行政院國家科學委員會專題研究計畫　成果報告

新上市股票之長期績效－盈餘管理與投資人心境

計畫類別：個別型計畫
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計畫主持人：徐政義

計畫參與人員：盧以誠；孔秀琴；劉佳玲

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行政院國家科學委員會補助專題研究計畫 ■ 成 果 報 告 □期中進度報告

（計畫名稱）

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中文摘要

「投資人情緒」假說(ISH)認為，新股上市後長期績效不佳的主要原因是投資人對 IPO 公司產生過度樂觀的預期。「盈餘管理」假說(EMH)則主張，由於發行公司的經理人有相當的動機藉著盈餘的管理去幫助原始股東在初次公開上市時賣出好價錢，以實現其創業的理潤，因此當盈餘操弄愈嚴重的公司，長期績效愈差。本文藉著探討臺灣在 1991 年至 2002 年期間共 783 家新股上市，來檢驗「投資人情緒」假說與「盈餘管理」假說。實證結果顯示，與美國及其他國家的結果一致地，臺灣的新股上市後有明顯地長期績效不佳的現象。我們發現，發行公司會擇時上市：發行公司會選擇市場很熱時上市。雖然在熱市時上市的 IPOs 會比在冷市時上市的 IPOs 有較高的期初報酬，但是他們兩者的長期績效並沒有顯著差異，意味著「投資人情緒」假說並不能解釋 IPOs 長期績效的差異。另一方面，我們發現發行公司傾向於在上市的階段進行盈餘管理，而盈餘操弄的程度與上市後的表現有負向關係，即盈餘操弄的程度愈嚴重，IPOs 的長期績效愈差。我們的實證結果認為，對 IPOs 長期績效的變異，「盈餘管理」假說較「投資人情緒」假說有較好的解釋能力。

關鍵詞：新股公開上市；長期績效；盈餘管理；投資人心境

Abstract

We test “investor sentiment hypothesis” (ISH) and “earnings management hypothesis” (EMH) by examining 783 Taiwanese IPOs which went public from 1991 to 2002. ISH attributed the long-run underperformance of IPOs to investor’s overoptimistic about IPOs’ prospects. EMH argued that managers of issuing firms have incentives to help founders realize their profits at higher offering/selling price by manipulating earnings at the IPO stage. Therefore IPOs with more extent of earnings manipulation will have worse performance aftermarket. Consistent with the findings in U.S. and most countries, Taiwanese IPOs under-perform relative to their benchmark returns. We find that issuing firms may time their IPO: the average of the previous market return is positive for all samples, implying that more issuing firms went public in hot market than in cold one. Although IPOs in hot market have higher initial returns, they do not have worse long-run performance than IPOs in clod market. On the other hand, we document the issuing firms tend to manage their earnings during the stage of public offerings. The discretionary current accruals, the proxy for earnings management, are high at the issuing year and go down gradually in the following three years. Furthermore, firms with more aggressive earnings management have poorer long-run performance. We conclude that EMH rather than ISH has powerful explanation for the variation of the underperformance of IPOs.

Keywords: Initial Public Offerings; Long-run Performance; Earnings Management; Investor Sentiment

1. Introduction

Two of the three anomalies regarding new issue topics- underpricing and hot issue phenomena- have been well documented in finance literature. Long-run performance of IPOs, however, is still a subject of intensive debate. For example, Ritter (1991), Loughran and Ritter (1995), Spiess and Affleck-Graves (1995), and Loughran and Ritter (2000) all document the poor long-run performance after an offering. Alternatively, Brav and Gompers (1997), Brav, Geczy, and Gompers (2000), and Gompers and Lerner (2003) demonstrate that new issuing firms, on average, do not perform worse than benchmark firms.

We analyze 783 non-financial IPOs went public during the period from 1991 to 2002 in Taiwan stock markets. These data are important in testing two hypotheses proposed in this study and we will address the reasons later. We find that investors engaging in Taiwanese IPOs from the end of next month after listing to three-year anniversary will suffer 40 to 55 percent loss relative to benchmark returns. Even if purchase new shares at the issuing prices, IPO investors still suffer 10 to 32 percent loss. The evidences found in Taiwan stock market strongly support the underperformance of IPOs.

Proponents of the IPO underperformance provide some evidence to explain why the new issuing firms perform poorly. Among them, the “earnings management” hypothesis and “investor sentiment” hypothesis are two most important arguments. Both hypotheses assert that investors are overoptimistic about the prospects of issuing firms. But their beliefs in the sources of investors’ over optimism are divergent. This paper sheds light on identifying which one have stronger explanation over the variation of the long-run underperformance of IPOs.

ISH argues that investors are inclined to be irrationally enthusiastic about the prospects of the future earnings of the issuing firms during the hot market. The marginal investors determine the new share price in the aftermarket and the decisions tend to be influenced by the hotness of the market. Therefore, marginal investors will push the price up to more than its intrinsic value. As the sentiment of the irrational behaviors by marginal investors are fade away over time, the IPOs go to public in the hot market would have large downward price corrections and thus have worse long-term performance (Ritter (1991), Ljungqvist, Nanda, and Singh (2005)). ISH predicts a negative relation between hotness of market and the long-run performance of IPOs.

EMH posits that the management of the issuing firms has incentives to help founders realize their profits at higher offering/selling price by manipulating the earnings at the IPO stage. Investors are attracted by the high earnings but unaware that management of the issuing firms manipulates the inflated earnings. Because information is asymmetric between management of issuing firms and outside investors, and because the high accruals at the IPO stage are borrowed from the earnings in the following years, the stock price with more extent of earnings management are more likely to go down when earnings management is reversed (Teoh, Welch, and Wong (1998)). Earnings management hypothesis predicts a negative association between earnings management and the long-run performance of IPOs.

We test the ISH and EMH by examining Taiwanese IPOs went to public in the period from

1991 to 2002. For each IPO, we calculate the weighted average market return (MR) in the periods before issuing date. The market return is a proxy for investor sentiment. We also calculate the discretionary current accruals (DCA) of IPO firm, which is proxy for earnings management, at the issuing year. If ISH correctly predicts the cross-sectional variation in post-IPO long-run performance, we would observe the highest initial return, other things being equal, accompanied by the worst long-run performance in the hot market. On the other hand, if EMH successfully explains the cross-sectional variation in post-IPO, a negative association between the extent of earnings management and the post-IPO performance would be found.

2. Data

The sample in this study consists of Taiwanese firms that went public during the period from 1991 to 2002. To identify sample, we crosscheck and hand pick common equity offerings reported in the Securities Dealer Association (SDA) and Company DB, which is database managed by Taiwan Economic Journal (TEJ). We delete firms from sample with the following criteria: (1) Closed-end mutual funds, (2) Taiwan Depository Receipts, (3) Firms going public from the OTC. There are 868 IPOs meet these criteria.

Our data sources of financial statements and equity prices come from Finance DB and Equity DB, respectively. Both are database of TEJ, too. Because there are 17 firms with missing data of financial statements or equity prices, or mismatched IPO date in SDA with in TEJ, our final sample includes 854 IPOs (783 non-financial IPOs and 71 financial companies). Since financial structure is quite different between financial and non-financial firms, we only focus on 783 non-financials.

Table 1 provides descriptive statistics of sample. Panel A presents the distribution classified by year, market, and industry. The number of IPOs listed on Taiwan Stock Exchange (TSE) spreads over the sample years evenly, but an upward trend in the proportion of new issues on Taiwanese over-the-counter (OTC) market is obvious. This trend reflects the fact of flourishing development of the Taiwanese OTC markets.

Panel B of Table 1 shows the descriptive statistics of the characteristics of the 783 non-financial issuing firms. The annual mean of IPO proceeds ranges from NT$190 millions (year 2001) to NT$1,562 millions (year 2000). Figures of assets and sales have the similar pattern. On average, Taiwanese IPO firm goes public with NT$46 issuing price and with the age of 15.9 years after its establishment. The mean of fraction of equity sold at the IPO is 9.28%. The range of annual mean is from 8.38 % in 2002 to 13.77% in 1996. Finally, the total mean of the initial return is 25.2%, indicating that Taiwanese IPOs leaved money on the table like the cases of IPOs in most countries, which is documented in Loughran, Ritter, and Rydqvist (1994).

3. Methodologies

3.1 Measures of earnings management

It is possible for managers to exercise discretion in computing earnings without violating generally accepted accounting principles. The manipulation of earnings is more likely happened around the time of certain type of corporate event. For example, Teoh et al. (1998) modified the

Jones (1991) model to calculate the discretionary current accruals (DCA), which is a proxy for earnings management. They found that new issues with the most aggressive earnings management have the worst long-run performance.

Our approach is closely related to the work of Teoh et al. (1998). We estimate the modified Jones (1991) model by using cross-sectional data. The procedures are similar to Teoh et al., except the estimation sample. For each sample year, we run the cross-sectional OLS regression by using the sample of non-issue firms, which have been listed at least three years. We divide our sample into only two groups: high-tech and traditional firms, rather than 18 groups classified by two-digit SIC code in Teoh et al. (1998). The accounting variables of new issues are fitted into the estimated model to calculate the DCA. A high DCA indicates the firm manipulating the earnings aggressively.

3.2 Measures of investor sentiment

Investors are inclined to be overoptimistic about the future earnings in hot market conditions. We calculate the market return variable (MR) at the IPO as a proxy for investor sentiment. Following Derrien and Womack (2003), we construct MR as a weighted average of the 30-day buy-and-hold returns of market return with weights of three for the most recent 30-day period before the listing date, two for the next period, and one for the third 30-day period before the IPO date. An issuer with high MR means it go public in the hot market.

3.3 Abnormal performance measures

We use two different approaches to measure abnormal performance of new issues. First, we consider the buy-and-hold returns (BHARs),

$$BHAR_T = \frac{1}{N} \cdot \sum_{i=1}^{N} \left[\prod_{t=0}^{T} (1 + r_{i,t}) - \prod_{t=0}^{T} (1 + r_{m,t}) \right] \tag{1}$$

Where $r_{i,t}$ is the raw return of IPO i at month t, $r_{m,t}$ is the value-weighted market return at the corresponding period. If sample returns are missing, both $r_{i,t}$ and $r_{m,t}$ equal to zero.

Fama (1998), Mitchell and Stafford (2000), and Gompers and Lerner (2003) provide evidence about the choice of tests on long-horizon performance. They argued that abnormal performance measured by buy-and-hold returns is more likely to suffer spurious rejections of market efficiency. Even if a new issue performs poorly in only single period, BHARs can magnify this underperformance as a consequence of compounding single-period return. Accordingly, we consider cumulative abnormal returns (CARs) as our second measures for abnormal performance,

$$CAR_T = \sum_{t=0}^{T} \frac{1}{N} \left[\sum_{i=1}^{N} (r_{i,t} - r_{m,t}) \right] \tag{2}$$

Where $r_{i,t}$ and $r_{m,t}$ is the monthly raw return and value-weighted market return, respectively, and N is the number of surviving firms in month t.

3.4 Research design

Figure 1 depicts the 36-month holding period abnormal performance of the new issues based on the event of listing date. Both BHARs and CARs display high initial returns and long-run underperformances of IPOs, regardless of the value-weighted or equally weighted new issue portfolios. For instance, the value-weighted new issue portfolio outperforms 26% than its benchmark return in the first trading month, but underperforms 11% and 15% than its benchmark for BHARs and CARs, respectively, in the 36-month holding period measured from the issuing price. Similarly, the equally weighted IPO portfolio has a 20% market-adjusted return for the first month but a –32% and –17% abnormal returns of BHARs and CARs in the 36-month holding return.

Because of the distinctive feature of our data and the purpose of test on EMH, two special corrections will be made on following analysis. Figure 2 shows the event classification timeline for our sample. First, Taiwan stock market has 7% daily price limit on the price movement. This restriction on daily price movement applies to all stocks in TSE and OTC market. Therefore, when an under-priced issue begins to trade, its security prices may continue to hit the limit many days after issuing day.

Second, the calculation of discretionary current accruals (DCA) needs the financial statements in the fiscal year of IPO (Fiscal Year (0) in Figure 2). In practice, Taiwanese public firms are obligated to disclose accounting statements during the period of consequent four months after the end of the fiscal year. Therefore, investors are not aware of the DCA of issuers until the financial statements are publicized. In general, fiscal year is over at the end of December and financial statements are disclosed before the end of next April. Accordingly, we cannot splice long-run return on the end of the second month after IPO, which is the end of initial return measure. Post-issuing performance should be measured by calculating 36-moth holding return from the first day of the fifth month in the fiscal year (1). Figure 2 depicts event classification timeline in our study.

4. Empirical results

4.1 Summary statistics for earnings management and investor sentiment

First, we present time-series and cross-sectional statistics for discretionary current accruals (DCAs) in Table 2. Panel A displays DCAs change from year 0 (IPO year) to year 3. The mean of DCA in IPO year is 3.518%, is statistically and economically significant. The means of DCA in the following two years are still significant but decline over time. Evidences suggest that Taiwanese IPO firms conduct earnings management. Managers of IPOs boost the earnings at the issuing stage and then reverse the inflated earnings gradually. This finding is consistent with Teoh et al. (1998).

We sort IPOs into three equal-size portfolios by their DCA rankings. Panel B of Table 2 reports the cross-sectional statistics for characteristics of the three DCA-ranking portfolios. The means of DCA are –9.31%, 1.81% and 18.12% for the conservative, mild and the aggressive portfolio, respectively. Interestingly, IPOs with aggressive earnings manipulation have smaller sales in revenue than conservative ones. It seems that a small firm is more likely to manipulate

its earnings at the IPO year. Besides, three variables- market return variable (MR), ages of IPOs, and fraction of equity sold in IPO- are not significantly different between the conservative and aggressive portfolios.

We then sort sample firms into three equal-size portfolios by their market return condition (MR) at the IPO date. Table 3 reports the descriptive statistics of the three MR-ranking portfolios. The mean of MR for the cold portfolio is -5.24%. It indicates that IPOs went public in the cold market have a –5.24% average market return in the 30-day period prior IPO date. The means of MR for the medium and hot market are 2.38% and 11.05%, respectively. Fraction of equity sold is 9.69% for the hot market portfolio and statistically higher than 8.72% for the cold market. The change is monotonic decreasing from the hot market to cold market. It implies the IPO firms have higher fraction of equity sold in the IPO when they went public in the hot market than in the clod market. Since most of the Taiwanese issuers sell their secondary shares in the IPO offerings and insiders provide most of the shares sold in IPO, the evidence suggests that insiders and founders of issuers realize their profits in the IPO offerings by taking advantage of hot markets. The other three variables of IPO characteristics- DCA, sales, and ages- are not different materially between cold and hot markets.

4.2 Long horizon post-issue performance

In this section, we examine the 36-month (from the fifth month in the next fiscal year after IPO) holding returns of the nine portfolios described earlier. Table 4 reports the OLS results for long-run performance of IPOs.

After controlling for other variables, including firm size, ages, institutional holdings, and selling methods, the effect of market hotness on long-run return is positive. Table 4 shows that the coefficient on MR_Mon is 1.012 (with t-statistic of 1.44) for BHAR and 1.572 (with t-statistic of 2.77) for CAR. If Initial Return variable replace MR_Mon to proxy for the investor's sentiment, both of the coefficients are positive and statistically significant. The result implies that IPOs went public in hot markets will have better long-run performance than ones in cold markets, and IPOs with higher initial returns will perform better than ones with low initial returns. It is inconsistent with the "investor sentiment" hypothesis.

On the other hand, the coefficients on DCA, the proxy for the extent of earnings manipulation, are significantly negative. The result indicates that IPOs with more extent of earnings manipulation have worse long-run return than conservative IPOs have. This result is consistent with the "earning management" hypothesis.

Evidences from Table 4 tell that ISH explains little for the variation of long-horizon post-issue performance. On the contrary, the EMH successfully predicts the long-run performance of new issues. Firms with more aggressive earnings manipulation have worse long-horizon post-issue performance.

5. Conclusions

This paper tests whether ISH or EMH predict well the long-horizon post-issue performance of initial public offerings. The purpose of this test is to enhance understanding the resources of

the underperformance of new issues. The sample includes 783 IPOs that went public in Taiwan stock market in the period of 1991-2002. Long-run performance is the 36-month holding abnormal return starting from the date when the financial statements are disclosed.

We find the evidence of earnings manipulation by Taiwanese IPOs when they go public. In order to sell shares in the IPO offerings or lock-up expires at higher price than the intrinsic value, they engage in earnings manipulation. We document that IPOs with more aggressive earnings management in the IPO stage have worse long-run performance. This finding is consistent with the EMH.

On the other hand, although the IPOs went public in hot markets have highest initial returns, their long-run performances are not always the worst. IPOs went public when market is cold still suffering severe underperformance. Both IPOs in hot and cold markets are big dogs. The result is not consistent with the ISH, which says that IPOs in hot market should have the highest initial returns and the worst long-run performance.

We offer two potential explanations for the phenomena. First, the results of IPOs in hot markets have strongest initial returns but not necessarily have the worst long-horizon performance are consistent with the prediction of costly information production in Sherman (2005). She argued that the issuer/underwriter offer price below the expected value in order to reduce the risk of failure. The risk depends on market conditions through the opportunity cost of evaluating and investing in the IPO. So it is reasonable to be more under-priced to attract investors when market returns are high.

Second, because the risk of market failure in cold market is greater than in hot market, IPOs face a trade-off between postpone of issue and low rewards to founders when they go public in cold markets. Issuers would choose to postpone if they are good firms and the waiting cost is low. But for bad firms, they tend to conduct their IPO as soon as possible when the filing has been approved. Therefore, IPOs in cold markets have worse long-run performance.

We conclude that ISH can explain the initial returns of IPOs but not the long-run returns. EMH is successful in prediction of the long-horizon post-issuing performance. Inflated earnings reported in the financial statements of new issuers are likely to fool IPO investors, especially for those individual investors who are not skillful in accounting principles and practices.

Reference

Brav, Alon, Christopher Geczy, and Paul Gompers, 2000. Is the Abnormal Return Following Equity Issuance Anomalous? Journal of Financial Economics 56, 209-249.

Brav, Alon, and Paul Gompers, 1997. Myth or Reality? The Long-Run Underperformance of Initial Public Offerings: Evidence from Venture and Nonventure Capital-Backed Companies. Journal of Finance 52, 1791-1821.

Carhart, Mark M.m 1997. On Persistence in Mutual Fund Performance. Journal of Finance 52, 57-82.

Derrien, Francois, and Kent Womack, 2003. Auction vs. Bookbuilding and the Control of Underpricing in Hot IPO Markets. Review of Financial Studies 16, 31-61.

Fama, Eugene F., 1998. Market Efficiency, Long-Term Returns, and Behavioral Finance. Journal of Financial Economics 49, 283-306.

Fama, Eugene F., and Kenneth French, 1993. Common Risk Factors in the Returns on Bonds and Stocks. Journal of Financial Economics 33, 3-56.

Fama, Eugene F., and Kenneth French, 1993. Common Risk Factors in the Returns on Bonds and Stocks. Journal of Financial Economics 33, 3-56.

Gompers, Paul, and Josh Lerner, 2003. The Really Long-Run Performance of Initial Public Offerings: The Pre-Nasdaq Evidence. Journal of Finance 58, 1355-1392.

Jones, Jennifer, 1991. Earnings Management during Import Relief Investigation. Journal of Accounting Research 29, 193-228.

Lee, Charles M.C., Andrei Shleifer, and Richard H. Thaler, 1991. Investor Sentiment and the Closed-End Fund Puzzle. Journal of Finance 46, 75-109.

Ljungqvist, Alexander, Vikram Nanda, and Rajdeep Singh, 2005. Hot Markets, Investor Sentiment, and IPO Pricing. Journal of Business (forthcoming).

Loughran, Tim, and Jay Ritter, 1995. The New Issues Puzzle. Journal of Finance 50, 23-51.

Loughran, Tim, and Jay Ritter, 2000. Uniformly Least Powerful Tests on Market Efficiency. Journal of Financial Economics 55, 361-389.

Loughran, Tim, Jay Ritter, and Kristian Rydqvist, 1994. Initial Public Offerings: International insight. Pacific-Basin Finance Journal 2, 165-199.

Miller, Edward, 1977. Risk, Uncertainty, and Divergence of Opinion. Journal of Finance 32, 1151-1168.

Mitchell, Mark, and Erik Stafford, 2000. Managerial Decisions and Long-Term Stock Price Performance. Journal of Business 73, 287-330.

Ritter, Jay, 1991. The Long-Run Performance of Initial Public Offerings. Journal of Finance 46,

3-27.

Ritter, Jay, R., and Ivo Welch, 2002. A Review Of IPO Activities, Pricing, and Allocations. Journal of Finance 57, 1795-1828.

Schultz, Paul, 2003. Pseudo Market Timing and the Long-Run Underperformance Of IPOs, Journal of Finance 58, 483-518.

Sherman, Ann. 2005. Global Trends in IPO Methods: Book Building versus Auctions with Endogenous Entry. Journal of Financial Economics (forthcoming).

Spiess, Katherine, and John Affleck-Graves, 1995. Underperformance in Long-Run Stock Returns Following Seasoned Equity Offerings. Journal of Financial Economics 38, 243-267.

Teoh, Siew Hong, Ivo Welch, and T.J. Wong, 1998. Earnings Management and the Long-Run Market Performance of Initial Public Offerings. Journal of Finance 53, 1935-1974.

White, H., 1980. A Heteroskedaticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedaticity. Econometirca 48, 817-838.

Table 1

Descriptive Statistics for Sample

This table reports the descriptive statistics for 854 Taiwanese IPOs in our sample period from 1991 to 2002. Panel A presents the distribution classified by year, market (TSE represents Taiwan Stock Exchange and OTC represents over-the-counter market), and by industry. Panel B presents the statistics for the characteristics of issuing firms. Assets and Sales are based on the financial statements of the year preceding the IPO. Age is the number of years from the establishment year of the firm to the IPO year. Fraction of Equity Sold is the shares sold in IPO divided by the total shares outstanding. Because of the 7% daily price limit imposed on the price movement of securities traded in Taiwanese stock markets, security prices may continue to hit the limit many days after listing day. Therefore, the initial return is calculated from the issue price to the closing price of the second month after IPO, after adjusting the market return in the corresponding period.

Panel A: Number of IPOs

Year	Total	Exchange		Industry		
		TSE	OTC	Hi-tech	Banking	Traditional
1991	24	22	2	8	1	15
1992	31	29	2	5	1	25
1993	28	25	3	2	2	24
1994	33	30	3	6	6	21
1995	61	34	27	15	19	27
1996	66	33	33	27	14	25
1997	53	21	32	21	4	28
1998	88	19	69	46	4	38
1999	106	18	88	50	3	53
2000	109	17	92	69	4	36
2001	110	20	90	74	4	32
2002	145	42	103	119	9	17
Total	854	310	544	442	71	341

Panel B: Descriptive Statistics for Characteristics of Issuing Firms

Year	IPO Proceeds (NT$ millions)	Assets (NT$ millions)	Sales (NT$ millions)	Ages (Years)	Issue Price (NT$)	Fraction of Equity Sold (%)	Initial Return (%)
1991	595	3,189	2,882	17.8	47.7	9.88	54.5
1992	402	2,365	2,390	16.1	48.3	10.43	40.3
1993	566	6,072	4,154	20.7	41.0	10.82	30.1
1994	512	3,657	3,097	19.9	51.9	10.06	19.5
1995	430	3,415	2,717	16.6	70.4	9.97	16.9
1996	560	3,031	4,046	15.8	32.6	13.77	41.1
1997	577	2,670	4,014	18.9	50.3	9.76	27.5
1998	341	2,852	2,178	15.7	50.9	8.51	18.7
1999	256	3,468	2,621	17.9	43.0	8.61	14.0
2000	1,562	8,218	4,048	14.6	51.7	8.77	25.3
2001	190	2,611	2,098	15.0	38.9	8.48	25.3
2002	213	2,300	2,068	12.8	44.2	8.38	25.2
Total	512	3,681	2,851	15.9	46.1	9.28	25.2

Table 2

Time-series and Cross-sectional Statistics for Discretionary Current Accruals

This table consists of 783 non-banking Taiwanese IPO firms going public in the period from 1991 to 2002. Panel A shows the time-series statistics of discretionary current accruals (DCA), which is a proxy for earnings management, from the IPO year (Year 0) to three years after IPO (Year 3). The procedure to calculate DCA is described in the text. Panel B reports the cross-sectional statistics of DCA, MR, sales, ages and fraction of equity sold for three portfolios ranking by DCA at IPO year. MR is market return, which is a proxy for investor sentiment constructed as a weighted average of the 30-day buy-and-hold returns of market return with weights of 3 for the most recent 30-day period before the listing date, 2 for the next period, and 1 for the third 30-day period before the IPO date. Sales are based on the financial statements of the year preceding the IPO. Age is the number of years from the establishment year of the firm to the IPO year. Fraction of Equity Sold is the shares sold in IPO divided by the total shares outstanding.

Panel A: Time-Series Statistics of Discretionary Current Accruals

Year	0	1	2	3
Mean (%)	3.518	3.019	1.412	0.530
Median (%)	1.811	1.376	0.684	0.355
Std. Dev. (%)	15.176	13.202	13.669	12.255
N	783	783	658	552
t-statistics	6.51	6.44	2.65	1.02

Panel B: Cross-Sectional Statistics for three portfolios ranking by DCA

Groups	Range	N	DCA (%)	MR (%)	Sales (Millions)	Ages (Years)	Fraction of Equity Sold (%)
1. Conservative	DCA <-1.73	260	-9.31	2.26	3,150	15.7	9.48
2. Mild	-1.73% < DCA < 6.13%	262	1.81	3.26	3,162	17.2	8.98
3. Aggressive	DCA>6.13%	261	18.12	2.73	2,233	14.6	9.30
Total		783	3.50	2.76	2,851	15.9	9.28
Differences (3-1)			27.44	0.47	-917	-1.1	-0.18
(t-statistic)			(25.04)	(0.69)	(-2.26)	(-1.46)	(-0.31)

Table 3

Descriptive Statistics for Portfolios Ranking by Market Return Condition, the Proxy for Investor Sentiment

This table consists of 783 non-banking Taiwanese IPO firms going public in the period from 1991 to 2002. Sample firms are divided into three portfolios based on MR, the market return condition, which is a proxy for investor sentiment, is constructed as a weighted average of the 30-day buy-and-hold returns of market return with weights of 3 for the most recent 30-day period before the listing date, 2 for the next period, and 1 for the third 30-day period before the IPO date. This table reports the mean of the three portfolios for: DCA, MR, sales, ages and fraction of equity sold. Sales are based on the financial statements of the year preceding the IPO. DCA means discretionary current accruals (DCA), which is a proxy for earnings management, ay the IPO year. Age is the number of years from the establishment year of the firm to the IPO year. Fraction of Equity Sold is the shares sold in IPO divided by the total shares outstanding.

Groups	Range	N	DCA (%)	MR (%)	Sales (Millions)	Ages (Years)	Fraction of Equity Sold (%)
1. Cold	MR < -0.42%	259	4.29	-5.24	3,284	16.0	8.72
2. Medium	-0.42% < MR < 5.40%	264	2.18	2.38	2,361	15.4	9.29
3. Hot	MR > 5.40%	260	4.12	11.05	2,911	16.3	9.69
Total		783	3.50	2.76	2,851	15.9	9.28
Differences (3-1)			-0.18	16.30	-372	0.3	0.96
(t-statistic)			(-0.13)	(43.95)	(-0.45)	(0.41)	(2.22)

Table 4

OLS Results for Long-run Performance of IPOs

This table presents regression coefficients (and White's (1980) heteroskedasticity adjusted t-statistics in parentheses) of various model specifications for long-run returns of 783 non-banking Taiwanese IPO firms going public in the period from 1991 to 2002. DCA means discretionary current accruals (DCA), which is a proxy for earnings management, ay the IPO year. Mr_mon is the *market momentum*, which is constructed as a 3-month weighted average of the buy-and-hold market returns after excluding new listing firms, and the weights are 3 for the most recent month, 2 for the next month, and 1 for the third month before the subscription beginning date. Initial return is calculated from the issue price to the closing price of the second month after IPO, after adjusting the market return in the corresponding period. Ln_sale, a variable proxy for firm size, is the natural logarithm of the yearly sales preceding the IPO year. Ln_Age is the natural logarithm of age of IPO firm, which is measured as the calendar year of going public minus the calendar year of founding. VC, a dummy variable, equals to 1 if the firm is backed by venture capital. Inst is institutional holding proportion in the first month after the firm is going public, while Δ Inst is the change of institutional holding proportions in the first month to 36 months after this firm is going public. Industry is an industry dummy equals to 1 if high-tech and 0 otherwise. Selling_dum1 and Selling_dum2 are dummies controlling for selling mechanism, selling_dum1 is 1 for auctioned IPOs and selling_dum2 for IPOs without public offerings.

	BHAR	BHAR	CAR	CAR	
Intercept	20.524 (0.66)	-4.081 (-0.14)	13.972 (0.64)	-13.128 (-0.64)	
DCA	-134.055 (-2.60)*	-136.361 (-2.75)*	-59.722 (-3.09)*	-63.254 (-3.67)	*
MR_Mom	1.012 (1.44)		1.572 (2.77)*		
Initial Return		0.483 (3.71)*		0.558 (12.15)	*
Ln_sales	0.180 (0.14)	0.769 (0.55)	-0.218 (-0.24)	0.379 (0.46)	
Ln_ages_	-28.583 (-2.97)*	-26.838 (-2.93)*	-15.819 (-2.61)*	-13.642 (-2.46)	*
VC	22.063 (1.30)	22.057 (1.34)	10.028 (1.27)	10.389 (1.45)	
Inst	-0.198 (-0.76)	-0.096 (-0.40)	-0.238 (-1.79)	-0.123 (-0.99)	
Inst_chg	-0.006 (-0.01)	0.170 (0.37)	-0.135 (-0.48)	0.049 (0.21)	
Industry	67.255 (4.78)*	55.039 (4.34)*	53.606 (7.21)*	39.645 (5.61)	*
Selling_dum1	-26.403 (-1.61)	-21.123 (-1.43)	-0.524 (-0.04)	4.657 (0.40)	
Selling_dum2	22.374 (1.37)	15.699 (0.95)	14.208 (1.24)	6.152 (0.56)	
N	745	745	745	745	
Adj-R^2	0.076	0.109	0.120	0.252	

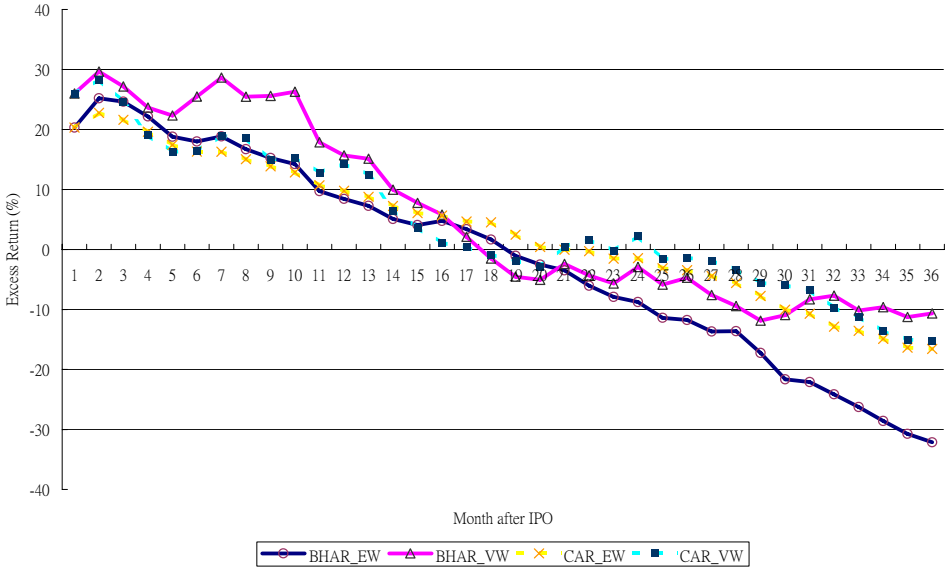

Figure 1. The Long-run Performance of Initial Public Offerings: 1991-2002

The figure displays the return patterns from the IPO date to 36 months after IPOs. The excess return for new issue portfolio is measured by buy-and-hold excess return (BHAR) and cumulative abnormal return (CAR), which are described in the text respectively.

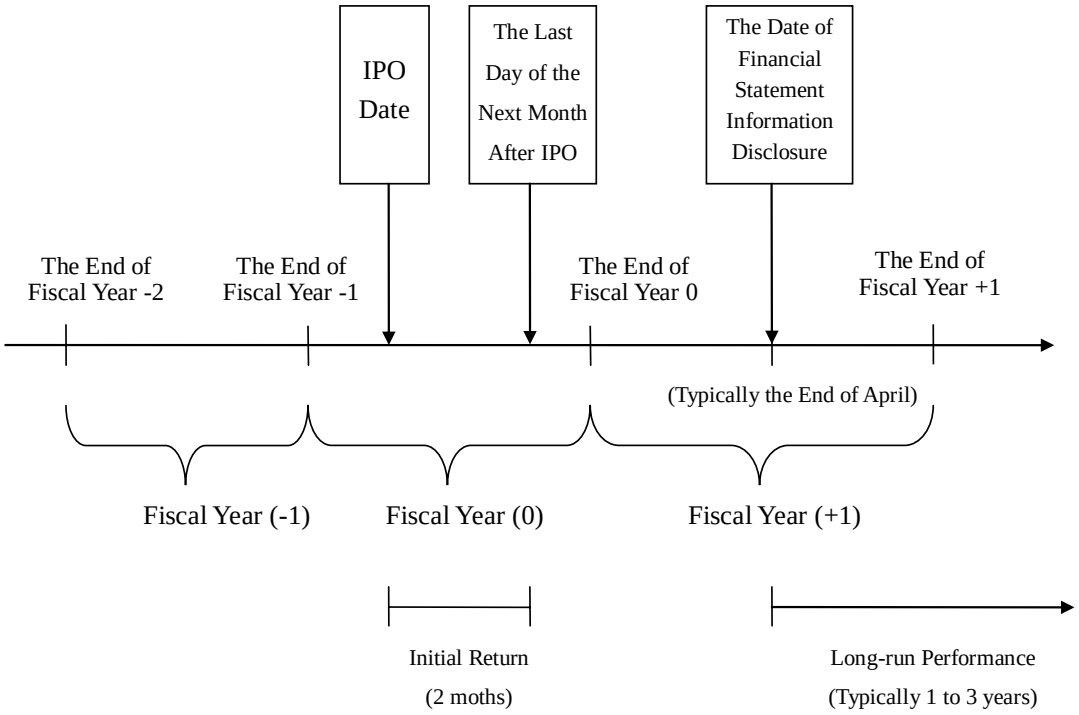

Figure 2. Event Classification Timeline for Taiwanese IPOs