Monitoring or Control in the Case of Korean IPOs

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Abstract

Using a sample of Korean firms, we show that the chaebol firms are motivated to maintain control after their initial public offering. They do this by using a greater degree of underpricing to distribute new shares to small individual investors and thereby avoid monitoring by large investors. On the other hand, independent firms are motivated to seek outside block holders to benefit from their monitoring activities. They use greater underpricing to distribute shares to these large investors, thereby causing a positive relation between underpricing and outside block holdings. Independent firms show a greater proportion of large investors, which results in higher long-run returns after their IPOs than is found for chaebol firms. These results are consistent with an agency cost perspective that independent firms are motivated by the benefits of outside monitoring, whereas chaebol firms are motivated by protecting their private benefits for firm control.

1. Introduction

An initial public offering is a process in which a firm sells new shares to the public for the first time. As outside investors gain shares in an IPO, the inside shareholders tend to have conflicting attitudes about it. A firm could benefit from outside monitoring. Large block shareholders can reduce agency costs associated with managerial self-dealing, tunneling, and other activities. Furthermore, the knowledge that monitoring exists can improve share prices, which increases the cash flow rights of insider mangers. But at the same time, insider mangers lose their private benefits of control through the creation of large outside shareholders. Brennan and Franks (1997) show that inside mangers in the U.K. try to maintain control at the time of IPOs and afterwards. On the other hand, Stoughton and Zechner (1998) develop models in which the monitoring by large outside investors increases firm value, which benefits small shareholders in the process. Using a sample of Korean IPOs, we investigate the conflicting motives of managers when firms initially issue shares.

The study of Korean IPOs is especially appropriate in the exploration of different motivations for IPOs. Korean firms offer two types of firms that have different motives for issuing shares. There are both chaebol firms and other non-chaebol firms, that we hereafter call independent firms. Chaebol firms are a group of firms that belong to the same holding companies that hold a controlling share of the firms though a web of ownership. Chaebol firms are considered to have a strong motive for keeping control closely held in mergers and acquisitions (Kang, 2002) or in ownership concentration (Claessens *et. al*., 2000). In this study, we call chaebol firms only those that belong to the top 5 chaebol firms. On the other hand, the motive for independent firms to issue stocks would be different if they try to maximize firm values through IPOs by creating a class of outside shareholders to monitor activity.

We hypothesize that the relationships between underpricing and the proportion of shareholding by large investors is negative for chaebol firms, whenever chaebol firms are motivated to keep private benefits of control even after IPOs. On the other hand, there is a positive relationship between underpricing and the fraction of shareholdings by large outside investors, whenever the independent firms attempt to have a dispersed ownership after IPOs. Furthermore, the firm value of independent firms would be higher because of the reduced agency costs than would be found for chaebol firms.

We find that initial returns for chaebol firms are higher than for independent firms in all sample periods. Over time, initial returns are lower after regulation changes to liberalize the offer price. Both types of firms were in operation for 19 years on average before their IPOs. The lower degree of underpricing we find for independent firms is consistent with the view that independent firms benefit from outside monitoring, whereas the agency costs associated with controlling mangers for chaebol firms tend to reduce firm value.

We also investigated initial returns by underwriter affiliations. The examination is whether an underwriter belongs to one of chaebol groups, even though it is legally prohibited for a chaebol firms to use underwriters that belongs to the same chaebol. We find greater underpricing among chaebol firms than independent firms, regardless of which type of underwriter is selected. However, there is greater underpricing among chaebol firms when they selected underwriters that belong to other chaebol firms. The results are consistent with the view that chaebol firms are motivated to reduce monitoring by (1) allowing dispersed ownership, (2) encouraging small investors to subscribe to new issues, and (3) underwriting the IPO by well known investment bankers.

As a direct test of monitoring and control motivations for IPO underpricing, we run regressions using initial returns as the dependent variable. Controlling for timing and industry effects, we find that there is a positive relationship between underpricing and relative fraction of shares held by outside block holders (compared the amount of controlling shares) for independent firms. Overall, we find that empirical evidence that is consistent with the motive of control for chaebol firms, whereas the motive for monitoring is supported when examining independent firms in Korean IPOs

Section 2 reviews literature on underpricing of IPOs and some of the empirical evidence. Section 3 discusses the governance of Korean chaebol firms, as it applies to IPOs. It also develops the main hypotheses. Data and sample construction are described in section 4. The empirical results are discussed in the section 7, followed by a brief conclusion.

2. Literature Review

Both the short-run underpricing of IPOs and the sub-par long-run underperformance of IPOs in the U.S. is well documented (Ibbotson and Ritter, 1995). In the US, the average first-day return was 7% during 1980-1989, 15% during 1990-1998, and 65% during 1999-2000 (Ritter, 2002). The persistent and growing underpricing found the US essentially "leaves money on the table," that could have used by the firms. The puzzle prompted various explanations for the underpricing phenomena, from the winner's curse to theories based on asymmetric information, agency costs, and signaling. Recently, international evidence of IPO underpricing has corroborated the US finding all around world, but no universal IPO underpricing theory or hypothesis applies for all times and countries. Differences in security regulations across countries have a potential to help explain the degree of underpricing. Some explanations are not mutually exclusive. Explanations often complement each other. Welch and Ritter (2002) provide an extensive survey of numerous theories of IPO underpricing. This paper concentrates on the agency cost approach: ownership, control, and monitoring role in IPOs. The theories covered here are not exhaustive.

2.1 Underpricing as a Way to Diffuse Share Ownership

Several explorations into the causes of IPO underpricing propose that insiders intentionally underprice IPO shares to scatter share ownership thereby reducing the power of these new shareholders. Zingales (1995) regards the decision of a firm to go public as the consequence of

maximizing value of initial owners who want eventually to sell the firm. The original owners use the IPO to optimize the ownership structure of their firm, which permits tactical advantages in negotiate with a potential buyer to maximize their proceeds from the sale of control rights. Booth and Chua (1996) argue that managers seeks to underprice IPO shares in order to achieve a diffused ownership structure, but their motive is to provide a more liquid market for trading of their shares in the secondary market rather than maximizing the eventual selling price of the firm.

Brennan and Franks (1997) offer a way in which insiders can use the underpricing of an IPO to retain control. Using a sample of 69 IPOs in the UK, they show that the underpriced IPO shares are oversubscribed. Issuers ration the allocation of shares, which ends up preventing the formation of block holdings. With outside holdings highly dispersed, these new shareholders have less of an incentive to monitor the managers. The monitoring costs are greater with widespread share ownership. The free rider problem causes no one to do effective monitoring. In sum, their model of underpricing predicts that mangers will underprice beyond what would be optimal in the monetary sense to preserve their private benefit of control. This control comes at the expense of other shareholders.

Both Brennan and Franks (1997) and Zingales (1995) consider the private benefit of control as a motivation for IPO underpricing, yet their ultimate objective of using an IPO is quite different. Whereas IPO underpricing is merely the first stage of the multi-stage selling strategy of a firm for Zingales (1995), IPO underpricing is intended to avoid a transfer of control to the new shareholders despite the partial transfer ownership involved in an IPO for Brennan and Franks (1997).

2.2 Underpricing as a Vehicle to Reduce Agency Costs

Stoughton and Zechner (1998) argue that managers ultimately bear some of the agency cost of associated with a firm whenever it fails to maximize shareholder wealth. They managers are also partial owners of the firm. From this reasoning, they develop a model in which underpricing of IPOs reduces agency costs. Stoughton and Zechner assume that large institutions are the only active investors who can afford to monitor the mangers, because of a free-rider problem. They claim that allocating shares to large outside investors, who are capable of monitoring managerial non-profit maximizing behavior, enhances the value of the firm as compared with a simple Walrasian auction of the new shares. In their two-stage rationing model, the investment banker optimally offers the remaining IPO shares to small investors. To encourage better monitoring, underpricing is necessary to allocate big blocks of shares to large investors. This underpricing is not viewed as costly from

the issuer's perspective, because without this monitoring, the firm would have to be floated at a lower total valuation.

Mello and Parsons (1998) also show that active large investors can improve the valuation of firms. They argue that it is beneficial to underprice IPO shares initially creating a dispersed shareholders structure. In subsequent negotiations, issuers can better negotiate with potential buyers of the controlling blocks. Their emphasis on the monitoring function of large block holders is similar to Stoughton and Zechner's model, but Mello and Parsons show that it is in the best interest of issuers first to distribute a fraction of the firm to a dispersed group of investors. Then subsequently to sell control to a block holders. While each of these the theories has some cogency, the power to explain depends on the time frame and the institutional environment.

2.3 International Evidence on Diversified Groups and IPO Underpricing

Does IPO underpricing disappear when the firm is part of a diversified group? A few studies have explored this issue using either an information asymmetry or an agency cost approach. Sullivan and Unite (2001) studied the influence of group affiliation using IPOs in the Philippines. They found that average initial returns were 22.69% over the period 1987 to 1997. The IPO underpricing was greater whenever the offering firm was affiliated to a family business group. It was also greater when the affiliated firms used a foreign lead underwriter. They concluded that market participants recognize conflict of interest problems. These conflicts of interest lead to significant underpricing.

Hamao, Packer, and Ritter (2000) looked at whether the lead venture capitalist was also the lead underwriter on the impact on the first-day underpricing. When this occurred, underpricing was more pronounced. Both Sullivan and Unite (2001) and Hamao, Packer, and Ritter (2000) suggest that conflicts of interest influence the initial pricing. Investors seem to require greater initial returns to compensate for the bearing this extra conflicts of interest risk.

Dewenter, Novaes, and Pettway (2001) find that average initial IPO underpricing of the top six *keiretsu* group affiliated firms is greater than that of independent firms. They explain the higher initial returns for *keiretsu* are due to higher information uncertainties for these group firms. They conclude that the complexity of these groups outweighs their high visibility and intense scrutiny. But Beckman, Garner, Marshall, and Okamura (2001) examine Japanese IPOs and they find that keiretsu-affiliated firms, on average, are more fully priced than independent firms under the market-driven auction system.

Therefore we may conclude that the underpricing of diversified group firms' IPOs depends on which factors dominate in each situation; whether conflict of interests between the underwriter and venture capitalist, or the tunneling effect between controlling shareholders and the minority shareholders, or the information asymmetry reductions from group structure, or the certification associated with a group name, or information uncertainties from a highly complicated group structure weigh more in IPO pricing. The possible explanations are extensive. To better focus the work on two competitive views, this paper ask whether it is the managers' private *benefit of control* or whether it is the *monitoring motive* which dominates IPO issue underpricing decisions for Korean chaebol groups.

3. Control and Monitoring Incentives for Korean IPOs.

This section discusses the nature of group structure, called chaebol in Korea. It develops hypotheses on how the firms that belong to chaebol differ in their reasons to undergo an initial public offering than would be true for independent firms.

3. 1. Chaebol Groups

The Korean chaebol is a form of corporate organization similar to Japanese *keiretu* in the sense that both organizations hold a set of firms in a wide range of business fields (Lim, 2000). Each firm affiliated with a chaebol is a legally separate entity but its major decisions are constrained by group policies determined at group headquarters. Shin and Park (1999) document that the investment decisions of chaebol firms are independent of their operating cash flows. In addition, they find that chaebol-affiliated firms invest more than independent firms, despite their relatively poor growth opportunities. Using Korean data from 1990 to 1995, Ferris, Kim, and Kitsabunnarat (2002) find that chaebol-affiliated firms have relatively lower value in the marketplace than otherwise similar independent firms. Bae, Kang, and Kim (2002) document that when a firm makes an acquisition a chaebol bidder's stock price falls, whereas an independent acquirer's stock price rises. They also find that a chaebol bidder loses its value even when firms in the same group gain in value. They conclude that there is a wealth transfer from the bidding firm to the other firms in the same chaebol. Campbell and Keys (2001) study executive turnover in Korea. They found that executive turnover of independent firms is directly explained by performance, whereas at the top five chaebol firms, executive turnover in not explained by performance. They argue this result is evidence for a poor corporate governance system used by Korean chaebol groups.

On the other hand, Claessens *et al.* (2000) document that diversification does less harm to the valuation of East Asian firms than it does in either the United States or Japan. They observe that complementary diversification is not at all detrimental to corporate valuation. Indeed, they argue that diversification enhances value in the United States, Japan, Korea, and Singapore.

With the exception of Classens *et al.* (2000), the research consistently demonstrates poorer performance of firms that art part of chaebol groups than would be the case for similar independent firms. This paper expands on this theme. We demonstrate that there are differences between chaebol and independent firms when they go public, that imply differences in the motives for going public. The clear pattern is that chaebol-affiliated firms are valued less than are independent firms at IPOs. This is consistent with the view that chaebol issuers are more interested in the private benefit of control. At the time of an IPO, investors discount the value of chaebol firms by a greater amount then they do for independent firms.

3.2. Hypotheses

The underpricing of initial public offerings of common stock and the long-term returns after the IPO is well documented for both U.S. firms and other countries. In this paper, we use two competing views: a motive to control and a motive to monitor as the hypotheses used to understand the initial underpricing and the pattern of long-term returns for Korean IPOs.

The study of Korean IPOs offers a test case to examine the implications of these two hypotheses. First, most of the big Korean firms are part of chaebol groups. The other firms are independent firms. The group firms (chaebols) are more likely to have incentive to maintain control, whereas independent firms are more likely to seek outside monitoring when firms go public. Second, regulations appreciably changed over time in Korea. The regulation emphasized changes in terms of a fraction of equity issues in the IPO, a changed formula to set offer price, and a relaxation in foreign ownership. The two sets of firms and the changing regulations provide different samples to test the implications of two hypotheses.

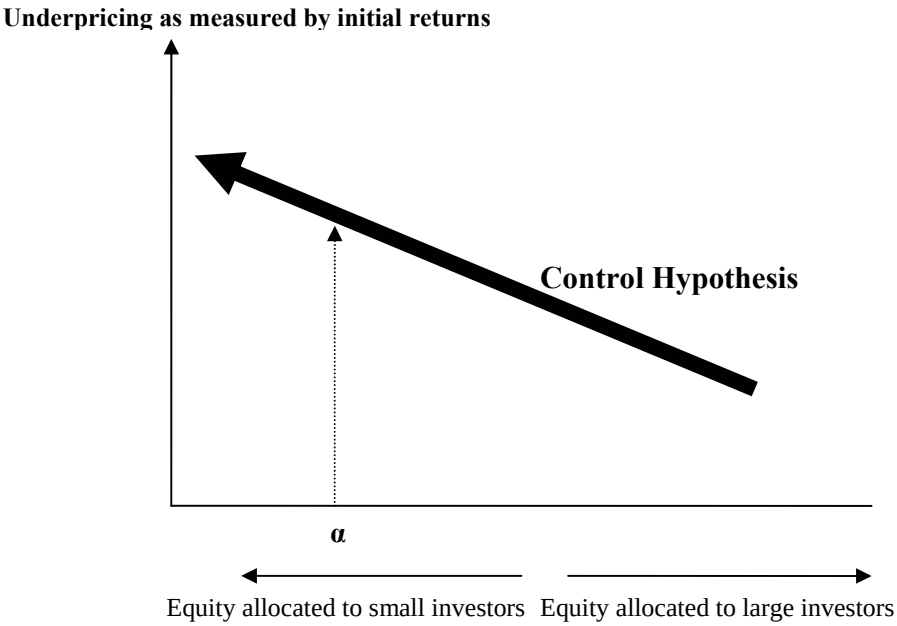
Figure 1 illustrates the relationship between underpricing and the fraction of large versus widely dispersed small shareholders in two panels. First turn your attention to the downward sloping curve labeled *control* in Panel A. When management is concerned primarily about the private benefits of control, they use the greatest underpricing to allocate to small investors. The size of underpricing is negatively related to the size of larger outside blocks after the IPO. This is the suggestion made by Brennan and Franks (1997).

Next turn attention to the upward sloping curve labeled *monitoring* in the same figure. The motive to increase firm value through outside monitoring by block holders implies rationing issues in favor of large shareholders. This implies a positive correlation between underpricing and the proportion of the issue allocated to large investors, as was suggested by Stoughton and Zechner (1998). The underpricing is greater when the motive of the IPO is to maintain control than when the motive is to increase firm value from outside monitoring.

The control motive dominates when the IPO offers large underpricing to ration more shares to small investors, as illustrated by point α illustrates in Panel A of figure 1. The monitoring motive is supported, when underpricing is large to allocate shares to large block holders, illustrated by point β in Panel B. In the Korean sample, we expect chaebol firms would show higher initial return to the extent that group firms are more concerned about maintaining control after IPO than are independent firms. On the other hand, we expect the independent firms to show greater IPO underpricing to capture the benefits from monitoring by large block holders.

[Figure 1 is next page]

Panel A:



Panel B:

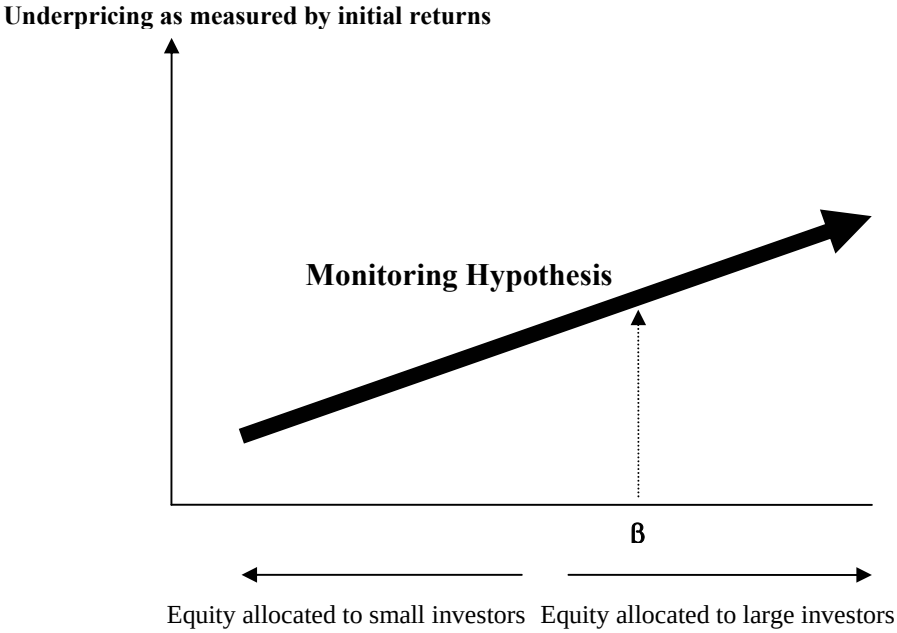


Figure 1: A Visual Illustration the Control and Monitoring Hypotheses

4. Sample Construction and Descriptive Statistics

This section describes how the sample was constructed. It provides descriptive statistic of the sample firms and some of the characteristics of issuing Korean IPOs.

4.1. Construction of the Sample

There are 704 listed corporations in the Korean Stock Exchange (KSE). For these listed firms, the total market capitalization is 188,041.5 billion Korean won[1] at the end of Year 2000. The offering price, the IPO offer size, and the listing date are obtained from the Korean Stock Exchange (KSE), the issuing firm's annual report, various Korean newspapers, and the *Asian Wall Street Journal*. Stock prices, individual stock returns, the market index returns, and financial statement data are from Pacific Capital Markets Research Center (PACAP) Databases-Korea 1999. The PACAP Databases-Korea 1999 goes up to 1998. For 1999 and 2000, Data Stream is used for stock data and company annual report for financial statement data. The sample begins in 1989, after the IPO pricing liberalization began in June 1988 (Kim, Krinsky, and Lee, 1995a). The IPO sample period extends from 1989 to 2000. Table 1 shows that during the sample period, 358 firms were listed in Korean Stock Exchange. Our sample selection criteria are as follows:

1) Firms should have stock price and IPO offer price to calculate initial returns.
2) Firms should have financial statement information.
3) Finance firms are not included.
4) Government privatization issues are not included.
5) No public offering and relisting issues are not included.
6) Firms previously listed on KOSDAQ are not included.

Previous Korean IPO studies covering our sample period included firms previously listed on KOSDAQ (Korea Securities Dealers Association Quotation). But the firms already listed on another stock market are not really IPO firms. Just as in the US, moving from NASDAQ to the American Stock Exchange is not an IPO, neither is a move within Korea. The total number of firms listed on Korean Stock Exchange (KSE) through KOSDAQ is fifty-five since the KOSDAQ market opened on July 1, 1996. These fifty-five firms were deleted from our sample. Seventy-six firms were delisted during the sample period and most of time we could not get the offer price of the delisted firms. Out of these 76 firms, 35 firms were bankrupt and only 2 belonged to top 30 chaebol-affiliated firms. Bankruptcy and delisting information comes from the KSE website.

Using these screens for entry into the sample, we end up with 183 non-financial firms that have IPO initial returns.

We classified these 183 firms either as top 5 chaebol-affiliated firms (chaebol 5) or as independent firms. This means that some "independent" firms will be part of smaller-level chaebol groups. To figure out whether a firm belonged to a chaebol or not, we referred to Korean Fair Trade Commission (KFTC) annual reports. Every year, KFTC announces the top 30 chaebol groups[2]. Whenever the firm belonged to chaebol 5 at the time of going public, the firm was classified as a chaebol 5-affiliated firm. Whenever a firm did not belong to the top five chaebol firms at the time of going public, but was later acquired by a major chaebol group, we persisted in classifying the firm as independent.

Firms must meet the KSE listing requirement when firms go public. The major requirements are given in Appendix 1. The firm should have an operating history of at least 3 years. The majority of firms listed in KSE have much longer operating history. With the exception of large cap firms, the minimum issue offered must be 30% of the total shares to the public. Large cap companies are permitted to offer a minimum of 10% or more to the public. In our sample, most of the IPO firms offered exactly the 30 percent minimum to meet this apparently binding constraint.

Panel A of Appendix 2 outlines the changes in the IPO share price setting regulations. From June 28, 1988 to March 31, 1990, no formal offer price regulations were in effect. But, in reality, most of firms followed a predetermined previous formula (Lim, 1992). Offer price liberalization started in August 1996. We allowed two months for processing time for the rule change. In our sample, we classified the "before liberalization period" as January 1989 to September 1996. "After liberalization period" is from October 1996 to the present.

Panel B of Appendix 2 lists the share allocation requirements for IPOs by different time periods. In order to go public, the IPO issues should first be allocated to the employees of the issuing firm for their Employee Stock Ownership Plan (ESOP). The ESOP is offered as much as 20% of the shares of the new issue. Any non-subscribed ESOP issues are then allocated to other investors. Before April 1997, institutional investors and other investors without having a special securities subscription or savings accounts were not allowed to subscribe IPO issues. From April 1997, institutional participation was allowed and the allocation rate was raised from 30% to 60%. Currently the allocations are as follows: 20% goes to the ESOP, 20% goes to individual investors,

[1] It's about U$ 148.55 billion at the end of 2000 exchange rate of 1 Korean Won = 0.00079 U$.

and 60% goes to institutional investors. Korea authorities regulate IPO share distributions rigorously. When oversubscription occurs, investors receive shares on a *pro-rata* basis. The lead underwriters have no discretionary power. We did not find any example of an undersubscribed issue for our sample period. This is consistent with Choi (2001), who found that that the average oversubscription was 1,468% above the issue in 1992. By 1998, oversubscription in Korea rose to 4,288% above the amount issued. There are short run financial rewards for the underwriters by encouraging oversubscription in terms of the use of money.

All of the financial information is based on the previous fiscal year's financial statements just before the IPO. The one exception is the growth rate. Growth rates are calculated as the three-year geometric average rate of sales growth. This growth rate minimizes the possible window dressing effect just before entering into an IPO.

In panel A of Table 2, the total assets of chaebol firms are substantially greater than the asset size of independent firms, labeled as 'non-group' in this table. Mean total assets of the chaebol firms are around nine times larger than are those of independent firms. Chaebol firms also have somewhat higher leverage ratios than do non-chaebol firms. The leverage ratio, which is measured by total liabilities divided by total assets, is 71.18% for chaebol firms, whereas the figure is 64.25% for independent firms. The liquidity ratio, which is measured by cash and marketable securities divided by total assets, is 5.94% for chaebol firms. For independent firms, the liquidity ratio is nearly twice as large. It is 11.41%. The somewhat higher leverage ratios and much lower liquidity ratios for chaebol groups are consistent with Shin and Park (1999) and with Ferris, Kim, and Kitsabunnarat (2002)'s findings. The knowledge that your firm is part of chaebol allows for the taking on of greater risk in leverage and reduced liquidity.

We measure the pre-IPO performance of firms by EBIT (earnings before interest and taxes) divided by sales. This is an attempt to exclude financing effects. Performance measurement shows that the performance of chaebol IPO firms was poorer than for independent IPO firms. Average growth rate of chaebol firms at 59.52% was substantially greater than for independent firms, which was 9.04%. The stylized description is that chaebol IPOs are bigger firms, somewhat more levered, and far less liquid. These chaebol IPOs also demonstrate lower performance, but held a surprisingly higher growth rate than were found among independent firms before going IPO.

[2] Over our sample period (1989 to 1999) top 5 chaebol's ranking was almost unchanged but the other 25 firms ranking was changed every year. Some groups added to top 30 chaebol groups, whereas the other groups were out of top 30.

4.2. Characteristics of Firms and of Issues

The entire sample of IPOs were firms listed on the Korean Stock Exchange (KSE). The number of additional IPO observations after 1996 when KOSDAQ was established becomes small. Most firms list their stock in the KOSDAQ. We limit our study to firms listed to KSE since the listing requirements are more stringent in KSE than KOSDAQ as detailed in appendix 1. There are two important changes in IPO regulations. The first change involves the offer price. The offer prices are regulated in some measure by the government. In addition, firms have to follow a formula to set their offer price in the period from April 1990 to July 1996. Before April 1990, there was no regulation on offer price. Nevertheless, most of firms followed predetermined formulae (Lim 1992). We treat periods before April 1996 as pre-liberalization period. After August 1996, offer prices were liberalized.

Second, the regulations on minimum share allocations have been also changed over time. Through the whole sample period, 20% of the IPOs were allocated to ESOP by regulations. Before April 1997, subscribers of IPOs had to establish special securities subscription and savings accounts. The allocation regulations were loosened after April 1997, with broad bands of 20% to 50% of the shares must be allocated to individual investors and a range from 30% to 60% of IPOs shares could be allocated to institutional investors. One of the difficulties in defining the first day initial returns for Korean IPOs is due to a restrictive *daily price limit*, which is imposed by KSE. A one-day limit of 6%, as shown in appendix 2 during the earliest part of the time period studied, was unable to allow trading to occur. The market price after IPOs is the *first traded price* after IPOs which is 41 days on average, with 12 days for group firms and 45 days for independent firms.

The fraction of equity offered is nearly identical between chaebol firms and independent with a median of 30% and a mean of 28%, consistent with the legal minimum over part of the period. The KSE listing requirements is that a minimum of 30% of shares has to be offered to the public with an exception for large firms in which a minimum of 10% is allowed for firm with the shareholder's equity of 50 billion won.

The number of issues for chaebol firms is 20. This is about one-eighth of the 163 offerings by the rest of firms. Nonetheless, the value of these 20 group offerings was 134 million won. This is large when compared to the value of all the remaining offerings, which totaled 168 million won. Chaebol firms are bigger than the other firms, with an average size of total asset of 983 million won. The average size of the independent firms was 108 million won. Chaebol firms show a growth rate of 59% annually, whereas independent firms grew at a slower rate of 9% before IPO.

Panel A of Table 2 shows that the average operating history of an IPO firm is 19.14 years, while the average operating history is approximately 6 years in the U.S. Typical IPO firm's age is much older than that in US. We may conjecture that Korean firm's motivation for going public may be quite different from that of US firms, given the age when firms go public. One special character of Korean IPO is that initial trading day are delayed before there is trading on a secondary market. Possible reasons may be price limit system[3] imposed on KSE and lower liquidity for IPO issues for a few months because regulators, not underwriters, mandate that stockholders who are related to firms may not sell the shares for at least 6 months. In Section 7.3, we address the price limit system's impact on IPO returns.

In Panel B, mean and median delayed days are 41.4 and 7 calendar days each. Median delayed days for chaebol firms are 1 day; for independent firms, it is 7 days. In later section, using the regression analysis, we investigate how different lengths of delay affect IPO initial returns when we control for other factors influencing IPO firm stock returns. Panel B shows that inflation adjusted IPO offering sizes of chaebol firms are around five times bigger than that of non-chaebol firms. Overall Korean IPO stocks show longer operating history, greater initial returns, and thin trading.

5. Analysis of initial returns and ownership structure

In this section, we analyze initial return between chaebol firms and independent firms.

5.1 Univariate Tests

The initial return for 18 group 5 firms is 109%, and the initial return for the remainder of firms is 67%. The difference is statistically significant at 1% level for the whole period in table 3. When we compare initial returns with respect to the liberalization of offer price, we find that the initial returns are lower after the liberalization. The initial returns are greater for chaebol firms (labeled as group firms) than independent firms for both periods. The differences in the initial returns between chaebol and independent firms are statistically significant at 5%. The results of higher underpricing of chaebol firms than independent firms is consistent with the hypothesis that chaebol firms are more concerned about control, whereas independent firms seek benefits from outside monitoring.

[3] Appendix 3 shows price limit change on Korean Stock Exchange. Currently, KSE has a maximum of 15% upper and lower price limit per day.

5.2. Underwriter Affiliations and IPOs

Beveniste and Spindt (1989) discuss the role of underwriters as information gatherers during IPOs. They argue that underpricing is reduced if underwriters gather favorable information in the pre-market. The reputation of underwriters is another factor that would reduce the underpricing in the face of information asymmetry. Table 4 shows the match of issuing firm and the underwriters. The underwriter information is available after 1994. All chaebol 5 firms have their own security firms, which can underwrite new issues. Underwriters affiliated with a chaebol 5 firm cannot be a lead underwriter the same chaebol group firms. But the security firms or other chaebol member firms can participate in the same affiliated group member IPOs. In table 4, the dummy for underwrites is 1 when an underwriter is either security firms or a firm belongs to other Chaebol firms.

The table shows that there are no differences in the initial returns regardless of which type of underwriter is selected. We check the initial return in four ways by separating underwriters and firms, whether they are part of the top five chaebol or not. Since there are large differences in initial returns changes after the liberalization of offer price, we analyze the underwriter affiliations separating the period before and after offer price liberalization. The results show that 1) underpricing is greater for chaebol firms regardless of they select as underwriters, 2) underpricing is greater when other chaebol underwriters are used by chaebol firms than when independent underwriters are used, 3) the largest underpricing occurs when chaebol firms use other chaebol underwriters. The results are not consistent with the view of underwriter's role in the face of asymmetric information. Suppose small investors are more likely to subscribe to new issues when the IPOs are underwritten by reputable investment bankers, and suppose also that the group underwriters have better reputation, we would expect diminished underpricing in this situation. The results are consistent with the control motive facing chaebol firms to use underpricing to ration shares to small shareholders. Firms with a strong control motivation would use chaebol underwriters, and chaebol firms would employ other chaebol underwriters to disperse share ownerships.

5.3. Regression Analysis of Initial Returns

Table 5 displays the relationship between the initial returns and the ownership proportion of outside block holders. Using initial returns as dependent variable in regressions, we test hypotheses

of relating to the control versus monitoring incentives of the original firm owners. In the previous sections, chaebol firms were thought to have a greater incentive for control than for monitoring. A group dummy (group5) is set at one whenever a firm belongs to the chaebol 5 or not. Ritter *et. al.* (1995) found that IPOs in the hot markets display less underpricing than were found in cool markets. In the Korean IPOs, underpricing becomes smaller after the liberalization of the offer price. We use year dummies in one regression and use a dummy whether the issue is before or after the liberalization. To see the influence of outside block holders, we use the ratio of shareholding by outside block holders to the shareholding of the controlling management. The coefficient label for this variable is *relout*. The larger is *relout*, the greater influence of outside block holders.

The sample size is 82 observations, for which information is available. The sample includes 14 observations of group firms. The first regression includes yearly dummies from 1993 through 1996, with the period before 1993 as the base. As expected, the chaebol firms have significantly greater initial returns, with or without yearly dummies. The second regression demonstrates that the offer liberalization is associated with significantly lower initial returns. With respect to the effect of large block holding, *relout* is positive. The regression results show a coefficient estimate of 0.28 with a t-statistics of 1.77 when year dummies are included, and a t-statistics of 1.74 when offer the offer price liberalization dummy is used. We also ran regressions that limited the data only to independent firms, which are not reported. The results were similar, with similar statistics for significance. Though not statistically significant, the positive coefficient on outside block holders tends to confirm our view that independent firms seek benefits from the monitoring of outside block holders offering higher underpricing.

6. Post-IPO Events

This section analyzes the longer term effects of IPOs on ownership structure and long-run returns.

6.1 Ownership structure after IPOs.

The ownership structure is reported in the table 6. This table examines controlling shareholders and outside block holders after an IPO. The two characteristics examined are "Control," which is the fraction of shares after the IPO still held by management, and "Outblock," which is the proportion of shares after the IPO held by outside block holders.

There is no significant differences in the proportion of shared held by controlling managements, which average 42% for independent firms and 44% for chaebols. However, the mean fraction of shares is held by outside block holders appears to differ. The mean holding is 13% for independent firms; whereas for chaebol firms, the mean drops to 8%. The difference of five percentage point, has a t-statistics of 1.58. The Z-statistics for the differences of median scores is 1.65. Both of these statistics are not significant at conventional level of 10%.

Since there are only 16 observations for group firms, we use non-parametric statistics to account for small sample size issues. We selected one-sided statistics to test whether the distribution of both samples not overlapping. Wilcoxon rank sum test for the mean differences shows a p-value of 0.0566, and the p-value for median differences is 0.0492. The results confirm that group firms are motivated by control at IPOs, and independent firms are motivated by monitoring benefits.

6.2. Long-run returns.

Table 7 examines stock returns after the IPO. We examine time horizons of one month, six-months, one, two and three year holding periods after the initial public offerings. The returns do not include the initial returns. The returns presented are market-adjusted holding period returns. Overall, mean stock returns are increasing over the holding period. They achieve a holding period return of 102% for three years after IPOs. Returns on group 5 firms are greater than are the returns on independent firms for the first two years after IPOs, but their returns are lower than independent firms when the holding-period is three years. Median returns for chaebol firms are negative in both the two- and three-year holding periods.

For US firms, Loughran and Ritter (1995) suggest that a three-year is a period when negative returns after IPOs are stabilizing. When we use the three-year returns as an indication of firm performance after IPOs, the lower returns for chaebol firms is consistent with the control motive. Pursuing managerial control within the chaebol firms is associated with significant agency costs, which are demonstrated by the lower long run returns. On the other hand, the higher returns on independent firms provide evidence of the monitoring benefits gained by having significant outside block holders.

7. Conclusion

We find that chaebol firms are motivated to have a dispersed ownership structure, whereas independent firms are motivated to benefit from monitoring by outside block holders after an IPO. Consistent with this view, underpricing is greater for chaebol firms when the offer price is based on strict formula in the period of time before the liberalization of the offer price. The pattern of higher underpricing continues for chaebol firms after the liberalization of offer price, leaving more money on the table at IPOs, even though chaebol firms are better known to investors. The results are consistent with the motivation of chaebol firms to dispersed ownership after public offerings.

The motive of monitoring of independent firms would have a lower underpricing from outside monitoring, consistent with the empirical results. In addition we find that there is positive relationship between underpricing and the fraction of outside shareholding scaled by the proportion of controlling shareholders, consistent with the predictions of monitoring motivation of firms.

The ownership structure after IPOs is different between independent and chaebol firms. We fin that the proportion of outsider block holding is 13% for independent firms, whereas it and it is 8% for chaebol firms. This is significant at 5% level using one-sided non-parametric tests. In addition, three-year returns after IPOs are higher for independent firms than for chaebol firms, indicating that, in the long-run, firm benefits from outside monitoring. The comparison of chaebol and independent firms show that underpricing of IPOs is partially explained by governance structure a firm seeks when new shares are issued.

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Appendix 1. IPO Share Listing Requirement on KSE

Korean Stock Exchange Major Listing Requirements[4]

- Time lapse since incorporation: 3 years or more
- Debt ratio: less than 1.5 times the average debt ratio of listed corporations in the same industry
- Asset value: exceeding twice par value
- No. of shares offered to the public: 30% or more of total shares. But the large-capitalized companies with the shareholders' equity of 50 billion won or more are allowed to offer 10% or more to the public.
- No. of minority shareholders: 1,000 or more

Alternative 1

In addition to the above major listing requirements,

- Earnings: ROE of 5% or more for the latest fiscal year and 10% or more over the last three fiscal years or net profit of 2.5 billion won or more for the latest fiscal year and 5 billion won or more over the last three fiscal years
- Capital stock: 5 billion won or more
- Shareholders' equity: 10 billion won or more
- Sales: 20 billion won or more for the latest fiscal year and an average sales of 5 billion won or more over the last two fiscal years
- Earning value: exceeding twice par value

Alternative 2

An alternative 2 requirement was made for firms that cannot meet alternative 1 regulation, but have good growth potential.

In addition to the above major listing requirements,

- Earnings: ROE of 5% or more for the latest fiscal year or net profit of 1billion won or more for the latest fiscal year
- Capital stock: 2 billion won or more
- Shareholders' equity: 5 billion won or more
- Sales: 6 billion won or more for the latest fiscal year and an average sales of 5 billion won or more over the last two fiscal years and sales growth of 20% or more for the latest fiscal year
- Earning value: exceeding 3 times par value

[4] The listing requirements information comes from KSE Fact book 2000 and various sources from KSE web page.

Appendix 2. IPO Share Price Setting and Distribution Regulations

Panel A: IPO Share Price Setting

Periods	Contents of Change
Before June 28, 1988	Offering Price is set by a predetermined formula.
June 28, 88 – March 31, 90	No regulation in the decision of offering price. As of November 22, 88, the initial market price to be set as the higher price between the offering price and the price of half of the total bid quantity
April 1, 90 - July 96	Partial regulation (Offering price set by a modified formula)
From August 96	Offer price liberalization

After June 28, 1988 to March 31, 1990 was a period that no formal offer price regulation was set. But, in reality, most of firms just followed predetermined formula (Lim, 1992). Actual offer price liberalization started in August 1996 and we allowed 2 month processing time. In our sample, we classified before liberalization period as January 1989 to September 1996 and after liberalization period as October 1996 to now.

Panel B: IPO Share Allocation Regulation

Periods	ESOP	Special securities subscription and savings account	General Individual investors	Institutional Investors
Before April 1,1997	20%	80%		
From April 1, 1997	20%		20% to 50%	30% to 60%

Korean IPO market follows pro-rata system for allocation.

Appendix 3. Price Limit History on KSE

- Before April 1995: Stock price moved based on actual price change method. In terms of percentage, around 4.6% (from 2.2% to 6.7%)
- Since April 1, 1995: Korean Stock Exchange (KSE) followed percentage change Method.

Periods	Daily upper and lower limit
95-4-1 to 96-11-24	6% daily limit for losses and gains
96-11-25 to 98-3-1	8% daily limit
98-3-2 to 98-12-6	12% daily limit
From 98-12-7	15% daily limit

Currently daily upper and down price limit is 15%.

Table 1. IPOs listed on Korean Stock Exchange (KSE) by year from 1989 to 2000

Year	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Total
Firms newly listed (numbers)	124	43	22	4	8	31	28	51	23	3	16	5	358
Already listed on the "KOSDAQ" *								29	17	1	5	3	55
Government Privatization	1									1	2		4
Finance Companies	5	2		1		5	3	11	1				28
Relisting after a period											1	1	2
No public offering												1	1
No offer price or financial information**	56	21	9	1	2	4					1		94
Overlapping firms								8	1				9
Sample of IPOs***	62	20	13	2	6	22	25	19	6	1	7	0	183
Percentage	53%	49%	59%	67%	75%	85%	100%	100%	100%	100%	88%	100%	
Number of delisted firms	39	14	6	1	1	7	2	6	0	0	0	0	76

* Total number of firms listed on KSE through KOSDAQ since July 1, 1996 is 55. KOSDAQ Market was opened since July 1, 1996. Before July 1,1996 the over the counter trading was man-to-man auction trading. From July 1, 1996, the KOSDAQ Market followed the competitive auction trading.

** We couldn't get the offer price or stock price or financial statement information after the firms were delisted from the exchange. We couldn't get 18 firms' financial information though the firms were not delisted.

***Finance companies, government privatization issues, and the firms listed through KOSDAQ were not included in our IPO samples because the major research question of the paper is to check whether Chaebol variable is priced in Korean IPOs.

Table 2. Descriptive Statistics of Korean IPO Firm and Issue

Panel A: IPO Firm Characteristics

		Mean			Median		
Variable	N	All	Group5	Non-group	All	Group5	Non-group
Total Assets (mil Won)	183	203,669	983,754	107,953	70,641	396,319	62,514
Sales (mil Won)	183	186,162	861,422	103,308	68,508	455,667	57,692
Age (years)	183	19.14	18.44	19.22	16.92	18.01	16.89
Leverage Ratio (%)	183	65.01%	71.18%	64.25%	67.60%	72.86%	66.13%
Liquidity Ratio (%)	183	10.81%	5.94%	11.41%	8.58%	5.05%	9.53%
EBIT / Sales (%)	183	10.83%	10.83%	10.83%	9.40%	8.70%	9.62%
Growth Rate (%)	183	14.56%	59.52%	9.04%	20.74%	21.66%	19.28%

Panel B: IPO Issue Descriptive Statistics

		Mean			Median		
Variable	N	All	Group5	Non-group	All	Group5	Non-group
Offer Size (mil Won)	183	20,453	67,161	14,722	8,665	44,530	8,018
Shares Sold (%)	183	28.29%	27.67%	28.36%	30.02%	30.05%	30.02%
Offer Size / TA	183	0.61	0.43	0.63	0.51	0.33	0.52
Offer Size / Sales	183	0.56	0.50	0.57	0.49	0.30	0.50
Offer Size / EBIT	183	6.55	4.99	6.74	5.33	4.30	5.38
Market Value / TA	183	0.98	0.87	1.00	0.83	0.66	0.85
Delayed Days	183	41.42	12.20	45.01	7.00	1.00	7.00
Turnover (%)	183	1.29%	2.58%	1.14%	0.11%	0.77%	0.10%

All the financial information is based on the previous fiscal year financial statements just before the IPO except the growth rate. Growth rate is a three- year geometric average rate of sales growth.
Group 5 firms are firms affiliated with top 5 Korean Chaebols. (Hyundai, Samsung, Daewoo, LG, and SK)

Total assets, sales, and offer size are millions of Korean Won and they are inflation adjusted using Year 2000 CPI as a base level.
Age is a length of operating history before IPO.
Leverage ratio is total liabilities divided by total assets.

Liquidity ratio is cash and marketable securities divided by total assets.
Offer size is measured by offer price X total number of common shares outstanding after the IPO.
Share sold (%) is a percentage of outstanding shares offered to the public. KSE requires IPO firm should distribute at least 30 percent of shares to the public in IPO except very big issues.
Offer Size / Total Assets, Offer Size / Sales, and Offer Size / EBIT measures underpricing using different multiples.
Market value is measured by first trading day price X total number of common shares outstanding after the IPO.
Market Value / Total Assets measures the relative valuation of the company after the IPO.
Delayed days are how many days are passed before first trading.
Turnover (%) is a first trading day volume / number of shares offered in IPO X 100.

Table 3. Initial Returns

Initial return is (Closing price on the first trading date - Offer price) / Offer Price. Offer price was liberalized in Aug 1996. Before offer price liberalization period covers from January 1989 to September 1996 listing date and after price liberalization period covers from October 1996 (considering 2-month processing time) to December 1998 listing date.

group5	#obs	mean	t-value	median	**independent firms**	#obs	mean	t-value	median	diff	t-statistics of the differences
Whole period											
1	18	108.69	5.06	70.34	0	161	67.44	12.51	48.00	-41.25	-1.86
Liberalization of offer price											
Before 1	10	156.99	5.23	179.44	0	149	71.18	12.47	55.56	-85.81	-2.81
After 1	8	48.30	4.08	42.98	0	12	20.96	4.90	21.00	-27.34	-2.17
By Year											
1988 1	3	112.25	1.55	46.67	0	59	63.03	9.08	49.33	-49.22	-0.68
1989					0	20	34.99	7.04	37.70	.	
1990 1	1	106.67	.	106.67	0	12	14.89	1.33	8.59	-91.77	
1991					0	2	17.96	5.26	17.96	.	
1992					0	6	83.92	3.24	72.00	.	
1993 1	2	213.85	6.32	213.85	0	20	134.05	9.84	119.76	-79.80	-2.19
1994 1	2	235.81	4.14	235.81	0	20	96.04	6.10	91.47	-139.77	-2.37
1995 1	5	76.85	2.47	54.00	0	15	62.10	2.04	28.18	-14.75	-0.34
1996 1	3	36.76	4.81	35.29	0	2	17.63	4.03	17.63	-19.14	-2.17
1997 1	1	86.67	.	86.67	0	1	40.00	.	40.00	-46.67	
1998 1	1	32.42	.	32.42	0	4	28.26	3.83	30.47	-4.17	

Table 4. Initial Returns by Underwriters

A dummy for underwriters is 1 if the underwriter belongs to one of 5 chaebol firms. A dummy for group 5 is one is the firms belongs to one of 5 chaebol firms. The symbol is "Underwriter_Dummy".

	Underwriter-Dummy	group5	#obs	mean	t-value	median	diff
Total Sample							
	0	.	27	0.72	3.64	0.29	-0.10
	1	.	27	0.81	6.03	0.70	-0.40
Type of underwriter and firms							
	0	0	25	0.75	3.55	0.29	0.47
	0	1	2	0.28	7.00	0.28	2.17
	1	0	17	0.68	5.17	0.70	.
	1	1	10	1.03	3.63	0.70	.
Type of underwriter and firms: before offer-price liberalization							
	0	0	19	0.94	3.57	0.56	0.04
	1	0	11	0.91	5.38	0.80	0.11
	1	1	4	1.75	3.44	1.81	.
Type of underwriter and firms: after offer-price liberalization							
	0	0	6	0.14	2.66	0.13	-0.14
	0	1	2	0.28	7.00	0.28	-2.11
	1	0	6	0.28	4.77	0.30	.
	1	1	6	0.55	3.66	0.52	.

Table 5. Regressions of Initial Returns as the Dependent Variable

	(1)	(2)
Intercept	0.63	0.97
	(1.92)	(8.07)
group5	0.57	0.62
	(2.36)	(2.68)
off_lib		-1.01
		(-5.01)
relout	0.29	0.28
	(1.77)	(1.74)
yr1993	0.60	
	(1.72)	
yr1994	0.29	
	(0.82)	
yr1995	-0.23	
	(-0.63)	
yr1996	-0.83	
	(-1.73)	
yr1997	-0.28	
	(-0.45)	
yr1998	-0.61	
	(-1.33)	
NSAMPLE	82	82
ADJRSQ	0.20	0.24
F	3.49	9.36

Definitions:

Initial Return = IPO initial trading day return. (Closing price on the first trading date – offer price) / Offer price

Group5 = Chaebol 5 dummy variable, taking the value of 1 if the firm belongs to the top 5 Chaebol. (Hyundai, Samsung, LG, Daewoo, and Sunkyung Groups).

Off_lib = Offer price liberalization dummy variable, taking the value of 1 if the listing date is after October 1, 1996.

Relout = Ratio of shareholding by outside block holders to the shareholding of the controlling management.

Yr19xx = Year dummies

Table 6. Ownership Structure

name	group5	#obs	mean	t-value	median	diff
Control	0	70	0.42	22.14	0.44	-0.02
Control	1	16	0 44	10.87	0.41	-0.48
Outblock	0	70	0.13	8.44	0.09	0.05
Outblock	1	16	0.08	2.56	0.00	1.34

Note: group5 is a dummy variable for being in a top 5 chaebol

#obs is the number of observations

Control is the proportion of shares held by management.

Outblock is the fraction of shares held by outside block holders.

Table 7. Long-run Returns

Panel A: All Firms

Variable	N	Mean	Median	Q1	Q3	Stdev
Initial return	183	72.22%	50.00%	22.00%	105.00%	72.09%
Adjusted 1 month return*	119	14.95%	5.90%	-3.55%	16.79%	43.06%
Adjusted 6 month return	166	26.31%	18.05%	-1.15%	37.64%	63.56%
Adjusted 1 year return**	179	36.70%	22.71%	-0.51%	46.94%	67.11%
Adjusted 2 year return	179	69.61%	39.12%	1.68%	96.44%	122.64%
Adjusted 3 year return	170	102.03%	50.18%	-2.54%	144.85%	167.13%

Panel B: Group 5 Firms

Variable	N	Mean	Median	Q1	Q3	Stdev
Initial return	20	110.31%	85.71%	39.92%	179.44%	87.40%
Adjusted 1 month return*	18	36.34%	8.28%	-0.60%	16.79%	90.23%
Adjusted 6 month return	20	53.60%	4.92%	-10.57%	64.06%	159.34%
Adjusted 1 year return**	20	46.95%	4.79%	-17.52%	62.86%	110.92%
Adjusted 2 year return	20	90.68%	-12.24%	-33.28%	65.79%	263.66%
Adjusted 3 year return	18	64.52%	-22.15%	-63.04%	29.61%	241.14%

Panel C: Independent Firms

Variable	N	Mean	Median	Q1	Q3	Stdev
Initial return	163	67.54%	48.00%	18.67%	101.00%	68.86%
Adjusted 1 month return*	101	11.14%	5.60%	-3.55%	16.76%	26.58%
Adjusted 6 month return	146	22.57%	18.46%	0.30%	36.96%	33.97%
Adjusted 1 year return**	159	35.41%	23.94%	2.39%	44.68%	59.83%
Adjusted 2 year return	159	66.96%	42.42%	4.64%	108.06%	92.31%
Adjusted 3 year return	152	106.47%	53.42%	5.85%	146.04%	156.62%

Initial return is (Closing price on the first trading date - Offer price) / Offer Price.
All long-term returns are excluding initial return and are adjusted using KOSPI index. (Holding period raw return - KOSPI holding period return)
*Adjusted 1 month returns have only 119 samples because so many firms are not traded within a month. Average delayed trading days after the listing on the Korean Stock Exchange was 41.42 days during our sample periods from 1989 to 2000.
**Adjusted 1 year return is the holding period return from the first trading date to first anniversary listing date.
Group 5 firms are firms affiliated with top 5 Korean chaebol groups. (Hyundai, Samsung, Daewoo, LG, and SK)