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## Who Decide IPO Withdrawal and When? \*

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## Who Decides IPO Withdrawal and When?

### Abstract

This paper explores the relationship between the sources of initial public offering (IPO) shares and withdrawal decision. Findings reveal that the amount of primary share does not have a direct relationship to the withdrawal decision. Furthermore, we analyze the relationship of the sources of secondary share and withdrawal decision making. The secondary share by the venture capitals positively relates to the withdrawal decision in any market condition. This is natural because the venture capitals usually cut off the relationship with the issuer firms. Moreover, the amount of secondary share by CEOs positively links with the withdrawal decision only during the IPO bubble period. These results imply that the preference for the IPO withdrawal decision differs by the secondary share seller, and that characteristics of the CEOs changes by the market timing.

Keywords: Withdrawn IPOs; Primary share; Secondary share; Market condition. *JEL classification code: G20; G30; G31*

## 1 Introduction

Market condition is one of the important factors that influence the success of an IPO (initial public offering)(Baker and Wurgler, 2002). Weak market conditions worsen investor sentiment, which leads to poor demand for the IPO stocks. The poor demand leads to a decline in the offering price (Cornelli et al., 2006; Dorn, 2009) and decreases the proceeds if the number of offering shares is constant.<sup>1,2</sup> Hence, some firms typically withdraw IPOs during weak market conditions (Busaba et al., 2001; Dunbar and Foerster, 2008). Further, the market condition is important for insiders because the high offering price brings a large gain on sales of their ownership in the IPO (Banerjee et al., 2016; Yung et al., 2008). The withdrawal decision should relate to the amount of insider selling at the IPOs, however, the existing literature does not analyze whether the number of secondary shares, which are the stocks sold by insiders at the IPO, affects withdrawal decision-making.

The purpose of this paper is to analyze the determination of withdrawal by the amount of primary and secondary shares, and by the sources of secondary shares. As shown above, a worsening market condition is linked to IPO withdrawal. Here, the impact of the worsening market condition differs by the type of the IPO share, because the proceeds from the primary shares increase the cash holding of the issuer and those from the secondary shares go into the pockets of insiders. If the insiders intend to go public to maximize the amount of proceeds for the issuer, they have an incentive to withdraw the issuance as the primary proceeds increase. However, if the insiders do not care to maximize proceeds from the IPO, they do not withdraw even when the market condition declines, which reduces the primary proceeds. This could happen because IPOs increase the agency cost between the managers and investors due to

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<sup>1</sup> The shares sold by the IPO firm are called primary shares, and those sold by insiders are called secondary shares. <sup>2</sup>

While a large amount of literature examines the relationship between market sentiment and initial return, few analyze the link with the offering price (Cornelli et al., 2006; Dorn, 2009). One of the exceptions is Derrien (2005) who argues that the investor sentiment links positively to the offering price.

diversification (Asker et al., 2014; Bernstein, 2015; Stein, 2003). The diversification happens when the firm issues more primary shares at the IPO, which increases the agency cost. Thus, the incentive to withdraw the IPO in weak market conditions diminishes as the firm issues more primary shares.

Additionally, we analyze whether the withdrawal decision differs by the sources of secondary shares, especially, we focus on sales by CEOs and venture capitals. The effect of market conditions on the withdrawal decision differs by sources of the secondary stock. If insiders sell their stakes at the IPO, they have strong incentives to go public when the offering price is high, so that they can maximize their wealth. The object function differs for insiders, due to the difference in relationship with the IPO firms in post-IPO periods. While venture capitals usually end the relationship after the IPO, CEOs often remain working for the issuer firms (Bruton et al., 2010). Because the venture capitals want to enhance their gain at the IPO, they have a strong incentive to choose the timing of the IPO. The profit function of CEOs comes from the gain at the IPO and those gains caused by subsequent management decisions post- IPO. If the quality of the firm is high and they can obtain the gain after going public, they have less incentive to care about the market conditions at the IPO. On the other hand, if the quality of the firm is low and they want to maximize the gain at the IPO as much as possible, they choose the IPO timing carefully. The latter pattern is frequently observed at the late phase of the IPO bubble. The theoretical literature argues that CEOs with low-quality firms try to go public during the IPO bubble period to sell their own stock with a higher offering price (Chemmanur and He, 2011).

We use Japan's IPO data because it is common to sell some portion of insiders' stake at the IPO. Indeed, about 92 percent of the IPOs offer secondary shares. This enables us to analyze the differences of selling behaviors in weak market condition by multiple insiders.

Further, Japan experienced an IPO bubble around 1999 and 2000 that burst in late 2000, just as in the US. This enables us to show the difference between CEOs' withdrawal decisions around the bubble period.

The findings can be summarized as follows. We find no relationship between the proceeds from primary shares and the withdrawal decision-making. If the insiders care about maximizing primary proceeds, the CEOs will withdraw with a large amount of primary proceeds. However, our findings reject this view. On the other hand, the amount of the secondary shares positively relates to the withdrawal decision, indicating that insiders want to postpone IPOs when their wealth declines.

Next, we divide the sources of secondary share: those by venture capitals and by CEOs. We find the difference in the withdrawal decision by insider selling is affected in separate ways by these two types of agents. First, insider selling by venture capitals positively relates with withdrawal decisions, regardless of market condition.

Second, proceeds gained by CEOs positively relate to the withdrawal decision only during the IPO bubble period in 2001. However, no consistent relationship is found in the entire sample analysis. This implies that the characteristics of CEOs are affected by market condition, and those only pursuing private benefits attempt to go public during the bubble period. We further examine whether the CEOs in the bubble burst period engage in maximizing secondary proceeds by employing investor sentiments. Additionally, after restricting the sample to 2001 only and adding an interaction term between the primary and secondary proceeds for CEOs, we find no statistically significant influence on the interaction term on the withdrawal decision. This implies that CEOs only care about their interests and do not care about the proceeds that flow to the firms by going public.

Previous literature, such as Chemmanur and He (2011), argues that high quality firms go public at the beginning of the bubble, and others follow it. This is why we divide the sample between 2001 and other years. As in the US, the Japanese IPO market experienced a bubble market condition during the late 1990s and early 2000s until it burst in 2000. We assume that many low-quality firms stopped going public after the bubble's collapse. Consistent with this view, we show that the number of withdrawn IPOs was concentrated in 2001. The alternative

possibility is that the withdrawals with high CEO secondary proceeds were observed during the recession period, not due to the collapse of the IPO bubble. To distinguish between them, we restrict the sample withdrawn during a bear stock market period. In this case, we find that, while venture capital firms still positively relates to the withdrawal decision, there is no relationship with the proceeds obtained by CEOs. Also, the amount of primary proceeds does not relate to the withdrawal decision. This is similar to the finding in the full sample analysis. We find that the increase of the probability of withdrawal due to CEOs' secondary proceeds is observed only in the IPO bubble burst period of 2001.

## **2 Related Literature and Hypothesis Development**

### **2.1 Related literature**

In this subsection, we introduce three streams of previous literature that relate to our research. The first stream of literature is about the agency cost at the IPO. The IPO is a typical event that increases agency cost due to diversification of the ownership (Jensen and Meckling, 1976).<sup>3</sup> Based on this argument, recent literature finds that going public leads to a decrease in innovation (Bernstein, 2015) and investment behavior (Asker et al., 2014). Further, the agency theory implies that selling by insiders is a signal of the quality of the IPO firms (Leland and Pyle, 1977).

The second stream of literature is focused on the determinant of IPO withdrawal decision. Latham and Braun (2010) explore the influence of CEO ownership on the decision to withdraw. Hao (2011) sheds light on the factors affecting IPO withdrawal decision from the perspective of litigation risk.

We studied the difference in insider selling at the IPO, especially around the hot market period. Chemmanur and He (2011) argue that firms which go public earlier in an IPO wave are predicted to have higher productivity and post-IPO profitability, and Pastor and Veronesi (2009) show that

high quality firms go public at the beginning of the hot market condition, while low-quality companies imitate their behavior later. Managers try to maximize the benefits when they tend to go public at the peak period of the IPO boom. At the same time, the burst of the IPO bubble indicates that low investor sentiment leads to the decline in the IPO pricing. This reduces the total proceeds from the IPO for insiders.

Previous literature exploring the determinant of withdrawal decision does not analyze the sources of IPO shares. For instance, Dunbar and Foerster (2008) explore the determinant of withdrawal decision. While they find the probability of withdrawal increases in the amount of total shares offered, they remain agnostic with respect to the effects of primary and secondary shares respectively, since the total shares offered are likely to absorb the effects of primary and secondary shares. Without distinguishing the source of secondary shares, Busaba et al. (2001) also examine whether the amount of secondary shares affects withdrawal decisionmaking, but they cannot find significant effect of secondary shares on withdrawal decisions. One potential reason for the insignificant effect is because the sources of secondary shares were not taken into account. To fill this void, we first examine the effects of primary and secondary shares separately. Next, we examine the sources of secondary shares. Specifically, we focus on secondary shares offered by CEOs and venture capitals, who are the two of the largest owners before the IPOs.<sup>2</sup> The objective of these actors differs in some aspects, as we will show in the next subsection.

The source of secondary share would affect withdrawal decision-making due to the difference in object function of the insiders at pre-IPOs. A burgeoning literature has developed on conflicting voices among parties with different investment objectives and horizons. Bruton et al. (2010) investigate the different impacts of private equity investors with different investment horizons on the performances of IPO firms. Arthurs et al. (2008) explore these conflicting voices

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<sup>2</sup> CEOs' selling consists of 23.3 percent while venture capitals' selling consists of 12.3 percent of secondary shares in our sample.



in the context of the IPO, where some agents may face conflicting interests concerning which principal's interest should be served. Our findings suggest that, in the transition to public listed firms, venture capitals tend to take actions that favor their own interests since they are no longer involved in IPO firms once they exit the IPOs.

By taking advantage of the institutional characteristics of the Japanese IPO market, where secondary shares are common at the time of IPO, our findings add to the understanding of who ultimately decides to withdraw in a deteriorating market condition and whose interests are well served in that withdrawal decision.

The third stream of literature is about market timing and the rational IPO bubble. Chemmanur and He (2011) build a model that shows firms which go public earlier in an IPO wave are predicted to have higher productivity and post-IPO profitability, and Pastor and Veronesi (2009) show that the high quality firms go public at the beginning of the hot market condition, while low-quality companies imitate after that. Managers trying to maximize the benefits at the IPOs tend to go public at the bursting period of the IPO boom. At the same time, the burst of the IPO bubble indicates that low investor sentiment leads to the decline of IPO pricing. This, then, reduces the total proceeds from the IPO for the insiders.

## **2.2 Hypothesis for primary proceeds**

The firm's object is to maximize its share value through efficient investment. Thus, the firm insider tries to enhance the amount of proceeds at the IPO. In the IPO process, the offering price is determined after the book building process. The insiders do not know exactly how much they will obtain through the IPO until the completion of that process. If the insider notices that weakening market condition leads to decline of expected proceeds, and if the insider cares about maximizing the subsequent investment, it is optimal in some settings to wait for the market

condition to recover.<sup>3</sup> First of all, we analyze whether the amount of primary proceeds affects the withdrawal decision-making.

The amount of proceeds at the IPO is determined by the shares offered at the IPO and the stock price. Usually, the primary proceeds are used for subsequent investment, therefore maximizing the proceeds is critical for the growth of the company. If the burst of the IPO bubble decreases the offering price, it is, in some settings, optimal to postpone going public until the market condition and offering price recover. If the insiders care about the primary proceeds and achieving subsequent investment, it is optimal to postpone the IPO.

**H1-a.** Frequency of the withdrawal increases as the primary proceeds increase during the recession period.

However, if the insiders care about their own wealth maximization by using the hot market, they do not decide to withdraw in a situation with a large fraction of primary proceeds when the market condition drops, because the amount of proceeds for the company does not influence the private benefit of the insiders.

**H1-b.** Frequency of the withdrawal does not change as the primary proceeds increase

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<sup>3</sup> To further facilitate the use of the option to withdraw an IPO during a weak market condition, the SEC adopted the “public to private” safe harbor rules 155 and amended Rule 477 for withdrawn offerings in 2001, which substantially reduces the cost and financial risk for a withdrawn IPO. For instance, before these regulation changes, the IPO firm had to wait for SEC approval and then wait for at least six months before starting a private offering.

### 2.3 Hypothesis of the Secondary Proceeds

CEOs and venture capital firms are the two main actors at the pre-IPO stage. The withdrawal decision is affected by these two large stakeholders especially when we focus on the number of secondary shares by these two agents and withdrawal decision-making.

CEOs at the pre-IPO stage usually remain as the CEOs after going public. The CEOs have a chance to sell their ownership stake even after going public. If the CEO knows the quality of the firm is high and the stock price will increase after going public, they will not withdraw the IPOs even if the market condition worsens.

If CEOs know the quality of the company is low and want to sell their stocks as high as possible, then they will choose to go public during the IPO bubble period. As shown by Chemmanur and He (2011) and Pastor and Veronesi (2009), the initial concentration of IPOs is by highly productive firms. Then low-quality firms imitate their strategy and go public. In the late stage of the IPO bubble period, low-quality firms with CEOs who maximize their own wealth by selling their own shares at a high price will go public. However, once the market condition worsens and the CEOs predict they cannot sell their shares at a higher price, they will withdraw the IPOs.

**H2-a** CEOs' secondary shares positively link to withdrawal decision-making during the burst of the IPO boom, because some CEOs in low-quality companies try to sell their stocks during the bubble period.

The arguments by Chemmanur and He (2011) and Pastor and Veronesi (2009) assume the IPO bubble period is being led by highly productive firms. The low-quality firms concentrate on the bubble burst period and will withdraw once the market condition worsens. In order to check this assumption, we analyze whether the CEOs withdraw in the recession period or the burst bubble period. This is why only the IPO bubble period shows low-quality firms with a high number of secondary shares by CEOs.

**H2-b** CEOs' secondary shares do not link to the withdrawal decision during the recession period

We next analyze the secondary proceeds by venture capitals and withdrawal decisionmaking. The venture capitals are usually important insiders until going public, not only by funding but also as an adviser for the company. However, venture capital firms sell off the shares and depart from the company after going public. For the venture capitals, the performance after going public does not link to the maximum of their performance. They then have an incentive to sell their shares as quickly as possible when the IPO price is high. If the venture capitals sell their portion at the IPO and stock market conditions decline, they will try to postpone the timing of IPOs because the worsen stock market condition usually links to the decline of the offering price (Derrien, 2005), which leads to the decline of the proceeds from the IPOs when they sell some portion at the IPOs. One of the assumptions is whether the venture capitals can decide to withdraw from the investee companies. Indeed, no clear evidence exists to support this assumption because of the lack of public information about the decision before going public and the small number of the withdrawn IPOs. However, it is not unrealistic for two reasons. First, the venture capitals are one of the largest shareholders before going public, and they have rights to advise important decisions by the company. Second, the venture capitals usually provide advices for the CEOs, and it is natural to say their opinion about the timing of the IPO for the CEOs.

**H3** Venture capitals tend to withdraw IPOs when the market condition is worse and their secondary share is high at the IPOs.

### **3 Japan's IPO Bubble**

Japan experienced an IPO bubble around 2000, just as in the US. This happened due to excessive expectation for internet technology companies and relaxing of the listing requirements (Takahashi and Yamada, 2015). This increased the number of IPOs in this period.

Figure 1 explains the number of completed and withdrawn IPOs in this period for each quarter. We use the withdrawn information from Trader's Web<sup>4</sup>, as with the following analyses. This website contains the list of withdrawn IPOs since the late 1990s. Unfortunately, due to the lack of information about ownership, our dataset starts from 2001 and cannot use the withdrawn IPOs in 2000. Thus, the sample period in this figure is longer than the subsequent analyses.

The number of IPOs was more than 60 issuances in the third quarter of 2000. Indeed, the number of annual IPOs in 2000 was 189, which is the highest number in this sample period. The number of IPOs gradually declined after that. The withdrawals were concentrated in the fourth quarter of 2001, and 14 firms withdrew in these three months, which is the highest number in this sample period. The second peak of the withdrawals is in the last quarter of 2000. In this period, eight firms withdrew.

## **4 Data and Empirical Method**

### **4.1 Completed IPOs and second Time IPOs**

For the completed IPOs and second time IPOs from 2001 to 2016, we manually collected the IPO data from prospectuses and IPO white papers as with other Japanese IPO research.<sup>5</sup> We start our sample with 2001 because prospectuses are available since 2001 from the ELO service provided by Pronexus. The financial information of the IPO firms is from Nikkei NEEDS

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<sup>4</sup> [www.traders.co.jp/ipo\\_info/stop/stop.asp](http://www.traders.co.jp/ipo_info/stop/stop.asp)

<sup>5</sup> Hereafter, firms that successfully completed their first-time IPOs are identified as completed IPOs; withdrawn IPOs that successfully completed their second-time IPOs are identified as second time IPOs.

Financial Quest.

## 4.2 Withdrawn IPOs

One of the difficulties in analyzing withdrawn IPOs is the lack of comprehensive data sources. Thus, we rely on various websites that preserve information related to withdrawn IPOs.<sup>6</sup> To collect detailed information of these withdrawn IPOs, we need to obtain the information from the prospectus. Unfortunately, the data sources frequently used in Japanese IPO research, such as EOL, do not contain the information of withdrawn IPOs. Therefore, we attempt to collect this data from alternative sources. We use a website that preserves IPO prospectuses of IPO firms after 2006, totaling 18 companies.<sup>9</sup> Using the prospectus enables us to collect primary and secondary shares, secondary shares offered by CEOs and venture capitals, expected offering price, and percent ownership by CEOs and venture capitals, which are key variables in our analyses. Unfortunately, up to 2006, there is no source collecting such information. We also rely on a website that collects only some of the IPO data (e.g., primary and secondary shares, percent ownership by CEOs and venture capitals).<sup>7</sup>

The alternative data source lacks some information about secondary shares offered by CEOs (venture capitals) between 2001 and 2006. We assume that primary and secondary shares offered by different insiders in the first time are the same as those in the second time and collect necessary information (e.g., secondary share offered by CEOs and venture capitals respectively) from their second-time prospectus (30 companies). We must admit that data availability is our weakness, and this data handling is also problematic because it ignores the possibility that firms might change the share of primary and secondary share and might have different ownership

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<sup>6</sup> We collect the list of withdrawn IPOs from the following website (e.g., company name, security code, scheduled IPO date) from 2001 to 2016 from [http://www.traders.co.jp/ipo\\_info/stop/stop.asp](http://www.traders.co.jp/ipo_info/stop/stop.asp). Only one company withdrew twice during our sample period and we deleted the second-time withdrawal (security code: 5220) <sup>9</sup>: <https://toushi.kankei.me/c/3126/d/S1008KJC>

<sup>7</sup> <http://ipo.tou3.com/>

structure in their second time IPOs. To alleviate this concern, we check withdrawn IPOs from 2001 to 2006 and find that most of the withdrawn IPOs successfully return to IPO markets within one year. Importantly, we find that, for most of the second time IPOs, the total primary (secondary) share offered and the percentage ownership by top 10

shareholders remain unchanged compared to first time IPOs, suggesting that our data handling is a plausible way to overcome the limitation of data availability. Financial information of withdrawn IPOs that never return is obtained from Teikoku Data Bank's database. Due to the small sample size and lack of comprehensive data sources for withdrawn IPOs, we can hardly afford to limit our sample to those without missing values on all available variables. Consequently, our sample size might vary among variables and some analyses are conducted based on parsimonious models.

### **4.3 Number of Withdrawn IPOs in Japan**

Financial institutions and utilities are removed from the sample. As a result, our sample consists of 1,373 completed IPOs, 54 withdrawn IPOs, and 35 successful second-time IPOs. Panel A of **Table 1** shows the total number of IPOs, divided into completed, withdrawn and second time IPOs for each year. Column 1 reports the number of IPOs which is the sum of the completed and withdrawn IPOs. Column 2 reports the completed IPOs, and column 3 reports the withdrawn IPOs for each year. The last column reports the number of IPOs that were once withdrawn, registered again, and then completed in the second-time registrations. Overall, we have 1,427 IPOs, 54 of which were withdrawn (around 3.8%), which is low compared to their counterparts in the US, ranging from 8.9% in 1991 to 55.3% in 2000 (Dunbar and Foerster, 2008). When restricting the sample to 2001, we find that more than 10% of the firms were withdrawn after the registration.

Panel B reports the cohort table of the withdrawn and second time IPO year. Most second time IPOs successfully return to IPO markets within one year. For instance, 80% of withdrawn

IPOs (16 in 20) in 2001 returned to IPO markets by the end of 2002. Panel C further reports the duration between a withdrawn issue and successful re-issue for both US and Japan. It is worth noting that approximately 65% of withdrawn IPOs in Japan successfully return at a median of 164 days, which is substantially higher and faster than in the US, where the returning rate is 9% and the duration for the return is 663 days after the withdrawal.

#### **4.4 Definition of variables**

As a measurement of the primary share, we use the fraction of primary proceeds divided by pre-IPO total assets. As for Hypothesis 2, we calculate the fraction of secondary proceeds offered by CEOs and venture capitals, divided by pre-IPO total assets.<sup>8</sup>

Since the market condition is a critical factor that influences the withdrawal decision, we calculate the buy-and-hold Russell-Nomura Mid-Small Cap Index return, which is the weighted-average return index of the small and medium size firms in Japan, during the 63 trading days ending 22 days before the first trading day (from day -85 to day -22, where day 0 is the first trading day) for each of the sample companies and defined as *BHRA -3 to -1 Month*. Previous studies commonly calculate market condition during several months before the listing date. However, this method may not accurately capture IPO decisions because an approximately one-month interval exists between the submission date of the first prospectus, which is also the date of the shareholder meeting for IPO approval, and the first trading date. We also include the buy-and-hold Russell-Nomura Small and Medium Size Index return during the one month preceding the first trading date (market condition during book building period) defined as *BHAR -1 to 0 Month*.

In addition, shareholders with the largest ownership before IPO might also be concerned about the dilution effect due to low offering price, thus, we predict that the higher percentage

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<sup>8</sup> We also conduct analyses by computing the fraction of primary shares and secondary shares offered by CEOs (venture capitals), divided by all outstanding shares at pre-IPO stage. Qualitatively similar results are obtained.



ownership by the shareholder with the largest ownership, the higher probability of withdrawal. Given that valuation uncertainty is less severe for large (total assets), profitable (ROA) and low sale-growth firms, we expect them to be less affected by market conditions, thus are less likely to withdraw. Highly leveraged firms concerned about the cost of financial distress might put high priority on capital structure adjustment as a motive for the IPO, thus are less likely to withdraw. Firms with alternative financing sources (debt retirement dummy takes the value one if the primary stated use of proceeds is retirement of debt) are more likely to withdraw during weak market conditions because they don't have to accept the discounted offering price due to low investor sentiment. Finally, the role played by reputable underwriters is expected to reduce the valuation uncertainty, thus reduce the probability of withdrawal (certification effects).

## 5 Descriptive Analysis

**Table 2** reports results of the simple comparison of two subsamples. Panel A of **Table 2** reports the difference between the withdrawn IPOs and completed IPOs. The amount of primary share is almost similar in the two subgroups. The fraction of proceeds from primary shares on the total asset at pre-IPO is 45% for withdrawn firms and 38% for completed IPOs. The proceeds from the secondary shares of the withdrawn IPOs are higher than that of completed IPOs, which is statistically significant at the 5% level. When dividing the portion of the secondary shares by CEOs and venture capitals, we find that firms with large amounts of secondary shares offered by venture capitals choose to withdraw. Of course, these results do not control for the influence of market condition and other firm specific characteristics.

The stock market condition is worse for the withdrawn IPOs, which is intuitive because, in the bear market, investor sentiment usually weakens and the offered price drops, which leads to the drop of proceeds from the IPO. The median *BHRA -3 to -1 Month* is -6.8% for withdrawn IPOs, while that of completed IPOs is 1.1%. Similarly, the median market condition during the book

building period (*BHAR -1 to 0 Month*) is -2.5% for withdrawn IPOs, which is lower than that of IPOs which successfully went public, 0.9%. As for performance variables, we find a significant difference in mean sales growth ratio between the two groups, but no significant difference exists in ROA.

Panel B of

**Table 2** analyzes the characteristics of the firms that went public again after being withdrawn in column 1 and those that stay private after being withdrawn in column 2. Almost all of the variables report the insignificance of the mean and median test, except for *BHRA -3 to -1 Month*. We find that the firms which withdrew in weak market conditions (-6.9%) try to go public again, while those who never return tend to have withdrawn in a relatively good market condition (-1.1%). One plausible explanation is that firms which withdraw during relatively good market conditions might have some negative information (such as litigation risk or a questionable accounting report) or other consideration (such as M&A as an alternative way to exit) rather than the commonly stated poor market condition, which in turn reduces the chance of retry.<sup>9</sup>

## 6 Empirical Analysis

### 6.1 Matching Analysis

Table 3 reports the results of the matching mechanism. For each withdrawn firm, one nearest matching firm is chosen from the propensity score by logit estimation. The matched firm is chosen from the same industry.

Panel A shows the results of the IT bubble burst period in 2001. We find no difference in the amount of primary shares between withdrawn and completed IPOs. The amount of primary proceeds of the withdrawn IPOs is 45.20% of the total assets pre-IPO period, which is almost the

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<sup>9</sup> Cooney et al., (2009) find that publicly traded firms acquire about 19% (211/1,119) of the withdrawn IPOs at discounted prices compared to the valuations indicated in IPO prospectus.

same as that of completed IPOs, 43.22% ( $p = 0.905$ ). On the other hand, we find a difference in the amount of the secondary proceeds. The amount of secondary proceeds of withdrawn firms is 27.49% and higher than that of matched firms, 8.06% ( $p = 0.001$ ).

The type of seller is then analyzed: we focus on the portion of selling by CEOs and venture capitals. We find the difference that withdrawn IPOs contain more stocks sold by both CEOs and venture capitals. Row 3 compares the dummy variable that takes the value of one if the IPO contains a secondary share by the CEOs. Findings show that 57% of the withdrawn IPOs contain the secondary share of the CEOs, while that is 7% in the matched firms. The average amount of the proceeds for CEOs is 12.97% in the withdrawn IPOs, while it is only 0.07% on average in the completed IPOs. Column 5 reports the frequency of the selling by the venture capitals and we find that half of the withdrawn IPOs contain secondary shares from venture capitals, while none of the matched firms contains the secondary shares by venture capitals.

Panel B reports the results of the entire sample analysis. Interestingly, we find that only the decisions by venture capitals work for the withdrawn IPO decision-making and those of the CEOs do not work. As with the results in the burst period of 2001 as shown in Panel A, we find no difference in the amount of primary proceeds between the two subsamples.

## 6.2 Multivariate Analysis

Table 4 reports the determination of the IPO withdrawal. The table reports the marginal effects around the mean value. Dependent variable takes the value of one for withdrawal decision-making. Column 1 reports the results where *Primary Proceeds* is the main explanatory variable. We find no influence of *Primary Proceeds* on the withdrawal decisions, not only in column 1 but also in other columns. This is consistent with Hypothesis H1 that insiders do not decide the withdrawal decision by the number of primary shares.

Panel A of Table 4 uses the IT bubble burst period of 2001, and shows that the withdrawal decision is strongly caused by secondary shares sold by the CEOs and venture capitals. Estimated coefficients of both *Secondary Proceeds by CEO* and *Secondary Proceeds by VC* are both positive.

Moreover, the economic impact is nontrivial. Estimated marginal effect of the *Secondary Proceeds by CEO (VC)* is 0.012 (0.005). The frequency of the withdrawn IPOs is 3.7% (= 54/1427). However, the *Primary Proceeds* are not positive in all five estimations. Rather, it has a negative estimated value on the column 2, while it is marginally significant ( $p = 0.099$ ).

The variables that relate to secondary proceeds are included in columns 2 to 4. Column 2 includes the *Secondary Proceeds*. The estimated marginal effect is 0.12 ( $p = 0.004$ ).

With regard to other control variables, market condition is negatively and significantly related to the withdrawal decision-making both statistically and economically, which is consistent with the premise of our hypotheses that the withdrawal decision is really a response to poor market condition. The marginal effect on *BHAR -3 to -1 Month* in Column 3 suggests that a 10-percentage point decrease in market condition results in a one percentage point increase in the probability of withdrawal. Leverage engenders a significant and negative sign, likely because highly leveraged firms concerned about the cost of financial distress put high priority on capital structure adjustment as a motive for the IPO. High-growth firms in sales are more likely to withdraw, probably because growing companies are viewed as risky IPOs and the uncertainty of offering price in turn affects the decision to withdraw.

## 7 Additional Analysis

### 7.1 Joint effects of the Primary and CEO Secondary Share

The previous analysis examines the influence of the primary shares and secondary shares separately. However, there is a possibility that these two factors jointly affect the withdrawal decision-making. **Table 5** shows the results using OLS estimation. Because of the non-linearity, it is difficult to interpret the results of the interaction term in logit estimation, so we chose to employ the OLS estimation. We find that *Secondary Proceeds by CEO* has a positive coefficient, while its interaction term with *Primary Proceeds* is not statistically significant. Further, the

estimated coefficient of *Primary Proceeds* is not statistically significant, even when controlling after the joint effect of the primary and secondary shares.

## 7.2 Recession period instead of bubble burst period

If we assume that 2001 is the year after the burst of the IPO bubble, then CEOs trying to maximize secondary proceeds during the IPO rush to go public, in order to obtain secondary proceeds with high offering price. Such CEOs would not be seen during the recession period without the bubble in IPO prices. We next restrict the sample to the bear market period and analyze the relationship between the sources of IPO stocks and withdrawal decisions.

The sample is restricted to the firms with *BHAR -1 to -0 Month* is lower than -5.47%, which is the 10<sup>th</sup> percentile of the index return in our sample. The result is reported in **Table 6**. We find the result is similar to the entire sample analysis in Panel B of Table 4. Although we find a positive relationship between the VCs selling and withdrawal decision, no relationship is observed between the CEOs selling and withdrawal decision. This indicates that the rentseeking phenomenon by the CEOs is only observed around the bubble in the IPO stock price.

## 8 Conclusion

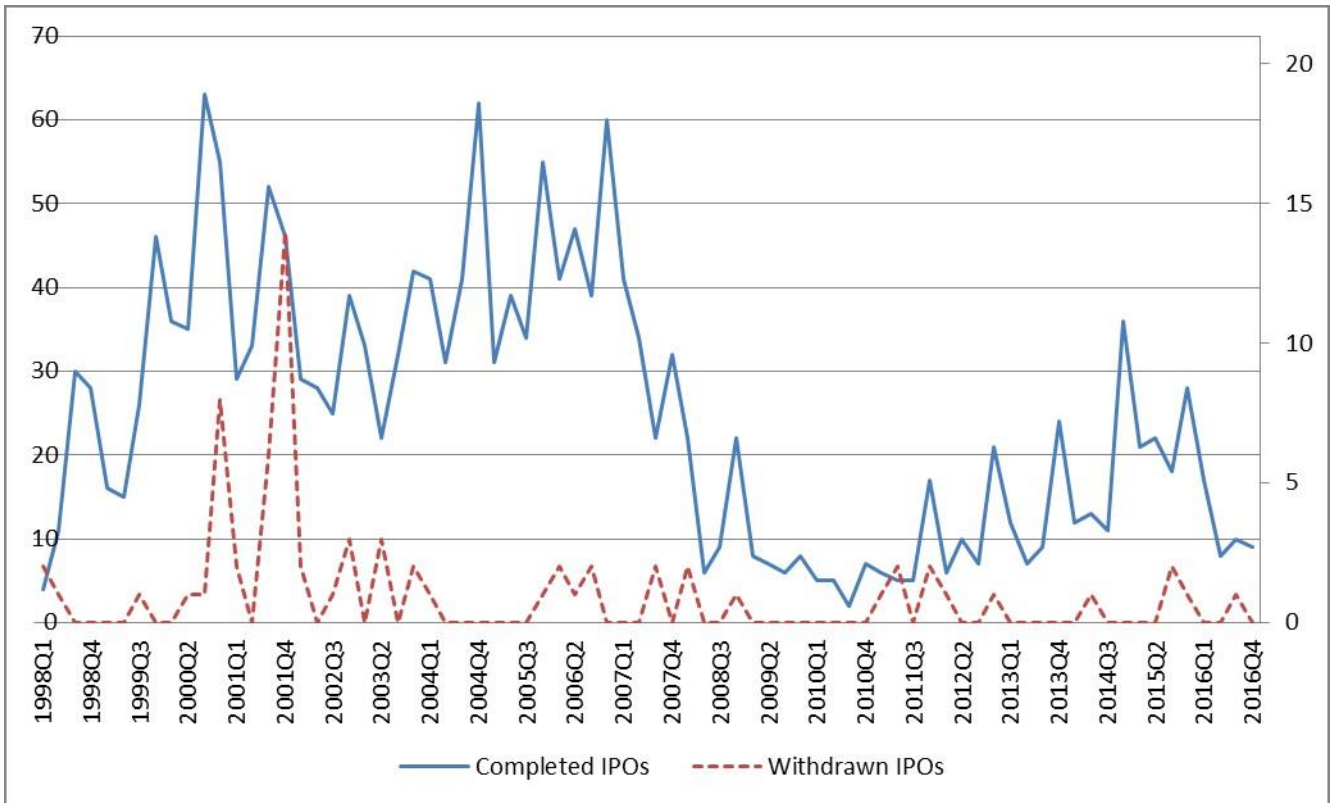
This paper explores the relationship between the sources of IPO share and withdrawal decisions. Findings reveal that the number of primary shares does not have a direct relationship to the withdrawal decision. Furthermore, we analyze the relationship of the sources of secondary shares and withdrawal decision-making. The secondary shares offered by the venture capitals are positively related to the withdrawal decision in any market condition. This is natural because venture capitals usually cut off the relationship with issuer firms. Moreover, the number of secondary shares offered by CEOs is positively linked with the withdrawal decision only during the IPO bubble period. These results imply the preference for the IPO withdrawal decision differs by the secondary share seller, and that the characteristics of CEOs changes according to the market timing.

Our finding that the CEOs do not withdraw during the burst of the bubble period when the amount primary share is high indicates that CEOs do not fully care about the increase of cash for the company. Rather, they care about their own private wealth, especially during the IPO bubble burst period.

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**Figure 1: Number of completed and withdrawn IPOs (quarterly base)**

Number of completed IPOs reported in the left axel, and number of withdrawn IPOs is reported in the right axel



**Table 1**

Sample Year Distribution. Panel A shows a year-by- year distribution of our sample IPOs, broken down by the eventual outcome (Total IPOs, Completed IPOs, Withdrawn IPOs and Second-time IPOs). Panel B reports a cohort table of the withdrawn and second-time IPO year. Panel C presents the length of time between a withdrawn IPO and successful re-issue for US and Japan. The US data are taken from Panel A, Table 4 in Dunbar and Foerster (2008). We calculate the length of time for Second-time IPOs as the duration between first time and second time IPO date. For those No-Return IPOs, we truncate it at the end of 31 December 2016 and calculate the duration between first time IPO date and 31 December 2016.

Panel A Number of total, completed, withdrawn, and second-time IPOs per year.

Year	Total IPOs	Completed IPOs	Withdrawn IPOs	Second-Time IPOs
2001	176 156	20	18	
2002	109 103	6	6	
2003	116 112	4	3	
2004	159 158	1	1	
2005	149 148	1	1	
2006	176 171	5	2	
2007	115 113	2	0	
2008	48 45	3	1	
2009	18 18	0	0	
2010	19 19	0	0	
2011	38 33	5	2	
2012	46 44	2	1	
2013	52 52	0	0	
2014	73 72	1	0	
2015	89 86	3	0	
2016	44 43	1	0	
Total	1427	1373	54	35

Panel B Cohort table of the withdrawn and second-time IPO year

		Return Year																
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
WithdrawnYear	20016	10	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	18
	2002	1	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	6
	2003		1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3
	2004			0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	2005				0	1	0	0	0	0	0	0	0	0	0	0	0	1
	2006					1	0	0	0	0	0	0	0	0	0	0	1	2
	2007						0	0	0	0	0	0	0	0	0	0	0	0
	2008							0	1	0	0	0	0	0	0	0	0	1
	2009								0	0	0	0	0	0	0	0	0	0
	2010									0	0	0	0	0	0	0	0	0
	2011										2	0	0	0	0	0	0	2
	2012											0	0	0	1	1	1	1
	2013												0	0	0	0	0	0
	2014													0	0	0	0	0
	2015														0	0	0	0
	2016																0	0
Total		6	11	4	2	1	4	1	1	1	0	2	0	0	0	1	2	35

Panel C presents the length of time between a withdrawn issue and a successful re-issue for US and Japan

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Days	N	Mean	Median	Minimum	Maximum	Standard deviation	Probability of return	Sample Period
Japan	35	506	164	21	3922	821	65%	2001-2016
US	138	819	663	77	3523	630	9%	1985-2000

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**Table 2**

Summary statistics. Panel A reports summary statistics of variables by the status of IPOs while Panel B reports summary statistics of variables by the type of withdrawn IPOs. All continuous variables are winsorized at the top and bottom one percent values. *t*-statistics (*z*-statistics) are for mean (median) difference test between withdrawn IPOs and completed IPOs (second-time IPOs and no-return IPOs in Panel B). \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively. See appendix for variable definition.

Panel A Summary statistics of variables by the type of IPOs

	Withdrawn IPOs	Completed IPOs	<i>t</i> -statistics
	Mean [Median]	Mean [Median]	[ <i>z</i> -statistics]
<i>Primary Proceeds</i>	45.23% [18.74%] N=54	37.59% [16.76%] N=1373	0.88 [0.47]
<i>Secondary Proceeds</i>	42.70% [21.85%] N=54	26.92% [10.32%] N=1373	2.16** [2.01***]
<i>Secondary Proceeds by CEO</i>	5.86% [0.00%] N=48 15.34% [0.00%] N=48	5.03% [0.00%] N=1318	0.51 [-1.46]
<i>Secondary Proceeds by VC</i>	-4.85% [-6.82%] N=54	5.93% [0.00%] N=1318	2.67*** [1.54]
<i>BHAR -3 to -1 Month</i>	-2.75% [-2.52%] N=54 8.41 [8.18] N=48	1.68% [1.12%] N=1373	-4.72*** [-4.97***]
<i>BHAR -1 to 0 Month</i>	52.42% [54.17%] N=48	0.70% [0.89%] N=1373	-4.64*** [-3.94***]
<i>lnAssets</i>	13.59% [12.16%] N=48	8.34 [8.17] N=1353	0.34 [0.01]
<i>Leverage</i>	135.39% [23.88%] N=48	58.36% [61.93%] N=1353	-1.84 [-1.52] 0.40
<i>ROA</i>	49.22% [45.32%] N=54	12.91% [10.96%] N=1351	[0.31] 4.55***
<i>Sales Growth Ratio</i>	51.85% [1.00%] N=54	49.03% [20.56%] N=1340	[1.37] 1.76*
<i>No1 Shareholder Stake</i>	29.63% [0.00%] N=54	43.84% [40.78%] N=1328	[1.43] 0.08
<i>Reputable Underwriter</i>	N=54	51.27% [1.00%] N=1328	[0.08] 0.72
<i>Debt Retirement</i>		25.30% [0.00%] N=1328	[0.72]

Panel B Summary statistics of characteristics by the type of withdrawn IPOs

	Second-Time IPOs	No-Return IPOs	t- statistics
	Mean [Median]	Mean [Median]	[z- statistics]
<i>Primary Proceeds</i>	45.62% [21.48%] N=35	44.53% [13.54%] N=19	0.06 [0.57]
<i>Secondary Proceeds</i>	38.66% [21.48%] N=35	50.18% [22.41%] N=19	-0.57 [-0.05]
<i>Secondary Proceeds by CEO</i>	6.11% [0.00%] N=34	5.26% [0.00%] N=14	0.19 [0.44]
<i>Secondary Proceeds by VC</i>	12.22% [0.00%] N=34	22.91% [0.00%] N=14	-0.86 [-0.97]
<i>BHAR -3 to -1 Month</i>	-6.90% [-8.83%] N=35	-1.06% [-2.16%] N=19	-2.25** [-2.47**]
<i>BHAR -1 to 0 Month</i>	-2.67% [-2.51%] N=35	-2.90% [-3.47%] N=19	0.12 [0.06]
<i>lnAssets</i>	8.43 [8.09] N=32	8.38 [8.19] N=16	0.11 [-0.02] -
<i>Leverage</i>	52.14% [51.21%] N=32	52.99% [58.61%] N=16	0.11 [-0.00]
<i>ROA</i>	11.76% [10.32%] N=32	17.24% [15.09%] N=16	-1.22 [-1.14]
<i>Sales Growth Ratio</i>	167.95% [23.89%] N=30	65.62% [17.01%] N=14	1.15 [1.79*]
<i>No1 Shareholder Stake</i>	49.81% [46.88%] N=35	48.12% [40.83%] N=19	0.24 [0.41]
<i>Reputable Underwriter</i>	48.57% [0.00%] N=35	57.89% [1.00%] N=19	-0.65 [-0.65]
<i>Debt Retirement</i>	34.29% [0.00%] N=35	21.05% [0.00%] N=19	1.01 [1.01]

**Table 3**

Propensity score matching results of the decision to withdraw an IPO. This table reports the comparison of primary proceeds (secondary proceeds, secondary proceeds realized by various insiders) between withdrawn IPOs and their matching completed IPOs. Control variables in Table 4 are used in a logit model to identify the matching IPOs of each withdrawn IPOs from the same industry. We identify one firm with the nearest scores from the completed IPOs subsample, where caliper is set at 0.01. For secondary proceeds realized by CEOs (VCs), we limit our sample to IPO where shareholding of CEOs (VCs) is larger than 0% prior to IPO. All continuous variables in Panel A are winsorized at the top and bottom one percent values. *t*-statistics are for mean difference test between Withdrawn IPOs and their matching completed IPOs. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively. See appendix for variable definition.

Panel A Size of primary and secondary proceeds realized (2001 subsample)

	1 vs 1 matching with replacement			
	Withdrawn IPOs	Completed IPOs	<i>t</i> -statistics	
<i>Primary Proceeds</i>	45.20% (N=15)	43.22% (N=15)	0.12	
<i>Secondary Proceeds</i>	27.49% (N=15)	8.06% (N=15)	3.63***	
<i>CEO Secondary Shares Dummy</i>	57.14% (N=14)	7.14% (N=14)	3.07***	
<i>Secondary Proceeds by CEO</i>	12.97% (N=14)	0.07% (N=14)	2.33**	
<i>VC Secondary Shares Dummy</i>	50.00% (N=10)	0.00% (N=10)	3.00***	
<i>Secondary Proceeds by VC</i>	8.95% (N=10)	0.00% (N=10)	2.29**	

Panel B Size of primary and secondary proceeds (Entire sample)

	1 vs 1 matching with replacement			
	Withdrawn IPOs	Completed IPOs	<i>t</i> -statistics	
<i>Primary Proceeds</i>	44.73% (N=40)	39.18% (N=40)	0.41	
<i>Secondary Proceeds</i>	41.47% (N=40)	29.38% (N=40)	0.88	
<i>CEO Secondary Shares Dummy</i>	39.39% (N=33)	42.42% (N=33)	-0.24	
<i>Secondary Proceeds by CEO</i>	8.47% (N=33)	6.45% (N=33)	0.56	
<i>VC Secondary Shares Dummy</i>	47.62% (N=21)	23.81% (N=21)	1.58	
<i>Secondary Proceeds by VC</i>	25.63% (N=21)	1.58% (N=21)	2.03**	

Table 4

Logit regression: the decision to withdraw. This table shows the estimated marginal effects of logit estimation. The dependent variable takes a value of one for withdrawn IPOs and zero otherwise. All continuous variables are winsorized at the top and bottom one percentile. Marginal effects are reported. z-statistics computed by using heteroskedasticity-consistent standard errors are in parentheses. See appendix for variable definition. \*\*\*, \*\*, and \* reports statistical significance at 1, 5, and 10% level, respectively.

## Panel A Post IT bubble periods: 2001

	(1)	(2)	(3)	(4)
<i>Primary Proceeds</i>	0.003 (0.93)	-0.003* (-1.65)	-0.002 (-1.43)	0.000 (0.19)
<i>Secondary Proceeds</i>		0.012*** (2.87)		
<i>Secondary Proceeds by CEO</i>			0.012** (2.63)	
<i>Secondary Proceeds by VC</i>				0.005** (2.42)
<b>Control variables:</b>				
<i>BHAR -3 to -1 Month</i>	-0.160*** (-3.59)	-0.071*** (-3.23)	-0.053*** (-3.59)	-0.035*** (-3.01)
<i>BHAR -1 to 0 Month</i>	-0.053** (-2.30)	-0.023** (-2.21)	-0.015** (-2.12)	0.009 (-1.66)
<i>lnAssets</i>	0.001 (0.75)	0.000 (-0.11)	0.000 (1.00)	0.000 (1.20)
<i>Leverage</i>	-0.017** (-2.45)	-0.007* (-1.93)	-0.006*** (-2.17)	-0.004** (-2.09)
<i>ROA</i>	0.001 (-0.11)	0.005 (-0.97)	0.004 (-0.80)	0.001 (-0.35)
<i>Sales Growth Ratio</i>	0.000 (0.01)	0.000 (0.24)	0.000 (1.05)	0.000 (0.64)
<i>No1 Shareholder Stake</i>	0.012* (1.95)	0.006* (1.69)	0.009*** (3.23)	0.004*** (2.97)
<i>Reputable Underwriter</i>	0.001 (0.37)	-0.000 (-0.49)	0.000 (-0.18)	-0.000 (-0.45)
<i>Debt Retirement</i>	0.014** (2.24)	0.010** (2.26)	0.012** (2.60)	0.007** (2.44)
Industry dummy	YES	YES	YES	YES
N	138	138	135	135
Pseudo R2	0.377	0.466	0.495	0.467

Panel B Entire sample

	(1)	(2)	(3)	(4)
<i>Primary Proceeds</i>	0.003 (0.57)	-0.003 (-0.62)	0.002 (0.04)	-0.002 (-0.38)
<i>Secondary Proceeds</i>		0.009* (1.86)		
<i>Secondary Proceeds by CEO</i>			0.009 (0.34)	
<i>Secondary Proceeds by VC</i>				0.016*** (2.11)
<b>Control variables:</b>				
<i>BHAR -3 to -1 Month</i>	-0.123*** (-3.41)	-0.115*** (-3.34)	-0.101*** (-3.11)	-0.098*** (-3.09)
<i>BHAR -1 to 0 Month</i>	-0.094* (-1.78)	-0.099* (-1.91)	-0.085* (-1.77)	-0.091* (-1.89)
<i>InAssets</i>	0.004 (1.41)	0.003 (1.28)	0.003* (1.66)	0.003* (1.45)
<i>Leverage</i>	-0.029** (-2.10)	-0.028** (-2.12)	-0.026** (-2.20)	-0.025** (-2.07)
<i>ROA</i>	0.021 (0.80)	0.010 (0.44)	0.009 (0.34)	0.005 (0.26)
<i>Sales Growth Ratio</i>	0.003** (2.47)	0.003** (2.38)	0.003*** (2.80)	0.002*** (2.57)
<i>No1 Shareholder Stake</i>	0.016 (1.25)	0.016 (1.32)	0.017 (1.59)	0.020** (2.01)
<i>Reputable Underwriter</i>	-0.006 (-1.04)	-0.007 (-1.16)	-0.007 (-1.22)	-0.007 (-1.29)
<i>Debt Retirement</i>	0.008 (1.35)	0.009 (1.55)	0.006 (1.18)	0.007 (1.39)
<i>Industry dummy</i>	YES	YES	YES	YES
<i>N</i>	1179	1179	1144	1144
<i>Pseudo R2</i>	0.154	0.161	0.173	0.185



**Table 5**

2001 and interaction term. This table reports the joint effect of the primary proceeds and secondary proceeds by CEOs. In addition to the column 3 of Table 4, we add the interaction term between primary proceeds and secondary proceeds of the CEOs. All continuous variables are winsorized at the top and bottom one percentile. Marginal effects are reported. z-statistics computed by using heteroskedasticity-consistent standard errors are in parentheses. See appendix for variable definition. \*\*\*, \*\*, and \* reports statistical significance at 1, 5, and 10% level, respectively.

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<i>Primary Proceeds</i>	-0.020 (-0.24)
<i>Primary Proceeds x Secondary Proceeds by CEO</i>	-0.428 (-0.98)
<i>Secondary Proceeds by CEO</i>	1.374** (2.09)
<i>BHAR -3 to -1 Month</i>	-0.790*** (-3.24)
<i>BHAR -1 to 0 Month</i>	0.035 (0.07)
<i>lnAssets</i>	0.032 (1.23)
<i>Leverage</i>	-0.187 (-1.46)
<i>ROA</i>	-0.118 (-0.39)
<i>Sales Growth Ratio</i>	0.020 (0.56)
<i>No1 Shareholder Stake</i>	0.238** (2.07)
<i>Reputable Underwriter</i>	-0.004 (-0.08)
<i>Debt Retirement</i>	0.108* (1.83)
Constant	-0.355 (-1.40)
Industry dummy	YES
N	162
Pseudo R2	0.125

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**Table 6**

Withdrawn Decision during the Recession period. This table reports the relationship of the IPO share and withdrawal decision during the recession period. The sample is consistent with the firms registered to go public in the recession period, or the Russell and Nomura Small and Median Index from -1 to 0 month is lower than 0.0547 that is the 10th percentile of our sample. The structure of Panel A is the same as with Panel B of Table 4. Panel B adds the interaction term between primary proceeds and secondary proceeds of the CEOs. All marginal effects are reported. z-statistics computed by using heteroskedasticity consistent standard errors are in parentheses. See appendix for variable definition. \*\*\*, \*\*, and \* reports statistical significance at 1, 5, and 10% level, respectively.

Panel A

	(1)	(2)	(3)	(4)
<i>Primary Proceeds</i>	-0.022 (-1.32)	-0.025 (-1.40)	-0.021* (-1.78)	-0.020 (-1.31)
<i>Secondary Proceeds</i>		0.024** (2.10)		
<i>Secondary Proceeds by VC</i>			0.047** (2.03)	
<i>Secondary Proceeds by CEO</i>				0.053 (1.06)
<b>Control variables:</b>				
<i>BHAR -3 to -1 Month</i>	-0.012 (-0.53)	-0.020 (-1.08)	-0.013 (-0.94)	-0.005 (-0.22)
<i>BHAR -1 to 0 Month</i>	-0.308* (-1.70)	0.208 (1.50)	0.180 (1.49)	-0.268* (-1.74)
<i>lnAssets</i>	0.000 (-0.01)	0.000 (-0.09)	0.000 (0.03)	0.002 (0.67)
<i>Leverage</i>	0.030 (-1.28)	-0.028* (-1.65)	-0.016 (-1.22)	-0.038** (-2.26)
<i>ROA</i>	0.036 (1.57)	0.018 (0.89)	0.026* (1.87)	0.011 (0.37)
<i>Sales Growth Ratio</i>	0.003** (2.46)	0.002*** (2.66)	0.002** (2.23)	0.003** (2.35)
<i>No1 Shareholder Stake</i>	-0.005 (-0.19)	-0.006 (-0.30)	0.002 (0.12)	-0.010 (-0.37)
<i>Reputable Underwriter</i>	0.017 (-1.44)	0.015 (-1.63)	-0.011 (-1.40)	0.013 (-1.37)
<i>Debt Retirement</i>	0.005 (-0.76)	0.002 (-0.29)	0.572 (-0.65)	0.000 (-0.06)
Industry dummy	YES	YES	YES	YES
N	136	136	134	134
Pseudo R2	0.342	0.374	0.400	0.371

Panel B

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	(1)
<i>Primary Proceeds</i>	-0.029 (-0.92)
<i>Primary Proceeds x Secondary Proceeds by CEO</i>	-0.123 (-1.04)
<i>Secondary Proceeds by CEO</i>	0.326 (0.83) <b>Control</b>
<b>variables:</b>	
<i>RN_MEDIAN3</i>	0.017 (0.18)
<i>RN_MEDIANBB</i>	-1.093 (-1.28)
<i>lnAssets</i>	0.022 (1.31)
<i>Leverage</i>	-0.184 (-1.45)
<i>ROA</i>	-0.116 (-0.61)
<i>Sales Growth Ratio</i>	0.032 (1.57)
<i>No1 Shareholder Stake</i>	0.001 (0.01)
<i>Reputable Underwriter</i>	-0.059 (-1.26)
<i>Debt Retirement</i>	-0.003 (-0.08)
Constant	-0.123 (-0.74)
Industry dummy	YES
N	175
R2	0.111

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## Table Appendix A Variable definition

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<i>Primary Proceeds</i>	(Primary offering * offering price) / total asset in Year -1, where Year 0 indicates IPO year
<i>Secondary Proceeds</i>	(Secondary offering * offering price) / total asset in Year -1, where Year 0 indicates IPO year
<i>Secondary Proceeds By CEO</i>	(Secondary offering sold by CEO * offering price) / total asset in Year -1, where Year 0 indicates IPO year
<i>Secondary Proceeds By VC</i>	(Secondary offering sold by VC * offering price) / total asset in Year -1, where Year 0 indicates IPO year
<i>BHAR -3 to -1 Month</i>	Three-month buy and hold Russell Nomura Mid-Small Cap Index return prior to the filing date
<i>BHAR -1 to 0 Month</i>	One-month buy and hold Russell Nomura Mid-Small Cap Index return after the filing date
<i>lnAssets</i>	Natural logarithm of total assets
<i>Leverage</i>	Total liabilities / total assets
<i>ROA</i>	Operating income divided by total assets
<i>Sales Growth Ratio</i>	Percentage sales growth ratio from previous year
<i>No1 Shareholder Stake</i>	Percent ownership by No 1 shareholder prior to IPO
<i>Reputable Underwriter</i>	A dummy variable which takes a value of one for firms with Top 3 underwriter and zero otherwise
<i>Debt Retirement</i>	A dummy variable which takes a value of one for firms whose primary stated objective is debt retirement and zero otherwise

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