duration	0.001	1.141	0.001	1.061	0.000	0.395	0.000	0.242	0.000	0.085	0.000	0.059
Turnover	**-0.058**	-2.467**	**-0.057**	-2.419**	-0.032	-1.037	-0.03	-0.966	0.002	0.05	-0.001	-0.019
Tobin's Q	**0.020**	6.099**	**0.020**	5.991**	**0.012**	2.749**	**0.012**	2.663**	0.008	1.457	**0.009**	1.685*
Real_Issue	0.156	1.237	0.149	1.179	0.242	1.452	0.226	1.353	**0.424**	2.087**	**0.432**	2.13*
Wedge	-0.001	-1.537	-0.001	-1.517	-0.002	-1.852*	**-0.002**	-1.811*	-0.002	-1.641	-0.002	-1.626
D(GEM)	**0.032**	2.534**	**0.031**	2.433**	**0.042**	2.527**	**0.039**	2.347**	**-0.063**	-3.158**	**-0.062**	-3.11**
D(listing)	**-0.070**	-3.727**	**-0.069**	-3.669**	**-0.122**	-4.964**	**-0.120**	-4.84**	**-0.087**	-2.895**	**-0.086**	-2.865**
Year	NO		NO		YES		NO		NO		NO	
Industry	YES		YES		YES		YES		YES		YES	
N	1089		1089		1089		1089		1083		1083	
Adjust R^2	0.075		0.073		0.072		0.066		0.052		0.054	
F	5.914**		5.779**		5.668**		5.2668**		4.273**		4.434**	

	WR1				WR2				WR3			
	Beta	t	Beta	t	Beta	t	Beta	t	Beta	t	Beta	t
Panel B: SOE subsample												
Constant	3.12	0.504	3.036	0.492	8.344	0.99	8.927	1.063	14.36	1.332	15.224	1.413
D_{high_OF}	-0.021	-0.69			0.032	0.776			0.06	1.152		
D_{low_OF}			-0.022	-1.252			-0.038	-1.614			-0.032	-1.056
PE_{offer_1yr}	0.002	0.141	-0.001	-0.112	0.013	0.79	0.013	0.814	0.026	1.261	0.029	1.409
PE_{IPO_1yr}	0.006	1.328	0.007	1.483	0.004	0.557	0.004	0.646	0.002	0.297	0.003	0.313
Board size	0.002	0.91	0.002	0.921	-0.001	-0.156	0	-0.054	-0.001	-0.182	0	-0.078
size	-0.007	-0.431	-0.011	-0.658	-0.058	-2.483**	**-0.058**	-2.51**	-0.021	-0.707	-0.017	-0.584
Liq	**-0.020**	-1.839*	**-0.019**	-1.718*	-0.014	-0.935	-0.010	-0.692	-0.008	-0.435	-0.005	-0.239
Ln(Own_Con)	0.031	0.774	0.032	0.807	0.062	1.143	0.062	1.146	-0.016	-0.229	-0.017	-0.248
Expense	0.049	1.625	0.035	1.251	**0.098**	2.393**	**0.1**	2.619**	**0.131**	2.514**	**0.146**	2.984**
Age	0.001	0.242	0.001	0.318	0.004	1.266	0.005	1.304	-0.003	-0.573	-0.003	-0.574
Duration	0.001	1.36	0.001	1.419	0.000	0.242	0.000	0.453	0.000	-0.441	0.000	-0.252
Turnover	**-0.199**	-3.77**	**-0.2**	-3.80*	**-0.181**	-2.516**	**-0.174**	-2.431**	**-0.189**	-2.04**	**-0.178**	-1.925*
Tobin's Q	0.005	0.879	0.002	0.437	-0.011	-1.451	**-0.013**	-1.698*	-0.014	-1.453	-0.015	-1.49
Real_Issue	0.207	1.24	0.2	1.204	**0.452**	1.895*	**0.453**	1.908*	0.451	1.48	0.464	1.522
Wedge	0.001	0.573	0.002	0.673	0.001	0.382	0.001	0.352	0.001	0.295	0.001	0.224
D(GEM)	-0.046	-0.803	-0.047	-0.836	-0.093	-1.188	-0.08	-1.035	**-0.214**	-2.152**	**-0.196**	-1.984**
D(listing)	**-0.080**	-2.794**	**-0.081**	-2.846**	**-0.151**	-3.872**	**-0.148**	-3.823**	**-0.106**	-2.112**	**-0.101**	-2.026*
Year	NO		NO		NO		NO		NO		NO	
Industry	YES		YES		NO		NO		NO		NO	
No.	341		341		337		337		335		335	
Adjust R^2	0.101		0.104		0.121		0.127		0.068		0.067	
F	3.111**		3.182**		3.579**		3.712**		2.346**		2.332**	

Table 10: The Impact of Over-issuance on Investment Efficiency: SOE v.s Non-SOE

The dependent variable is investment inefficiency that is gauged by the absolute value of the residual term ($|\varepsilon_{it}|$) of the following regression in reference to Richardson (2006):

$$INV=\alpha+\beta_1 Cash_{i,t}+\beta_2 Lev_{i,t}+\beta_3 Liq_{i,t}+\beta_4 EPS_{i,t}+\beta_5 Sales\_Gr._{i,t}+\beta_6 IPO\_year_{i,t}+\varepsilon_{i,t}.$$

Compensation denotes the top 3 managers' salary. Ownership concentration (*Own_Con*) denotes the top five shareholders' shareholdings. Sales growth (*Sales_Gr*) denotes the sales growth rate in two consecutive quarters.

	Non-SOE				SOE			
	IPO		Post-IPO		IPO		Post-IPO	
	Beta	t	Beta	t	Beta	t	Beta	t
Constant	**2.34**	2.233**	**1.551**	2.251**	**11.159**	3.186**	**2.662**	2.231**
D_{high_OF}	**0.009**	2.748**	**0.003**	1.746*	0.004	0.256	**0.009**	1.675*
p-value for equality test	[0.059]				[0.382]			
D_{low_OF}	**0.007**	1.842*	0.002	0.738	0.009	0.924	**0.006**	1.849*
p-value for equality test	[0.147]				[0.386]			
Compensation	-0.003	-0.727	-0.001	-0.479	**0.028**	1.683*	0.001	0.204
Ind._Dir	-0.003	-0.139	-0.014	-1.036	0.021	0.317	-0.027	-1.028
Own_Con.	**0.001**	1.732*	**0.001**	1.968*	0.000	-1.15	0.000	1.182
Size	**-0.010**	-2.816**	**-0.010**	-4.585**	-0.002	-0.195	**-0.007**	-2.322**
Cash	**0.119**	2.491**	**0.027**	2.079**	-0.244	-1.546	**0.068**	1.934*
Lev	**0.049**	4.233**	**0.041**	7.028**	-0.033	-0.961	**0.033**	3.184
Liq	**-0.013**	-3.398**	-0.002	-1.48	**-0.054**	-2.785**	0.001	0.451
Sales_Gr.	2.99E-06	0.099	-7.06E-05	-0.659	0.004	0.647	0.000	0.826
EPS	**-0.007**	-2.618**	0.002	0.961	-0.003	-0.256	0.001	0.171
Year	YES		YES		YES		YES	
Industry	YES		YES		NO		YES	
No.	1,138		3,050		221		838	
Adjusted R²	0.051		0.028		0.059		0.035	