Managing News Coverage around Initial Public Offerings

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We examine opportunistic behavior of initial public offering (IPO) firms in Taiwan where they are required to disclose their own earnings forecasts and are unrestricted in releasing news around the offerings. We find that prior to the offerings, IPO firms tend to report higher earnings, disclose inflated earnings forecasts, and manage more good news. News management, however, emerges as the most predominant factor in aftermarket stock prices. In particular, IPO firms have a strong preference for releasing good news related to strategy/policy that may simply provide a vision of a firm's future. Furthermore, the news releases are often forward-looking when they are positive about the firms but tend to be realized when they are negative. IPO firms also tend to engage in more window dressing activities before a larger sale of IPO shares from existing shareholders or a larger decline in insiders' holdings. Our analysis shows that managerial optimism cannot fully account for their behavior.

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The pioneering work of Ritter (1991) documents the long-run underperformance of firms conducting initial public offerings (IPOs). Ritter's (1991) finding is further complemented by Jain and Kini (1994) and Mikkelson, Partch, and Shah (1997), who document a significant decline in operating performance for IPO firms from the year prior to the offerings to one to three years subsequent to the offerings. The received wisdom is that IPO firms tend to perform poorly after the offerings.[1] Academic researchers have thus far attempted to explain why IPO firms have poor long-run performance.

The poor long-run aftermarket performance may, in part, be attributed to the asymmetric information phenomenon documented by Leland and Pyle (1977), Allen and Faulhaber (1989), Welch (1989), and Houge et al. (2001), among others. Information asymmetry proscribes the fair pricing of an IPO firm. When investors are overly optimistic, the value of the firm tends to be inflated.

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[1]With the exception of some Asian markets such as Korea and Singapore, the empirical consensus regarding the issue across international borders appears to suggest that IPO firms experience a long-run decline in market value relative to the market and matching firms after the offerings. See Ritter (1991) and Ritter and Welch (2002) for the United States, Levis (1993) for the United Kingdom, Keloharju (1993) for Finland, Lee, Taylor, and Walter (1996a) for Australia, Firth (1997) for New Zealand, Aggarwal, Leal, and Hernandez (1993) for Latin America, Cai and Wei (1997) for Japan, Lee, Taylor, and Walter (1996b) for Singapore, and Kim, Krinsky, and Lee (1995) for Korea. An extensive survey on the issue can be found in Loughran, Ritter, and Rydqvist (1994).

Hence, long-term underperformance could be traced to overvaluation at the outset. Ritter (1991) interprets such poor long-run performance to be consistent with "a scenario of firms going public when investors are irrationally overoptimistic about the future potential of certain industries." Daniel, Hirshleifer, and Subrahmanyam (1998) also argue that investor overconfidence, coupled with biased self-attribution, can be responsible for the long-run reversal in stock prices.

However, naïve investors should not be the only party to blame for the long-run underperformance of IPO firms. Information asymmetry could also provide an environment that allows a firm going public to engage in opportunistic strategies due to the high and costly information barrier. Subsequently, as the IPO firm becomes more transparent due to disclosure regulations placed on publicly listed firms and careful scrutiny by the market, and given that these strategies are unlikely to be sustainable in the long run, investors will revise their valuation downward for this firm accordingly. The IPO firm would, therefore, underperform in the aftermarket. Alternatively, Schultz (2003) advances a pseudo market timing explanation to rationalize the long-run aftermarket underperformance of IPO firms in an efficient market. The essence of the pseudo market timing hypothesis is that IPO firms are likely to herd into the market when they observe an increase in stock prices consistent with the clustering phenomenon documented by Loughran, Ritter, and Rydqvist (1994) that the number of IPOs is positively associated with the aggregate market level. As a result, most IPOs tend to occur at market peaks resulting in abnormally poor long-run returns for these IPO firms. Ang and Brau (2003) find that managers of IPO firms undertake contrived concealment strategies in a multistage IPO process to maximize their personal wealth. Bradley et al. (2006) also document that penny stock IPOs, which encounter larger information asymmetry than regular IPOs, are more likely to be subject to market manipulation. This echoes the essence of the opportunistic management behavior of an IPO firm at the offering.

It has long been documented that stock prices are positively correlated to reported earnings (e.g., Ball and Brown, 1968; Ball, 1978; Watts, 1978; Rendleman, Jones, and Latane, 1982). To increase proceeds of the offerings, IPO firms may inflate their reported earnings prior to the offerings using discretionary accounting procedure by adopting favorable depreciation and accounts receivable policies that are earnings friendly. Friedlan (1994) provides evidence that is consistent with this type of earnings management engaged by firms prior to their IPOs. Furthermore, Aharony, Lin, and Loeb (1993) demonstrate that earnings management practices are more prevalent among small, highly leveraged firms. In two comprehensive studies, Teoh, Welch, and Wong (1998) and Teoh, Wong, and Rao (1998) document that abnormal discretionary accruals in the IPO year are negatively related to subsequent three-year earnings and stock returns DuCharme, Malatesta, and Sefcik (2001), Zheng and Stangeland (2007), and Chan et al. (2008) also provide further evidence supporting the earnings management hypothesis.[2]

Closely related to the earnings management literature, earlier studies such as Foster (1973), Patell (1976), Nichols and Tsay (1979), and Waymire (1984) suggest that stock markets also respond to management earnings forecast announcements. Skinner (1994) and Hutton, Miller, and Skinner (2003) recently demonstrate that stock prices react asymmetrically to good news and bad news management earnings forecasts. Although there have been abundant studies of this type on US companies, almost none of them relate the issue to IPOs due primarily to the fact that earnings forecasts by executives are prohibited prior to IPOs in the United States.

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[2]The overreaction hypothesis, a competing hypothesis with the earnings management hypothesis, can explain the same directional effect on stock prices. If investors overreact in the IPO process, we are likely to witness more pronounced stock price reversals. However, it cannot explain why postissue earnings decline rapidly. Therefore, price reversals subsequent to the offerings along with the decrease in postissue earnings appear to lend support to the earnings management hypothesis.

However, voluntary disclosure of management earnings forecasts in IPO prospectuses is permitted in some markets outside the United States. Taking together with the corroborative evidence for the informational content of management earnings forecasts, the concurrence of the discretionary disclosure of management earnings forecasts and a specific event such as an IPO may provide another window of opportunity for IPO firms. Consistent with this line of reasoning, Keasey and McGuinness (1991) and Clarkson (2000) find earnings forecasts in IPO prospectuses are optimistically biased for the United Kingdom and Canada, respectively. Jog and McConomy (2003) also report that Canadian IPO firms with optimistic earnings forecasts tend to perform worse during the two-year period following the offerings. For a few exceptions, Cheng and Firth (2000) and Chong and Ho (2007) find that earnings forecasts for IPO firms in Hong Kong and Singapore, respectively, are quite conservative.

In this study, we investigate another form of opportunism that entrepreneurs may pursue during the IPO years. In addition to inflating realized and/or forecasted earnings prior to the offerings, issuers can also influence investors' views on the prospects of the firms via news announcements in the media. For instance, by talking up their strategic plans and/or operational advantages that could increase their market shares and profitability, IPO firms can raise market expectations regarding their subsequent performance. The issuers can also engage in public relations by adopting strong corporate governance measures and socially responsible policies that present them as good and ethical corporate citizens.[3] One of the purposes of these media exercises is to convey a positive image to the public and boost the demand for their stocks. Analogous to the well-documented earnings management, we call these practices news management.

Due to the enforcement of Section 5(c) of the Securities Act prohibiting any undue actions a firm may take to influence the public's views about the value of the firm prior to its equity offering, there have been almost no studies explicitly examining the relationship between IPO firms' news releases around the offerings and their subsequent performance. The regulation essentially imposes a so-called "quiet period" prior to the completion of an offering. During the quiet period, IPO firms are banned from making statements relating to the value of their shares. For example, they should not make forward-looking statements about their future performance such as earnings forecasts. Nevertheless, US firms conducting equity offerings are not forbidden to issue other types of information. Lang and Lundholm (2000) investigate corporate disclosure activity around seasoned equity offerings (SEOs) using a sample of 41 small firms conducting SEOs in 1992. They find that issuers' disclosure activity increases significantly during the six-month period prior to the offerings, but there is little change in disclosure frequency over the one-year interval preceding this six-month period. They suggest that issuers increase disclosure to hype up their stocks. In addition, they report that the increase in corporate disclosure activity comes from all but forward-looking statements, which are prohibited by Section 5(c) of the Securities Act.

Unlike the regulatory environment of equity offerings in the United States, there is no restriction on news announcements of issuers around IPOs in Taiwan. Examining news announcements of IPO firms in Taiwan allows us to investigate whether these firms manage favorable news and what types of news during the IPO periods. If IPOs in Taiwan are indeed engaged with the news management practice, then it could potentially be the primary explanation for the subsequent performance of the IPO firms. Therefore, the result may have implications for regulatory issues

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[3]A firm can strengthen its corporate governance by increasing the number of independent directors, establishing an independent audit and executive compensation committee, and separating the CEO from the chairman of the board. Similarly, a firm could become an ethical corporate citizen by implementing sound environmental policies and establishing foundations for charitable contributions.

in security markets. Furthermore, we focus on IPO firms rather than existing listed firms. IPO firms are less transparent and have not been extensively scrutinized by the market. Hence, they can serve as a prime sample for insider's opportunistic behavior.

In addition, several other unique characteristics of the Taiwanese stock market may provide further insight into the opportunistic behavior of the issuers. First, unlike other IPO environments where additional shares can be issued for the offering, IPO shares come solely from the existing shareholders. Therefore, the larger the proceeds from the offerings are, the more gains the shareholders can acquire. Such an arrangement provides further incentives for the issuers to manage the IPO process. Second, there is no lock-up period for an IPO in Taiwan for our sample period.[4] Hence, a firm's shares tend to be traded under the normal market environment and their prices will be governed by prevailing market forces once the firm becomes listed. Third, unlike IPO firms in other markets where management earnings forecasts are either prohibited or optional, IPO firms in Taiwan have been required to supply their earnings forecasts for the IPO fiscal year along with their applications for the offerings since June, 1991. Therefore, after taking these regulatory and market features into account, multiple forms of opportunism are available to the IPO firms.

Finally, emerging markets are usually operated in an environment of informational opaqueness. As pointed out by Morck, Yeung, and Yu (2000), stock prices in these markets are quite sensitive to political events and rumors. De Long et al. (1990) suggest that uniformed trading can intensify marketwide noise trader risk. Consequently, in relation to stock prices in developed markets, stock prices in emerging markets tend to be volatile. Furthermore, Bae, Bailey, and Mao (2006) document that increased openness to foreign equity investors improves the information environment of emerging markets. Hence, the involvement of foreign investors in the domestic stock market can be related to the quality of the market. Some summary statistics of the Taiwan stock market for the period 1991-2000 may support the presumption that the market environment of Taiwan provides room for insiders to engage in opportunistic behavior. Variance of the daily return on the Taiwan stock market is 2.41 for the period 1991-2000, while the S&P 500 portfolio has a daily return variance of only 0.88. The percentage of securities trading value by foreign investors averages just 1.43% of the total trading value. Furthermore, domestic individual investors are the predominant group in the Taiwan stock market in that they account for 91.66% of total security trading. Arbel and Strebel (1983) suggest that individual investors are usually uninformed, poorly trained, and inclined to rely on noise in the market. Although the literature related to IPOs is now quite extensive, most of it concentrates on the events in the United States or other developed markets. Therefore, little is known about the IPO pricing behavior in a relatively less matured market. Our investigation on IPOs in the Taiwan stock market, an emerging market, could shed light in that regard.

Consistent with recent studies, we find that prior to the offerings, IPO firms tend to disguise themselves as those with good prospects. These issuers also intend to make use of every opportunity to maximize their own personal wealth. Our investigation yields several specific results. First, IPO firms appear to engage in earnings window dressing prior to the offerings as evidenced by the decline in their postoffering earnings.

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[4]Although no lockup restrictions for IPO firms have been imposed in Taiwan until March 2005, an informal mechanism was adopted to perform functions of the lockup period under the following conditions: 1) insiders frequently changed their share holdings during the past three years prior to the offering, 2) the proportion of newly appointed insiders is too high at the IPOs, and 3) a firm had poor reported earnings for recent years but is exempted from meeting the offering standards since it belongs to the government-fostered industry. Under these circumstances, insiders are forbidden from selling their shares for up to two years after the offering. According to the underwriting industry, no more than 20% of IPO firms were likely to fall in this category.

Second, earnings forecasts disclosed by IPO firms are systematically upwardly biased well above the magnitude that can be explained by managerial optimism. These mandatory earnings forecasts are more optimistic than earnings forecasts by IPO issuers in other markets where earnings forecasts are optional for IPO issuers. This suggests that making earnings forecasts a requirement in IPO prospectuses might provide these firms with an additional window of opportunism rather than reducing the information barrier of the firm.

Third, in accordance with the news management hypothesis, news reports prior to the offerings are, on average, more positive and favorable to the firms. We find that the percentage of good news prior to the offerings is significantly greater than that after the offerings. The difference cannot be fully explained by managerial optimism. In particular, when news reports are sorted into different categories, the Strategy/Policy category is the only one that experiences a decline in reporting frequency from the preoffering to the postoffering periods. It is worthwhile to note that the magnitude of the decline is a drastic 58.26%. Furthermore, news reports of this kind appear most frequently and are the dominant type of good news prior to the offerings. Unlike other types of news, Strategy/Policy news is relatively easy to create since it could simply portray a blueprint or a vision of a firm and hype up its future prospects. The ease of making the news along with the informational opaqueness of firms prior to the IPOs provides more opportunities for issuers to bias the news coverage. For these reasons, news in the Strategy/Policy category may be the most preferred type of news coverage for IPO firms to improve their image with investors prior to the offerings.

We further divide news reports between those of "forward-looking" and "historical" types. Around the time of the offerings, we find that the proportion of forward-looking statements within the good news category is more than twice that in the bad news category. This indicates that IPO firms tend to make public disclosure when they expect a positive outlook but disclose negative events primarily after they have already occurred. The disparity in this disclosure activity is much larger in the preoffering period than in the postoffering period. These findings suggest that IPO firms tend to sell themselves as having excellent prospects via forward-looking news statements.

Consistent with the earlier analysis, earnings management, inflated earnings forecasts, and news management are highly correlated with stock performance subsequent to the offerings. The more extensive the opportunistic behavior engaged in by the issuers, the larger the decline in subsequent stock prices of the IPO firms. When we examine the three concealment strategies concurrently, the effects of earnings management and inflated earnings forecasts are largely included in news management. These results are not surprising given that the news reports are released on a continual basis and spread over the offering period, while realized and forecasted earnings are revealed at specific points in time and form only a subset of news reports.

Finally, we investigate whether insiders of IPO firms gain from these window dressing exercises. Our results indicate that IPO firms that experience a larger decrease in insiders' holdings in the aftermarket are more likely to engage in these practices prior to the offerings. Furthermore, the negative correlation between the window dressing activity and the aftermarket performance is observed to be more pronounced for IPO firms experiencing a larger decrease in insiders' holdings. Although not as significant as the change in insiders' holdings in the aftermarket, the IPO size has similar effects. Together, these results suggest that insiders of IPO firms may deliberately take advantage of naïve or uniformed investors in the IPO process.

The rest of the paper is organized as follows. Section I introduces the background of Taiwan stock market, discusses the data and methodology, and presents the summary statistics of the sample. In Section II, we investigate the three concealment strategies and their relationship with aftermarket performance of the IPO firms. In Section III, we examine whether managerial

optimism as an alternative hypothesis can explain IPO behavior. Section IV performs regression analyses to check the robustness of our findings. Section V examines whether insiders of IPO firms take advantage of information asymmetry to gain from the IPO process. Section VI takes another look at the effect of information asymmetry on the correlation between initial IPO underpricing and window dressing exercises. Section VII concludes the paper.

I. Data and IPO Performance

A. Sample Selection

Excluding IPOs of financial firms, heretofore state-owned enterprises, and those with incomplete financial or return data for the study, we collect a final sample of 183 industrial firms going public for the first time in Taiwan from June 1991 to December 2000. The sample period is chosen to coincide with the new disclosure regulation beginning in June 1991. Under the new rule, all issuers are required to publicly disclose their financial forecasts for the IPO fiscal year. To ensure that all IPO firms fall under the same regulatory environment, IPOs prior to June 1991 are excluded. All financial and return data are obtained from the *Taiwan Economic Journal* database. The breakdown of the 183 IPOs exhibits an unevenly distributed pattern across 18 industries classified by the two-digit Standard Industrial Classification code. In particular, 65 IPOs come from the computer products industry, 24 from construction, 18 from textiles, 14 from steel products, 12 from electrical equipment, and the rest scatter over the remaining 13 industries with a maximum of 9 IPOs and a minimum of 0. As expected, computer-related firms dominate the Taiwanese IPO market with 35.52% of the total sample. The distribution of these firms reflects the importance of the computer products sector, which has become the main driver of the Taiwanese economy for the last 15 years. According to the Ministry of Economic Affairs in Taiwan, Taiwanese computer firms made 58% of the world's laptop computers and 90% of PC motherboards in 2002.

B. Stock Returns of IPO Firms

We begin our analysis on IPO pricing behavior by defining IPO firms' initial returns. Unlike the US stock market where a majority of studies have conducted, the Taiwanese stock market imposes daily limits on stock price movements. Therefore, it may take more than a trading day to fully reflect the fair value of the newly listed stock. To overcome this price movement restriction, we take the closing price of the day on which the closing price falls within the daily limit for the first time to be the first day market price of IPO shares. Hence, firm i's initial return, IR_i, and initial abnormal (market-adjusted) return, IAR_i, are respectively defined as

$$IR_i = \frac{CP_{i,D_{i,F}} - OP_i}{OP_i},$$
(1)

$$IAR_i = IR_i - \left[\prod_{t=1}^{D_{i,F}} (1 + R_{M,t}) - 1 \right],$$
(2)

where $D_{i,F}$ is the day on which firm i's daily closing price does not reach the daily limit for the first time, $CP_{i,D_{i,F}}$ is firm i's closing price on day $D_{i,F}$, OP_i is the offering price, and $R_{M,t}$ is the market return on day t.

For the long-run buy-and-hold return of an IPO firm, we compound the daily returns from the following day after the closing price first falls within the price limit to the end of the next fiscal year.[5] The market-adjusted long-run return of the IPO firm is further estimated by subtracting the corresponding daily compounded market returns from the long-run buy-and-hold return.

$$LR_i = \prod_{t=B_i}^{E_i} (1 + R_{i,t}) - 1, \qquad (3)$$

$$LAR_i = \prod_{t=B_i}^{E_i} (1 + R_{i,t}) - \prod_{t=B_i}^{E_i} (1 + R_{M,t}), \qquad (4)$$

where LAR_i is firm i's market-adjusted buy-and-hold return; $R_{i,t}$ and $R_{M,t}$ are returns for firm i and the market on day t, respectively; B_i is the following day after firm i's closing price first falls within the daily limit; and E_i is the end of the next fiscal year corresponding to firm i.

Although test of long-run abnormal buy-and-hold returns can be problematic as documented by Barber and Lyon (1997), Kothari and Warner (1997), and Lyon, Barber, and Tsai (1999), we use the measurement for the following reasons. First, the buy-and-hold measure makes it easy to compare the results of the study with those of prior studies on IPOs, most of which use the buy-and-hold approach to measure long-run performance. Second, investors prefer to use the buy-and-hold return to evaluate their investment strategies. Third, our buy-and-hold returns span over intervals with an average of only 18 months, which is much shorter than the three-year period. Fourth, and most importantly, the primary concern of the study is to investigate the impact of opportunistic behavior on the aftermarket performance of IPO firms, if any, rather than the long-run performance of IPO firms per se. In addition, since our objective is to match the last day of the long-run return with the fiscal year-end, we do not calculate individual long-run returns over a fixed time interval.[6]

Consistent with prior evidence of the underpricing of IPO firms, Panel A of Table I demonstrates that the initial return and the market-adjusted initial return are 14.92% and 14.81%, respectively and both statistically significant at the 1% level. On average, it takes 2.3 days for the market to reflect the fair value of the IPO firms. Medians, maxima, and minima of these two return measures are also quite comparable in magnitude. The striking similarity between initial returns and market-adjusted initial returns implies that the listing days of the IPO firms are, on average, days of flat market conditions. The similarity persists in the two subsamples. While IPO firms in the computer industry appear to have higher initial (abnormal) returns than the rest, the difference is not significant.

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[5]All sample firms have a December fiscal year-end. Even though we plan to examine the relationship between changes in realized earnings and buy-and-hold returns, we do not extend the buy-and-hold period for another six months to ensure that the annual report is publicly available. The six-month allowance might introduce biases since other information becomes available. In Taiwan, investors and especially institutional investors have a good forecast on the annual report based on the heretofore quarterly reports prior to the year-end.

[6]If we annualize individual long-run returns, we also need to standardize the earnings and news management variables but will distort their meanings. Similarly, if we calculate individual long-run returns over a fixed time interval in the aftermarket (e.g., a multiple of a one-year interval), we will run into another problem of mismatching the return interval with the interval over the earnings and news management variables. We regress the number of trading days of the period over which the long-run performance is measured on the long-run performance and the three variables. The regression results (not tabulated) indicate that the number of trading days of the period over which abnormal performance is measured bears no relation to these variables.

Table I. Initial and Long-Run Stock Returns of the Sampled IPO Firms

This table reports the stock market performance of 183 IPO firms. The full sample is further divided into two subsamples for IPOs in the computer and noncomputer industries. *IR* is the initial return measured by the ratio of the difference between the first postoffering nonlimit hit closing price and the offering price to the offering price where the first postoffering nonlimit hit closing price is the closing price of the day on which the closing price first falls within the daily price limit. *IAR* is the market-adjusted initial return and is calculated by the difference between the initial return and the corresponding market return. *LR* is the long-run buy-and-hold return over the period from the day following the day on which the IPO firm's closing price is first within the daily price limit to the year-end of the next fiscal year. *LAR* is the long-run abnormal return and is calculated by subtracting the corresponding market return from the long-run buy-and-hold return. *N* (IPO) is the number of IPOs in each portfolio.

	N (Days)	*N* (IPO)	Mean	Std. Dev.	Max.	Med.	Min.	*t*-stat.
Panel A. Initial IPO Returns								
Initial Returns (IR)								
Full sample	2.30	183	14.92%	19.68%	93.03%	6.89%	−19.53%	10.26***
Computer industry	2.55	65	16.33%	23.56%	93.03%	6.94%	−19.53%	5.59***
Noncomputer industry	2.15	118	14.14%	17.23%	91.07%	6.74%	−6.97%	8.91***
Initial Abnormal Returns (IAR)								
Full sample	2.30	183	14.81%	19.57%	94.25%	7.56%	−15.61%	10.24***
Computer industry	2.55	65	16.57%	23.51%	94.25%	7.56%	−15.61%	5.68***
Noncomputer industry	2.15	118	13.84%	17.04%	92.23%	7.57%	−9.02%	8.82***
Panel B. Long-Run IPO Returns								
Long-Run Returns (LR)								
Full sample	405.12	183	29.75%	99.28%	816.64%	4.03%	−89.32%	4.05***
Computer industry	391.35	65	60.94%	145.48%	816.64%	19.93%	−74.23%	3.38***
Noncomputer industries	412.70	118	12.57%	54.03%	218.32%	2.23%	−89.32%	2.53*
Long-Run Abnormal Returns (LAR)								
Full sample	405.12	183	14.37%	93.69%	793.80%	−5.27%	−91.77%	2.07**
Computer industry	391.35	65	55.29%	136.12%	793.80%	13.88%	−83.60%	3.27***
Noncomputer industry	412.70	118	−8.17%	45.57%	154.24%	13.51%	−91.77%	−1.95

***Significant at the 0.01 level.
**Significant at the 0.05 level.
*Significant at the 0.10 level.

Panel B of Table I reports gross and market-adjusted long-run returns of the sampled firms over an average period of 405.12 trading days (i.e., about 18 months for 25 trading days per month during the sample period) after the offerings. On average, the IPO firms enjoy a 29.75% increase in stock prices after the offerings. The subsample results further indicate that the average raw long-run return for IPO firms in the computer industry is 60.94%, significantly greater than the 12.57% for IPO firms in the noncomputer industry at the 1% level.

Unlike Ritter (1991) who reports an average abnormal return of −14.78% over an 18-month period after the offerings in the United States, we document a positive average long-run abnormal return of 14.37%, significant at the 5% level. The relatively low market-adjusted long-run return, when compared to the raw return, suggests that the 183 IPO firms, on average, experience a long-run upward market condition after the offerings. Furthermore, the relatively small median

of -5.27% when compared to the mean, and the large spread with a maximum of 793.80% and a minimum of -91.77% suggest that the positive average long-run return could be attributed to a limited number of IPO firms.[7] The results of the two subsamples further confirm this supposition and indicate that the positive abnormal long-run performance comes primarily from IPO firms in the computer industry.

IPO firms in the computer industry experience an average long-run abnormal return of 55.29%, significant at the 1% level. This result may reflect the fact that the computer industry has grown rapidly and become the mainstay of Taiwan's economy since the early 1990s. In contrast, the average long-run abnormal return of IPO firms in the noncomputer industry is a significant -8.17%, which is more comparable to the average return of the IPO firms in the US market. Further, we find that the difference in the long-run abnormal return between the two subsamples is statistically significant at the 1% level. Our results are in line with Ritter's (1991) finding that long-run stock returns after IPOs vary across industries. Therefore, the difference in the long-run performance between IPO firms in the computer industry and those in other industries justifies further analyses at both the aggregate and subgrouping levels.

C. Characteristics of IPO Firms

Table II reports some summary statistics of the sampled IPO firms. At the time of the offerings, the mean and median market capitalizations of the firms in terms of New Taiwan dollars are NT$8.15 billion and NT$3.89 billion (or US$281.86 million and US$139.48 million), respectively. Given that Taiwan is an emerging market, these figures are surprisingly larger than those reported in the United States by Teoh, Welch, and Wong (1998) and Teoh, Wong, and Rao (1998) who report that the mean and median capitalizations of their sample firms are US$199.68 million and US$66.23 million, respectively, between 1980 and 1992. However, the firm size varies widely as the largest firm is about 146 times the size of the smallest firm. A further look at the composition of the IPOs at the industry level reveals that the large, but dispersed capitalizations can, in part, be attributed to the capital-intensive computer industry. IPO firms in the computer industry have an average firm size of NT$13.74 billion (the equivalent to US$455.38 million), as compared to an average of NT$5.07 billion (equivalent to US$186.27 million) for other IPO firms. The large capitalization of IPO firms in Taiwan may also be partly attributed to their average age of 17 years, compared with an average of 13 years in the US IPO firms (Teoh, Welch, and Wong, 1998). Furthermore, the subsample results indicate that the considerable age of the Taiwanese IPO firms are primarily skewed by the noncomputer firms with an average age of 20 years.

Regarding institutional holdings, institutional investors typically own 16.56% of the total shares when an IPO is launched. We also find a medium of only 3.3% in the institutional ownership, implying that most of the IPO firms in our sample are largely owned by individuals. This finding differs from Mikkelson, Partch, and Shah (1997) where they found that individuals have only a median holding of 10% in US IPO firms. At the industry level, computer-related firms tend to have larger institutional holdings than the others, although the difference is not significant.

To estimate the block holdings, we define block shareholders as managers or directors who own more than 10% of the total shares in a firm. The average block ownership of a Taiwanese IPO firm

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[7]The positive aftermarket performance of the IPO firms can be attributed to the outstanding performance of the IPOs in the computer sector and the relatively minor proportion of the computer sector to the market portfolio. The buy-and-hold return on the computer stocks amounts to 421.92% over the period from the beginning of 1992 to the end of 2002, while it is only -14.52% on the noncomputer stocks. Furthermore, the market value of the computer stocks accounts for only about 4.5% of the market at the end of 1992, but it increases to 52% in Year 2002.

Table II. Summary Statistics of the Sampled IPO Firms

This table presents summary statistics for the characteristics of the 183 IPOs in the sample. The full sample is further divided into two subsamples for IPOs in the computer and noncomputer industries. *Firm Size* is the market value of the IPO firm at the offering and is presented in billions of New Taiwan dollars. *Firm Age* is the number of years that the IPO firm has been in existence before going public. *Institutional Holding* is the proportion of shares held by institutional investors at the offering. *Block Holding* is the proportional ownership of shares held by the insiders individually with more than 10% of the IPO firm's shares at the offering. *Quality of the Auditor* is a dummy variable that takes on a value of one if the auditor is from a Big Four accounting firm and zero otherwise. *Reputation of the Underwriter* is a dummy variable that takes on a value of one if the underwriter's sales in the past three years were in the top half of all the underwriters' and zero otherwise. *Market Timing* is a dummy variable that takes on a value of one if the ratio of averages of daily market index for the one-month and 12-month periods preceding the IPO application is greater than one and zero otherwise. *N* (IPO) is the number of IPOs in each portfolio.

Firm Variable	*N* (IPO)	Mean	Std. Dev.	Max.	Median	Min.
Firm Size (billion, NTD)						
Full sample	183	8.15	18.00	171.63	3.89	1.18
Computer industry	65	13.74	28.56	171.63	5.45	1.50
Noncomputer industry	118	5.07	5.54	39.66	3.17	1.18
Firm Age (Year)						
Full sample	183	17.13	8.77	49.52	14.87	3.10
Computer industry	65	11.69	5.35	28.54	10.75	3.10
Noncomputer industry	118	20.13	8.86	49.52	19.99	3.74
Institutional Holdings (%)						
Full sample	183	16.56	24.70	96.29	3.30	0.00
Computer industry	65	19.15	23.47	78.90	11.39	0.00
Noncomputer industry	118	15.13	25.43	96.29	0.90	0.00
Block Holdings (%)						
Full sample	183	43.56	17.94	88.39	41.39	10.37
Computer industry	65	40.13	15.54	72.81	37.02	10.37
Noncomputer industry	118	45.46	18.93	88.39	41.91	12.17
Quality of the Auditor (Dummy)						
Full sample	183	0.78	0.41	1.00	1.00	0.00
Computer industry	65	0.88	0.33	1.00	1.00	0.00
Noncomputer industry	118	0.73	0.45	1.00	1.00	0.00
Reputation of the Underwriter (Dummy)						
Full sample	183	0.81	0.39	1.00	1.00	0.00
Computer industry	65	0.85	0.36	1.00	1.00	0.00
Noncomputer industry	118	0.79	0.41	1.00	1.00	0.00
Market Timing of IPOs (Dummy)						
Full sample	183	0.58	0.50	1.00	1.00	0.00
Computer industry	65	0.69	0.47	1.00	1.00	0.00
Noncomputer industry	118	0.52	0.50	1.00	1.00	0.00

is 43.56%, quite comparable to Spiess and Pettway (1997) and Aggarwal, Krigman, and Womack (2002) who find that management of an IPO firm in the United States holds 41.6-43.2% of its shares at the time of the offering. Between the subsamples, IPO firms in the computer industry are less likely to be held by big shareholders than those in other industries at the 5% level. This

discrepancy may relate to the relatively large capitalization of IPO firms in the computer industry reported earlier.

To measure the quality of the auditor, we introduce a dummy variable that takes on a value of one if the auditor comes from one of the Big Four accounting firms (i.e., Ernst and Young, KPMG, Price-water houseCoopers, and Deloitte and Touche) and zero otherwise. As illustrated in Table II, the average of the dummy variable of 0.78, significantly greater than 0.5 at the 1% level, suggests that the IPO firms tend to hire reputable auditors. This finding contrasts the result of Beatty (1989) that the Big Eight firms audited 58% of the IPOs during the 1975-1984 period in the United States. The subsample results further indicate that auditors in the computer industry are more reputable than those in other industries at the 1% level.

For the reputation of the lead underwriter of an IPO firm, we also use a dummy variable that takes on a value of one if its underwriting sales during the past three years were in the top half of all the underwriters and zero otherwise. At both the aggregate and subsample levels, the IPO firms tend to work with underwriters of good reputation where the average value of the dummy variable is significantly greater than 0.5 at the 1% level. It also appears that underwriters in the computer firms have relatively high reputations. The difference, however, is not significant.

Before being qualified to file an application to launch its IPO, a firm in Taiwan must go through at least a one-year preparation period under the supervision and assistance of an underwriter. The preparation period is designed to help the firm to fulfill the listing requirements set forth by the Security and Futures Commissions, parallel to the SEC and the CFTC in the United States. There is no restriction on the amount of time between the end of the preparation period and the initiation of an IPO application. Nevertheless, the firm usually files its application within six months after the preparation period because of the costs to delay and periodic charges by the underwriter. In addition, any delay in the IPO process could cause the firm to continue to bear the implicit costs of changes in its daily operation routine to avoid revealing too much inside information to the underwriter. The reviewing process for the application usually takes about three months. The firm must start the offering process within three months after the application is approved. The offering, however, can be postponed for another three months though it has rarely been done. Quite often the firm announces the offering right after receiving the approval.

Finally, to test whether management engages in market timing on their IPOs, we first calculate the ratio of the one-month and the 12-month daily market index averages prior to the day a firm files its IPO application. Since the date of the application is not known, we use the day three months prior to the day the IPO is announced instead. We then introduce a dummy variable for the IPO market timing where it takes on a value of one if the ratio is greater than one and zero otherwise.[8] As indicated in Table II, the dummy variable takes an average value of 0.58, significantly greater than 0.5 at the 5% level. Our preliminary results support Schultz (2003) who document that firms tend to time their IPOs at market peaks. It seems that despite having more than one-year lead time over the offering process, the Taiwanese firms are likely to launch their IPOs when market conditions become better.

The subsample results provide further insight into the IPO firms' market timing ability. The market timing dummy variable has an average of 0.69 for IPO firms in the computer industry,

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[8]We also conduct the analysis using the ratio measure rather than the dummy measure and obtain qualitatively similar results. In another robustness test, we calculate the ratio of the two daily market index averages, respectively, for the one-month and the 24-month periods prior to the day the firm files its IPO application. The analyses are then repeated and the results are similar.

significantly greater than 0.5 at the 5% level. Alternatively, firms in other industries appear to conduct their IPOs in an average market condition. The significantly higher dummy value in the computer industry may imply that firms in the computer industry are more capable of timing their IPOs in good market conditions. Conversely, it might just reflect the relatively short business cycle of the computer industry as opposed to other industries. Taken together, with the prominence of the computer industry in the Taiwanese stock market for the last 15 years, the offerings of computer firms are more likely to coincide with better market conditions.

II. Concealment Strategies of IPO Firms

A. Earnings Management

We first examine the operating performance of the IPO firms by analyzing their returns on assets (ROA) during the pre- and postissue periods. Our interest in the issuers' ROA is motivated by Friedlan (1994) and Teoh, Welch, and Wong (1998), and Teoh, Wong, and Rao (1998) who document that IPO firms tend to have higher earnings via abnormal discretionary accruals in the issue year. Thus, ROA can be seen as a proxy for managed earnings. Following Jain and Kini (1994), we compute a firm's ROA of fiscal years after its initial public offering relative to its ROA of the fiscal year prior to the IPO. We define ROA as the net income before taxes of a fiscal year divided by total assets at the end of the previous fiscal year. Year −1, Year 0, and Year 1 denote the fiscal years prior to, surrounding, and after the IPO, respectively. For measuring an IPO firm's industry-adjusted change in return on assets, we subtract the contemporaneous median change in ROA of all other firms in the same industry from the firm's change in ROA.

Panel A of Table III reports industry-adjusted changes in ROA for the sampled IPO firms. Consistent with Jain and Kini (1994), we find that the 183 IPO firms experience an average of 1.50% decline in industry-adjusted ROA from Year −1 to Year 0 and an even larger decline of 4.14% in ROA from Year −1 to Year 1, both significant at the 1% level. Similar patterns of change in ROA also emerge in the two subsamples. However, the subsample results reveal industrial variations in earnings management. Computer-related firms appear to suffer a larger decline in industry-adjusted ROA from Year −1 to Year 1 than those in other industries at the 1% level. Our findings that computer-related IPO firms possess a greater ability to manage earnings should not come as a surprise. The average annual ROA of 10.02% for computer-related IPO firms over the three-year period (i.e., Years −1, 0, and 1) is far greater than the average of 6.62% for the other firms at the 1% significance level. The higher ROA gives computer-related IPO firms more flexibility in adjusting earnings over time.

To establish a link between the degree of earnings management and the long-run abnormal stock return, we rank the IPOs according to their industry-adjusted changes in ROA and then evenly divide them into two portfolios. We then compute average market-adjusted long-run returns of the two portfolios, respectively. Panel B of Table III presents the effect of earnings management on long-run performance. For IPO firms that experience larger declines in industry-adjusted ROA, we find an average long-run abnormal return of 2.16%. In contrast, IPO firms that have relatively smaller declines enjoy an average long-run abnormal return of 26.44%. The difference in the average abnormal returns between the two portfolios is significant at the 1% level. These results indicate a negative relationship between earnings management and the long-run market performance of IPO firms. This negative relationship continues to hold within the two subsamples. Since in Taiwan, IPO shares all come from existing shares, the decrease in industry-adjusted ROA

Table III. Earnings Management and Aftermarket Performance

This table reports industry-adjusted changes in return on assets (ROA) and their relation with the aftermarket performance for the 183 sampled IPOs. The full sample is further divided into two subsamples for IPOs in the computer and noncomputer industries. A firm's industry-adjusted change in ROA is obtained by subtracting the contemporaneous median change in ROA of all other firms in the same industry from the firm's change in ROA. Years −1, 0, and 1 denote the fiscal years preceding, surrounding, and following the IPO fiscal year, respectively. Changes in ROA are all measured relative to Year −1. Panel A reports the summary statistics of industry-adjusted changes in ROA for Years 1 and 0 relative to Year −1. Panel B presents the relationship between the industry-adjusted change in ROA and the long-run abnormal return, which is calculated by subtracting the corresponding market return from the long-run buy-and-hold IPO return over the period from the day following the day on which the IPO firm's closing price is first within the daily price limit to the year-end of the next fiscal year. The IPO sample is also evenly divided into two portfolios according to ranks of these firms' industry-adjusted changes in ROA form Year −1 to Year 1. *Low* and *High* represent the portfolios of IPO firms with smaller and larger increases in industry-adjusted ROA, respectively. *N* (IPO) is the number of IPOs in each portfolio.

Panel A. Summary Statistics of Industry-Adjusted Changes in ROA

	N (IPO)	Mean	Std. Dev.	Max.	Med.	Min.	*t*-stat.
From Year −1 to Year 0							
Full sample	183	−1.50%	4.44%	19.29%	−0.99%	−17.19%	−4.57***
Computer industry	65	−1.95%	5.32%	19.29%	−1.87%	−12.54%	−2.96***
Noncomputer industry	118	−1.25%	3.87%	8.80%	−0.53%	−17.19%	−3.52***
From Year −1 to Year 1							
Full sample	183	−4.14%	6.90%	16.36%	−2.44%	−37.95%	−8.12***
Computer industry	65	−5.73%	7.44%	11.22%	−4.84%	−27.08%	−6.21***
Noncomputer industry	118	−3.27%	6.45%	16.36%	−2.04%	−37.95%	−5.50***

Panel B. Effects of Earnings Management on Long-Run Abnormal Returns (LAR)

Industry-Adjusted Changes in ROA from Year −1 to Year 1	*N* (IPO)	Mean (LAR)	*t*-stat.
Full sample			
Low	91	2.16%	0.21
High	92	26.44%	2.88***
Computer industry			
Low	32	22.96%	0.86
High	33	86.63%	4.34***
Noncomputer industry			
Low	59	−17.39%	−3.12***
High	59	1.05%	0.17

***Significant at the 0.01 level.

cannot be attributed to the increase in firm size and managers' incapability to operate a larger firm. Therefore, we interpret our findings to be consistent with those documented by Teoh, Welch, and Wong (1998), Teoh, Wong, and Rao (1998), DuCharme, Malatesta, and Sefcik (2001), and DuCharme et al. (2001).

B. Inflated Earnings Forecasts

Since June 1, 1991, firms going public in Taiwan have been required to disclose their earnings forecasts as part of their application over the IPO fiscal year.[9] The purpose of this disclosure according to the Security and Futures Commissions in Taiwan is twofold: 1) to lower the information asymmetry in a market where a majority of the investors are individuals and 2) to reduce uncertainty and, therefore, the stock price volatility as a result of the disclosure.

Consequently, we test whether the newly listed firms manage their financial information to boost market expectations regarding their earnings prospects. In particular, we examine whether the required earnings forecasts are systematically overly optimistic by comparing the forecasted with the realized earnings. To measure the degree of overoptimism, we calculate the error in earnings forecasts by dividing the difference between the forecasted earnings and the realized earnings by the absolute value of the forecasted earnings:

$$EF_i = \frac{PE_i - AE_i}{|PE_i|} \times 100, \tag{5}$$

where EF_i is the rate of error in earnings forecasts for firm i, AE_i is firm i's actual earnings before taxes, and PE_i is firm i's predicted earnings before taxes.

Panel A of Table IV reports that at the aggregate level, earnings forecasts for the IPO year are, on average, 11.40% higher than the actual earnings. The forecast error is significantly different from zero at the 1% level. At the subsample level, the forecast errors of computer and noncomputer firms are 10.37% and 11.97%, both significant at the 5% and 1% levels, respectively. Although IPO firms in the noncomputer industry typically have higher earnings forecast errors, the difference is not statistically significant. Overall, the results indicate that IPO firms tend to be too optimistic about their future earnings performance.

The forecast error found here is higher than those documented by previous studies on markets such as the United Kingdom, Canada, and Hong Kong, where earnings forecasts in IPO prospectuses are optional. The compulsory disclosure in Taiwan, therefore, provides no real information advantage to the investors. IPO firms with good prospects may instead not be able to use the earnings forecasts as an effective signaling tool given that all firms are required to issue their forecasts (Verrecchia, 1983). Furthermore, an IPO firm with a less than rosy future may have further opportunity to disguise itself among those with positive outlook.

We examine the effect of forecast errors on the long-run abnormal returns by dividing the IPO firms into two groups based on the ranks of the firms' forecast errors. As shown in Panel B of Table IV, IPO firms with higher forecast errors have an average long-run abnormal return of −2.66%, which is significantly smaller than the 31.58% average for the IPO firms with lower forecast errors at the 1% level. The differences in long-run abnormal returns between the firms of higher and lower forecast errors are also significant at the 5% level for the two subsamples. The significant correlation between the forecast error and long-run performance may suggest that investors are naively led to believe in the forecasts prior to the offerings and make corrections only when the earnings are realized.

The inflated management earnings forecasts could be particularly attractive in Taiwan since there is little penalty for upwardly biased forecasts. Even when a firm's realized earnings are below 80% of the earnings forecasts, it will only go through a stricter, but not clearly defined, screening process when it applies for a subsequent cash offering. Despite the fact that there is

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[9]When the date of the IPO falls within the three-month period prior to the coming fiscal year-end, the IPO firm is required to additionally disclose earnings forecasts for the next fiscal year. If this occurs, we take the earnings forecasts of the next fiscal year as the earnings forecasts for the IPO.

Table IV. Earnings Forecasts Errors and Aftermarket Performance

This table reports percentage errors in compulsory earnings forecasts and their correlation with the aftermarket performance for the 183 sampled IPOs. The full sample is further divided into two subsamples for IPOs in the computer and noncomputer industries. Panel A reports the summary statistics of percentage errors in earnings forecasts. The error in earnings forecasts is measured by the difference between forecasted earnings and realized earnings divided by the absolute value of forecasted earnings. Panel B presents the relationship between the percentage error in earnings forecasts and the long-run abnormal return, which is calculated by subtracting the corresponding market return from the long-run buy-and-hold IPO return over the period from the day following the day on which the IPO firm's closing price is first within the daily price limit to the year-end of the next fiscal year. The IPO sample is also evenly divided into two portfolios according to ranks of these firms' percentage errors in earnings forecasts. *Low* and *High* represent the portfolios of IPO firms with smaller and larger upward biased earnings forecasts, respectively. *N* (IPO) is the number of IPOs in each portfolio.

Panel A. Summary Statistics of Earnings Forecast Percentage Errors

	N (IPO)	Mean	Std. Dev.	Max.	Med.	Min.	*t*-stat.
Full sample	183	11.40%	38.98%	251.90%	8.12%	−95.07%	3.96***
Computer industry	65	10.37%	40.02%	153.32%	8.30%	−95.07%	2.09**
Noncomputer industry	118	11.97%	38.56%	251.09%	8.08%	−90.67%	3.37***

Panel B. Effects of Earnings Forecast Errors on Long-Run Abnormal Returns (LAR)

	N (IPO)	Mean (LAR)	*t*-stat.
Full sample			
Low	91	31.58%	2.57**
High	92	−2.66%	−0.44
Computer industry			
Low	32	88.80%	2.83***
High	33	22.79%	1.98**
Noncomputer industry			
Low	59	0.55%	0.10
High	59	−16.89%	−2.73***

***Significant at the 0.01 level.
**Significant at the 0.05 level.

no severe regulatory penalty for inflated earnings forecasts, it is interesting to see if the market will penalize firms for such misconduct. In particular, we examine whether there is a relationship between the forecast error and the difficulty of raising SEOs within three to five years following the IPO. We run the following regression:

$$ALR_i = \alpha + \beta \times EF_i + \varepsilon_i$$

within 3 years: $\quad -5.53 \quad 0.11 \qquad i = 1, \ldots, 128$
$\qquad\qquad\qquad (-2.86) \quad (2.56)$

within 4 years: $\quad -5.26 \quad 0.11 \qquad i = 1, \ldots, 132$
$\qquad\qquad\qquad (-2.69) \quad (2.45)$

within 5 years: $\quad -5.32 \quad 0.11 \qquad i = 1, \ldots, 137$
$\qquad\qquad\qquad (-2.74) \quad (2.47)$

where EF_i is the rate of error in earnings forecasts for firm i in its IPO year and ALR_i is the weighted average (by the offering proceeds) of the adjusted allotment ratios for firm i's SEOs under the issuing method of public subscription over a given period following its IPO. The allotment ratio of an offering is defined as the ratio of the number of offered shares to the number of subscribed shares. To account for the time-varying market condition, we first calculate the weighted average of the allotment ratios of the SEOs conducted by all the listed firms over the same half-year interval (either the first half or the second half of a calendar year) as a SEO conducted by the IPO firms. The adjusted allotment ratio of the SEO conducted by the IPO firms is then obtained by subtracting the weighted average allotment ratio from the allotment ratio of the SEO.

The regression results present a positive relationship between the forecast error and the allotment ratio. It suggests IPO firms tend to experience greater difficulty in raising funds the earlier they make larger earnings forecasts. Inflating earnings forecasts in their IPO prospectuses appears to damage their credibility as a fund raiser in the aftermarket.

C. Tactical News Manipulation

1. Variations in News Reports and Market Performance

In addition to using earnings management and optimistic earnings forecasts to raise market expectations and successfully launch their IPOs, these firms can also engage in other qualitative types of reporting to influence investors' perception and, consequently, their demand for the new shares. Unlike the United States, there is no restriction regarding news disclosure for IPO firms prior to and after the offerings in Taiwan. Therefore, it allows IPO firms to release news that can generate favorable views at their discretion. For example, a firm can report its promising operation and production strategies in a news conference or to security analysts directly. The purpose of these exercises could be an attempt to present one unified and positive image about the firm.

In order to test such a hypothesis, we manually collect the news coverage for the 183 IPO firms from the Electronics News Information Bank, the most complete electronic news system available in Taiwan, over the period one year prior to the offering date to the end of the next fiscal year after the IPO. The reason for this choice of unequal postoffering sample periods across IPOs is to match the intervals with the sample periods over which industry-adjusted ROA and the abnormal long-run stock return of the IPO firms are measured. When news reports with similar content are released on successive days, only the first report is counted. Unlike realized and forecasted earnings disclosed by IPO firms, news reports regarding these firms announced through the media are mostly qualitative in nature. The abstract nature of the news releases may give IPO firms more room for engaging in media hype activities.

To avoid exercising too much subjective judgment, we do not convert the qualitative news reports to quantitative measures. Instead, we use qualitative variables to characterize the news reports such in a way that a news release is labeled "good" if it is thought to have a positive impact on the firm, "bad" if it carries a negative impact, and "mixed" if the impact is unclear or trivial. We further classify the news reports into eight categories: 1) Earnings/Financials, 2) Strategy/Policy, 3) R&D/Production, 4) Personnel/Insider, 5) Marketing/Industry, 6) Price/Valuation, 7) Regulation/Law, and 8) Others. However, when a news report appears to fall into more than one category, we use the cover story, the reporting weight, or the first mentioned topic, in that order, to categorize the news report. We also classify a news report as forward-looking if it refers to the future, historical if it is related to the past, and indecisive if it belongs neither of the two. We choose three news reports in Year 1999 to illustrate how a news report is characterized:

Date: 21/05/1999 (Good; Strategy/Policy, Forward-looking; IPO date: 21/12/1998)

News: Tex-Ray Industrial announced that it will expand its marketing channels in the United
    States by the end of the year, which was intended to boost sales and profits.

Date: 29/06/1999 (Bad; Regulation/Law; Historical; IPO date: 05/03/1999)

News: Intel accused VIA Technologies for patent infringement and withdrew Slot 1 patent
    from VIA Technologies. VIA Technologies refuted such infringement and claimed
    that it would obtain alternative patent elsewhere.

Date: 08/09/1999 (Bad; Earnings/Financials, Forward-looking; IPO date: 05/01/1999)

News: Chicony Electronics adjusted its earnings forecasts for the current year downward to
    a loss of NT$1.79 per share.

Table V presents summary statistics of news reports on the sampled IPO firms. As shown
in Panel A, a total number of 12,590 news releases for the 183 IPO firms are collected over a
period of 893.16 days, from 367.73 calendar days preceding the offering date to 525.43 calendar
days following the offering date.[10] An IPO firm has an average of 68.8 news releases, a little
larger than the median of 54. Coupled with the wide range of the number of news reports from a
maximum of 347 to a minimum of 5, the relatively large mean, as opposed to the median, implies
the dominance of several IPO firms with a greater number of news reports. Of the 12,590 pieces
of news, 5,555 news reports reveal something good about the 183 IPO firms, equivalent to 30.36
good news reports per IPO firm during the period around their offerings. In contrast, there are
merely 1,824 bad news reports from 176 IPO firms, implying a mean of 9.97 bad news reports
per firm. The difference in the number of good and bad news reports is significant at the 1%
level. Of the remaining news reports, which represent about 41.4% of the total sample, they are
considered to have either uncertain or trivial impact on the IPO firms. We suspect that firms
might just want to draw public attention through widespread media coverage and/or that news
statements are often not enunciated in a clear manner.

Panels B and C of Table V repeat the analysis of news reports, but look at the periods prior to
and after the IPOs separately. Similar to Rao (1993) where there is relatively less news coverage
of IPO firms prior to the offerings, we find that the average number of news reports per IPO firm
prior to the offerings is far smaller than that after the offerings. Similar patterns occur across all
three categories of news reports: good, bad, and mixed. The result still holds even after we control
for the difference in the number of calendar days between the two periods. Thus, it seems that the
IPO firms are more closely followed by the media after they are publicly listed. Panels B and C
also reveal that only 89 IPO firms have bad news reports prior to the offerings, while there are
170 IPO firms with bad news reports after the offerings. Alternatively, the number of IPO firms
with either good or mixed news reports remains almost unchanged between the periods prior to
and after the offerings. Our findings suggest that before they are publicly listed, IPO firms may
have more leeway to get away with bad publicity.

For establishing the linkage between news reports on IPO firms and their subsequent stock
market performance, we define a variable that measures the quality of news reports based only

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[10]The day on which the IPO firm's closing price first falls within the daily price limit rather than the offering day is taken
as the cutoff point. Therefore, the period preceding an IPO in fact includes the number of days the market takes to fully
reflect the fair value of an IPO firm.

Table V. Summary Statistics of News Reports on the Sampled IPO Firms

This table presents the characteristics of 12,590 news reports on the 183 sampled IPO firms. News reports are divided into three types: 1) good news, 2) bad news, and 3) mixed news. News that is considered to have a positive (negative) impact on an IPO firm is classified as good (bad) news. News that is considered to have an unclear or a trivial impact is classified as mixed news. The period prior to the offerings refers to the one-year period preceding and including the day on which the IPO firm's closing price is first within the daily price limit. The period following the offerings spans over the time interval between the first nonlimit hit day and the year-end of the next fiscal year. The period around the offerings is the combination of the pre- and postoffering periods. N (IPO) is the number of IPOs in each portfolio.

	N (IPO)		News Report Frequency				
Classification	**With Reports**	**Without Reports**	**Total**	**Mean**	**Max.**	**Med.**	**Min.**
Panel A. News Reports Around the IPOs							
All	183	0	12,590	68.80	347	54	5
Good news	183	0	5,555	30.36	211	20	1
Bad news	176	7	1,824	9.97	67	8	0
Mixed news	183	0	5,211	28.48	126	23	1
Panel B. News Reports Prior to the IPOs							
All	183	0	3,441	18.80	108	13	1
Good news	181	2	2,127	11.62	89	8	0
Bad news	89	94	195	1.07	14	1	0
Mixed news	175	8	1,119	6.11	37	5	0
Panel C. News Reports Following the IPOs							
All	183	0	9,149	49.99	270	39	2
Good news	180	3	3,428	20.90	140	13	0
Bad news	170	13	1,629	8.90	65	7	0
Mixed news	181	2	4,092	22.26	107	18	0

on good and bad news reports.

$$Q_{P,T} = \frac{G_{P,T}}{G_{P,T} + B_{P,T}} \times 100, \tag{6}$$

where $Q_{P,T}$ is the percentage of good news reports for portfolio P during time interval T; $G_{P,T}$ and $B_{P,T}$ are the number of good and bad news reports, respectively; P denotes an IPO portfolio including the IPOs of particular interest; and T stands for a time interval and could be the one-year period prior to the offering date, the period from the offering date to the end of the next fiscal year, or the sum of the two periods. Using the normalized measure of good news reports rather than the number of good news reports allows us to compare the quality of news reports between different periods for an IPO firm and across individual IPO firms.

Panel A of Table VI presents summary statistics of the quality measure for good and bad news reports. Around the offerings, a majority of news reports have a positive impact on the IPO firms in that good news reports show up 75.28%, significantly greater than 50% at the 1% level. Moreover, the results of the pre- and postoffering periods provide additional insights. About 91.60% of news reports on the 183 IPO firms belong to the good news category prior

Table VI. Changes in the Percentage of Good News and Aftermarket Performance

This table presents variations in proportion of good news and their linkage with the aftermarket performance for the 183 sampled IPOs. The full sample is further divided into two subsamples for IPOs in the computer and noncomputer industries. Panel A indicates the numbers of good and bad news reports for various time periods. News that is considered to have a positive (negative) impact on an IPO firm is classified as good (bad) news. The period prior to the offerings refers to the one-year period preceding and including the day on which the IPO firm's closing price is first within the daily price limit. The period following the offerings spans over the time interval from the day following the first nonlimit hit day to the year-end of the next fiscal year. The period around the offerings is the combination of the pre- and postoffering periods. Percentage of good news reports is the ratio of the number of good news reports to the aggregate of good and bad news reports. Panel B reports changes in the percentage of good news reports between pre- and postoffering periods. Panel C reports the relationship between the change in percentage of good news reports and the long-run abnormal return, which is calculated by subtracting the corresponding market return from the long-run buy-and-hold IPO return over the postoffering period. The IPO sample is also evenly divided into two portfolios according to ranks of these firms' changes in the percentage of good news reports. *Low* and *High* represent the portfolios of IPO firms respectively with larger and smaller decreases in the percentage of good news reports between pre- and postoffering periods. *N* (IPO) is the number of IPOs in each portfolio.

Panel A. Good and Bad News Reports

	Good News		Bad News		Proportion of Good News	
	N (IPO)	Frequency	*N* (IPO)	Frequency	Percentage	*t*-stat.
Full sample						
Around offerings	183	5,555	176	1,824	75.28%	23.01***
Prior to offerings	181	2,127	89	195	91.60%	58.05***
After offerings	180	3,428	170	1,629	67.79%	12.36***
Computer industry						
Around offerings	65	2,959	63	786	79.01%	22.06***
Prior to offerings	65	1,063	31	74	93.49%	48.83***
After offerings	65	1,896	61	712	72.70%	11.93***
Noncomputer industry						
Around offerings	118	2,596	113	1,038	71.44%	13.32***
Prior to offerings	116	1,064	58	121	89.79%	37.55***
After offerings	115	1,532	109	917	62.56%	6.41***

Panel B. Changes in the Percentage of Good News Reports Between Pre- and Postoffering Periods

	N (IPO)	Mean	Std. Dev.	Max.	Med.	Min.	*t*-stat.
Full sample	183	−28.34%	26.92%	100%	−26.60%	−100%	−14.24***
Computer industry	65	−24.05%	19.79%	20%	−23.76%	−83.33%	−9.80***
Noncomputer industry	118	−30.70%	29.95%	100%	−30.51%	−100%	−11.14***

(*Continued*)

to the offerings, while good news reports account for only 67.79% of the news reports after the offerings. Similar to the results of the aggregate sample, IPO firms have a higher frequency of good news reports for the period prior to the offerings than for the period after the offerings in the subsamples. Panel A also demonstrates that an average IPO firm in the computer industry tends to have more news reports than its counterpart in other industries. As the computer industry has

Table VI. Changes in the Percentage of Good News and Aftermarket Performance (*Continued*)

Panel C. Effects of News Reports on Long-Run Abnormal Returns (LAR)

Changes in the Percentage of Good News between Pre- and Postoffering Periods	*N* (IPO)	Mean (LAR)	*t*-stat.
Full sample			
Low	91	−13.16%	−2.73***
High	92	41.60%	3.38***
Computer industry			
Low	32	−0.68%	−0.08
High	33	109.56%	3.74***
Noncomputer industry			
Low	59	−17.62%	−2.98***
High	59	1.27%	0.22

***Significant at the 0.01 level.

become the focal point of the Taiwanese economy since the early 1990s, it is not surprising that these glamour firms are more closely followed and reported. The subsample results also indicate that IPO firms in the computer industry have a higher percentage of good news reports than those in other industries. Further examination confirms that the difference in the percentage of good news reports between the two subsamples is significant for all the three periods: 1) prior to, 2) after, and 3) around the offerings.[11]

Additionally, we examine whether there are significant changes in the percentage of good news reports between the periods prior to and after the offerings. We first calculate the change in the percentage of good news reports for an individual IPO firm by taking the difference in the firm's percentage of good news reports between the two subperiods. Reported in Panel B of Table VI, the percentage of good news reports for an average IPO firm declines 28.34% from pre- to postoffering periods and is significant at the 1% level.

The subsample results again mirror closely those of the aggregate sample. However, IPO firms in the computer industry typically experience a 24.05% decrease in the percentage of good news reports as compared to a larger decline of 30.70% in other industries. While the findings tend to suggest that IPO firms in the noncomputer industry are more likely to engage in news management, the difference in the percentage changes in good news between the two subsamples is not statistically significant. Panel B of Table VI also indicates that percentage changes in good news reports on IPO firms in the computer industry exhibit a less heterogeneous characteristic in that they spread over a narrower range with a smaller standard deviation. This observation could be attributed to the fact that the noncomputer sample consists of IPO firms from various industries.

Using similar methodology as earlier, we evenly divide the IPO firms into two groups according to the ranks of their individual changes in the percentage of good news reports between periods prior to and after the offerings. Panel C of Table VI reports that the portfolio of IPO firms with a larger proportional decrease in good news reports has an average long-run abnormal

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[11] We first calculate the percentage of good news reports of each individual IPO firm for a given period and then conduct the tests by comparing the average percentage of good news reports between the two subsamples. The *t*-statistics are 2.31, 3.19, and 3.22 for the periods prior to, after, and around the offerings, respectively.

return of −13.16%. In sharp contrast, the portfolio with a smaller proportional decline earns an average return of 41.60%. Both measures are significant at the 1% level. Equally important, the difference between these two long-run abnormal returns is also significant at the 1% level. The negative relationship declines in the percentage of good news reports and the IPO firms' long-run performance and, therefore, supports the hypothesis that IPO firms are likely to release more good news prior to the offerings to boost the market price of their shares. However, those that release more good news reports than an average firm could not hide their inflated views in the long run. The subsample results closely resemble the aggregate results and suggest that the relationship is immune from industrial variations.

2. A Breakdown of News Reports on IPO Firms

Following our findings on news management of IPO firms, we now identify what types of news reports tend to suffer larger proportional decreases in the percentage of good news reports over the IPO periods. In other words, what kind of news tends to be more cost-effective in improving investors' perceptions of an IPO firm? Panel A of Table VII presents summary statistics of good and bad news reports across various categories and time periods for the sampled firms. News related to the Earnings/Financials category shows up most frequently totaling 1,902 pieces of news and accounts for about 25.8% of all the reports over the period around the offerings. The Price/Valuation category is next with 1,552 news reports, followed by the Strategy/Policy category with 1,141 news reports, and then the R&D/Production category with 1,006 news reports. Not surprisingly, news under the categories of Personnel/Insider and Regulation/Law has the least coverage.

With minor exceptions, the percentage of good news reports significantly exceeds 50% of news reports in each category at the 1% level for periods preceding, following, and surrounding the offerings. At the category level, about 93.78% of news reports around the offerings in the Strategy/Policy category are good news, followed closely by the 93.24% in the R&D/Production category. For the Earnings/Financials and Price/Valuation categories, the two with the most frequent news reports, 72.08% and 73.39% of their news reports are found to be good news, respectively. An interesting observation is the Regulation/Law category where only 4.88% of the news reports are considered good news. This is perhaps expected given the "nature" of a news event in this category. When a firm is operating according to rules and regulations, it is not qualified to be news. Therefore, the news reports found in this category are mostly related to violations of regulations and laws with a few exceptions related to winning lawsuits.

An examination of changes in the number of news reports across all news categories over the IPO periods appears to shed more light on news management practices. All but the Strategy/Policy category experience an increase in the number of news reports after the offerings. Specifically, the Strategy/Policy category contains 805 news items prior to the offerings, but only 336 news items after the offerings. Furthermore, with the minor exception of the Regulation/Law category, which has very few good news reports to start with, the Strategy/Policy category appears to be the only category suffering a decrease in the number of good news reports from 779 items to 291 items between pre- and postoffering periods. Alternatively, while all the categories exhibit an increase in the number of bad news reports after the offerings, the Strategy/Policy category has the smallest increase (i.e., from 26 to 45).

We suggest that the unique characteristics of news reports in the Strategy/Policy category may offer an explanation for the eccentric behavior of this type of news reports. When compared with other types of news, news in the Strategy/Policy category is relatively easy to make as it typically provides only a blueprint or a vision of a firm's future. This is particularly true and,

Table VII. Variations of News Reports and Aftermarket Performance across News Categories

This table presents analysis on variations in news reports and their relation to the aftermarket performance for the 183 sampled IPOs across various types of news classification. A news report is classified into one of the following eight categories according to the content of the news: 1) Earnings/Financials, 2) Strategy/Policy, 3) R&D/Production, 4) Personnel/Insider, 5) Marketing/Industry, 6) Price/Valuation, 7) Regulation/Law, and 8) Others. Panel A reports the number of good and bad news reports for various time periods within each news category. News that is considered to have a positive (negative) impact on an IPO firm is classified as good (bad) news. The period prior to the offerings refers to the one-year period preceding and including the day on which the IPO firm's closing price is first within the daily price limit. The period following the offerings spans over the time interval from the day following the first nonlimit hit day to the year-end of the next fiscal year. The period around the offerings is the combination of the pre- and postoffering periods. Percentage of good news reports is the ratio of the number of good news reports to the aggregate of good and bad news reports. Panel B presents changes in the percentage of good news reports between pre- and postoffering periods within each news category. Panel C indicates the relationship between changes in the percentage of good news reports and long-run abnormal returns within each news category. The long-run abnormal return is calculated by subtracting the corresponding market return from the long-run buy-and-hold IPO return over the postoffering period. Within each news category, IPO firms with complete data are further evenly divided into two portfolios according to ranks of these firms' changes in the percentage of good news reports. Within each news category, *Low* and *High* represent the portfolios of IPO firms, respectively, with larger and smaller decreases in the percentage of good news reports between pre- and postoffering periods. *N* (IPO) is the number of IPOs in each portfolio.

	Panel A. Good and Bad News Reports by News Category							
Category	**Good News**		**Bad News**		**Good & Bad News**		**Proportion of Good News**	
	N (IPO)	Freq.	*N* (IPO)	Freq.	*N* (IPO)	Freq.	Percentage	*t*-stat.
	Earnings/Financials							
Around offerings	167	1,371	136	531	176	1,902	72.08%	12.09***
Prior to offerings	110	268	16	19	118	287	93.38%	24.19***
After offerings	156	1,103	132	512	171	1,615	68.30%	8.90***
	Strategy/Policy							
Around offerings	180	1,070	40	71	180	1,141	93.78%	53.28***
Prior to offerings	177	779	23	26	177	805	96.77%	79.96***
After offerings	92	291	21	45	99	336	86.61%	15.68***
	R&D/Production							
Around offerings	156	938	37	68	160	1,006	93.24%	44.47***
Prior to offerings	104	348	5	7	105	355	98.03%	61.22***
After offerings	140	590	35	61	145	651	90.63%	31.17***
	Personnel/Insider							
Around offerings	41	60	12	18	48	78	76.92%	5.07***
Prior to offerings	20	30	0	0	20	30	100.00%	∞***
After offerings	25	30	12	18	35	48	62.50%	1.59
	Marketing/Industry							
Around offerings	106	314	92	232	132	546	57.51%	3.11***
Prior to offerings	37	55	10	12	41	67	82.09%	6.77***
After offerings	95	259	91	220	128	479	54.07%	1.58

(*Continued*)

Table VII. Variations of News Reports and Aftermarket Performance across News Categories (*Continued*)

Panel A. Good and Bad News Reports by News Category (*Continued*)

Category	Good News		Bad News		Good & Bad News		Proportion of Good News	
	N (IPO)	Freq.	*N* (IPO)	Freq.	*N* (IPO)	Freq.	Percentage	*t*-stat.
Price/Valuation								
Around offerings	157	1,139	126	413	168	1,552	73.39%	16.95***
Prior to offerings	63	313	27	40	75	353	88.67%	16.21***
After offerings	152	826	115	373	160	1,199	68.89%	12.54***
Regulation/Law								
Around offerings	11	16	94	312	96	328	4.88%	−37.20***
Prior to offerings	7	11	30	55	31	66	16.67%	−8.64***
After offerings	4	5	88	257	89	262	1.91%	−61.33***
Others								
Around offerings	144	647	83	179	159	826	78.33%	14.25***
Prior to offerings	124	323	27	36	131	359	89.97%	22.11***
After offerings	103	324	74	143	126	467	69.38%	7.04***

Panel B. Changes in the Percentage of Good News Between Pre- and Postoffering Periods

Category	*N* (IPO)	Mean	Std. Dev.	Max.	Med.	Min.	t-stat.
Earnings/Financials	113	−25.59%	36.43%	100%	−20.69%	−100%	−7.47***
Strategy/Policy	96	−9.36%	29.79%	40.00%	0.00%	−100%	−3.08***
R&D/Production	90	−5.90%	19.16%	30.00%	0.00%	−100%	−2.92***
Personnel/Insider	7	−47.62%	50.40%	0.00%	−33.33%	−100%	−2.50**
Marketing/Industry	37	−24.82%	49.92%	87.50%	−27.27%	−100%	−3.02***
Price/Valuation	67	−9.41%	44.09%	100%	−18.75%	−100%	−1.75
Regulation/Law	24	−8.10%	18.24%	11.11%	−50.00%	−11.11%	−2.18**
Others	98	−14.94%	34.95%	66.67%	0.00%	−100%	−4.23***

Panel C. Effects of Changes in News Quality on Long-Run Abnormal Returns (LAR)

Changes in the Percentage of Good News between Pre- and Postoffering Periods	*N* (IPO)	Mean (LAR)	*t*-stat.
Earnings/Financials			
Low	56	0.20%	0.03
High	57	47.56%	2.81***
Strategy/Policy			
Low	20	4.88%	0.25
High	76	36.40%	2.62***
R&D/Production			
Low	18	8.43%	0.49
High	72	37.30%	2.42**
Personnel/Insider			
Low	3	−59.94%	−3.88***
High	4	−37.23%	−1.58

Table VII. Variations of News Reports and Aftermarket Performance across News Categories (*Continued*)

Panel C. Effects of Changes in News Quality on Long-Run Abnormal Returns (LAR) (*Continued*)

Changes in the Percentage of Good News between Pre- and Postoffering Periods	*N* (IPO)	Mean (LAR)	*t*-stat.
Marketing/Industry			
Low	18	0.61%	0.03
High	19	53.36%	2.46**
Price/Valuation			
Low	33	25.56%	1.40
High	34	46.67%	1.83
Regulation/Law			
Low	5	23.58%	1.51
High	19	−0.55%	−0.03
Others			
Low	44	24.06%	1.15
High	54	23.26%	2.01**

***Significant at the 0.01 level.
**Significant at the 0.05 level.

perhaps necessary, when the firm is not well known and is still not fully under the watchful eye of the market. Therefore, the ease of making this type of news and the informational opaqueness of an IPO firm prior to the offering provides additional opportunities for managers to engage in this line of news coverage bias. Although we do not have more direct evidence to base our assertion on here, the exclusive and dramatic decline in the number of good news reports after the offerings lends support to the supposition that voluntarily releasing news in this category prior to the offerings is the IPO firms' favorite approach to enhancing the public perception regarding the firms' future prospects.

Panel B of Table VII provides results regarding the proportional changes in good news reports between the two subperiods. For each individual IPO firm, percentages of good news reports in each category for pre- and postoffering periods are, respectively, calculated, and their difference is obtained by subtracting the percentage of the number of the preoffering period from that of the postoffering period. Consistent with the observation for the aggregate sample in Panel B of Table VI, the results indicate that all the categories suffer a decrease in the percentage of good news after the offerings, and except for the Price/Valuation category, the decrease is statistically significant across the news categories.

Finally, we test whether the aforementioned significant relationship between the change in the percentage of good news reports and the long-run performance of IPO firms varies across news categories. Within each news category, we again sort the IPO firms into two groups based on the ranks of the individual changes in the percentage of good news reports. Panel C of Table VII presents these results. Overall, we find that a larger decrease in the percentage of good news is accompanied by a sharper decline in subsequent stock prices in all categories except Personnel/Insider and Regulation/Law. Although the results are consistent with what we observed in Panel C of Table VI, they should be interpreted cautiously. First, not every IPO firm has news reports in each category, limiting the number of IPO firms with changes in the percentage of good news in that category. Second, changes in the percentage of good news for individual IPO firms

tend to cluster in magnitude, particularly in the categories of Strategy/Policy, R&D/Production, and Regulation/Law. The strong tendency for either good news or bad news to appear in these categories is likely to cause the percentage of good news reports to remain unchanged between pre- and postoffering periods. Consequently, we observe a lot of IPO firms with trivial changes in the percentage of good news reports in these categories, resulting in unequal numbers of IPO observations in the low and the high portfolios. This limits the implications of the results.

D. Forward-Looking versus Historical News Reports

Following the above analysis, we further sort good and bad news reports into forward-looking and historical statements to examine the characteristics of these reports. Table VIII reports the summary statistics. About 37.41% of the good news reports around the offerings are stated in the future tense, while only 17.65% of the bad news reports are forward-looking statements. This implies that issuers are more likely to make news disclosures when they view the firms are likely to have good future prospects.

The subperiod results provide more insight into the disclosure behavior of the IPO firms. In the preoffering period, forward-looking news statements account for 43.66% of good news reports, while only 6.95% of bad news reports are forward-looking. The difference in the percentage of forward-looking statements between good and bad news reports narrows, however, in the postoffering period. Furthermore, within the good news category, the percentage of forward-looking statements decreases from 43.66% before the offerings to 33.54% after the offerings. However, the percentage of forward-looking reports in the bad news category almost triples from the pre- to the postoffering periods. Subsample results also tell a similar story despite the fact that IPO firms in the noncomputer industry seem to disclose forward-looking good news more frequently prior to the offerings.

Our analysis seems to indicate that IPO firms are inclined to either disclose their promising future via forward-looking news statements or postpone the announcement of bad events until they have occurred, or both. In particular, firms are even more likely to do so prior to the offerings. Thus, our findings complement the results of Lang and Lundholm (2000) that US firms conducting SEOs increase their disclosure activity by making all but the forward-looking statements. More importantly, the findings support the strict enforcement of gun-jumping prohibition securities law such as Section 5(c) of the 1933 Securities Act.

III. Can Managerial Optimism Account for the Behavior of the IPO Firms?

As a competing theory with asymmetric information and agency theories in explaining a manager's behavior, Heaton (2002) proposes a managerial optimism hypothesis to establish an underinvestment-overinvestment trade-off related to free cash flow. It argues that managers are optimistic about the future of their companies when they are inclined to overestimate the probability of good firm performance and underestimate the probability of poor firm performance. Since Heaton's (2002) optimism model assumes no information asymmetry that forms an important part of the basis of our argument, it cannot fully explain our results. However, when asymmetric information is more prevalent, as in an IPO, our findings of inflated earnings forecasts in the IPO prospectus and the large number of good news reports prior to the offerings may still appear to be consistent with the managerial optimism hypothesis. Therefore, further investigation is warranted. To differentiate whether ours results are driven by managerial optimism rather than managerial

Table VIII. News Reports Categorized by Forward-Looking and Historical Statements

This table presents analysis of the good and bad news reports whose content can be classified into either forward-looking or historical for the 183 sampled IPOs. The full sample is further divided into two sub-samples, respectively, for IPOs in the computer and noncomputer industries. News that is considered to have a positive (negative) impact on an IPO firm is classified as good (bad) news. A news report is categorized as forward-looking if it is about the future and historical if it is related to the past. The period prior to the offerings refers to the one-year period preceding and including the day on which the IPO firm's closing price is first within the daily price limit. The period following the offerings spans over the time interval from the day following the first nonlimit-hit day to the year-end of the next fiscal year. The period around the offerings is the combination of the pre- and postoffering periods. Percentage of forward-looking news reports is the ratio of the number of forward-looking news reports to the aggregate of forward-looking and historical news reports.

	Good News			Bad News		
	Forward-Looking	Historical	Percentage of Forward-Looking	Forward-Looking	Historical	Percentage of Forward-Looking
Full sample						
Around offerings	2,074	3,470	37.41%	314	1,465	17.65%
Prior to offerings	926	1,195	43.66%	13	174	6.95%
After offerings	1,148	2,275	33.54%	301	1,291	18.91%
Computer industry						
Around offerings	1,042	1,911	35.29%	139	636	17.94%
Prior to offerings	392	669	36.95%	5	67	6.94%
After offerings	650	1,242	34.36%	134	569	19.06%
Noncomputer industry						
Around offerings	1,032	1,559	39.83%	175	829	17.43%
Prior to offerings	534	526	50.38%	8	107	6.96%
After offerings	498	1,033	32.53%	167	722	18.79%

opportunism, we conduct further analysis regarding the patterns of the earnings forecast errors and news reports in the pre- and post-IPO events.

In Panel A of Table IX , we report percentage errors in management earnings forecasts for the IPO year, the first year, and the second year following the IPO year, denoted by Years 0, 1, and 2, respectively.[12] Mean percentages of forecast errors for the three years are all positive implying that managers tend to be optimistic about the future earnings of their firms. However, in relation to the average forecast error of the IPO year, mean percentages of forecast errors for both Year 1 and Year 2 after the IPO year are small. Due to the extreme maximum of 819.90% and minimum of −1,574.23%, the variance of forecast errors of Year 1 is apparently large and may cause the *t*-value of the mean forecast error to be small. We exclude these two extreme values and report the same summary statistics of forecast errors denoted by Year 1*. After the adjustment, mean forecast errors of both Years 1* and 2 remain lower than that of Year 0. The differences are statistically significant at the 5% level.

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[12] In Taiwan, IPO firms are required to disclose annual management earnings forecasts for three consecutive years for the initial public offering.

Table IX. The Managerial Optimism Hypothesis and the Behavior of the IPO Firms

Years 0, 1, 1*, and 2 denote the IPO year, the first year, and the second year following the IPO year, respectively. The error in earnings forecasts is measured by the difference between the forecasted earnings and realized earnings divided by the absolute value of forecasted earnings. Summary statistics of forecast errors for Year 1* excludes the maximum and the minimum values in Year 1. "Over" and "Under" indicate positive and negative bias in earnings forecasts. The change in news quality is proxied by the change in the percentage of good news reports between pre- and postoffering periods. News that is considered to have a positive (negative) impact on an IPO firm is classified as good (bad) news. The preoffering period refers to the one-year period preceding and including the day on which the IPO firm's closing price is first within the daily price limit. The postoffering period spans over the time interval from the day following the first nonlimit hit day to the year-end of the next fiscal year. Percentage of good news reports is the ratio of the number of good news reports to the aggregate of good and bad news reports. The change in ROA is measured by the change in industry-adjusted ROA between fiscal years preceding (i.e., Year -1) and following (i.e., Year 1) the IPO fiscal year. The long-run abnormal return is calculated by subtracting the corresponding market return from the long-run buy-and-hold IPO return over the postoffering period.

Panel A. Percentage Errors in Management Earnings Forecasts

Year-End	Mean	Std. Dev.	Max.	Median	Min.
Year 0	11.40%	38.98%	251.90%	8.12%	-95.07%
Year 1	2.71%	137.13%	891.90%	2.96%	$-1,574.23\%$
Year 1*	6.51%	29.03%	169.09%	2.96%	-85.03%
Year 2	5.93%	37.19%	207.43%	6.29%	-273.80%

Panel B. Distribution of Positive and Negative Forecast Errors over the Sample Years

Year-End	No. of IPOs Overstating Earnings Forecasts	No. of IPOs Understating Earnings Forecasts
Year 0	115	68
Year 1	101	82
Year 2	106	77

Panel C. Persistence of Bias in Earnings Forecasts, Window Dressing Activity, and Aftermarket Performance

IPOs	Bias in Earnings Forecasts			Changes in ROA	Earnings Forecast Error	Changes in News Quality	Long-Run Abnormal Return
	Year 0	Year 1	Year 2				
39	Over	Over	Over	-6.39%	33.24%	-39.64%	-21.42%
24	Over	Over	Under	-5.57%	24.85%	-32.82%	-10.04%
28	Over	Under	Over	-3.12%	25.22%	-36.27%	17.90%
24	Over	Under	Under	-4.24%	34.36%	-30.42%	5.90%
22	Under	Over	Over	-4.30%	-17.90%	-20.43%	10.32%
16	Under	Over	Under	-2.69%	-23.30%	-12.48%	17.74%
17	Under	Under	Over	0.13%	-20.72%	-17.94%	55.43%
13	Under	Under	Under	-3.89%	-16.76%	-11.74%	123.95%

(*Continued*)

Table IX. The Managerial Optimism Hypothesis and the Behavior of the IPO Firms (*Continued*)

Panel D. Distribution of Good and Bad News Reports across the Four Subperiods

Time Period	Good News Reports	Bad News Reports	Percent of Good News
The first half of the preoffering period	618	66	90.35%
The second half of the preoffering period	1,509	129	92.12%
The first half of the postoffering period	1,786	721	71.24%
The second half of the postoffering period	1,642	908	64.39%

Panel B reports the distribution of positive and negative earnings forecast errors over the sample years. The relatively large number of IPOs with positive forecast errors for each of the sample years appears to indicate managerial optimism. However, Year 0 witnesses a much larger number of positively biased earnings forecasts than the other two years, suggesting that managers may be inclined to engage in optimistic earnings forecasts prior to their IPOs.

Since managers can have great discretion over the earnings forecasts, the time-series pattern of the forecast errors might provide new insight into their preference for window dressing exercises. We further categorize the IPO firms into eight groups based on whether the earnings forecast of an IPO firm in a given year is overestimated or underestimated. Panel C of Table IX reports that 39 IPO firms persistently overestimate their earnings forecasts over the three-year period while only 13 IPO firms continually make underestimated earning forecasts. The unequal distribution of IPO firms across these groups suggests that IPO firms tend to overestimate their earnings forecasts. To further investigate whether managers' tendencies to overestimate earnings is related to managerial opportunism, we report average values for the three window dressing proxies and the aftermarket abnormal return across the eight groups.

The results indicate that IPO firms persistently overestimating their earnings forecasts during the three-year period tend to suffer a larger decrease in earnings, disclose more bad news, and perform worse than other IPO firms in the postoffering period. They also tend to commit a larger earnings forecast error prior to the offerings.[13] The findings support our argument that managerial opportunism, rather than managerial optimism about the future of their firms, is more likely to be an important driving force behind the overestimated earnings forecasts.

Panel D of Table IX presents the distribution of good and bad news reports across the following four subperiods: 1) the first half, 2) the second half of the preoffering period, 3) the first half, and 4) the second half of the postoffering period. The percentages of good news across the four subperiods are all greater than 0.5, consistent with the managerial optimism hypothesis once again. However, the percentage of good news increases slightly between the two subperiods prior to the offering but experiences a significant drop during the first half of the postoffering period. It continues to decrease further during the fourth subperiod. The decline in the percentage of good news is statistically significant at the 1% level. The result is, in fact, attributable to the different patterns of good and bad news reports. In contrast to the time-series behavior of good news reports, the number of bad news reports increases chronologically for the four subperiods.

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[13] We compare the mean difference of the four measures between IPO firms with persistent overestimation and those with persistent underestimation during the three-year period. The results show that differences in the change in news quality, the change in ROA, and the long-run abnormal return between the two groups are significantly different at the 1% level.

Since we do not have an explicit model to capture managerial optimism, its exact effect on management earnings forecasts and news disclosures is not known. However, if managers are optimistic about their firms' future prospects, the height of their optimism should not correlate precisely at the turn of the IPO events. Therefore, the results of Table IX do not support managerial optimism as the driving force behind the patterns of the observations. Instead, managers appear to be overoptimistic about the future of their firms at the time of the IPO, further reinforcing the notion that firms going public may engage in opportunistic strategies on uninformed investors.

IV. The Regression Analysis

In this section, we conduct more rigorous regression analyses on the robustness of our earlier results. In addition to examining the simple linear relationship between the long-run abnormal performance of IPO firms and the three concealment strategies, we run multivariate regression tests to address the problem of potential interdependencies between the major variables. The error in earnings forecasts is measured by the difference between forecasted earnings and realized earnings divided by the absolute value of forecasted earnings for the IPO year (i.e., Year 0). The earnings management variable is measured by the change in industry-adjusted ROA from Year −1 to Year 1. The news management variable is proxied by the change in the percentage of good news reports between the pre- and post-IPO periods. Based on the results in Table I that IPO firms in the computer industry perform significantly better than the rest, we add into the regression models an industry dummy, which takes the value of one if an IPO firm is in a noncomputer industry and zero otherwise. We further add several control variables into the regression based on previous empirical findings about IPO pricing. These variables were found to be empirically related to the offering price and, as such, may affect the long-run performance of IPO firms. The definitions of these control variables are described in Section I.C.

Table X reports the regression results. In all of the five regressions, the coefficient estimate of the industry dummy is negative and significant at the 1% level. When compared with the results in Table I, it is consistent not only in sign, but also in magnitude, with the difference in average long-run abnormal returns between IPO firms in the computer industry and those in other industries. When examined individually, each of the three concealment strategies is significantly related to the long-run performance of IPO firms. These regression results reinforce our earlier finding that a higher degree of concealment is associated with poorer aftermarket performance.

However, when these three variables are regressed together, only the variable for news management remains significant at the 1% level. The same result prevails when control variables are added into the regression. The findings are not that surprising given that news related to realized and forecasted earnings is just part of an IPO firm's disclosure activity. The regression results confirm that the news management practice plays the most important role in explaining the behavior of subsequent stock prices for IPO firms.[14]

The exceptional performance of IPO firms in the Taiwanese stock market seemingly makes investment in IPO stocks a sure bet. At first glance, investors may not need to be concerned about managerial opportunism when they buy IPO shares during the sample period of the study. However, our results suggest that since there exists a correlation between the degree of managerial opportunism and long-run performance, investors will be better off if they can differentiate between firms with various degrees of managerial opportunism.

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[14]The results continue to hold in each subgroup when we divide the sample firms into those of positive and negative aftermarket performance.

Table X. Regression Analysis of Concealment Strategies and Aftermarket Performance

This table presents regression analysis of the relationships between the three concealment strategies and the aftermarket performance for the 183 sampled IPOs. The news management variable is proxied by the change in the percentage of good news reports between pre- and postoffering periods. News that is considered to have a positive (negative) impact on an IPO firm is classified as good (bad) news. The preoffering period refers to the one-year period preceding and including the day on which the IPO firm's closing price is first within the daily price limit. The postoffering period spans over the time interval from the day following the first nonlimit hit day to the year-end of the next fiscal year. Percentage of good news reports is the ratio of the number of good news reports to the aggregate of good and bad news reports. The earnings management variable is measured by the change in industry-adjusted ROA between fiscal years preceding (i.e., Year -1) and following (i.e., Year 1) the IPO fiscal year (i.e., Year 0). The error in earnings forecasts is measured by the difference between forecasted earnings and realized earnings divided by the absolute value of forecasted earnings for the IPO year. The dependent variable of all the regressions is the long-run abnormal return, which is calculated by subtracting the corresponding market return from the long-run buy-and-hold IPO return over the postoffering period. The industry dummy takes on a value of zero if an IPO firm is in the computer industry and one otherwise. Firm size is the market value of the IPO firm at the offering and is noted in billions of New Taiwan dollars. Firm age is the number of years that the IPO firm has been in existence before going public. The institutional holding is the proportion of shares held by institutional investors at the offering. The block holding is the proportional ownership of shares held by the insiders individually with more than 10% of the IPO firm's shares at the offering. Quality of the auditor is a dummy variable that takes on a value of one if the auditor is from one of the Big Four accounting firms and zero otherwise. Reputation of the underwriter is a dummy variable that takes on a value of one if the underwriter's sales in the past three years were in the top half of all the underwriters' and zero otherwise. Market timing is a dummy variable that takes on a value of one if the ratio of averages of daily market index for the 1-month and 12-month periods preceding the IPO application is greater than one and zero otherwise. t-statistics (in parentheses) are calculated using White's (1980) heteroskedasticity-consistent covariance estimators.

Variable	Coef.	Coef.	Coef.	Coef.	Coef.
Intercept	75.08***	72.75***	60.19***	84.66***	100.04**
	(3.91)	(4.84)	(3.50)	(5.06)	(2.41)
Industry dummy	−57.98***	−70.96***	−62.70***	−64.13***	−65.57***
	(−3.56)	(−4.44)	(−3.69)	(−4.14)	(−4.86)
News management	0.82***			0.62***	0.67***
	(3.83)			(2.91)	(2.93)
Earnings management		3.05*		2.10	2.02
		(2.51)		(1.48)	(1.38)
Earnings forecasts			−0.47***	−0.24	−0.19
			(−4.17)	(−1.71)	(−1.29)
Firm size					−0.33
					(−1.51)
Firm age					−0.68
					(−1.25)
Institutional holdings					−0.56**
					(−2.50)
Block holdings					0.42
					(1.67)
Auditor quality					14.08
					(1.50)
Underwriter reputation					−12.92
					(−0.40)
IPO market Timing					−12.41
					(−0.95)
Adjusted R^2	0.15	0.15	0.13	0.18	0.19
F-statistic (p-value)	17.24	16.45	15.17	11.14	4.86
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Number of IPOs	183	183	183	183	183

***Significant at the 0.01 level.
**Significant at the 0.05 level.

V. Do Insiders Gain in the IPO Process?

Given that the window dressing exercise of IPO firms bears a negative association with their aftermarket performance, insiders might also suffer a loss from the aftermarket decline in stock prices if their holdings remain unchanged. However, since there is no lockup period for IPOs in Taiwan and IPO shares come solely from existing shareholders, the insiders may be motivated to boost the prices of their firms' shares in the early stage of the offering and gradually sell off their holdings in the postoffering period. If this occurs, we expect to see a stronger negative correlation between the window dressing exercise and aftermarket performance for IPO firms whose insiders reduce a relatively large amount of their holdings. In a similar vein, the size of the IPOs may also be a contributing factor.

Panel A of Table XI reports that the average percentage of shares sold in an IPO is 13.31% of the total shares outstanding, a small figure as compared with the 25.9% for the US IPOs reported by Aggarwal, Krigman, and Womack (2002). One reason for the smaller IPO size in Taiwan is the regulatory restriction of 10-20% on the offerings of existing shares depending on the ownership structure of the firm. There are, however, exceptions for some special circumstances. Alternatively, IPO size might be limited as existing shareholders might lose control of the firm if too many shares are sold. Of the 183 IPO firms reported in Panel B of Table XI, 12 firms sell less than 10% of their existing shares, 89 firms sell 10%, 43 firms sell 20%, and only one firm sells greater than 20%. Therefore, consistent with the regulations, firms tend to sell between 10% and 20% of their existing shares in their IPOs. To investigate changes in insiders' holdings after the IPOs, we define the following measure:

$$\Delta Holding_i = \sum_{t=1}^{T_i} (h_{i,t} - h_{i,t-1}),$$

where $h_{i,t}$ is the percentage of insiders' holdings in month t after the IPO and T_i is number of months for firm i during the period of interest. Insiders are referred to board members and managers of the firm.

Summary statistics regarding changes in insiders' holdings after the IPOs are reported in Panels A and B of Table XI. During the period from the end of the offering month to the year-end of the year following the IPO year, insiders' holdings drop by 5.32%. Further investigation into the time-series pattern of the changes provides new insights into the trading behavior of insiders after the IPOs. Insiders do increase their holdings in the first month following the offerings, suggesting that insiders are making an effort to promote their firms immediately following the offerings. However, insiders start reducing their holdings right after the first month following the offerings. They continue to be on the sell side throughout the end of the year following the IPO year.

Panel C of Table XI demonstrates that firms with larger IPO issues tend to experience a greater decline in ROA, commit larger errors in earnings forecasts, issue more good news reports prior to the offerings, and experience inferior aftermarket performance than those with smaller IPO sizes. However, none of the differences are statistically significant possibly due to the effect of the IPO size regulation. When we examine the effect of change in insiders' holdings, we do find that IPO firms with a large decline in insiders' holdings after the offerings experience a significantly bigger drop in ROA and news quality in the aftermarket than those with a small decline in insiders' holdings. Therefore, our findings indicate that in relation to the IPO size that might be constrained by regulations, the decrease in insiders' holdings is strongly related to the intensity of the window dressing exercise.

Table XI. Incentives behind the Window Dressing Activity by Insiders

IPO size is defined to be the ratio of number of IPO shares to number of shares outstanding at the offering. The 183 IPO firms are divided into two groups. The "Low" group contains firms with IPO size smaller than or equal to 10% and the "High" group contains the remainder. We also define a dummy variable to distinguish between the two groups, taking on the value of one if the IPO firm belongs to the "High" group and zero otherwise. Cumulative change in insiders' holdings of an IPO firm for a given aftermarket period is measured by subtracting the percentage of insiders' holding at the end of the given period from the percentage of insiders' holding at the end of the IPO month (i.e., Month 0). The insiders' holding is measured by the ratio of number of shares held by insiders to number of shares outstanding. Insiders are referred to members of the board of directors and managers of the firm. We evenly divide the 183 IPO firms into two groups based on ranks of these firms' change in insiders' holdings for the period from Month 0 to the end of Year 1. The "Large" group refers to firms suffering a larger decrease in insiders' holdings, while other firms belong to the "Small" group. We further define a dummy variable to distinguish between the two groups, taking on the value of one if the IPO firm belongs to the "Large" group and zero otherwise. The change in news quality is proxied by the change in the percentage of good news reports between pre- and postoffering periods. News that is considered to have a positive (negative) impact on an IPO firm is classified as good (bad) news. The preoffering period refers to the one-year period preceding and including the day on which the IPO firm's closing price is first within the daily price limit. The postoffering period spans over the time interval from the day following the first nonlimit hit day to the year-end of the next fiscal year. Percentage of good news reports is the ratio of the number of good news reports to the aggregate of good and bad news reports. The change in ROA is measured by the change in industry-adjusted ROA between fiscal years preceding (i.e., Year −1) and following (i.e., Year 1) the IPO fiscal year (i.e., Year 0). The error in earnings forecasts is measured by the difference between forecasted earnings and realized earnings divided by the absolute value of forecasted earnings for the IPO year. The dependent variable of all the regressions is the long-run abnormal return, which is calculated by subtracting the corresponding market return from the long-run buy-and-hold IPO return over the postoffering period. The industry dummy takes on a value of zero if an IPO firm is in the computer industry and one otherwise. Firm size is the market value of the IPO firm at the offering and is noted in billions of New Taiwan dollars. Firm age is the number of years that the IPO firm has been in existence before going public. The institutional holding is the proportion of shares held by institutional investors at the offering. The block holding is the proportional ownership of shares held by the managers and directors who individually own more than 10% of the firm's shares at the offering. Quality of the auditor is a dummy variable which takes on a value of one if the auditor is from one of the Big Four accounting firms and zero otherwise. Reputation of the underwriter is a dummy variable that takes on a value of one if the underwriter's sales in the past three years were in the top half of all the underwriters' and zero otherwise. Market timing is a dummy variable that takes on a value of one if the ratio of averages of the daily market index for the 1-month and 12-month periods preceding the IPO application is greater than one and zero otherwise. Numbers in the parentheses are *t*-statistics, which are calculated using White's (1980) heteroskedasticity-consistent covariance estimators.

Panel A. Summary Statistics of the Percentage of IPO Shares and the Change in Insiders' Holdings

	N (IPO)	Mean	Std. Dev.	Max.	Median	Min.
IPO size change in insiders'	183	13.31%	4.74%	25.00%	10.00%	2.76%
holdings from Month 0 to end of Year 1	183	−5.22%	10.12%	36.87%	−3.99%	−56.49%

Panel B. Distribution of the Percentage of IPO Shares and the Change in Insiders' Holdings

Number of IPO Firms Sorted by IPO Size

Below 10%	10%	10%-20%	20%	Above 20%
12	89	38	43	1

Average Cumulative Change in Insiders' Holdings of 183 IPO Firms Following the Offering

Month 0 to 1	Month 0 to 3	Month 0 to 6	Month 0 to 12	Month 0 to end of Year 1
0.19%	−0.31%	−1.58%	−4.54%	−5.22%

(*Continued*)

Table XI. Incentives behind the Window Dressing Activity
by Insiders (*Continued*)

Panel C. IPO Percentage, Decrease in Insiders' Holdings, Window Dressing Activity,
and Aftermarket Performance

	N (IPO)	Average Change in ROA	Average Forecast Error	Average Change in News Quality	Average Long-Run Abnormal Return
		Grouped by IPO size			
Low	101	−3.96%	9.45%	−27.26%	15.90%
High	82	−4.36%	13.80%	−29.67%	12.48%
Difference		0.40%	−4.35%	2.40%	3.42%
		(0.38)	(−0.73)	(0.60)	(0.25)
		Grouped by Decrease in Insiders' Holdings from Month 0 to End of Year 1			
Small	91	−2.19%	7.91%	−24.21%	22.58%
Large		−6.07%	14.85%	−32.42%	6.24%
Difference	92	3.88%	−6.94%	8.21%	16.34%
		(3.96)**	(−1.21)	(2.08)*	(1.18)

Panel D. The Regression Analysis

	IPO Size			Decrease in Insiders' Holdings		
	High	**Low**	**Full**	**Large**	**Small**	**Full**
Intercept	241.59***	−44.63	104.64	143.31**	65.61	96.63**
	(3.09)	(−1.63)	(1.77)	(2.15)	(1.34)	(2.23)
Industry dummy	−68.96***	−65.96***	−67.62***	−67.21***	−64.41***	−65.16***
	(−3.84)	(−2.89)	(−4.66)	(−2.97)	(−3.36)	(−4.56)
News management	0.89***	0.46	0.61**	0.94**	0.08	0.22
	(2.70)	(1.58)	(2.21)	(2.09)	(0.35)	(0.82)
Earnings management	3.86***	0.74	1.04	1.59	2.01	1.83
	(3.15)	(0.33)	(0.41)	(0.71)	(1.24)	(1.17)
Earnings forecasts	−0.06	−0.41	−0.35	−0.28	−0.35	−0.23
	(−0.29)	(−1.57)	(−1.53)	(−1.06)	(−1.79)	(−1.13)
News management			0.06			0.69**
× dummy			(0.25)			(2.37)
Earnings management			2.38			−0.47
× dummy			(0.86)			(−0.16)
Earnings forecasts			0.35			0.01
× dummy			(1.09)			(0.04)
Control Variables Including Firm Size, Firm Age, Institutional Holdings, Block Holdings, and IPO Size						
(Coefficient Estimates Are Not Shown)						
Adjusted R^2	0.38	0.06	0.19	0.16	0.21	0.19
P-value of *F*-statistic	0.00	0.12	0.00	0.01	0.00	0.00
Number of IPOs	82	101	183	92	91	183

***Significant at the 0.01 level.
**Significant at the 0.05 level.

As a sequel to the above analysis, we investigate whether the IPO size and the divesture of insiders' holdings can affect the relationship between the concealment strategy and the aftermarket performance. To conserve space, we do not report coefficient estimates of the control variables in Panel D of Table XI. Within the group of firms of larger offerings, we find that decreases in earnings and news quality are significantly related to aftermarket performance. However, this is not the case for firms of smaller offerings. Furthermore, the results also indicate that decreases in news quality are significantly related to declines in stock prices for IPO firms with larger divestures of insiders' holdings in the aftermarket, but it fails to hold for firms with smaller reductions in insiders' holdings.

We add a dummy variable in the full sample regression model to investigate whether the intergroup difference in the relationship between the concealment strategy and aftermarket performance is significant. For the IPO size groups, the dummy takes on a value of one if the IPO firm belongs to the "High" group and zero otherwise. The "High" group contains firms with an IPO size greater than 10% of the total shares outstanding. For the insider holdings groups, the dummy takes on a value of one if the IPO firm belongs to the "Large" group and zero otherwise. The "Large" group refers to IPO firms suffering a larger decrease in insiders' holdings in the postoffering period. The regression results of the full IPO sample further support that the correlation between the news management measure and the long-run abnormal performance for IPO firms with large divestures of insiders' holdings is significantly stronger than that of IPO firms with smaller divestures of insiders' holdings.

Ideally, we would like to measure the (upward) bias of the offering price due to the window dressing exercise prior to the offering and calculate excess profits to the insiders from the sale of their existing shares. Similarly, it would be desirable to calculate excess profits from the divesture of insiders' holdings in the aftermarket. If these two types of excess profits could be measured, we can then relate them to the window dressing exercise. However, calculating these excess gains to insiders is a difficult task due primarily to a lack of data. Nevertheless, our findings appear to provide some evidence consistent with managerial opportunism rather than the managerial optimism hypotheses. IPO firms with a larger number of IPO shares have a stronger incentive to window dress their performance prior to the offerings and insiders actively engaging in window dressing tend to sell more of their holdings in the aftermarket. These behaviors are counterintuitive to managerial optimism.

VI. Information Asymmetry Revisited

Our results thus far have consistently suggested a negative correlation between the window dressing exercise of IPO firms and their long-run performance in the aftermarket. In particular, investors respond positively to IPO firms' window dressing prior to the offerings and revise downward when the window dressing is no longer sustainable. This implies that investors appear to be led by the information released by IPO firms. In this section, we examine whether investors are repeatedly fooled by the upward bias window dressing exercises of IPO firms. Table XII illustrates the simple correlation between the underpricing premium and the intensity of the window dressing exercise. None of the correlations, however, are significant. Since the market response to IPO shares on the offering day precedes the end of the periods over which the three window dressing variables are measured, the results suggest that investors are not able to judge in advance the intensity of the window dressing exercise by IPO firms. Information asymmetry may give managers the edge over investors and leads to managerial opportunism in the behavior of IPO firms.

Table XII. Correlation between Underpricing Premium and Window Dressing Activity

This table reports the correlation between the three concealment strategies and the aftermarket performance for the 183 sampled IPOs based on simple regression analysis. The news management variable is proxied by the change in the percentage of good news reports between pre- and postoffering periods. News that is considered to have a positive (negative) impact on an IPO firm is classified as good (bad) news. The preoffering period refers to the one-year period preceding and including the day on which the IPO firm's closing price is first within the daily price limit. The postoffering period spans over the time interval from the day following the first nonlimit hit day to the year-end of the next fiscal year. Percentage of good news reports is the ratio of the number of good news reports to the aggregate of good and bad news reports. The earnings management variable is measured by the change in industry-adjusted ROA between fiscal years preceding (i.e., Year -1) and following (i.e., Year 1) the IPO fiscal year (i.e., Year 0). The error in earnings forecasts is measured by the difference between forecasted earnings and realized earnings divided by the absolute value of forecasted earnings for the IPO year. The dependent variable of all the regressions is the underpricing premium. It is the initial return measured by the ratio of the difference between the first postoffering nonlimit hit closing price and the offering price to the offering price where the first postoffering nonlimit hit closing price is the closing price of the day on which the closing price first falls within the daily price limit.

Variable	Coef.	Coef.	Coef.
Intercept	13.71***	13.46***	15.60***
	(6.51)	(8.00)	(10.42)
News management	−0.04		
	(−0.72)		
Earnings management		−0.33	
		(−1.56)	
Earnings forecasts			−0.07
			(−1.78)
Adjusted R^2	−0.0027	0.0078	0.0137
Number of IPOs	183	183	183

***Significant at the 0.01 level.

VII. Summary and Conclusions

This paper investigates three conceivable concealment strategies that IPO firms might deploy to maximize their returns from the sale of their shares. The analyses are based on a sample of 183 IPO firms in the Taiwanese stock market where the unique security regulatory environment allows us to investigate the opportunistic behavior of IPO firms. A Taiwanese company is required to disclose its own earnings forecasts in IPO prospectuses when it seeks to become a publicly listed firm. Furthermore, there is no restriction on disclosure activities of an IPO firm. The mandatory disclosure of IPO firms' earnings forecasts and complete freedom in releasing news around the offerings may further prompt the initial shareholders to develop window dressing strategies to boost the market price of their shares. Therefore, in addition to an examination of the well-known earnings management hypothesis, we investigate whether there are links between the aftermarket performance of IPO firms and the accuracy of their compulsory earnings forecasts and the characteristics of news releases on the IPO firms. Our main thesis revolves around the concept that if the initial price is temporarily inflated, we would expect to observe lower stock returns following the IPOs.

Consistent with the well-founded earnings management practice, we find that IPO firms experience a significant decline in industry-adjusted return on assets between the fiscal years proceeding and subsequent to the IPOs. The changes in industry-adjusted ROA are also significantly related to stock market performance. Specifically, IPO firms that experience larger declines in industry-adjusted ROA tend to have poorer aftermarket performance.

Our results also indicate that IPO firms are likely to inflate their earnings forecasts in a manner that cannot be attributed to managerial optimism. IPO firms with larger errors in earnings forecasts perform significantly worse than those with smaller errors. The compulsory disclosure of management earnings forecasts is originally aimed at reducing informational opaqueness of IPO firms. However, the antithetical effect suggests that the requirement provides another window of opportunism for IPO firms. Coupled with feeble law enforcement, the enforcement of the mandatory disclosure may in fact introduce another information barrier to naïve investors.

The most interesting results of the study come from the examination of the news management hypothesis. We find that the percentage of good news reports following the offerings suffers a significant decline far beyond the point attributable to managerial optimism. IPO firms are inclined to disclose good news and/or hide bad news prior to the offerings. These changes also bear a significant relationship to aftermarket performance. In particular, IPO firms experiencing larger decreases in the percentage of good news reports suffer poorer performance in the aftermarket stock price. Our subsequent findings also confirm that the effects of earnings management and inflated earnings forecasts on aftermarket performance are largely suppressed by the prevalence of the news management practice. This suggests that the decline in the quality of news reports is the most predominant factor in the drop in subsequent stock prices. Furthermore, the link between the three concealment strategies and subsequent stock prices remains robust at the industry level.

We also sort news reports into various categories according to the content of these reports. We find that unlike other types of news, good news related to Strategy/Policy has the largest reduction in reporting frequency from the preoffering to the postoffering periods. This implies that issuers are particularly keen to release positive news related to strategy and policy prior to the offerings to improve the public's perception regarding the firms' prospects. The preference for drawing good publicity by making this type of news is especially appealing given that the news is relatively easy to create as it only provides a vision of a firm's future. Further, we find that IPO firms tend to release forward-looking news reports when they feel something potentially good about the future and disclose bad events largely after the events have already occurred. They are particularly more likely and able to do so prior to the offerings. Our analysis further reveals that insiders take advantage of information asymmetry between IPO firms and investors through the managerial opportunistic behavior documented in this study. Firms with larger sales of IPO shares from existing shareholders or whose insiders sell more of their own shares in the aftermarket tend to engage in more window dressing practices. They subsequently experience poorer aftermarket performance.

Consistent with the received wisdom that signals can be only valuable and informative if there are costs or penalties for a false signal, our results indicate that IPO firms in an emerging market with a relatively weak regulatory system have much leeway in their opportunistic behavior. This suggests that sound and strict regulations might be called for to ensure that a market is structured and intended to function well. It also provides grounds for enforcing market rules such as the lock-up period and the quiet period on managers of IPO firms. The results of the study may direct our attention once again to the role of regulation in the development of a sound financial market. ∎

References

Aggarwal, R.K., L. Krigman, and K.L. Womack, 2002, "Strategic IPO Underpricing, Information Momentum, and Lockup Expiration Selling," *Journal of Financial Economics* 66, 105-137.

Aggarwal, R., R. Leal, and L. Hernandez, 1993, "The Aftermarket Performance of Initial Public Offerings in Latin America," *Financial Management* 22, 42-53.

Aharony, J., C.J. Lin, and M.P. Loeb, 1993, "Initial Public Offerings, Accounting Choices, and Earnings Management," *Contemporary Accounting Research* 10, 61-81.

Allen, F. and G.R. Faulhaber, 1989, "Signaling by Underpricing in the IPO Market," *Journal of Financial Economics* 23, 303-323.

Ang, J.S. and J.C. Brau, 2003, "Concealing and Confounding Adverse Signals: Insider Wealth-Maximizing Behavior in the IPO Process," *Journal of Financial Economics* 67, 149-172.

Arbel, A. and P. Strebel, 1983, "Pay Attention to Neglected Firms," *Journal of Portfolio Management* 9, 37-42.

Bae, K.H., W. Bailey, and C.X. Mao, 2006, "Stock Market Liberalization and the Information Environment," *Journal of International Money and Finance* 25, 404-428.

Ball, R., 1978, "Anomalies in Relationships between Securities' Yields and Yield Surrogates," *Journal of Financial Economics* 6, 103-126.

Ball, R. and P. Brown, 1968, "An Empirical Evaluation of Accounting Income Numbers," *Journal of Accounting Research* 6, 159-178.

Barber, B.M. and J.D. Lyon, 1997, "Detecting Long Run Abnormal Stock Returns: The Empirical Power and Specification of Test Statistics," *Journal of Financial Economics* 43, 341-372.

Beatty, R.P., 1989, "Auditor Reputation and the Pricing of Initial Public Offerings," *Accounting Review* 64, 693-709.

Bradley, D.J., J.W. Cooney, S.D. Dolvin, and B.J. Jordan, 2006. "Penny Stock IPOs," *Financial Management* 35, 5-29.

Cai, J. and K.C. Wei, 1997, "The Investment and Operating Performance of Japanese Initial Public Offerings," *Pacific-Basin Finance Journal* 5, 389-417.

Chan, C., J.W. Cooney, J. Kim, and A.K. Singh, 2008, "The IPO Derby: Are There Consistent Losers and Winners on This Track?" *Financial Management* 37, 45-79.

Cheng, T.Y. and M. Firth, 2000, "An Empirical Analysis of the Bias and Rationality of Profit Forecasts Published in New Issue Prospectuses," *Journal of Business, Finance, and Accounting* 27, 423-446.

Chong, B.M. and K.W. Ho, 2007, "Lockup and Voluntary Earnings Forecast Disclosure in IPOs," *Financial Management* 36, 63-80.

Clarkson, P.M., 2000, "Auditor Quality and the Accuracy of Management Earnings Forecasts," *Contemporary Accounting Research* 17, 595-622.

Daniel, K., D. Hirshleifer, and A. Subrahmanyam, 1998, "Investor Psychology and Security Market Under- and Over-reactions," *Journal of Finance* 53, 1839-1885.

De Long, J.B., A. Shleifer, L.H. Summers, and R.J. Waldmann, 1990, "Noise Trader Risk in Financial Markets," *Journal of Political Economy* 98, 703-738.

DuCharme, L., P.H. Malatesta, and S.E. Sefcik, 2001, "Earnings Management: IPO Valuation and Subsequent Performance," *Journal of Accounting, Auditing, and Finance* 16, 369-396.

Firth, M., 1997, "An Analysis of the Stock Market Performance of New Issues in New Zealand," *Pacific-Basin Finance Journal* 5, 63-85.

Foster, G., 1973, "Stock Market Reaction to Estimates of Earnings per Share by Company Officials," *Journal of Accounting Research* 11, 25-37.

Friedlan, J.M., 1994, "Accounting Choices of Issuers of Initial Public Offerings," *Contemporary Accounting Research* 11, 1-31.

Heaton, J.B., 2002, "Managerial Optimism and Corporate Finance," *Financial Management* 31, 33-45.

Houge, T, T. Loughran, G. Suchanek, and X. Yan. 2001, "Divergence of Opinion, Uncertainty, and the Quality of Initial Public Offerings," *Financial Management* 30, 5-23.

Hutton, A.P., G.S. Miller, and D.J. Skinner, 2003, "The Role of Supplementary Statements with Management Earnings Forecasts," *Journal of Accounting Research* 41, 867-890.

Jain, B. and O. Kini, 1994, "The Post-Issue Operating Performance of IPO Firms," *Journal of Finance* 49, 1699-1726.

Jog, V. and B.J. McConomy, 2003, "Voluntary Disclosure of Management Earnings Forecasts in IPO Prospectuses," *Journal of Business, Finance, and Accounting* 30, 125-167.

Keasey, K. and P. McGuinness, 1991, "Prospectus Earnings Forecasts and the Pricing of New Issues on the Unlisted Security Market," *Accounting and Business Research* 21, 133-145.

Keloharju, M., 1993, "The Winner's Curse, Legal Liability, and the Long Run Price Performance of Initial Public Offerings in Finland," *Journal of Financial Economics* 34, 251-277.

Kim, J.B., I. Krinsky, and J. Lee, 1995, "The Aftermarket Performance of Initial Public Offerings in Korea," *Pacific-Basin Finance Journal* 3, 429-448.

Kothari, S.P. and J. Warner, 1997, "Measuring Long-Horizon Security Price Performance," *Journal of Financial Economics* 43, 301-339.

Lang, M.H. and R.J. Lundholm, 2000, "Voluntary Disclosure and Equity Offerings: Reducing Information Asymmetry or Hyping the Stock?" *Contemporary Accounting Research* 17, 623-662.

Lee, P. J., S.L. Taylor, and T.S. Walter, 1996a, "Australian IPO Pricing in the Short and Long Run," *Journal of Banking and Finance* 4, 153-180.

Lee, P.J., S.L. Taylor, and T.S. Walter, 1996b, "Expected and Realized Returns for Singaporean IPOs: Initial and Long Run Analysis," *Pacific-Basin Finance Journal* 4, 153-180.

Leland, H.E. and D.H. Pyle, 1977, "Information Asymmetries, Financial Structure, and Financial Intermediation," *Journal of Finance* 32, 371-387.

Levis, M., 1993, "The Long Run Performance of Initial Public Offerings: The UK Experience 1980–1988," *Financial Management* 22, 28-41.

Loughran, T., J.R. Ritter, and K. Rydqvist, 1994, "Initial Public Offerings: International Insights," *Pacific-Basin Finance Journal* 2, 165-199.

Lyon, J.D., B.M. Barber, and C.L. Tsai, 1999, "Improved Methods for Tests of Long Run Abnormal Stock Returns," *Journal of Finance* 54, 165-201.

Mikkelson, W.H., M.M. Partch, and K. Shah, 1997, "Ownership and Operating Performance of Companies that Go Public," *Journal of Financial Economics* 44, 281-307.

Morck, R., B. Yeung, and W. Yu, 2000, "The Information Content of Stock Markets: Why Do Emerging Markets Have Synchronous Stock Price Movements?" *Journal of Financial Economics* 58, 215-260.

Nichols, D.R. and J.J. Tsay, 1979, "Security Price Reactions to Long-Range Executive Earnings Forecasts," *Journal of Accounting Research* 17, 140-155.

Patell, J.M., 1976, "Corporate Forecasts of Earnings per Share and Stock Price Behaviour: Empirical Tests," *Journal of Accounting Research* 14, 246-276.

Rao, G.R., 1993, "The Relation between Stock Returns and Earnings: A Study of Newly-Public Firms," Kidder Peabody and Co. Working Paper, New York, NY.

Ritter, J.R., 1991, "The Long Run Performance of Initial Public Offerings," *Journal of Finance* 46, 3-27.

Ritter, J.R. and I. Welch, 2002, "A Review of IPO Activity, Pricing, and Allocations," *Journal of Finance* 57, 1795-1828.

Rendleman, R.L., C.P. Jones, and H.A. Latane, 1982, "Empirical Anomalies Based on Unexpected Earnings and the Importance of Risk Adjustments," *Journal of Financial Economics* 10, 269-287.

Schultz, P., 2003, "Pseudo Market Timing and the Long Run Underperformance of IPOs," *Journal of Finance* 58, 483-517.

Skinner, D.J., 1994, "Why Firms Voluntarily Disclose Bad News," *Journal of Accounting Research* 32, 38-60.

Spiess, D.K. and R.H. Pettway, 1997, "The IPO and First Seasoned Equity Sale: Issue Proceeds, Owner/Managers' Wealth, and the Underpricing Signal," *Journal of Banking and Finance* 21, 967-988.

Teoh, S.H., I. Welch, and T. J. Wong, 1998, "Earnings Management and the Long Run Market Performance of Initial Public Offerings," *Journal of Finance* 53, 1935-1974.

Teoh, S.H., T.J. Wong, and G.R. Rao, 1998, "Are Accruals during Initial Public Offerings Opportunistic?" *Review of Accounting Studies* 3, 175-208.

Verrecchia, R.E., 1983, "Discretionary Disclosure," *Journal of Accounting and Economics* 5, 179-194.

Waymire, G., 1984, "Additional Evidence on the Information Content of Management Earnings Forecasts," *Journal of Accounting Research* 22, 703-718.

Watts, R., 1978, "Systematic 'Abnormal' Returns after Quarterly Earnings Announcements," *Journal of Financial Economics*, June-September, 127-150.

Welch, I., 1989, "Seasoned Offerings, Imitation Costs, and the Underpricing of Initial Public Offerings," *Journal of Finance* 44, 421-449.

White, H., 1980, "A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity," *Econometrica* 48, 817-838.

Zheng, S.X. and D.A. Stangeland, 2007, "IPO Underpricing, Firm Quality, and Analyst Forecasts," *Financial Management* 36, 45-64.