Ownership Structure and IPO Valuation*

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Abstract

We investigate the effect of ownership structure on IPO valuation in Taiwanese market, where many controlling shareholders exert their voting power through pyramidal structures and cross shareholdings, and their voting rights exceed the cash flow rights. Our analyses on 218 Taiwanese IPO firms in the 1992-2001 sampling period indicate that higher cash flow rights of controlling shareholders are positively associated with, and a deviating voting-cash structure is negatively associated with the offer price valuation relative to the intrinsic value computed using comparable price multiples. Our results are consistent with both the interest-alignment and the entrenchment hypotheses. The deviating voting-cash structure also correlates negatively with IPO underpricing, consistent with the hypothesis that controlling shareholders with excess voting rights have less incentive to underprice the unseasoned shares in preventing the emergence of new block shareholders.

Keywords: Ownership Structure, IPO, Interest Alignment Hypothesis, Entrenchment Hypothesis, Reduced Monitoring Hypothesis.

1. Introduction

The separation between ownership and management creates costs and conflicts in many publicly traded firms. In the analysis on resolving the conflicts of interests between shareholders and managers, the role of large shareholders is especially intriguing. On the one hand, large shareholders, with substantial ownership stake, have strong incentives to exert control and engage in active monitoring so as to enhance firm value. On the other hand, large shareholders, when endowed with substantial control power, could also become entrenched and pursue self-interest over firm value maximization. Stulz (1988) formalizes the costs of entrenched large shareholders, and predicts a concave relationship between managerial ownership and firm value. In particular, the cost of entrenchment could be exacerbated when there exists divergence between the cash-flow rights and control rights, and the large shareholders are able to control the firm with disproportional small stake in firm's cash flows (La Porta *et al*., 2002; Claessens *et al*., 2002).

In this study, we examine the effect of large shareholder ownership on firm valuation, with a focus on firms in the IPO market. The new issue market is characterized by extreme uncertainty and information asymmetry, where ownership structure could serve as one crucial piece of information in share valuation. Such information not only outlines the firm's governance structure that dictates resources allocation, but also manifests the motives of controlling shareholder, who may have incentive to run the firm properly or conduct wealth exploitation on minority shareholders. To disentangle the two conflicting roles (incentive vs. entrenchment) of the large shareholders, we make use of a sample of 218 Taiwanese firms issuing IPOs in the period of 1992-2001. Many Taiwanese firms are controlled by ultimate shareholders by voting power through pyramidal structures and cross shareholdings. As a result, their voting rights exceed the cash flow rights.

We formulate our first two hypotheses in examining the correlation between large shareholder ownership and the IPO offer price. If the offer price is a share value determined by the negotiation between the issuers and associated underwriters, then controlling shareholders, with substantial cash flow rights, would have strong incentive in anchoring a high valuation. At the same time, a high offer price would be acceptable to underwriters (on behalf on investors), when the controlling shareholders

owning a majority of cash flow rights are believed to have incentives to engage in firm value maximization (the interest alignment hypothesis). In contrast, underwriters would discount share value when there is concern that the controlling shareholder are entrenched and likely to pursue self-interests, when the large shareholders are able to control the firm with disproportional smaller stake in firm's cash flows (the entrenchment hypothesis). If both the effects of interest-alignment and entrenchment are valued in IPO market, the offer prices would be higher when cash flow rights of the controlling shareholder are higher, or when the deviation between ownership of voting and cash rights is lower.

We examine a valuation metric of the IPO offer price relative to a value based on comparable firm multiples. Our procedure of choosing non-IPO industry peers with similar asset value as comparable firms is similar to that used in Purnanadam and Swaminathan (2004). First, we calculate the price multiples of the IPO firm relative to its equity book value, sales, earning before interest, taxes, depreciation and amortization (EBITDA) in the year prior to the IPO offering. The price multiples are then divided by the corresponding price multiples of the matching sample firm in a cohort year. We then examine the correlation between the price multiple ratios (as a relative valuation measure), and the controlling shareholders ownership variables. Our results from multivariate analyses indicate that higher cash flow rights of controlling shareholders are positively associated with, and a deviating voting-cash structure is negatively associated with the offer price valuation relative to the intrinsic value computed using comparable price multiples. The results are robust and significant after we control for the effect of firm age, reputation of financial intermediaries (underwriter and auditor), IPO selling mechanism (fixed-priced and auction), as well as offering size.

We further investigate the incentive of large shareholders to maintain their control power in the first sale of shares to outside (IPO) investors. Brennan and Franks (1997) propose the reduced monitoring hypothesis, illustrating that insiders valuing independence are willing to underprice new issues to generate excess demand, permitting discriminatory rationing against large bidders. An offer price, in such case, is intentionally set at a lower level to attract a diverse base of individual investors, and to prevent the formation of large blockholders. Smart and Zutter (2003) find that shares of dual class firms are less underpriced than those of single-class firms in the

U.S., in support for the hypothesis that control is a motivation for underpricing. Field and Sheehan (2004), however, report that a large fraction of going-public firms has large blockholders in place prior to the IPO, and managers attempting to use share underpricing to prevent blocks from forming may have already lost the battle in the first place. In our study, we analyze the *incremental disincentive* of large shareholders to underprice the unseasoned shares when they could exert control on firms through voting power (in excess of their cash flows rights)[1]. In support of the reduced monitoring hypothesis, the deviating voting-cash structure correlates negatively with the extent of IPO underpricing. This is in support for that controlling shareholders with excess voting rights have less incentive to underprice the unseasoned shares in preventing the emergence of new block shareholders[2].

The results in our study add to two strands of existing literature. First, our empirical results corroborate the existing findings that the incentives and opportunities of controlling shareholders to both benefit and expropriate the minority shareholders are most relevant in non-U.S. countries (La Porta *et al*, 1999), and corporate governance plays a crucial role in firm valuation. To our best knowledge, this is one of the first studies that directly examine how ownership and governance structure affect the valuation of IPO shares. Our study makes use of a unique dataset from Taiwanese market, where firm shares are closely held by large shareholders through pyramidal structures and cross shareholdings, and their voting rights exceeds the cash flow rights. Our analysis provides significant results that the IPO process incorporates both the benefit of interest alignment and the cost of entrenchment of controlling shareholders into the share valuation. Second, this study provides new findings on relating corporate governance to IPO underpricing. Our results indicate that maintaining control of major shareholders is one important consideration in determining the amount of "money left on the table" for IPO investors. When the

[1] The effect of cash flow rights of large shareholders on IPO underpricing, however, is indeterminate. On the one hand, the large retention of cash flow rights by the controlling shareholders serves as a good signal to IPO investors. Such good signal lowers the information uncertainty of the unseasoned shares, and leads to lower underpricing. On the other hand, large shareholders, with strong incentive to maintain subsequent control, are more likely to underprice IPO shares to avoid monitoring shares from emerging block shareholders. It is also possible that investors are less willing to place a high aftermarket valuation on firms with entrenched large shareholders, resulting in less underpriced shares.

[2] Alternatively, investors n the IPO market may be less willing to place a high valuation (relative to the offer price) for an IPO firms with higher agency costs from entrenched managers/controlling shareholders. As a result, IPO shares of firms with deviating voting-cash structure are less underpriced.

continued control of the firm is less of a concern, IPO shares are less underpriced. Our results are consistent with that controlling shareholders in Taiwan, through complicated pyramidal and cross-ownership structures, effectively reduce the threat to their continued control. Specifically, we report that when large shareholders enjoy the *incremental* control on firms through voting power in excess of their cash flows rights, their incentive to intentionally underprice the unseasoned is significantly mitigated.

The remainder of this paper is organized as follows. Section two presents the data and our summary statistics. Section three describes the procedure of constructing our relative valuation metric based on comparable firms multiples and IPO underpricing. Section four outlines our hypotheses and discusses the empirical findings. Section five concludes the paper.

2. Data and Descriptive Statistics

We manually construct information of Taiwanese firms issuing IPOs in the ten-year period of 1992-2001 from the prospectuses filed with the Security Exchange and Future Commission in Taiwan. We exclude financial firms, which are subject to different regulatory requirements and have distinctly different financial characteristics. We further exclude five IPO firms from our sample due to insufficient information on the controlling shareholder's cash flow and voting rights. Our final sample consists of 218 industrial IPOs, which represent 98% of all Taiwanese firms with new issuance in our sample period. Distribution of our sample by year and industry is presented in Table 1. Our results indicate no significant clustering of our sample IPOs in any given calendar year. Distribution by industry indicates a significantly high percentage of our sample firms (81 IPOs/37.16%) operating in the electronic industry, with 25 IPOs (11.47%) and 20 IPOs (9.17%) operating in the construction and textile industry respectively.

[Insert Table 1 about Here]

We describe the construction of variables used in our analysis as the following:

2.1 Variables of Corporate Ownership/Governance

Voting Rights of Controlling Shareholders

We identify the large shareholders and calculate associated voting and cash flow rights following the procedure used in La Porta *et al*. (1999). Shareholders with dominant voting rights are then designated as the controlling shareholders. In the Taiwanese market, many firms are family-controlled with the control power exerting through family members who jointly possess a majority voting rights[3]. We aggregate the shares registered under the names of the controlling shareholder and his affiliated individuals as direct voting rights.

Indirect voting rights refer to the shares registered under other companies or institutions controlled by the same controlling shareholder. We identify the business entities affiliated with the major shareholders from "Business Groups in Taiwan" published by China Credit Corporation, a local authoritative source. We supplement information on business affiliation from other sources such as company prospectuses and annual reports, in which the affiliations between top managers, directors and supervisors are discussed. We gather the indirect ownership data (registered under other companies or institutions controlled by the controlling shareholder) from "invested business", "major shareholders", and "trades with affiliated persons" disclosed in the company prospectuses or annual reports. Finally, we also use data provided by the Central News Agency to confirming the interwoven relationships among the controlling shareholders.

Indirect voting rights by a major shareholder could be channeled through a pyramidal structure and cross shareholding in Taiwan. When a major shareholder invests in a listed company A, which in turn invests another listed company B, we define that the controlling shareholder obtains indirect control over company B through a pyramidal structure. There could exist multiple layers of chains whereby a shareholder exerts his/her control power. Cross shareholding is the case when the various affiliated business entities are controlled by the same major shareholder, and those affiliating firms hold equity shares in one another. There are some cases of cross shareholding in Taiwan, in which the controlling shareholder of a listed firm, through a subsidiary, buys up shares in another listed company using the company's resources.

[3] We identify family member as spouse, parents, children, siblings, parents-in-law of a major

Following Claessens *et al* (2000), when multiple control chains exist, the voting rights are sum of the voting rights along each chain with the weakest link among all holding layers. Our variable of "voting rights" is used as measure of the controlling shareholder's ability to affect the company's decisions, including the election of directors to the board and appointment of supervisors. For example, family A owns 30% of company B, which in turn owns 20% of company C. In addition, family A owns 20% of company D directly, which in turn owns 10% of company C (This constitutes the second control chain of family A over company C). Family A's control rights over company C are *Min* (30%, 20%) + *Min* (20%, 10%) = 30%

In either a pyramidal structure and cross shareholding, the voting rights of the controlling family are summed from their collective direct and indirect voting rights over the firm. Direct voting rights refer to the shares registered under the names of the controlling shareholder and affiliated individuals. Indirect voting rights refer to the shares registered under the companies or institutions that are in turn controlled by the same controlling shareholder. The direct and indirect voting rights are then aggregated as the total voting rights.

Cash Flow Rights of Controlling Shareholders

The variable of "cash flow rights" is constructed to measure the controlling shareholder's percentage ownership of the profits/loss and dividends of the firm. A high percentage ownership of the controlling shareholder provides a strong incentive to maximize the firm value and minimize agency misconduct. If there exist multiple chains of ownership, the cash flow rights along each chain are the products of all ownership rights in the intermediate companies along that chain. The total cash flow rights are then equal to the sum of all cash flow rights from all ownership chains (Claessens *et al*., 2000)[4]. Using the aforementioned example, the cash flow rights of

shareholder.

[4] Note that there are cases in which a private investment company is included on the list of major shareholders for a listed company. The controlling shareholder's family members represent this private investment company on the board of this listed company. We check the status of this private investment company from numerous sources, including "Business Groups in Taiwan", company prospectuses, annual reports, and newspaper clippings, to determine if the voting rights of this private investment company belong to the controlling shareholder. In calculating the cash flow rights, we need the detailed structure along each layer of ownership. However, when the detailed ownership structure of the private investment company is not available, we assume that the private investment company is equally invested by the controlling shareholder and his other affiliated companies.

family A on company C would be 30%*20% + 20%*10% = 8%.

We calculate the difference of the controlling shareholder's voting and cash flow rights, as divergence between one share/one vote ownership structure, and use it to proxy for the controlling owner's motive to extract wealth from the firm, as in doing so the controlling shareholder receives the entire benefit of the action but only bears a fraction of the cost.

Second Largest Shareholder

The second largest shareholder is the shareholder with the second largest ownership, but not affiliated with the largest shareholder. The existence of a second large blockholder facilitates corporate governance as it allows him/her to exert greater influence on the management and to ward off non-profit-maximizing behavior by the controlling shareholders. We assign a Second Largest Shareholder indicator with a value of one when the percentage ownership of the second largest shareholder exceeds 5%[5], and zero otherwise. In Taiwan, the second largest shareholder is mostly a large family owner, an insurance company, the government, or other institutional investors.

Board Composition

As ownership structure measures the controlling shareholder's incentive, board structure manifests his/her influence over the firm. We focus on the proportion of directors and supervisors represented by the controlling shareholder on the board. The greater the proportion of board membership controlled by the largest shareholder, the easier for an entrenched controlling owner to pursue non-profit-maximizing objectives in return for personal utilities. We therefore count the members in a board of directors (supervisors) that are associated with the controlling shareholder, including family members and representatives of controlled institutions. The proportion of the counts relative to total board members serves as a proxy of the controlling shareholder's influence over the firm.

[5] In our sampling period, Article 241 of Taiwanese Company Law stipulates that shareholders that have continuously held 5% or more of the total number of outstanding shares in a company over one year may request in writing to the company supervisors to institute, in the company interest, an action against a company director. In case the supervisors fail to institute an action within 30 days after having received the request, the shareholders filing such request may then institute an action for the company. Therefore, the existence of a second largest shareholder holding 5% or more of the shares provides a counterbalancing power to deter the controlling shareholder from misconduct.

Table 2 summarizes the basic statistics of 218 qualified 1992-2001 IPOs. The mean (median) voting rights held by the controlling shareholders are 38.48% (36.07%). The mean (median) cash flow rights pertaining to the controlling shareholders are 31.40% (27.91%). The mean deviation between the voting and his/her cash flow rights is 7.09%. In general, the proportion of cash flow to voting rights is 81.39%. Pyramidal shareholding (31.19%) and cross shareholding (13.30%) were also commonly seen in these IPO firms. Around half of the IPO firms (46.79%) have a second largest shareholder to counterbalance the power of the controlling shareholders. On average, 39.45% of the directors and supervisors in the boards are related to the controlling shareholders, serving as one way for the controlling shareholders to affect IPO firm operations.

2.2 Offering Characteristics

Other firm and offering characteristics used in our following analysis include issuing proceeds of the offerings, the reputation of the financial intermediaries (auditor and underwriter), and the average odds rate (for the fixed price offerings only). The variable of proceeds calculated as the natural logarithm of the product of the offer price and the issued shares. Ritter (1991) shows that the issuing firms with small proceeds are associated with higher initial returns. Michaely and Shaw (1995) report that IPO initial return is positively correlated with the reputation of the auditors. We construct a dummy variable of reputable auditor, with a value of one the associated auditor is in the league of the top six accounting firms, namely Arthur Anderson (AA), Klynveld, Peat, Marwick, and Goerdeler (KPMG), PriceWaterhouseCoopers (PwC), Deloitte Touche Tohmatsu (DTT), Ernst & young, Coopers & Lybrand[6], and zero otherwise.

It is documented that IPO offerings underwritten by more prestigious underwriters are less underpriced[7] (Carter, Dark, and Singh, 1998). We use a indicator of reputable underwriter, with a value of one when the lead underwriter is one of the following underwriters: Grand Cathay Securities Corp. (GCSC), Taiwan

[6] In 1999 KPMG merged Cooper & Lybrand, and in 2003 AA and DTT merged into Deloitto & Touche.

[7] For other related works examining the relation between underwriter reputation effect and initial performance, see Logue (1973), Beatty and Ritter (1986), Titman and Trueman (1986), and Maksimovic and Unal (1993).

International Securities Corp. (TISC), Yuanta Group, National Investment Trust Co., Ltd. (NITC), Chinatrust Securities, and Chiao Tung Bank, and zero otherwise.

The lottery odds are defined as the new shares issued divided by the shares of investor subscription. "Hot" issues are favorably received by investors and are associated with lower lottery odds rates.

The gross proceeds distribution is skewed to the right with a mean of NT$1.56 billion (equivalent to US$50 million) and a median of NT$0.47 billion. The average amount is somewhat smaller than that of the U.S (US$78 million). Around three quarters of the issuing firms (or 124 IPO firms) are countersigned by the top six accounting firms. Fifty-five percent of the IPO firms (or 119 IPO firms) are issued by the top six reputed underwriters. A low lottery odds rate (12.84%) indicates these IPO shares are favored by investors in our sampling period.

2.3 Firm Characteristics

We also control the characteristics of the issuing firms. The electronic industry indicator is one when the issuing firm operates in the electronic industry, and zero otherwise. Firm age is calculated as the time elapsed between the years of firm incorporation and IPO offering. Loughran and Ritter (2001) report that the median age of firms going public has stayed remarkably stable at about 7 years old since 1980, with the exception of the internet bubble period. The third control variable is the natural logarithm of issuing firm's asset size at the yearend prior to the IPO offering. Debt ratio is defined as the ratio of total debt divided by total assets in the year prior to the IPO. Firm profitability of the issuing firm is calculated as the average of return on asset (ROA) in the five years prior to the IPO. We use the average of the ratios of the sum of R&D expenditure and advertising expenses divided by sales serves in the prior five years as a proxy for the growth potential. We also calculate a five-year standard deviation in EBIT prior to measure operating volatility, which is expected to be negatively associated with IPO offer price valuation.

Among these IPOs, 81 are electronic firms. The median firm age is ten, longer than seven years reported in Loughran and Ritter (2001). Note that the standard deviation of EBIT five years prior to the IPOs is 162.35%, indicating that the operating incomes of these IPO firms are highly volatile.

[Insert Table 2 about Here]

3. Offer Price and IPO Underpricing

3.1 Offer Price Valuation Metric

We calculate the IPO offer price valuation relative to the intrinsic/fair value (P/V) computed using price multiples of comparable firms, following similar procedure used in Kim and Ritter (1999) and Purnanandam and Swaminathan (2002). First, we calculate the price multiples of the IPO firm relative to its equity book value, sales, earning before interest, taxes, depreciation and amortization (EBITDA) in the year prior to the IPOs. The price multiples are further divided by the corresponding price multiples of non-IPO industry peer (matching sample firm) in a cohort year with (1) comparable assets value, (2) public listing for more than one year, and (3) no issuance of new shares within two months of the IPO. Specifically, the relative valuation measure of the IPO firm based on various price multiples are computed as the following: $(P/V)_{book} = [(P/B)_{IPO} / (P/B)_{Match}]$, $(P/V)_{Sales} = [(P/S)_{IPO} / (P/S)_{Match}]$, and $(P/V)_{EBITDA} = [(P/EBITDA)_{IPO} / (P/EBITDA)_{Match}]$ respectively. We conduct analysis on the relative valuation measures using price multiples of the matching firm for both one-year and three-year averages prior to the IPOs. The empirical results are similar. For brevity, we only report the results for the latter.

The results show that on average the IPO offer prices in Taiwan are undervalued relative to intrinsic value calculated based on the price-to-sale and price-to-EBITDA multiple. The median values of $(P/V)_{sales}$ and $(P/V)_{EBITDA}$ are 0.59 and 0.65, both are significantly different from one at 1% level. The median $(P/V)_{book}$ is of value of 0.98, and insignificantly different from one.

There is certain time variation of the price-to-intrinsic-value ratios in our sample. For example, the median $(P/V)_{book}$ in 1997 (1.57) and in 2001 (1.56), and the median $(P/V)_{sales}$ in 2001 (1.88) are significantly above one based on the Wilcoxon rank sum test. The cases of undervaluation outnumber the cases of overvaluation. There are 2, 6, and 6 cases that the price to intrinsic value multiples using comparable firm's price-to-book ratio, price-to-sales ratio, and price-to-EBITDA ratio are significantly below one. Therefore, our results do not lend supportive evidence to Purnanandam and Swaminathan (2004) that IPO share could be over-valued initially. Table 3

summarizes the year-breakdown distribution of IPO valuations based on different comparable firm multiples.

3.2 IPO Underpricing

The IPO initial return (or underpricing) is calculated as the percentage differene between and the offer price and the closing price on the first trading day. As there is a limit on price changes for stocks listed in Taiwan market, we employ the following procedure in calculating initial returns for stocks which reach the limit of price change within the first few trading days. For example, if the offer price was NT$20 and the first-day price was closed at the price limit of NT$21.4, no initial return is calculated. If the following-day price is closed within 7% price limit, says NT$22.5, the initial return is then calculated as 12.5% ((NT$22.5-NT$20)/NT$20). In this case, we replace the closing price in the first trading day by the closing price in the following days that is not closed at the 7% limit. The market adjusted initial return is the difference between the IPO initial return and the corresponding market return. The results in panel B of Table 3 show that these IPO firms on average has an initial return of 29.02%, and a market adjusted initial return of 28.97%, which is even higher than the first-day return in the U.S. (18.1%) in the sampling period from 1980 through 2001.

[Insert Table 3 about Here]

4. Empirical Analysis

In this section, we first briefly described each of our hypotheses on the effect of corporate ownership/governance structure on IPO valuation. We then present the empirical analysis and discuss our results.

4.1 Ownership and IPO Offer Price Valuation

Numerous studies document the predominant existence of a single large controlling shareholder in firms around the world[8]. A related question of interest is how the ownership of controlling shareholder affects the firm's value. La Porta *et al.* (2002) and Claessens et al (2002) propose the interest-alignment hypothesis hat higher cash flow rights could serve as a firm commitment for the controlling shareholder in active monitoring/management in firm value maximization. In contrast,

[8] See La Porta *et al.* (1999), Claessens *et al.* (2000) and Faccio and Lang (2002)

the entrenchment hypothesis implies that a detrimental effect could be associated with the controlling shareholder as when he/she abuses the controlling power in pursuing self-interests.

Ownership/governance structure could serve as good measure of the controlling shareholder's motivation and incentives in IPO price setting. Controlling shareholders with higher cash flow rights are strongly motivated to negotiate a higher offer price in that they have to bear a high proportion of cost of selling shares at a discounted price. A higher offer price could also be acceptable to the underwriters, who have certain incentive to work for the benefits of the minority shareholders for reputation concerns. The incentive alignment effect predicts that an increase in controlling shareholder ownership beyond the minimum level needed for effective control improves the alignment of interests between the controlling and minority shareholders.

Purnanandam and Swaminathan (2004) use the IPO price valuation relative to the intrinsic value computed using comparable price multiples. This approach provides cross-section comparisons between IPO firms and their industry peers. We follow the methodology of Purnanandam and Swaminathan (2004) to examine the relation between IPO valuation and ownership structure. Given that higher cash flow rights could serve as a firm commitment to convince the associated underwriter and potential investors and that monitoring considerations are less important for the controlling shareholder to undervalue IPO share, we would expect a higher IPO offer price valuation relative to the intrinsic value is positively associated with the cash flow rights of controlling shareholder.

Hypothesis One: The offer price valuation of an IPO company relative to the intrinsic value should increase with increasing cash flow rights of controlling shareholder.

The agency problem of concentrated ownership results from the conflicts between the controlling owner and minority shareholders. Grossman and Hart (1988) and Harris and Raviv (1988) show that separating ownership and control lowers shareholders' value and may not be socially optimal. Shleifer and Vishny (1997) illustrate that as ownership gets beyond a certain point, large owners gain nearly full control, generating private control benefits that are not shared by the minority shareholders. Claessens *et al.* (2002) report that for the largest shareholders, the difference between control rights and cash flow rights is associated with a value

discount and that such discount generally increases with the size of the wedge between control rights and cash flow rights. With a deviating control-cash structure, the controlling owners could be strongly motivated to opportunistically deprive minority shareholders of their rights through opaque transactions in which profits are transferred to other companies that the controlling share holders control. With an increasing managerial ownership, the entrenched owner is less subject to board governance and market discipline.

Under a divergent control-cash ownership structure, the associated underwriter, who bears the risk of diminishing their reputation, could be reluctant to spare a high offer price. It is also possible that, the reported financial/accounting information from firms with divergent control-cash ownership could be less credible and informative (Fan and Wong, 2002). As a result, IPO offer prices are discounted for firms associated with a divergent control-cash ownership structure.

Hypothesis Two: The offer price valuation of an IPO company relative to the intrinsic value should decrease with the degree of deviation between the controlling shareholder's voting and cash flow rights.

In testing Hypothesis One and Two, we examine the correlation between the price to intrinsic value ratio (P/V) with the corporate governance variables in determining whether the controlling shareholder's motives are manifested in the ownership/governance structure on the IPO offer price valuation. The regression results of $(P/V)_{book}$, $(P/V)_{sales}$, and $(P/V)_{EBITDA}$ are summarized in Table 4, 5 and 6, respectively[9].

Our results indicate that both the controlling shareholder's cash flow rights and the proportion of his/her cash flow rights to voting rights are positively correlated with the $(P/V)_{book}$ at the 5% significance level. The positive interest-alignment argument is significant and robust when the dependent variable is replaced by $(P/V)_{sales}$ in Table 5 and $(P/V)_{EBITDA}$ in Table 6, though the results are less significant. One percent increase in the cash flow rights of the controlling shareholder is associated with 0.009 increase in $(P/V)_{book}$, 0.008 increase in $(P/V)_{sales}$, and 0.007

increase in $(P/V)_{EBITDA}$, respectively. The results support Hypothesis One that a controlling shareholder with high cash flow rights is strongly motivated to demand a high price valuation. The associated underwriter would also be likely to compromise on a valuation based on this credible commitment embedded in the aligned-interest ownership.

Our results indicate that the voting-cash deviation used alone in regression is less significant. However, when incorporating an interactive term with an cash flow indicator, with a value of one when the controlling shareholder's cash flow rights exceed the sample median and zero otherwise, the voting-cash deviation is negatively correlated with the $(P/V)_{book}$ at the 5% significance level. This result indicates that the entrenchment effect is somewhat suppressed by the interest-alignment effect of the controlling shareholder when his/her cash flow rights exceed the sample median. The results in Table 5 illustrate the voting-cash deviation used alone and the additional inclusion of its interactive term with cash flow dummy both are negatively associated with $(P/V)_{sale}$ at the 5% significance level. The result between voting-cash deviation and $(P/V)_{EBITDA}$ is substantively intact albeit less significant. The overall picture generally supports Hypothesis Two that the offer price valuation decrease with the degree of voting-cash deviation.

In addition to the ownership structure variables discussed earlier, we further also investigate the effect of the board structure, i.e. the proportion of board membership represented by the controlling shareholders. However, our empirical result indicate that the board structure variable is less significant in affecting the IPO offer price valuation, after controlling for the ownership structure variables

The natural logarithm of proceeds[10], a proxy variable of size effect, and electronic industry dummy are positively correlated with the offer price valuation using comparable firm's price multiples. We argue that issuing firms with larger proceeds are able to negotiate a higher offer price valuation with underwriters. Alternative explanation of size effect is that a larger issuing firm, subject to fewer problems of information asymmetry, may receive a better valuation from the associated underwriter. Electronic issuing firms in our sampling period are better

[9] We also include year dummies (not reported) in each regression analysis.

[10] For a robustness check, we also use the natural logarithm of firm's total assets in replace and end up with a similar result. In fact, the proxy variables of size are highly correlated. The partial correlation

received by the market investors.

The results from the other control variables are significant in some but not all investigations. For example, the debt ratio is positively related to the $(P/V)_{book}$ in Table 4. The free cash flow hypothesis (Jensen, 1986) indicates that a high level of debt reduces the agency costs, since the fixed corporate debt payments force managers to disgorge any free cash flow that may have been misused. As a result, a high debt level could act as a peripheral governance mechanism. Moreover, firm age is negatively associated with the $(P/V)_{sale}$ in Table 5, indicating that younger firms possessing growth potential are welcomed by the market and have higher price valuation. Also evidenced in Table 5 is that R&D plus advertisement expenditure divided by sales are positively related to the $(P/V)_{sale}$. This echoes the finding of Mishra et al. (2001) that firms with relatively higher tangible assets or lower intangible assets in their asset structure have lower value.

4.2 Ownership Structure and IPO Underprcing

The initial return, also known as IPO underpricing, refers to the difference between the first-day trading price and the offer price chosen by the issuers and their investment bankers[11]. This phenomenon has been examined in a large theoretical literature which mainly attempts to justify the underpricing as a compensation for bearing risk or the cost of providing information[12] Alternatively, in this paper we investigate the incentive to maintain control by large shareholders in determining the initial return to attract the subscription from outside investors.

Presumably, outside investors would prefer the shares of an IPO firm of which the controlling shareholder possesses higher cash flow rights as a credible commitment have the company run properly for their own sake[13]. Such good signal lowers the information uncertainty of the unseasoned shares, and leads to lower underpricing. However, possibilities exist to weaken the relationship between the controlling shareholder's cash flow rights and initial returns. First of all, large

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coefficient between proceeds and assets is 0.747 significant at 1% level.

[11] See Logue (1973); Ibbotson (1975); and Ibbotson, Sindelar, and Ritter (1994)

[12] See Rock (1986); Allen and Faulhaber (1989); Benveniste and Splindt (1989); Geinblatt and Hwang (1989); and Welch (1989).

[13] Many prior studies have documented that ownership retention, the percentage of shares owned by the existing shareholders, serves as a signal of firm quality and is negatively associated with the extent

shareholders, with strong incentive to maintain subsequent control, are more likely to underprice IPO shares to avoid monitoring shares from emerging block shareholders. It is also possible that investors are less willing to place a high aftermarket valuation on firms with entrenched large shareholders, resulting in less underpriced shares. As a result, overall, we do not have a determinate prediction on the effect of cash flow rights of large shareholders on IPO underpricing.

Brennan and Franks (1997) proposed the reduced monitoring hypothesis illustrating that insiders valuing independence are willing to underprice new issues to generate excess demand, permitting discriminatory rationing against large bidders. Consistent with this hypothesis, Scott and Zutter (2003) report that the dual-class firms in the U.S. experience less underpricing than single-class firms, as the motive to generate outside ownership dispersion is absent or substantially diminished for dual-class issuers. We analyze the *incremental disincentive* of large shareholders to underprice the unseasoned shares when they could exert control on firms through voting power (in excess of their cash flows rights). Controlling shareholders with excess voting rights have less incentive to underprice the unseasoned shares in preventing the emergence of new block shareholders.

Alternatively, whether ownership structure is crucial to IPO price setting depends on whether the controlling shareholder's stake in firm is threatened by the emergence of a new blockholder[14]. A higher voting-cash deviation associated with the entrenchment effect may be associated with strong motives of the controlling shareholders to exploit minority wealth. Also noteworthy is that the firm's report is less credible and informative under a deviating ownership structure. Outside investors are less likely to demand shares of IPO firms of which the controlling shareholders possess voting rights far exceeding their cash flow rights. A higher voting-cash deviation is also often associated with other inferior governance characteristics: for examples, the top ten shareholders are closely related to the controlling shareholder and that the board members of the related businesses are interlocked.

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of IPO underpricing.

[14] The regulatory environment in Taiwan may work against formation of new blockholders in the IPO process. First, regulations stipulate that, as a result of the IPO share allocation, the number of shareholders holding 1,000 shares to 50,000 shares should exceed 500. Such requirement urges the underwriters to allocate shares to small-amount individual applicants rather than blockholders. Second, the shares sold in the IPO offerings are ceded from old shareholders, typically a 10% ownership from the existing shareholders. Finally, the rules also require that at least 50% of the IPO shares should be rationed through fixed-price offer, which further impedes the emergence of a new block shareholding.

From the perspective of the reduced-monitoring hypothesis, the necessity of underpricing is mitigated when the controlling shareholder has predominant control which is unlikely jeopardized in the IPO process.

Hypothesis Three: The initial return of an IPO firm should decrease with the degree of deviation between the controlling shareholder's voting and cash flow rights.

Table 7 summarizes the regressions of initial IPO return on the corporate governance variables. The results show that the relation between the controlling shareholder's cash flow rights and initial return is insignificant. The prediction from the reduced monitoring hypothesis indicates that higher cash flow rights of the controlling shareholder eliminate the necessity to undervalue IPO offer price. The cash/voting ratio is positively associated with the IPO firms' initial return and the deviation in voting from cash flow rights is negatively correlated with the initial return at 10% significance level. The result is consistent with the prediction of hypothesis Three that controlling shareholders with excess voting rights have less incentive to underprice the unseasoned shares in preventing the emergence of new block shareholders.

The results are also consistent with the alternative explanation that investors could discipline the wealth-exploitation controlling shareholder. Outside investors could rationally discount the aftermarket share for IPO firms with complicated (pyramidal/cross ownership) and less democratic governance structure. and discount its value accordingly. We also find that that the underwriter's reputation effect is positively related to IPO firm's initial return. Underwritten by a prestigious investment banker is associated with 8%-9% increase of initial return. Booth and Smith (1986) show that an underwriter's reputation is a signal to investors of that the security has been fairly priced. Carter and Manaster (1990) find that the prestige of an underwriter, with his name printed in the security offering advertisement, can explain IPO returns as well. Moreover, the lottery odds representing the market demand for the issued shares are negatively related to the initial return at 1% significance level. For a robustness check, in Table 8 we use the market adjusted initial return instead and the result are similar.

4. Conclusion

In this paper, we present empirical evidence of effects of ownership structure on the valuation, as well as the extent of underpricing for firms issuing IPOs in the Taiwanese market. The ownership structure of our sample firms are characterized by ultimate shareholders exerting control through pyramidal structures and cross shareholdings. The voting rights of these controlling shareholders exceed the cash flow rights, providing us a unique opportunity to investigate both positive and negative effects associated with the presence of large shareholders. Our analyses on 218 Taiwanese IPO indicate that higher cash flow rights of controlling shareholders are positively associated with, and a deviating voting-cash structure is negatively associated with the offer price valuation relative to the intrinsic value computed using comparable price multiples. Our results are consistent with both the interest-alignment and the entrenchment hypotheses.

We also provide evidence that controlling shareholders consider "corporate control" in their decision to sell the unseasoned shares at a discount. We report that, for shareholders with voting rights in excess of cash flow rights have disincentive to underprice the unseasoned shares in preventing the emergence of new block shareholders. Overall, our results suggest that investors could infer potential benefits and costs associated with large shareholders in different stages of IPO valuation in an economy dominated by closely-hold corporations.

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Table 1: Sample Distribution- Year and Industry Breakdown

Year	No. of IPO	%	Industry	No. of IPO	%
1992	29	13.30	Electronic	81	37.16
1993	21	9.63	Construction	25	11.47
1994	24	11.01	Textile	20	9.17
1995	33	15.14	Miscellaneous	19	8.72
1996	28	12.84	Electric Machinery	15	6.88
1997	18	8.26	Iron and Steel	14	6.42
1998	18	8.26	Foods	9	4.13
1999	17	7.80	Transportation	8	3.67
2000	13	5.96	Chemistry	7	3.21
2001	17	7.80	Others	20	9.17
Total	218	100.00	Total	218	100.00

Table 2 Basic Statistics

This table reports the basic statistics for 218 qualified IPOs. The voting rights are the summed voting rights along each chain with the weakest link among all holding layers. The cash flow rights along each chain are the products of all ownership in the intermediate companies along that chain. The total cash flow rights are equal to the sum of all cash flow rights from all ownership chains. The second-largest-shareholder dummy is assigned the value of 1 when a second largest shareholder with 5% or more shares exists, and 0 otherwise. The pyramidal dummy is assigned the value of 1 when the controlling shareholder has indirect voting via a pyramidal structure, and 0 otherwise. The cross-shareholding dummy is assigned the value of 1 when the controlling shareholder has indirect voting via cross shareholding and 0 otherwise. Initial return is defined the difference between the first trading day that is not closed at the price limit and offer price divided by the offer price. The adjusted initial return subtracts the corresponding market return from the initial return. Proceeds is defined as a multiplication of the issued shares and the offer price. The accountancy dummy is assigned the value 1 when the associating IPO accounting firm is one of the top six accounting firms, and 0 otherwise. The underwriter dummy is assigned the value 1 when the lead underwriter is one of the following underwriters: Grand Cathay Securities Corp. (GCSC), Taiwan International Securities Corp. (TISC), Yuanta Group, National Investment Trust Co., Ltd. (NITC), Chinatrust Securities, and Chiao Tung Bank, and 0 otherwise.

Variable	Mean	S. D.	Q1	Median	Q3
Panel A: Ownership Structure					
Voting Rights (%)	38.481	21.831	22.179	36.070	54.001
Cash Flow Rights (%)	31.395	20.475	15.935	27.910	43.338
Voting Rights – Cash Flow Rights (%)	7.085	10.354	0.000	2.320	11.030
Cash Flow Rights/Voting Rights (%)	81.390	23.153	64.803	93.374	100.00
Dummy (Second Largest Shareholder)	0.468	0.500	0.000	0.000	1.000
Dummy (Pyramidal)	0.312	0.464	0.000	0.000	1.000
Dummy (Cross Shareholding)	0.133	0.340	0.000	0.000	0.000
Proportion of Directorates and Supervisors (%)	39.445	20.253	25.000	37.500	50.000
Panel B: Offering Characteristics					
Proceeds (in million NT dollars)	1,564.0	10,862	279.3	446.0	921.8
Dummy (Reputation of Auditor)	0.752	0.433	1.000	1.000	1.000
Dummy (Reputation of Lead Underwriter)	0.548	0.499	0.000	1.000	1.000
Lottery Odds Rate (%)	12.838	27.461	0.683	1.690	6.051
Panel C: Company Characteristics					
Firm Age	17.454	9.113	10.000	16.000	23.000
Assets (in million NT dollars)	6,708.1	33,081	1,520.3	2,406.6	4,615.4
Debt Ratio (%)	44.650	14.869	34.380	44.530	55.770
Returns on Assets (%)	14.353	7.592	9.492	12.706	17.876
(R&D Expenditure + Advertisement)/Sales(%)	3.010	8.046	0.312	1.238	2.851
Standard Deviation of EBIT (%)	162.35	270.589	40.762	75.941	161.849

Table 3: IPO Valuation Based on Comparable Firm Multiples

For each IPO firm, we calculate a price-to-value (P/V) ratio, where P is the offer price and V is the intrinsic value computed from comparable firms' market multiples. The P/V ratios of the IPO firm based on various price multiples are computed as follows: $(P/V)_{book} = [(P/B)_{IPO} / (P/B)_{Match}]$, $(P/V)_{Sales} = [(P/S)_{IPO} / (P/S)_{Match}]$, $(P/V)_{EBITDA} = [(P/EBITDA)_{IPO} / (P/EBITDA)_{Match}]$, and $(P/V)_{Earnings} = [(P/E)_{IPO} / (P/E)_{Match}]$, respectively. The 25^{th} (Q1), 50^{th} (Median), and 75^{th} (Q3)percentiles of the cross-sectional distributions of P/V ratios based on various comparable firms' market multiples and the p-values from the Wilcoxon rank sum test for testing the null hypothesis that the median P/V is equal to 1are reported accordingly. .

Year	No.	Q1	Median P/V	Q3	Wilcoxon p-value
Panel A: P/V ratio based on P/B multiple					
1992	28	0.51	0.68	0.89	0.0001
1993	21	0.81	1.01	1.28	0.8538
1994	24	0.68	0.90	1.05	0.0461
1995	33	0.58	0.86	1.17	0.1997
1996	28	0.64	0.84	1.04	0.1549
1997	18	1.28	1.57	1.97	0.0001
1998	18	1.00	1.30	1.95	0.0047
1999	17	0.77	1.07	1.41	0.4586
2000	13	0.79	1.23	1.67	0.1909
2001	17	1.00	1.56	2.01	0.0150
overall	217	0.67	0.98	1.39	0.370
P/V ratio based on P/S multiple					
1992	26	0.31	0.40	0.47	0.0001
1993	21	0.27	0.58	0.97	0.0091
1994	24	0.36	0.54	0.89	0.0265
1995	33	0.27	0.49	0.75	0.0077
1996	28	0.28	0.67	1.02	0.0510
1997	18	0.46	1.40	1.94	0.1297
1998	18	0.57	0.73	1.13	0.1964
1999	17	0.44	0.84	0.98	0.0305
2000	13	0.54	0.85	2.70	0.5879
2001	17	0.87	1.88	3.75	0.0202
overall	215	0.34	0.59	1.13	0.0001
P/V ratio based on P/EBITDA multiple					
1992	28	0.21	0.44	0.75	0.0001
1993	21	0.31	0.48	0.87	0.0035
1994	21	0.46	0.56	0.69	0.0001
1995	32	0.30	0.50	0.86	0.0014
1996	25	0.49	0.57	0.76	0.0001
1997	18	0.52	1.05	1.41	0.7760
1998	13	0.49	0.72	0.83	0.0398
1999	16	0.45	0.69	1.08	0.1297
2000	12	0.81	1.12	3.49	0.2036
2001	14	0.68	0.87	1.06	0.2958
overall	200	0.42	0.65	0.96	0.0001

Panel B: IPO Underpricing					
Variable	**Mean**	**S. D.**	**Q1**	**Median**	**Q3**
Initial Returns (%)	29.024	33.753	4.051	18.533	48.669
Adjusted Initial Returns (%)	28.967	33.612	5.072	18.996	46.729

Table 4: Regression of $(P/V)_{book}$ on Corporate Governance

According to Purnanandam and Swaminathan (2004), $(P/V)_{book}$ is the IPO offer price valuation relative to the intrinsic value computed using comparable price-to-book multiple The cash flow rights and voting rights refer to the definition of La Porta et al. (1999) and Claessens et al. (2000). The cash-flow-rights dummy is assigned the value of 1 when the controlling shareholder's cash flow rights exceed the sample median, and 0 otherwise. The accountancy dummy is assigned the value of 1 when the countersigning accountant belongs to the top six accounting houses, and 0 otherwise. The underwriter dummy is assigned the value of 1 when the lead underwriter belongs to the top six renowned investment bankers and 0 otherwise. The electronic-industry dummy is assigned the value of 1 when the IPO firm is classified with industry codes 23 and 24, and 0 otherwise. The year dummies are also included in each regression while not reported to save space. In each cell the regression coefficient is reported in the upper case and t-statistics in parentheses is reported in the lower case. ***, **, and * represent significance level of 1%,5%, and 10%, respectively.

Independent Variable	**Dependent Variable: $(P/V)_{book}$**					
Intercept	-0.440 (-0.583)	-0.265 (-0.353)	-1.120 (-1.336)	-0.244 (-0.322)	-0.307 (-0.410)	-0.298 (-0.399)
Cash flow Rights	0.009 (1.985)**					
Voting Rights – Cash Flow Rights		-0.012 (-1.372)			-0.023 (-2.024)**	
Cash Flow Rights / Voting Rights			0.009 (2.324)**			
Proportion of Directorates and Supervisors				0.001 (0.289)		-0.011 (-1.688)*
Dummy (Cash Flow Rights) * (Voting Rights – Cash Flow Rights)					0.022 (1.701)*	
Dummy (Cash Flow Rights) * Proportion of Directorates and Supervisors						0.013 (2.631)***
Ln (Proceeds)	0.303 (2.769)***	0.343 (3.077)***	0.353 (3.214)***	0.311 (2.788)***	0.362 (3.241)***	0.373 (3.322)***
Dummy (Reputation of Accountancy)	0.034 (0.161)	-0.027 (-0.129)	-0.020 (-0.094)	-0.001 (-0.004)	-0.025 (-0.119)	-0.032 (-0.153)
Dummy (Reputation of Underwriter)	0.051 (0.293)	0.056 (0.319)	0.045 (0.258)	-0.045 (0.254)	0.035 (0.198)	0.005 (0.031)
Dummy (Electronic Industry)	0.725 (3.354)***	0.613 (2.846)***	0.663 (3.133)***	0.660 (3.041)***	0.605 (2.817)***	0.664 (3.108)***
Time from Foundation	-0.011 (-1.031)	-0.011 (-1.027)	-0.013 (-1.160)	-0.010 (-0.940)	-0.011 (-1.041)	-0.010 (0.946)
Debt Ratio	0.011 (1.862)*	0.011 (1.898)*	0.010 (1.841)*	0.011 (1.884)*	0.010 (1.638)	0.008 (1.473)
(R&D + Advertisement)/ Sales	-0.005 (-0.408)	-0.005 (-0.488)	-0.006 (-0.554)	-0.006 (-0.504)	-0.004 (0.377)	-0.003 (-0.350)
R^2 (%)	16.69	15.95	17.40	15.19	16.90	18.07

Table 5: Regression of $(P/V)_{sale}$ on Corporate Governance

This table reports the regression of $(P/V)_{Sales}$ on corporate governance variables prior to the IPO. The independent variables are defined in Table 4. In each cell the regression coefficient is reported in the upper case and t-statistics in parentheses is reported in the lower case. ***, **, and * represent significance level of 1%,5%, and 10%, respectively.

Independent Variable	**Dependent Variable: $(P/V)_{sale}$**					
Intercept	1.398 (1.343)	1.410 (1.378)	0.445 (0.386)	1.586 (1.523)	1.367 (1.346)	1.513 (1.456)
Cash flow Rights	0.008 (1.837)*					
Voting Rights – Cash Flow Rights		-0.027 (-2.336)**			-0.037 (-2.544)**	
Cash Flow Rights / Voting Rights			0.011 (2.138)**			
Proportion of Directorates and Supervisors				-0.0004 (-0.064)		0.010 (-1.072)
Dummy (Cash Flow Rights) * (Voting Rights – Cash Flow Rights)					0.022 (1.138)	
Dummy (Cash Flow Rights) * Proportion of Directorates and Supervisors						0.010 (1.516)
Ln (Proceeds)	0.093 (0.618)	0.170 (1.130)	0.153 (1.016)	0.107 (0.701)	0.187 (1.239)	0.154 (0.998)
Dummy (Reputation of Accountancy)	-0.178 (-0.622)	-0.276 (-0.972)	-0.238 (-0.840)	-0.218 (0.750)	-0.277 (-0.978)	-0.249 (-0.856)
Dummy (Reputation of Underwriter)	-0.280 (-0.116)	0.009 (0.038)	-0.027 (-0.115)	-0.039 (-0.161)	-0.013 (-0.055)	-0.066 (-0.273)
Dummy (Electronic Industry)	0.627 (2.110)**	0.486 (1.664)*	0.578 (1.987)**	0.561 (1.888)*	0.475 (1.627)	0.568 (1.915)
Time from Foundation	-0.031 (-1.971)*	-0.031 (-2.000)**	-0.032 (-2.076)**	-0.029 (-1.870)*	-0.031 (-1.997)**	-0.028 (-1.824)*
Debt Ratio	-0.003 (-0.397)	-0.002 (-0.293)	-0.003 (-0.374)	-0.003 (-0.331)	-0.004 (-0.459)	-0.004 (-0.549)
(R&D + Advertisement)/ Sales	0.099 (6.485)***	0.100 (6.584)***	0.099 (6.490)***	0.010 (6.406)***	0.101 (6.659)***	0.100 (6.516)***
R^2 (%)	29.00	30.40	30.09	28.44	30.87	29.28

Table 6: Regression of $(P/V)_{EBITDA}$ on Corporate Governance

This table reports on the regression of $(P/V)_{EBITDA}$ on corporate governance variables prior to the IPO. EBITDA is defined as the earnings before interest, taxes, depreciation and amortization at per share basis. The independent variables are defined in Table 4. In each cell the regression coefficient is reported in the upper case and the t-statistics are reported in parentheses in the lower case. ***, **, and * represent 1%,5%, and 10% significance levels, respectively.

Independent Variable	**Dependent Variable: IPO Price-to-EBIDA Multiple deflated by Matching Sample**					
Intercept	-0.033 (-0.055)	0.138 (0.229)	-0.184 (-0.263)	0.059 (0.098)	0.151 (0.248)	0.047 (0.078)
Cash flow Rights	0.007 (1.856)*					
Voting Rights – Cash Flow Rights		-0.004 (-0.595)			-0.002 (0.236)	
Cash Flow Rights / Voting Rights			0.003 (0.955)			
Proportion of Directorates and Supervisors				0.007 (1.119)		0.005 (0.898)
Dummy (Cash Flow Rights) * (Voting Rights – Cash Flow Rights)					-0.004 (-0.321)	
Dummy (Cash Flow Rights) * Proportion of Directorates and Supervisors						0.002 (0.541)
Ln (Proceeds)	0.205 (2.296)**	0.225 (2.484)**	0.229 (2.533)**	0.191 (2.117)**	0.223 (2.441)**	0.200 (2.175)
Dummy (Reputation of Accountancy)	-0.122 (-0.695)	-0.177 (-1.009)	-0.171 (-0.981)	-0.110 (0.621)	-0.178 (-1.012)	-0.115 (-0.650)
Dummy (Reputation of Underwriter)	-0.019 (-0.128)	-0.032 (-0.209)	-0.029 (-0.194)	-0.025 (-0.170)	-0.032 (-0.214)	-0.026 (-0.175)
Dummy (Electronic Industry)	0.474 (2.586)**	0.413 (2.233)**	0.426 (2.328)**	0.460 (2.515)**	0.417 (2.245)**	0.458 (2.496)**
Time from Foundation	-0.011 (-1.196)	-0.010 (-1.070)	-0.010 (-1.113)	-0.012 (-1.349)	-0.010 (-1.075)	-0.012 (1.337)
Debt Ratio	0.003 (0.590)	0.003 (0.595)	0.003 (0.606)	0.003 (0.513)	0.003 (0.617)	0.002 (0.453)
(R&D + Advertisement)/ Sales	0.003 (0.201)	0.003 (0.250)	0.003 (0.196)	0.002 (0.127)	0.002 (0.149)	0.003 (0.166)
R^2 (%)	13.60	12.03	12.32	13.36	12.08	13.51

Table 7: Regression of the Initial Return on Corporate Governance

This table reports the regression of initial IPO return on corporate governance variables prior to the IPO. The initial return is defined as the difference between the first market price that does not close at the price limit and the offer price divided by the offer price. The other variables are defined in Table 4. In each cell the regression coefficient is reported in the upper case and the t-statistics are reported in the lower case in parenthesis. ***, **, and * represent significance level of 1%,5%, and 10%, respectively.

Independent Variable	**Dependent Variable: Initial Return of IPO**					
Intercept	19.740 (1.015)	17.551 (0.922)	1.135 (0.053)	18.950 (0.982)	16.726 (0.875)	17.742 (0.920)
Cash flow Rights	-0.016 (-0.136)					
Voting Rights – Cash Flow Rights		-0.422 (-1.947)*			-0.520 (-1.886)*	
Cash Flow Rights / Voting Rights			0.179 (1.849)*			
Proportion of Directorates and Supervisors				0.023 (0.185)		-0.125 (-0.736)
Dummy (Cash Flow Rights) * (Voting Rights – Cash Flow Rights)					0.204 (0.575)	
Dummy (Cash Flow Rights) * Proportion of Directorates and Supervisors						0.154 (1.292)
Ln (Proceeds)	0.664 (0.237)	1.544 (0.551)	1.342 (0.480)	0.558 (0.197)	1.753 (0.619)	1.351 (0.467)
Dummy (Reputation of Accountancy)	4.288 (0.773)	3.450 (0.631)	3.974 (0.729)	4.590 (0.819)	3.449 (0.630)	4.119 (0.734)
Dummy (Reputation of Underwriter)	8.579 (1.870)*	9.178 (2.016)**	8.763 (1.927)*	8.642 (1.881)*	9.051 (1.983)	8.228 (1.790)*
Odds of Lottery	-0.326 (-3.731)***	-0.307 (-3.522)***	-0.309 (-3.542)	-0.325 (3.720)***	-0.303 (-3.464)***	-0.321 (-3.668)***
Dummy (Electronic Industry)	4.158 (0.718)	3.392 (0.598)	5.044 (0.890)	4.435 (0.771)	3.289 (0.579)	4.473 (0.779)
Time from Foundation	0.150 (0.535)	0.132 (0.475)	0.115 (0.413)	0.139 (0.489)	0.132 (0.477)	0.141 (0.497)
Debt Ratio	-0.114 (-0.733)	-0.117 (-0.762)	-0.124 (-0.804)	-0.116 (0.750)	-0.127 (-0.822)	-0.143 (-0.915)
(R&D + Advertisement)/ Sales	0.135 (0.448)	0.142 (0.476)	0.123 (0.409)	0.136 (0.451)	0.154 (0.513)	0.158 (0.522)
R^2 (%)	11.08	12.78	12.62	11.09	12.93	11.85

Table 8: Regression of the Market-Adjusted Initial Return on Corporate Governance

This table reports the regression of the market-adjusted initial IPO return on corporate governance variables prior to the IPO. The market-adjusted return is defined as the market return subtracted from the initial IPO return. Other independent variables are defined in Table 4. In each cell the regression coefficient is reported in the upper case and t-statistics in parentheses is reported in the lower case. ***, **, and * represent significance level of 1%,5%, and 10%, respectively.

Independent Variable	**Dependent Variable: Market-Adjusted Initial Return of IPO**					
Intercept	19.781 (1.007)	17.319 (0.901)	0.826 (0.040)	18.944 (0.972)	16.45 (0.852)	17.707 (0.909)
Cash flow Rights	-0.025 (-0.205)					
Voting Rights – Cash Flow Rights		-0.434 (-1.983)**			-0.537 (-1.93)	
Cash Flow Rights / Voting Rights			0.180 (1.839)*			-0.140 (-0.819)
Proportion of Directorates and Supervisors				0.012 (0.092)		
Dummy (Cash Flow Rights) * (Voting Rights – Cash Flow Rights)					0.216 (0.601)	
Dummy (Cash Flow Rights) * Proportion of Directorates and Supervisors						0.158 (0.313)
Ln (Proceeds)	0.780 (0.276)	1.675 (0.592)	1.452 (0.514)	0.707 (0.247)	1.896 (0.663)	1.521 (0.521)
Dummy (Reputation of Accountancy)	4.149 (0.741)	3.336 (0.604)	3.884 (0.705)	4.402 (0.777)	3.335 (0.603)	3.916 (0.691)
Dummy (Reputation of Underwriter)	8.074 (1.743)*	8.695 (1.892)*	8.265 (1.799)*	8.117 (1.749)*	8.562 (1.858)*	7.691 (1.656)*
Odds of Lottery	-0.320 (-3.624)***	-0.300 (-3.410)***	-0.302 (-3.433)***	-0.319 (-3.614)***	-0.296 (-3.351)***	-0.314 (-3.562)***
Dummy (Electronic Industry)	3.240 (0.553)	2.519 (0.440)	4.200 (0.733)	3.519 (0.605)	2.411 (0.420)	3.558 (0.613)
Time from Foundation	0.143 (0.504)	0.123 (0.438)	0.106 (0.377)	0.135 (0.470)	0.120 (0.440)	0.137 (0.478)
Debt Ratio	-0.104 (-0.665)	-0.108 (-0.697)	-0.115 (-0.739)	-0.107 (-0.681)	-0.119 (-0.761)	-0.134 (-0.849)
(R&D + Advertisement)/ Sales	0.111 (0.364)	0.119 (0.393)	0.099 (0.327)	0.113 (0.370)	0.131 (0.433)	0.135 (0.442)
R^2 (%)	10.23	12.00	11.75	10.21	12.16	11.01