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The Hong Kong Polytechnic University

School of Accounting and Finance

**Usefulness of Pro Forma Accounting Information Mandated
in IPO Prospectuses: Its Association with IPO Pricing and
Subsequent Firm Performance**

CHEN Wei

A Thesis Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy

December 2009

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I dedicate this work to my parents, XU Liping and CHEN Aiping, and my sister,
CHEN Fang, for all their love, encouragement, and unknowing sacrifices.

ABSTRACT

This study examines the characteristics and usefulness of pro forma accounting information disclosed in IPO prospectuses as required by Article 11 of Regulation S-X in the United States. Using hand-collected pro forma accounting data from IPO prospectuses during 1997-2008, I first collect descriptive evidence on the nature and characteristics of pro forma accounting data in my sample. I find that pro forma IPOs are more likely to occur in the service industry and increase significantly during the Internet bubble period (1999-2000). I also find that pro forma IPO firms are more mature than non-pro forma IPO firms. An examination of characteristics of pro forma transactions indicates that pro forma transactions are more likely to occur during the IPO year and related to mergers and acquisitions. I then concentrate my examination on a “bottom line item” of pro forma accounting data – pro forma earnings adjustment. I find that pro forma earnings adjustment has, on average, an income-decreasing effect on historical GAAP earnings. A decomposition of pro forma earnings adjustment shows that positive pro forma earnings adjustment is more likely associated with gross profit and selling, general & administrative (SG&A) expenses, and negative pro forma earnings adjustment is more likely associated with depreciation and amortization (D&A) expenses.

Next I investigate the usefulness of pro forma earnings adjustment for IPO investors by examining its association with future financial performance, IPO equity value and future stock returns. In general, my empirical findings suggest that the

usefulness of pro forma earnings adjustment should be interpreted with caution. I find that positive pro forma earnings adjustment is positively and significantly associated with future financial performance as well as IPO equity value, indicating that this measure is reliable to gauge the continuing effect of a pro forma transaction on future firm performance and is priced by IPO investors as a component of IPO equity value. I also find an insignificant association between positive pro forma earnings adjustment and post-IPO stock returns, indicating that investors completely price this information initially. In comparison, I find that negative pro forma earnings adjustment is insignificantly associated with future financial performance but negatively and significantly associated with IPO equity value. The result indicates that negative pro forma earnings adjustment has poor quality to gauge the continuing effect of a pro forma transaction on future firm performance. The regression results also provide some evidence that investors' initial reaction to negative pro forma earnings adjustment is not complete. The conclusion, however, is not supported by portfolio analysis.

Keywords: relevance and reliability, mandated pro forma accounting information, Initial public offering (IPO)

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CHAPTER 1

INTRODUCTION

1.1. Motivation and objective

This study is motivated by the shortage of empirical evidence on the nature and usefulness of pro forma accounting figures that are disclosed, but not recognized in financial statements based on generally accepted accounting principles (GAAP), under Article 11 of Regulation S-X. For publicly listed companies, the Securities and Exchange Commission (SEC) requires managers to calculate accounting numbers directly attributable to a particular transaction, and disclose separately in pro forma financial statements of their filings what historical GAAP accounting figures might have been had the transaction occurred at an earlier date.

The SEC, among others, believes that these pro forma accounting figures are useful for investors to understand the future prospects of a company. It argues that they provide investors with information about the continuing impact of a particular transaction by showing how it might have affected historical financial statements if the transaction had been consummated at an earlier time. Because they illustrate the possible scope of the change in the company's historical financial position and results of operations caused by the transaction, they should assist investors in analyzing the future prospects of the company (SEC 2009).

In the accounting literature, an accounting amount is defined as value relevant (and useful to equity market investors) if it has a predicted association with equity market values (Holthausen and Watts 2001; Barth et al. 2001). Thus, the usefulness of pro forma accounting figures for investors in the equity market can be empirically examined by looking at the association between pro forma accounting figures and equity market values. To accommodate this issue empirically, I choose the initial public offering (IPO) market as my equity market setting and hand collect pro forma accounting figures from IPO firms' final prospectuses filed as part of S-1 registration forms with the SEC. I focus on the 'bottom line' measure in the pro forma income statement, pro forma earnings, and examine the nature and usefulness of this pro forma accounting disclosure for investors in the IPO market.

1.2. Overview of research methods and major findings

I first gather descriptive empirical evidence on characteristics and trends of pro forma earnings disclosed in IPO prospectuses from 1997 through 2008. I find that pro forma IPOs are more likely to occur in the service industry and increase significantly during the Internet bubble period (1999-2000). I also find that pro forma IPO firms are more mature than non-pro forma IPO firms. An examination of characteristics of pro forma transactions indicates that pro forma transactions are more likely to occur during the IPO year and related to mergers and acquisitions. In addition, pro forma earnings adjustment has, on average, an income-decreasing effect on historical GAAP earnings. A decomposition of pro forma earnings adjustment

indicates that positive pro forma earnings adjustment is more likely associated with gross profit, selling, general & administrative (SG&A) expenses, and negative pro forma earnings adjustment is more likely associated with depreciation & amortization (D&A) expenses.

I then propose three hypotheses to empirically examine the usefulness of pro forma earnings adjustment to IPO investors. My first hypothesis focuses on the relation between pro forma earnings adjustment and future financial performance. The rationale behind this hypothesis is that if pro forma earnings adjustment is truly a reflection of continuing effects arising from a particular transaction, this reflection will materialize in future periods when the transaction actually occurs. Thus, I should expect a significant association between pro forma earnings adjustment and future financial performance. To test this hypothesis, I employ four future financial performance measures (two earnings and two cash flows measures) as dependent variables regressed on pro forma earnings adjustment and a set of control variables. The estimation results show that positive pro forma earnings adjustment is significantly and positively associated with all dependent variables, but negative pro forma earnings are insignificantly associated with them. Moreover, I also examine the association between decomposed pro forma earnings adjustment and future financial performance measures. The estimation result indicates that pro forma adjustments related to gross profit, SG&A expenses, D&A expenses and income tax benefits (provisions) are significantly associated with future financial performance.

My second hypothesis focuses on the relation between pro forma earnings adjustment and IPO equity value. The rationale behind this hypothesis is that if pro

forma earnings adjustment is truly reliable to reflect future performance implication of a particular transaction and investors are rational to price this implication at the time of its disclosure, I should expect pro forma earnings adjustment be significantly associated with IPO equity value. I run regressions of the IPO offer and first trading day market value on pro forma earnings adjustment and a set of control variables. The estimation results show a significant association between pro forma earnings adjustment and IPO offer and market value in a nonlinear pattern: positive pro forma earnings adjustment is positively associated with the offer and market value, and negative pro forma earnings adjustment is negatively associated with the offer and market value. Moreover, I also examine the association between decomposed pro forma earnings adjustment and IPO offer and market value. The estimation result indicates that investors price pro forma adjustments related to gross profit, SG&A expenses, and D&A expenses at the time of IPO.

My third hypothesis focuses on the relation between pro forma earnings adjustment and post-IPO long run stock return to examine whether IPO investors completely price pro forma earnings adjustment at the time of IPO. The regression estimation results show that positive pro forma earnings adjustment is insignificantly associated with future stock return, suggesting that investors completely price positive pro forma earnings adjustment at the time of IPO. The regression estimation also provides some evidence that negative pro forma earnings adjustments is positively and significantly associated with future stock returns, suggesting that investors do not completely price negative pro forma earnings adjustment at the time of IPO. However, the result is not supported by portfolio analysis. Moreover, an

examination of the association between decomposed pro forma earnings adjustment and future stock return indicate that none of its decomposed components are found to be significantly associated with future stock return.

Collectively, empirical evidence provided in this thesis indicates that the usefulness of pro forma earnings adjustment to IPO investors should be interpreted with caution. Positive pro forma earnings adjustment is a reliable measure of future performance implications associated with a particular transaction and is priced completely by investors at the time of its disclosure in an IPO prospectus. Negative pro forma earnings adjustment (especially related to D&A expenses), on the other hand, does not provide useful information in forecasting firm's future performance. However, investors fail to identify this at the time of its disclosure in an IPO prospectus and incorporate it as a component of IPO equity value.

1.3. Contribution

This study contributes to the literature in the following two ways. First, to the best of my knowledge, this is the first study that directly examines the characteristics of pro forma earnings disclosed in an SEC filing under Article 11 of Regulation S-X. The study provides empirical evidence on several issues about the nature of pro forma reporting in IPO prospectuses. For example, pro forma IPOs are more likely to occur in the service industry and increase significantly during the Internet bubble period (1999-2000). Firms that disclose pro forma accounting information in their IPO prospectuses are more mature than their non-disclosing peers. The most popular pro

forma accounting disclosure relates to mergers and acquisitions and gives effect to pro forma transactions that occur during the IPO year. Positive and negative pro forma earnings adjustments are also different in terms of adjusting items. While positive pro forma earnings adjustment is more likely related to gross profit and SG&A expenses, negative pro forma earnings adjustment is more likely related to D&A expenses.

Second, the main contribution of this study to the existing literature is to provide first-hand empirical evidence on the relevance and reliability of a long existing mandatory but unaudited accounting disclosure in the United States. As noted in the literature, (Holthausen and Watts 2001; Barth et al. 2001), relevance and reliability are two important conceptual frameworks that direct the assessment of usefulness of accounting disclosures for information users. In the United States, pro forma financial information has been required by the SEC to be included as part of company filing in addition to audited financial statements back in the 1980s. Although the policy maker addresses that pro forma financial information is useful for investors in understanding firm's future performance impacted by material transactions, no prior empirical evidence has been provided in academics to support this statement. Given the fact that pro forma financial information is provided by managers, rather than financial analysts, the possibility of their unintentionally misuse (due to managers' inability to perfectly estimate the impact of material transactions) and intentionally misuse (due to the motivation of managers to mislead investors) is a concern in this regard.

In general, this study provides empirical evidence to address this concern. The main results show that positive pro forma earnings adjustment improves the future performance predictability and priced by investors at the time of an IPO. In contrast, negative pro forma earnings adjustment is found to provide little information on forecasting future performance. Investors, however, fail to anticipate its poorness in providing future performance information and price negative pro forma earnings adjustment initially. The major component that is mispriced by investors is related to depreciation and amortization expenses. Interpreted depreciation and amortization expenses as indicators for firm's future expansion, investors misprice negative pro forma earnings adjustment because they expect the IPO firm will eventually benefit from growing up its businesses. The findings of this study are interesting to academicians, regulators and investors. It provides empirical evidence that pro forma financial information disclosed in IPO prospectuses is not as reliable as we previously thought and it thus deserves more attention in the future research.

1.4. Structure of the thesis

The remainder of this thesis is structured as follows. Chapter 2 provides the background of pro forma accounting disclosure practice and related prior research. Chapter 3 describes the sample selection process and presents descriptive evidence. Chapter 4 develops my hypotheses, outlines my research design, and presents my empirical findings. Chapter 5 offers additional analyses as the robustness check, and Chapter 6 concludes.

CHAPTER 2

BACKGROUND

2.1. Pro forma accounting disclosure practice

2.1.1. Pro forma accounting disclosure for internal use purpose

According to the Merriam-Webster Dictionary, “pro forma” means “done or existing as a matter of form”. In business, pro forma disclosure has traditionally meant the presentation of financial statements where certain amounts are hypothetical. Managers use pro forma financial statements for decision making in planning and control. For example, managers may prepare pro forma financial statements as the capstone of the master budget and the culmination of the budgeting cycle. The pro forma financial statements summarize the output of all budgetary efforts including forecasts of sales, production activity and the cash flow associated with those activities, and give managers a preview of how published financial statements will appear if actual activities, revenues, and costs are as budgeted. Also, managers may prepare pro forma financial statements to gauge the effects of significant financial changes (e.g., a merger, an acquisition, a new capital investment, or a change in capital structure such as incurrence of new debt or issuance of equity) when they expect the company to experience or have just experienced. For example, when a transaction with a material impact on a company's financial condition is contemplated, managers may prepare a business plan containing pro forma financial statements demonstrating the expected impact of the proposed transaction on the company's

financial viability. The company board will require such statements to structure or confirm compliance with debt covenants such as interest coverage and debt to equity ratios.

2.1.2. Pro forma accounting disclosure for external use purpose – management’s voluntary disclosure in earnings press releases

Starting in the late 1990s, many companies have begun reporting an alternative, non-standard profitability measure (commonly known as “pro forma”, “non-GAAP”, “street” or “operating” earnings) along with the standard GAAP earnings number in their earnings press releases (Bhattacharya et al. 2004). Because press release pro forma earnings are unaudited earnings numbers voluntarily disclosed by managers, they are quite subjective. Managers often assert that they calculate press release pro forma earnings by deleting one-time or unusual items from GAAP earnings (Halsey and Soybel 2002). They contend that pro forma earnings demystify complex GAAP accounting disclosures and provide a clearer picture of the "core earnings" that they expect to persist in future periods (Pitt 2001; Phillips et al. 2002). Some proponents of press release pro forma earnings disclosure argue that because GAAP earnings include nonrecurring items, such as restructuring charges and gains and losses on asset sales, alternative earnings metrics that exclude such items are more comparable (Bray 2001; Halsey and Soybel 2002).

Regulators and other critics of press release pro forma earnings disclosure, however, are skeptical about managers' claims (Liesman and Weil 2001a, 2001b). The ad hoc and nonstandard nature of press release pro forma earnings brought it

under the scrutiny of lawmakers and regulators. Moreover, several highly publicized accounting scandals added to critics' skepticism about unaudited, nonstandard corporate disclosures (Dreman 2001; D'Avolio et al. 2001). The SEC warned that firms could face civil fraud lawsuits for reporting potentially misleading pro forma numbers in their earnings press releases if they do not also provide a "clear and comprehensible" reconciliation between the pro forma and GAAP numbers (Weil 2001).

In response to increasing concerns that the disclosure of press release pro forma earnings might mislead investors by obscuring firms' GAAP results, the SEC issued a warning regarding the use of pro forma earnings number in earnings press releases in December 2001. The SEC's cautionary advice stated that "presentation of financial results that is addressed to a limited feature of a company's overall financial results ... raises particular concerns ... To inform investors fully, companies need to describe accurately the controlling principles [and] the particular transactions and the kind of transactions that are omitted." The warning also stated that a pro forma figure would not be deemed misleading if the company disclosed in plain English how it deviated from GAAP and the amount of each of those deviations.

Additionally, Section 401(b) of Sarbanes-Oxley is devoted to the regulation of non-GAAP usage (Regulation G). This rule requires public companies that disclose or release non-GAAP financial measures to include, within that disclosure or release, a presentation of the most directly comparable GAAP financial measure and a quantitative reconciliation, by either schedule or other clearly understandable method,

of the disclosed non-GAAP financial measure to the most directly comparable GAAP measure. The final rule took effect on March 28, 2003.

The new rules include Regulation G, amendments to Item 10 of Regulation S-K, and the addition of Item 12 to Form 8-K. Regulation G mandates that public disclosures containing a non-GAAP earnings number (1) must contain the most directly comparable GAAP number, (2) must contain a clearly understandable quantitative reconciliation of the non-GAAP number to the most directly comparable GAAP number, and (3) may not present non-GAAP earnings in ways that mislead investors. Item 12 of Form 8-K requires that companies file a Form 8-K within 5 business days of any public disclosure of annual or quarterly operating results. The form must include the text of the public disclosure and, if the public disclosure contains a non-GAAP financial measure, the 8-K must (1) present the most directly comparable GAAP measure with equal or greater prominence, (2) disclose the reasons why management believes the non-GAAP measure provides investors useful information, and (3) describe whether and how management uses the non-GAAP measure. The amendments to Item 10 of Regulation S-K prohibit, from filings such as 10-Qs and 10-Ks but not 8-Ks, non-GAAP financial measures that exclude 'non-recurring' items, if the firm reports or is likely to report the same or similar items in the previous or following two years.

2.1.3. Pro forma accounting disclosure for external use purpose – GAAP and SEC requirements

In certain circumstances, GAAP may require pro forma accounting disclosures in the financial statements or the accompanying notes. These disclosures include, for example, pro forma information required by Accounting Principles Board (APB) Opinion No. 16, *Business Combinations* (superseded by Statement of Financial Accounting Standards (SFAS) No. 141, *Business Combinations* in June 2001); APB Opinion No. 20, *Accounting Changes* (superseded by SFAS No. 154, *Accounting Changes and Error Corrections* in May 2005); and SFAS No. 123, *Accounting for Stock-Based Compensation*.

APB No. 16 requires public¹ companies to disclose in financial statement notes supplemental pro forma information giving effect to the material business combination (or a series of individual immaterial business combination that are material in the aggregate) for the period in which those transactions occur. The supplemental pro forma information generally includes (1) results of operations for the current period as though the business combination or combinations had been completed at the beginning of the period, and (2) results of operations for the comparable prior period as though the business combination or combinations had been completed at the beginning of that period if comparative financial statements are presented. In June 2001, FASB issued SFAS No. 141 to supersede APB No. 16 and retained the pro forma disclosure requirements.

¹FASB Statement No. 79, *Elimination of Certain Disclosures for Business Combinations by Nonpublic Enterprises*, exempts nonpublic entities from APB Opinion 16 requirement to disclose supplemental pro forma information due to the fact that the costs of preparing the pro forma information exceed the benefits of providing it for nonpublic enterprises. SFAS No. 141 retains the exemption from APB No. 16.

APB No. 20 requires the cumulative effect of changes in accounting principle – from one GAAP to another – to be reflected in the current income statement. There are no changes to prior financial statements presented, except to report "pro forma income," or what the income in those periods would have been had the new method been used in those periods. In May 2005, FASB issued SFAS No. 154 to supersede APB opinion No. 20. In a major shift, SFAS No. 154 requires retrospective application of all comparative financial statements for accounting principle changes. Retrospective application means that a change in accounting principle is treated by restating comparative financial statements to reflect the new method as though it had been applied all along. Under SFAS No. 154, pro forma income disclosure for comparable prior years is no longer required (Morris 2005).

In October 1995, FASB issued SFAS No. 123 to replace APB No. 25 for stock-based compensation accounting. Under SFAS No. 123, stock-based compensation expense is based on option fair values at the measurement date. Option values are calculated using an option pricing model that takes into account the option exercise price, the share price, the option's expected life, expected dividend yield, expected risk-free interest rate, and expected stock price volatility. SFAS No. 123 expense is recognized over the vesting period; as the expense is recognized, so is equity. SFAS No. 123 permits firms to apply the measurement provisions in APB No. 25 or those in SFAS No. 123. If a firm measures compensation expense under APB No. 25, it must disclose, among other items, pro forma net income, which is net income if stock-based compensation expense had been measured under SFAS No. 123.

For public companies listed on the stock exchanges which has experienced or is proposed to experience material transactions, the SEC requires managers to recast their historical financial statements based on GAAP and disclose these adjustments separately in pro forma financial statements. The Article 11 of Regulation S-X is devoted to the regulation of pro forma financial statement usage.

The Article 11 of Regulation S-X is consisted of Rule 11-01, Rule 11-02 and Rule 11-03. Rule 11-01 provides a list of situations that might call for pro forma financial statements, including business combinations and dispositions, security offerings, purchases of property or real estate operation, autonomous transactions, and roll-up transactions. As an example (provided in the appendix), in its final IPO prospectus dated March 18, 2008 CardioNet, Inc. presents a pro forma financial statement giving effect to the acquisition of PDSHeart, Inc. on March 8, 2007. In addition to the listed transactions, the SEC explains that other transactions may also require pro forma financial statements and cites reorganization, unusual asset exchanges, and restructuring of debt as examples. Because a comprehensive list of situations that might call for pro forma financial statements is not incorporated in Rule 11-01 of Regulation S-X, the SEC advises managers to exercise judgment in determining whether pro forma financial statements will be meaningful (Trautmann et al. 2008).

Rule 11-02 mandates the presentation format of the pro forma financial statement. In general, a pro forma financial statement is consisted of an introductory paragraph, a (condensed) pro forma financial statement, and accompanying

explanatory notes.² An introductory paragraph briefly sets forth a description of the transaction or event that is reflected in the pro forma financial statement, the entities involved, and the periods for which the pro forma financial statement is presented. A pro forma condensed financial statement generally includes a pro forma condensed balance sheet at the end of the most recent period for which a balance sheet is required and a pro forma condensed statement of income for the most recent fiscal year. It is ordinarily in columnar form showing condensed historical statements, pro forma adjustments, and the pro forma results. Accompanying explanatory notes describe the significant assumptions used in developing and computing the pro forma adjustments.

Rule 11-02 also outlines the computation of pro forma adjustments related to the pro forma financial statement and require the disclosure in explanatory notes. In general, pro forma adjustments related to the pro forma balance sheet shall be computed assuming the transaction was consummated at the end of the most recent period for which a balance sheet is required and shall include adjustments which give effect to events that are directly attributable to the transaction and factually supportable regardless of whether they have a continuing impact or are nonrecurring. Pro forma adjustments related to the pro forma condensed income statement shall be computed assuming the transaction was consummated at the beginning of the fiscal year presented and shall include adjustments which give effect to events that are (i) directly attributable to the transaction, (ii) expected to have a continuing impact on

² Rule 11-02 allows a narrative description of the pro forma effects of the transaction in lieu of the pro forma statement in certain circumstances where a limited number of pro forma adjustments are required and those adjustments are easily understood.

the registrant, and (iii) factually supportable. In the example of CardioNet, the company provides four explanatory notes to the pro forma statement of income: Note (a) explains that the pro forma adjustment to general and administrative expenses reflects the elimination of salary paid to PDSHeart's Chief Executive Officer whose employment was terminated in connection with the acquisition; Note (b) explains that the pro forma adjustment to sales and marketing expenses reflects the elimination of salary paid to PDSHeart's Vice President of Marketing whose employment was terminated in connection with the acquisition.; Note (c) explains that the pro forma adjustment to amortization expenses reflects the increase amortization expenses of intangible assets acquired from PDSHeart; Note (d) explains that the pro forma adjustment to interest expenses reflects the reduction of interest expense related to the repayment of \$5.0 million of debt assumed in the acquisition.

Rule 11-03 prescribes the presentation of financial forecast in lieu of pro forma condensed income statement if it is present in a filing. The forecasted income statement must be presented in the same degree of detail as that required of the pro forma income statement and it must be presented in accordance with guidelines established by the AICPA. Because pro forma financial statements mandated under Article 11 of Regulation S-X is used to recast historical financial statements giving effect to hypothetical pro forma transactions assuming these transaction occurred at the beginning of the historical fiscal year, they are not required to be audited. Alternatively, a registrant may voluntarily require an independent account to issue an examination or a review report (AICPA 2001).

2.2. Pro forma accounting disclosure research

2.2.1. Related research on pro forma accounting disclosure for external use purpose – management’s voluntary disclosure in earnings press releases

As noted earlier, the central debate between supporters and detractors of management’s voluntary disclosure of pro forma earnings in earnings press releases focuses on whether these pro forma disclosures are primarily used to mislead or to inform investors. Prior studies have found that press release pro forma earnings both inform investors and are used opportunistically. These studies can be classified into three groups based on their research methodologies and I review each of them below.

The first group of press release pro forma earnings studies uses event studies (short window return studies) to examine the association between press release pro forma earnings and short window equity value changes. The rationale behind this approach is that one will detect a significant association between press release pro forma earnings and contemporaneous stock returns only if press release pro forma earnings is relevant to investors and measured with sufficient reliability to be reflected in their valuation assessments, based on the assumption that marginal investor is rational and share prices aggregate investors’ consensus beliefs (Holthausen and Watts 2001; Barth et al. 2001). Notable studies in this group include Bradshaw and Sloan 2002; Brown and Sivakumar 2003; Doyle et al. 2003; Bhattacharya et al. 2003; Lougee and Marquardt 2004; Johnson and Schwartz 2005; Bowen et al. 2005; Marques 2006; Allee et al. 2007; and Heflin and Su 2008.

Bradshaw and Sloan (2002) compare the association between quarterly stock returns and earnings surprises based on I/B/E/S EPS and GAAP EPS, where quarterly stock returns are defined as buy-and-hold returns from two days after the last quarterly earnings announcement and through the day after the current period earnings announcement. Using a sample of 108,864 firm-quarter observations from 1986 to 1997, they find that pro forma earnings surprises are incrementally important than GAAP earnings surprises during the post-1992 period. Their result shows that investors are displaying an increasing preference for pro forma earnings over GAAP earnings.

Brown and Sivakumar (2003) compare the information content of operating earnings disclosed in firms' earnings press releases based on I/B/E/S data, with operating earnings derived from firms' financial statements based on Standard and Poor's data. Using a sample of I/B/E/S firm-quarter observations from 1989 to 1997, they examine the association between earnings surprises calculated from both operating earnings measures and 3-day/63-day market adjusted return around the earnings announcement date. The authors find that the coefficient and R-square in the short window regressions are higher when the realization is based on press release operating earnings than when it is based on Standard and Poor operating earnings and conclude that press release operating earnings is more value-relevant than Standard and Poor's operating earnings.

Doyle et al. (2003) examine the association between expenses excluded from press release pro forma earnings and the three day stock return around the earnings announcement date, after controlling for the earnings surprise and other known

determinants of stock returns. They define the exclusions as the difference between GAAP EPS and I/B/E/S actual EPS. Using a sample of 143,462 firm-quarter observations from I/B/E/S database from 1988 to 1999, they find that the announcement period return is positively associated with the press release pro forma earnings surprise but negatively related to the total exclusions. Their results provide evidence that the market obviously rewards positive earnings surprises, but the reward is diminished if the surprise is achieved by the use of exclusions in the definition of press release pro forma earnings.

Bhattacharya et al. (2003) examine the association between three day window abnormal returns and earnings surprises measures based on three earnings metrics, including GAAP EPS, I/B/E/S EPS and press release pro forma EPS. They hand collect a sample of 1,149 quarterly pro forma earnings press releases from 1998 to 2000. The authors find that the coefficient on GAAP forecast error is not statistically significant, while the coefficients on both pro forma forecast error and I/B/E/S forecast error are significantly positive and conclude that press release pro forma earnings are significantly more informative to investors than GAAP operating earnings.

Lougee and Marquardt (2004) examine the association between two day window abnormal returns and earnings surprise measures based on press release pro forma earnings and GAAP earnings. They hand collect press release pro forma earnings from a sample of 249 quarterly press releases from 1997 to 1999. The authors find that press release pro forma earnings have relative and incremental information content over GAAP earnings, as evidenced by significantly different R-

square and coefficients. They also find that the information content of press release pro forma earnings varies systematically with GAAP earnings informativeness and strategic reporting consideration: pro forma earnings have significantly greater relative and incremental information content over GAAP earnings for the group of firms with low GAAP earnings informativeness and when GAAP earnings surprises are positive.

Johnson and Schwartz (2005) use a between-samples design and investigate whether investors systematically assign a higher share price to pro forma firms than other firms. They document the frequency and magnitude of pro forma earnings in press releases during June through August 2000 and identify 433 firms that disclose pro forma earnings. They examine the association between 3-day/20-day window abnormal returns and incremental earnings surprise based on press release pro forma earnings and find that the incremental slope coefficient associated with earnings surprises of pro forma firms is indistinguishable from zero, indicating that press release pro forma earnings is not value-relevant for investors around earnings announcements. The authors interpret their findings as an indication that investors consider a rich set of information when evaluating firm performance and share price other than focus exclusively on pro forma earnings highlighted in earnings press releases.

Bowen et al. (2005) examine the association between 3-day window abnormal returns and earnings surprise measures based on press release pro forma earnings and GAAP earnings and interact both measures with metrics capturing their emphasis in earnings press releases. They hand collect a sample of 550 firms that report pro forma

earnings metrics in earnings press releases between April 7, 2001 and June 7, 2001. Their results indicate that higher level of emphasis on pro forma earnings in the earnings press release lead to larger stock market reactions to pro forma earnings.

Marques (2006) examines the market reaction to (1) the presence of pro forma earnings adjustment in earnings press releases and (2) the magnitude and direction of pro forma earnings adjustments using 3-day/63-day window. She hand collects a sample of 361 S&P 500 firms that issues quarterly press release pro forma earnings from 2001 to 2003. She finds that there is no reaction to the disclosure of pro forma earnings measures before Regulation G. Nevertheless, after the approval of Regulation G, the market reacts positively when a pro forma earnings number is disclosed. She also finds that investors react differently to the two parts of the adjustment. While the market reacts to the adjustments made by I/B/E/S financial analysts as positively as it reacts to the GAAP surprise, investors either do not react or have a very small reaction to the additional adjustments made by firms.

Allee et al. (2007) examine the association between 3-day window abnormal returns and earnings surprise based on I/B/E/S earnings and interact it with metrics capturing (1) whether the firm announces a pro forma EPS figure in their press release, (2) whether the pro forma EPS figure is presented before the GAAP EPS figure in the press release, and (3) whether the press release is issued after January 1, 2003 (during the mandatory reconciliation period). They hand collect a sample of 4,928 quarterly pro forma earnings press releases from 1998 to 2003. The authors find that the aggregate market reaction to the earnings surprise increases when the pro forma figure is emphasized in the earnings press release, but is indifferent when

GAAP number is emphasized. They do not find evidence that reconciliation has any effect on aggregate reaction to earnings announcements.

Heflin and Su (2008) assess the regulations' effect on the pricing of GAAP and non-GAAP earnings. They use a sample of 42,760 firm-quarter observations from I/B/E/S during March 2000 to February 2005. They use differences between GAAP and I/B/E/S actual earnings as their indicator of non-GAAP earnings disclosure. They regress quarterly stock returns on earnings forecast errors and controls and find that the regulations have reduced the association between returns and earnings forecast errors.

As noted above, the first group of studies provides mixed evidence on the informative or opportunistic nature of press release pro forma earnings in the capital market. To complete these results, researchers also examine the association between press release pro forma earnings (adjustment) and future financial performance. These studies are classified as the second group of press release pro forma earnings studies, which are characteristic of regressing future performance measures on press release pro forma earnings. The rationale behind this approach is that if press release pro forma earnings are truly reflective of company's permanent performance by eliminating any non-recurring or one-time items, as supporters have claimed, this reflection would eventually materialize as permanent performance is likely to continue in the future periods. Notable studies in this group include Brown and Sivakumar 2003; Doyle et al. 2003; Gu and Chen 2004; Lougee and Marquardt 2004; Landsman et al. 2007; Frankel et al. 2008; and Kolev et al. 2008.

Brown and Sivakumar (2003) compare the predictive ability of operating earnings disclosed in firms' earnings press releases based on I/B/E/S data, with operating earnings derived from firms' financial statements based on Standard and Poor's data by examining their own abilities to predict themselves in future periods. They find that in general press release operating earnings predicts itself better than GAAP operating earnings, consistent with the notion that managers and analysts, on average, do a better job than does Standard & Poor's in identifying non-recurring items. They also compare the valuation consequences of their two operating income measures by using a book value and earnings regression to determine which regression has the higher adjusted R-square and which operating income coefficient has the higher multiplier. Their result shows that operating earnings reported by managers and analysts is in general significantly more value relevant than operating earnings derived from firms' financial statements as reported by Standard and Poor's based on both Vuong test for comparison of adjusted R-square and t-test for comparison of coefficient estimates.

Doyle et al. (2003) examine whether exclusions from press release pro forma earnings have predictive content for future cash flows, where future cash flows are assigned as the benchmark to measure future performance. They find a significant and negative association between total exclusions and future cash flows: one dollar of excluded expenses in a quarter predicts 3.328 fewer dollars of cash flow over the next three years, more than 40% of the predictive value of pro forma earnings. They also find a significant and negative association between other exclusions and future cash flows, although special items are found to be insignificantly associated with the latter.

They conclude their study as evidence showing that expenses that the company deems non-recurring, non-cash, or otherwise unimportant for understanding the future value of the firm, and therefore are excluded from pro forma earnings in their press releases, are far from unimportant. Firms with relatively large exclusions in their definition of pro forma earnings suffer relatively lower future cash flows.

Gu and Chen (2004) compare the predictive power of the nonrecurring items that analysts include in street earnings with those items they exclude from street earnings for future operating performance. They obtain street earnings directly from First Call's actual earnings file of a sample of 22,013 firm-quarter observations from 1990 to 2003. They use future earnings and cash flows as the performance measure. Their result shows that although the persistence of nonrecurring items differs across the future performance measures, the included items are generally more persistent, especially for earnings, than the excluded items. Although exclusions do have some predictive power as found in Doyle et al. (2003), it is much weaker than that of the included items.

Lougee and Marquardt (2004) examine the ability of press release pro forma earnings to predict one-year-ahead GAAP earnings and itself. They find that press release pro forma earnings do not have predictive power for future GAAP earnings, although they have marginally significant predictive power for themselves in the future. They also examine whether the ability of press release pro forma earnings to predict future profitability varies with GAAP earnings informativeness and strategic considerations and find that when GAAP earnings informativeness is low or the earnings benchmark of last year's GAAP earnings has been reached, pro forma

earnings have significant incremental predictive ability for future profitability. On the other hand, when GAAP earnings informativeness is high or the earnings benchmark of last year's GAAP earnings has been missed, pro forma earnings do not appear to have any predictive power for future profitability. Finally, they implement a power analysis using simulated data to examine the sensitivity of their results to sample size. Since the result supports their conjecture, their findings on the predictive ability of press release pro forma earnings for future profitability are inconclusive.

Landsman et al. (2007) investigate the ability of pro forma exclusion components to forecast future abnormal earnings based on the Ohlson (1995 and 1999) valuation model. Similarly as Doyle et al. (2003), they define the total exclusions as the difference between GAAP EPS and I/B/E/S actual EPS, and furthermore decompose it into special item exclusions and other exclusions. Their sample is composed of 21,748 firm-year observations from 1999 to 2000. They find that the total forecasting coefficient on total exclusions is significantly positive, although smaller than that on other components or abnormal earnings. Findings from the positive and negative total exclusion subsamples indicate that the significantly positive total forecasting coefficient reported for the overall sample is attributable to negative total exclusions. Findings related to special items indicate that, as with total exclusions, the total forecasting coefficient is significantly positive. Contrary to the findings for total exclusions, the total coefficient is insignificantly different from zero for both the positive and negative special items subsamples. Findings related to other exclusions indicate that the total forecasting coefficient is significantly positive and nearly the same magnitude as that on other components of abnormal earnings.

Frankel et al. (2008) examine whether exclusions from street earnings have a greater association with future earnings and cash flows when boards contain proportionally fewer independent directors. They use I/B/E/S actual earnings to measure street earnings and street exclusions. Using a sample of 55,519 firm-quarter observations from 1996 to 2005, they examine the ability of exclusions to predict one-year-ahead performance (GAAP earnings, Operating Income, Cash Flow from Operations and Free Cash flow). They find that exclusions are significantly and negatively correlated with these measures. By interacting street exclusions with board independence, they find that the association between street exclusions and future earnings is lower when the board is more independent, suggesting that managers are more likely to exclude recurring expenses from street earnings when boards are less independent.

Kolev et al. (2008) investigate the quality of pro forma exclusions around the regulatory events governing pro forma reporting by examining the association between pro forma exclusions and future operating income. They calculate total pro forma exclusions as I/B/E/S actual earnings less GAAP earnings. Using a sample of 104,954 firm-quarter observations from the second quarter of 1998 through the third quarter of 2004, they find that (1) pro forma exclusions are, on average, of higher quality following intervention by the SEC into pro forma reporting, and (2) firms that stopped releasing pro forma earnings numbers after the SEC intervention had lower quality exclusions in the pre-intervention period. These results are consistent with the SEC's objectives of improving the quality of pro forma earnings figures. However, when they decompose total exclusions into special items and other exclusions, they

find that the quality of special items has decreased in the post-intervention period, which suggests that managers adapted to the new disclosure environment by shifting more recurring expenses into special items. This suggests that there may be unintended consequences arising from the heightened scrutiny over pro forma reporting.

Before my discussion of the third group of press release pro forma earnings studies, let's return to the first group first, of which studies investigate the informativeness of press release pro forma earnings by examining the market reaction to the earnings announcement. Note that this group of studies is based on the assumption of rational investors and efficient market process, an examination of market reaction to earnings announcement is a joint test of (1) informativeness of press release pro forma earnings adjustment and (2) market efficiency assumption. Thus, a conclusion of informativeness (uninformativeness) of press release pro forma earnings based on a(an) significant (insignificant) association between press release pro forma earnings and abnormal returns is likely to be wrong if the market overreacts to (fails to anticipate) its information content at the time of earnings announcement (market mispricing). This issue can be addressed by examining the association between press release pro forma earnings and long-run equity value (or changes in values), which is classified as the third group of press release pro forma earnings studies. The rationale behind this approach is that although market may initially misprice press release pro forma earnings the information content of press release pro forma earnings will eventually arise and be priced by investors in the long-run. Notable studies in this group include Doyle et al. 2003; Gu and Chen 2004; and Lougee and Marquardt 2004.

Doyle et al. (2003) examine the association between pro forma exclusions and the market-adjusted future returns for one, two and three years subsequent to the earnings announcement, beginning two days after the announcement date. They find that the future one, two and three market-adjusted return is negatively related to the total exclusions, indicating that investors do not fully appreciate the lower cash flow implications of the total exclusions at the time of the earnings announcements. To complement the regression tests, they implement a trading strategy based on the total exclusions and that the trading strategy yields a large positive abnormal return in the years following the announcement, and persists after controlling for various risk factors and other anomalies. Overall, their result shows that although the market reacts negatively to exclusions in the announcement period, the reaction is not sufficient.

Gu and Chen (2004) examine the association between future abnormal returns 1 quarter, 1 year and 2 years following the earnings announcements and inclusions in and exclusions from street earnings. They find no evidence that the differential pricing between the included and excluded items leads to future abnormal returns, suggesting that the market reaction to the differential persistence of the included and excluded items is complete.

Lougee and Marquardt (2004) examine the ability of pro forma earnings to predict future returns to determine whether the investor response to pro forma earnings is complete at the time it is announced. They regress year-ahead, market adjusted returns from two days after the current earnings announcement through the announcement date of year-ahead earnings on both the GAAP earnings surprise and

pro forma earnings surprise. They find that pro forma earnings are, on average, not significantly correlated with future returns, although pro forma earnings are marginally significantly and negatively correlated with future returns when GAAP earnings informativeness is high and GAAP earnings surprises are negative. However, the power analysis using simulated data indicates that these results are sensitive to sample size and thus leave their findings inconclusive.

2.2.2. Related research on pro forma accounting disclosure for external use purpose – GAAP and SEC regulations

While there have been numerous papers investigating the usefulness of press release pro forma earnings for equity market investors, only a few studies provide empirical evidence on the usefulness of pro forma accounting disclosure under GAAP or SEC regulations. The only group of studies I am aware of focuses on pro forma compensation expenses under SFAS No. 123, including Bell et al. (2002), Aboody et al. (2004) and Aboody et al. (2006).

Bell et al. (2002) investigate the relation between share price and SFAS No. 123 expense, but only for 85 profitable firms in the computer software industry. They document a positive association between share price and SFAS No. 123 expense for these firms. However, Bell et al. (2002) obtain these inferences without controlling for the mechanical relation between share price and option value. After controlling for this mechanical relation, they find a negative, but insignificant relation between share price and their stock-based compensation expense variable. These findings are

consistent with SFAS No. 123 expense lacking relevance and reliability and with profitable computer software firms being different from other firms.

Aboody et al. (2004) investigate the relation between share price and stock-based compensation expense that is disclosed but not recognized under SFAS No. 123, after controlling for net income, equity book value, and expected earnings growth. Their instrumental variables approach control for the mechanical relation between share price and option values. They find that investors view SFAS No. 123 expense as an expense of the firm, and as sufficiently reliable to be reflected in their valuation assessments. Findings based on annual returns indicate SFAS No. 123 expense reflects on a timely basis changes in investor-perceived costs associated with stock-based compensation.

Aboody et al. (2006) focus on the four key option pricing model inputs – expected option life, expected stock price volatility, expected dividend yield, and the risk-free interest rate for the expected life of the option – this study finds that firms understate option value estimates and, thus, stock-based compensation expense disclosed under SFAS 123. As predicted based on incentives and opportunities for management to understate SFAS 123 expense, the understatement of option value estimates is increasing in proxies for the magnitude of the expense, is greater for firms with weaker corporate governance, and, to a lesser extent, is increasing in the excessiveness of executive pay. The findings are strongest for the expected option life and expected stock price volatility input assumptions, consistent with firms' greater latitude in determining these inputs. They find weaker evidence of understatement associated with the expected dividend yield assumption, and non for the interest rate

assumption, consistent with these inputs being less amenable to discretion. Taken together, their findings raise some concern that the exercise of management discretion adversely affects the overall reliability of SFAS 123 expense.

One important reason that not many empirical studies exist in the literature investigating the usefulness of pro forma accounting disclosure under either GAAP or SEC regulations, I conjecture, is that because these pro forma accounting disclosures are not recognized in historical financial statements, they are not assessable by empirical researchers via machine-readable databases like Compustat. Researchers have to hand-collect these data by themselves. Also, because these pro forma accounting data are mandated by GAAP or SEC regulations in various documents, such as the SEC form 10-K or S-1, it is not easy to control all noises that may bias the empirical findings in capital market research.

Nevertheless, an investigation of usefulness of pro forma accounting disclosure under GAAP or SEC regulations is interesting in itself. First, because pro forma financial statement is an alternative financial statement based on management's future expectations, it does not follow the regulation of historical financial statements and therefore is not audited by auditors. The reliability of this information depends on the accuracy of management's assumptions, the calculation of pro forma adjustments and the application of these adjustments to the preparation of pro forma financial statements. Obviously pro forma accounting data prepared *per se* are subject to management discretion. Second, although the reliability of pro forma accounting data under GAAP or SEC regulations will be disclosed in future periods when the particular transaction actually occurs, its hypothetical nature will decrease

management's political costs (but not economic costs) to disclose inaccurate pro forma accounting data. Managers thus incur lower costs to influence investors' understanding of firm performance by reporting inaccurate pro forma accounting data than by manipulating GAAP accounting data via, for example, high discretionary accruals.

The reliability concern of pro forma accounting data under GAAP or SEC regulations are also raised by practitioners. For example, before the issuance of SFAS No. 141, FASB collected feedbacks from practitioners with regard to the elimination of pro forma disclosures required by APB No. 16. Many of the respondents supported elimination of those disclosure requirements, arguing that the information provided has little value because it is based on hypothetical assumptions and mechanical computations (FASB 2001).

To address the issue of usefulness of pro forma accounting disclosure under Article 11 of Regulation S-X and accommodate the analysis empirically, I choose the initial public offering market as my equity market setting and hand-collect pro forma accounting figures from the IPO prospectus. A prospectus is Part 1 of the S-1 registration form an IPO firm files with the SEC and converts into 424B form after the IPO date. It contains financial statements and information about the offering, company background, risk factors, and auditors and underwriters involved in the issuance. SEC Regulations S-K and S-X govern the required disclosures (Beatty et al. 2000). Thus, managers are required to disclose pro forma accounting figure under Article 11 of Regulation S-X to address continuing effects of a particular transaction on firm performance.

Before turning on my empirical investigation on the usefulness of pro forma accounting information in IPO prospectuses, I need to address one more issue: the selection of pro forma accounting measures. Intuitively, as the bottom line items in pro forma balance sheet and income statement, pro forma earnings and pro forma book value of equity are ideal candidates. However, as noted earlier, pro forma balance sheet is required only when material transaction occurs after the most recent interim period. Thus, if a transaction occurs during the most recent fiscal year or between the most recent fiscal year and most recent interim period, a pro forma income statement is furnished but not a pro forma balance sheet.³ Therefore, I assign my candidate for pro forma accounting disclosure to pro forma earnings. For brevity, pro forma earnings are defined in this way in the rest of the thesis unless being defined otherwise.

2.3. Chapter summary

This chapter provides background of disclosing pro forma accounting information in the United States. In practice, pro forma accounting information is used by practitioners in three ways. First, pro forma accounting information has traditionally meant the preparation of pro forma financial statements by managers for the purpose of budgeting or to seek the approval of the company's board of a business plan. Second, since late 1990s, companies begin to voluntarily disclose pro forma earnings figures along with GAAP earnings in their earnings press releases by

³ In my sample of 827 IPO prospectuses that disclose pro forma earnings for the most recent fiscal year from 1997 to 2008, only 7 disclose pro forma balance sheet at the same time.

eliminating the effect of non-cash, non-recurring charges from core operating activities. Finally, pro forma accounting information is mandated by GAAP and SEC regulations to reflect a transaction or other development as if it had been in effect for a past period.

In academic, researchers have recently provided some evidence on the usefulness of pro forma accounting information for market investors; however, these studies concentrate on pro forma earnings voluntarily disclosed in company press releases and provide evidence for both informativeness and opportunism of this measure. In comparison, few studies have examined the usefulness of pro forma accounting information mandated under GAAP and SEC rules. The reasons, I conjecture, are due to (1) data inaccessibility and (2) difficulty to control for capital market noises. To address this concern, in this study, I choose initial public offering as a capital market setting and hand collect pro forma accounting data from IPO prospectuses. I focus on the pro forma income statement “bottom line” item – pro forma earnings and examine the characteristics and usefulness of this measure for investors in the IPO market.

CHAPTER 3

SAMPLE SELECTION AND DESCRIPTIVE EVIDENCE

3.1. Sample selection

To obtain a comprehensive sample of pro forma IPOs, I first downloaded an initial sample of all U.S. IPOs issued between January 1, 1997 and December 31, 2008 from Thomson Financial Securities Data Company database (SDC). This time frame was selected to ensure that all IPO prospectuses are available from the SEC's Electronic Data Gathering Analysis and Retrieval (EDGAR) system.⁴ I then eliminated regulated utility IPOs (SIC code between 4910 and 4942 inclusive) and financial IPOs (SIC codes between 6000 and 6999 inclusive)⁵ (1,106), IPOs filed on registration forms other than S-1 (511), IPOs with offer prices less than \$5 (4), IPOs not matched to a firm on the CRSP database or not covered by CRSP within 10 days following the offering date (31), and IPOs of other than ordinary or common shares (74).

This procedure yields a total of 1,860 IPOs. I next downloaded 424B forms of these IPOs and searched for the terms “pro forma/pro-forma/proforma” or “supplementary/supplemental/adjusted”. As outlined in Table 3-1, my initial search identifies 1,538 IPO prospectuses. Of these, 711 IPO prospectuses disclose pro forma

⁴ According to Ljungqvist and Wilhelm (2003), IPO registration forms are available on EDGAR website <http://www.sec.gov/edgar/searchedgar/companysearch.html> only since early May 1996.

⁵ Regulated utility and financial IPOs are removed because they have different regulations from other firms.

earnings adjustment related to only “below the bottom line” items, including reporting of pro forma adjustment related to extraordinary items, discontinued operations, cumulative effect of changes in accounting principles, dividends on preference shares, and the calculation of weighted average outstanding shares. Because my empirical tests require different pro forma earnings figures from GAAP earnings figures, I eliminated these pro forma IPO prospectuses from the final sample. Thus, the final sample consists of 827 IPO prospectuses that disclose pro forma earnings required under Article 11 of Regulation S-X from 1997 to 2008.

[Insert Table 3-1 here]

3.2. Descriptive evidence

I begin my analyses by providing descriptive evidence on characteristics and evolution of pro forma earnings disclosed in IPO prospectuses from 1997 through 2008.

3.2.1. Concentration of pro forma IPOs by industry and year

I first investigate the industries where pro forma IPOs are primarily concentrated. Figure 3-1 classifies my sample of pro forma IPOs by one-digit standard industry classification (SIC) codes. It is noted that the highest concentration of my sample pro forma IPOs, 42.2 percent, occurs in the service industries – both “personal and business services” and “professional services.” The next highest concentration of 31.2 percent occurs in the manufacturing industries – both “food,

paper, and chemicals manufacturing” and “machinery, electronics, and transportation manufacturing.” Figure 3-1 also compares the distribution of pro forma IPOs with the distribution of total IPOs. The two highest concentrations of total IPOs occur in the service industries (43.9 percent) and manufacturing industries (37.4 percent). In general, Figure 3-1 indicates that there is no major difference in the distribution pattern of pro forma IPOs and total IPOs included in my sample period across industries. While nearly 80 percent of IPOs falls into service and manufacturing industries, these two industries also accommodate more than 70 percent of pro forma IPOs.

[Insert Figure 3-1 here]

Next I investigate the temporal trends in pro forma IPOs by industry and focus on the two most common industry classifications (SIC 3 and SIC 7). Figure 3-2 plots the relative frequency of pro forma IPOs among the industry groupings for each year during 1997-2008. The relative frequency of pro forma IPOs in the machinery, electronics, and transportation manufacturing industry (SIC 3) remained relatively stable during this period and accounted for nearly 20 percent of all pro forma IPOs. The dramatic change occurred in the personal and business service industry (SIC 7). Although this industry accounted only for 27 percent of all pro forma IPOs in 1997, its firms released 53 percent of all pro forma IPO prospectuses in 1999. The relative frequency of pro forma IPOs in this industry then dramatically declined to 34 percent in 2000 and 26 percent in 2001. Starting from 2003, the percentage of pro forma IPOs

in personal and business service industry converged with that in the machinery, electronics, and transportation manufacturing industry and remained nearly 20 percent.

[Insert Figure 3-2 here]

Given the evidence regarding the industries where pro forma IPOs is most common, I also contrast the age of pro forma IPO firms with that of non-pro forma IPO firms included in my sample. I define the age of an IPO firm as the difference between the founding year and IPO issue-year, where I obtain the founding year of IPO firms from Professor Jay R. Ritter's website⁶. I find that pro forma IPO firms are, on average, more mature than non-pro forma IPO firms (mean age 20.65 years vs. 10.52 years). Figure 3 plots the average age of pro forma IPO firms and non-pro forma IPO for each year. It is noted that pro forma IPO firms are consistently older than non-pro forma IPOs during 1997-2008 (except for 2008). Figure 3-3 also indicates that the average age of both pro forma IPOs and non-pro forma IPOs decrease dramatically during 1999 and 2000, consistent with the evidence in the literature that during 1999 and 2000 (bubble period), a lot of young firms chose to go public (Loughran and Ritter 2004).

[Insert Figure 3-3 here]

⁶ <http://bear.cba.ufl.edu/ritter/foundingdates.htm>

3.2.2. Concentration of pro forma IPOs by pro forma time horizon and adjustment category

I first investigate the pro forma time horizon where pro forma IPOs are primarily concentrated. As illustrated in Figure 3-4, a transaction that calls for pro forma financial statements in an IPO prospectus can occur any time after the beginning of the most recent fiscal year just prior to IPO (fiscal year -1). Pro forma financial statements are prepared assuming the transaction occurs at the beginning of fiscal year -1. Defining the “pro forma” date as the beginning date of fiscal year -1 and ‘actual’ date as the date of which the transaction actually occurs, the pro forma time horizon is then the difference between the “pro forma” and “actual” date.

[Insert Figure 3-4 here]

The average pro forma time horizon of pro forma IPOs included in my sample during 1997-2008 is 15.22 months, indicating that on average the pro forma transaction occurs three months after the end of fiscal year -1. Figure 3-5 plots the concentrate of pro forma IPOs by the pro forma time horizon. It shows that the pro forma time horizon ranges between zero and twenty five months: 28 percent of pro forma transactions occurs within fiscal year -1; 69 percent of pro forma transactions occurs within fiscal year 0; 3 percent of pro forma transactions occurs within fiscal year 1.

[Insert Figure 3-5 here]

Next I investigate the concentration of pro forma IPOs by adjustment categories. I classify my sample of pro forma IPOs into the following categories:

- Mergers and Acquisitions (*M&A*)
- Use of IPO proceeds (*Proceeds*)
- Income tax benefits (provisions) (*Tax*)
- Recapitalization of debt structure (*Recapitalization*)
- New debt financing (*New Financing*)
- Sale of businesses (*Disposition*)
- Conversion of Convertible Notes (*Convertible Notes*)
- Reorganization (*Reorganization*)
- Autonomous transactions from parent company (*Independence*)
- Other specific adjustments (*Other*), including stock-related compensation, management fee elimination, agreement amendment, switch of capital to operating leases, sale leaseback, spin-off, asset sale and transfer, revision of compensation plans for consultants before the IPO, purchases of intangible assets, purchases of minority interests, roll-up transactions, capital stock transfers, and equity buyouts.

Because a single pro forma IPO prospectus can contain more than one adjustment category, the summary of adjustment categories are larger than the total number of pro forma IPOs. On average, one pro forma IPO prospectus contains about 2 adjustment categories. Figure 3-6 displays the relative frequency that pro forma IPO

firms used each type of these adjustment categories during 1997-2008. The chart indicates that the most commonly used adjustment is mergers and acquisitions (*M&A*), accounting for about 56 percent of all adjustments. The next two common adjustments are the use of IPO proceeds (*Proceeds*) and income tax benefits (provisions) (*Tax*), accounting for 20 percent and 8 percent, respectively, followed by recapitalization of debt structure (*Recapitalization*) of 5 percent. None of the rest adjustment categories account for more than 5 percent of the total adjustment categories.

[Insert Figure 3-6 here]

Figure 3-7 plots temporal trends in pro forma IPOs by adjustment category and focuses on the four most common adjustment categories (*M&A*, *Proceeds*, *Tax*, and *Recapitalization*). It is noted that the most dramatic change occurred in mergers and acquisitions (*M&A*). Although this adjustment category accounted for 51 percent of all pro forma IPOs in 1997, its relative frequency increased to 70 percent in 1999 and continued to climb up to 71 percent in 2000, before it dramatically decreased to 28 percent in 2004. It then gradually climbed up to 44 percent in 2008. The relative frequency of pro forma IPOs in *Proceeds* also fluctuated during 1997-2008 but was less dramatic: there was a decrease from 23 percent in 1997 to 12 percent in 1999, and then it gradually reversed to 22 percent in 2008. Figure 3-7 also indicates a stable evolution of pro forma IPOs of *Tax* and *Recapitalization*, both remaining around 7 percent and 6 percent of total pro forma IPOs during the period.

[Insert Figure 3-7 here]

3.2.3. The magnitude of pro forma earnings adjustment

I first investigate the magnitude of pro forma earnings adjustment by adjustment categories. Table 3-2 reports descriptive statistics regarding the relative size of these adjustments as a percentage of total assets at the beginning of the fiscal year -1. Note that the mean value of pro forma earnings adjustment across adjustment categories is significantly lower than the median value. Thus, all adjustment categories are skewed by extreme observations to the left. An examination of the medians of each category reveals that the largest adjustments, relative to total assets, occur in the following categories: (1) *Convertible Notes*, 2.2 percent, (2) *Recapitalization and Disposition*, both 1.3 percent, and (3) *Proceeds*, 0.8 percent. The rest of pro forma adjustment categories have negative pro forma earnings adjustment indicating an income-decreasing effect on historical GAAP earnings.

[Insert Table 3-2 here]

Next I decompose pro forma earnings adjustments based on the income statement adjusting items and examine the magnitude of each of them. Panel A of Figure 3-8 reports the magnitude of pro forma earnings adjustment by decomposed adjusting items. Panel A reveals that the largest absolute value of pro forma earnings adjustment occurs in *Income Tax Benefits (Provisions) Adjustment*, accounting for

673.6 percent of beginning total assets for fiscal year -1. The next two highest absolute values of pro forma earnings adjustment occur in *Depreciation and Amortization Expense Adjustment* and *Interest Income (Expense) Adjustment*, accounting for 487.8 and 352.8 percent of beginning total assets for fiscal year -1, respectively.

[Insert Panel A of Figure 3-8 here]

Given the evidence that more than half of my reported pro forma earnings adjustment by adjustment categories in Table 3-2 display an income-decreasing effect on historical GAAP earnings, I then investigate the magnitude of decomposed pro forma earnings adjustment items based on partitioned subsamples of positive and negative pro forma earnings adjustment. Panel B of Figure 3-8 reports the magnitude of decomposed items of positive pro forma earnings adjustment. Panel B reveals that most pro forma earnings adjustment in this subsample occurs in operating activities. The largest absolute value of pro forma earnings adjustment relative to beginning total assets occurs in *Gross Profit Adjustment* and *Selling, General & Administrative (SG&A) Expense Adjustment*.

[Insert Panel B of Figure 3-8 here]

Panel C of Figure 3-8 reports the magnitude of decomposed items of negative pro forma earnings adjustment. Panel C reveals that most pro forma earnings

adjustment in this subsample is related to *Depreciation and Amortization (D&A) Expense Adjustment*, which accounts for 714.6 percent of total assets. The result indicates that the main reason pro forma earnings adjustment has an income-decreasing effect on historical GAAP earnings is due to the expectation of more depreciation and amortization expenses arising from pro forma transactions.

[Insert Panel C of Figure 3-8 here]

Given the evidence that positive and negative pro forma earnings adjustment display different patterns in reaching pro forma earnings figure, I also investigate the trend in proportion of positive relative to negative pro forma earnings adjustment during 1997-2008, as reported in Figure 3-9. The preponderance finding is that the relative frequency of negative pro forma earnings adjustment consistently exceeds that of positive pro forma earnings adjustment during this period. The relative frequency of negative pro forma earnings adjustment relative to positive pro forma earnings adjustment is the highest in 1999 and 2000, when positive pro forma earnings adjustment accounts for nearly 40 percent of total pro forma earnings adjustment but negative pro forma earnings adjustment accounts for more than 60 percent.

[Insert Figure 3-9 here]

3.3. Chapter summary

This chapter discusses the sample selection process of this study and provides descriptive evidence on the characteristics and evolution of pro forma accounting disclosure in IPO prospectuses during 1997-2008. Using hand-collected pro forma accounting data from IPO prospectuses during 1997-2008, I first examine the temporal trend of pro forma accounting disclosure by industry and year and find that pro forma IPOs are more likely to occur in the service industry and increase significantly during the Internet bubble period (1999-2000). I also find that pro forma IPO firms are more mature than non-pro forma IPO firms. Then I examine some characteristics within the pro forma IPO group. I find that pro forma transactions are more likely to occur during the IPO year and related to mergers and acquisitions. Concentrating on a “bottom line item” of pro forma accounting data – pro forma earnings adjustment, I find that pro forma earnings adjustment has, on average, an income-decreasing effect on historical GAAP earnings. A decomposition of pro forma earnings adjustment indicates that positive pro forma earnings adjustment is more likely associated with gross profit and selling, general & administrative (SG&A) expenses, and negative pro forma earnings adjustment is more likely associated with depreciation and amortization (D&A) expenses.

CHAPTER 4

HYPOTHESIS DEVELOPMENT, RESEARCH DESIGN AND EMPIRICAL FINDINGS

4.1. Hypothesis development

4.1.1. Pro forma earnings adjustment and future financial performance (H1)

As stated in Article 11 of Regulation S-X, the objective of pro forma financial information is to provide investors with information about the continuing impact of a particular transaction by showing how it might have affected historical financial statements if the transaction had been consummated at an earlier time. The SEC, as the policymaker, believes that such statements should assist investors in analyzing the future prospects of the registrant because they illustrate the possible scope of the change in the registrant's historical financial position and results of operations caused by the transaction. To the extent that continuing effects of a particular transaction on firm performance will arise in future periods after the transaction actually takes place, and that pro forma earnings adjustment is sufficiently reliable to measure these effects, I expect a significant association between pro forma earnings adjustment and future financial performance. This discussion leads to my first hypothesis as follows:

H1: (The association between pro forma earnings adjustment and future firm performance) *Pro forma earnings adjustment being useful for investors, there is an*

expected significant association between pro forma earnings adjustment and future firm performance.

4.1.2. Pro forma earnings adjustment and IPO equity value (H2)

In the accounting literature, an accounting amount is defined as value relevant (and useful to equity market investors) if it has a predicted association with equity market values (Holthausen and Watts 2001; Barth et al. 2001). To the extent that pro forma earnings adjustment truly reflects future performance implications of a particular transaction, and that investors view pro forma earnings adjustments sufficiently reliable to measure these effects, I expect a significant association between pro forma earnings adjustment and IPO equity value. This discussion leads to my second hypothesis as follows:

H2: (The association between pro forma earnings adjustment and IPO equity value) *Pro forma earnings adjustment being useful for investors, there is an expected significant association between pro forma earnings adjustment and IPO equity value.*

4.1.3. Pro forma earnings adjustment and future stock returns (H3)

If the market's reaction on the first trading day following an IPO fully anticipates the future financial performance implications of pro forma earnings adjustment then there should be no significant relation between pro forma earnings adjustment and future stock returns. Alternatively, if the market fails to incorporate all the information from pro forma earnings adjustment then future stock returns will

have a predictable relation with pro forma earnings adjustment. This discussion leads to my third hypothesis as follows:

H3: (The association between pro forma earnings adjustment and future stock returns) *Pro forma earnings adjustment being useful for investors and the market being efficient, there is no expected association between pro forma earnings adjustment and future stock returns.*

4.2. Research design

4.2.1. Tests of pro forma earnings adjustment and future financial performance

(H1)

To test H1, I first run the OLS regressions of future financial performance measures on pro forma earnings adjustment controlling for other known determinants, based on the following models:

$$L(FGAAPNI) = a_0 + a_1NEG_PFEADJ + a_2LOSS_GAAPNI + a_3L(PFEADJ) + a_4L(PFEADJ)*LOSS_GAAPNI + a_5L(PFEADJ)*NEG_PFEADJ + a_6L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI + a_7L(GAAPNI) + a_8L(GAAPNI)*LOSS_GAAPNI + a_9L(TA) + a_{10}L(AGE) + YEAR_DUMMIES + INDUSTRY_DUMMIES + e,$$

$$L(FGAAPOI) = a_0 + a_1NEG_PFEADJ + a_2LOSS_GAAPNI + a_3L(PFEADJ) + a_4L(PFEADJ)*LOSS_GAAPNI + a_5L(PFEADJ)*NEG_PFEADJ + a_6L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI + a_7L(GAAPNI) +$$

$$\begin{aligned}
& a_8L(GAAPNI)*LOSS_GAAPNI + a_9L(TA) + a_{10}L(AGE) + \\
& YEAR_DUMMIES + INDUSTRY_DUMMIES + e, \\
L(FGAAPCFO) = & a_0 + a_1NEG_PFEADJ + a_2LOSS_GAAPNI + a_3L(PFEADJ) + \\
& a_4L(PFEADJ)*LOSS_GAAPNI + a_5L(PFEADJ)*NEG_PFEADJ + \\
& a_6L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI + a_7L(GAAPNI) + \\
& a_8L(GAAPNI)*LOSS_GAAPNI + a_9L(TA) + a_{10}L(AGE) + a_{11}L(TACC) \\
& + YEAR_DUMMIES + INDUSTRY_DUMMIES + e, \\
L(FGAAPFCF) = & a_0 + a_1NEG_PFEADJ + a_2LOSS_GAAPNI + a_3L(PFEADJ) + \\
& a_4L(PFEADJ)*LOSS_GAAPNI + a_5L(PFEADJ)*NEG_PFEADJ + \\
& a_6L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI + a_7L(GAAPNI) + \\
& a_8L(GAAPNI)*LOSS_GAAPNI + a_9L(TA) + a_{10}L(AGE) + a_{11}L(TACC) \\
& + YEAR_DUMMIES + INDUSTRY_DUMMIES + e.
\end{aligned}$$

I consider four measures of future financial performance as dependent variables, including two earnings variables and two cash flow variables. *FGAAPNI*, GAAP earnings, my main dependent variable, is defined as earnings before extraordinary items and discontinued operations from cash flow statement (COMPUSTAT item IBC) averaged over three years following the completion of pro forma transaction. However, GAAP earnings often include earnings that are arising from activities other than operating activities (such as financing or investing activities). Because pro forma earnings adjustment arising from financing and investing activities is, on average, fixed savings or charges (such as interest income or expenses), and thus calculatedly mechanically (according to effective interest rate), a systematic relation between pro forma earnings adjustment and future GAAP

earnings might not be reflective of possible misuse of pro forma earnings adjustment from operating activities which is believed to be more opportunistic (Richardson et al., 2005). As a consequence, I also consider *FGAAPOI* as dependent variable, which is defined as operating income after depreciation (OIADP) averaged over three years following the completion of pro forma transaction. As Doyle et al. (2003) argue that future cash flows have some desirable features compared with earnings as relevant benchmark for “useful” information mainly because they are uninfluenced by more traditional forms of earnings management by manipulating accruals. I also consider two cash flow measures, *FGAAPCFO* and *FGAAPFCF* as dependent variables. *FGAAPCFO* is defined as cash flow from operations (OANCF) averaged over the three years following the completion of pro forma transaction. *FGAAPFCF* is defined as cash flow from operations less capital expenditure (CAPX) averaged over the three years following the completion of pro forma transaction.

The variable of interest in the models, *PFEADJ*, is defined as the difference between pro forma earnings and GAAP earnings for the year just prior to the IPO. Since prior studies indicate that negative earnings are likely to be more transitory than positive earnings due to the abandonment option (Hayn, 1995) and that firms tend to be conservative with regard to bad news (Basu, 1997), I differentiate positive from negative pro forma earnings adjustment using the dummy variable approach. *NEG_PFEADJ* is an indicator variable equal to one if *PFEADJ* is negative, and zero otherwise.

The control variables and their predicted relations with dependent variables are discussed as follows: *GAAPNI* is defined as earnings before extraordinary items

and discontinued operations (IBC) for the year just prior to IPO. As the accrual accounting is designed to do, I expect a positive association between *GAAPNI* and all dependent variables. I also use dummy variable approach to differentiate positive from negative GAAP earnings. *LOSS_GAAPNI* is an indicator variable equal to one if *GAAPNI* is negative, and zero otherwise. Furthermore, I also include interaction variables between *PFEADJ* and *LOSS_GAAPNI* to address any different impacts of positive and negative GAAP earnings on pro forma earnings adjustment in predicting future financial performance.

$L(TA)$ and $L(AGE)$ are the logarithm of 1 plus total assets at the end of the year just prior to IPO and the logarithm of 1 plus the difference between the founding year and IPO issue-year, respectively. I obtain founding dates of IPO firms from Professor Jay R. Ritter's website.⁷ As firm performance is affiliated with its operating stages, a company at the growth stage is more likely to have lower earnings than a company at the mature stage, as it spends more on expansion. Thus, I expect both $L(TA)$ and $L(AGE)$ are positively associated with all dependent variables.

For regressions with future cash flows as dependent variables, I include an additional variable, *TACC*, defined as earnings before extraordinary items and discontinued operations from cash flow statement (IBC) less cash flow from operations (OANCF) for the year just prior to IPO. As Dechow (1994), Dechow et al. (1998), and Barth et al. (2001) show that current period accruals predict future cash flows (as the accounting model is designed to do), I expect *TACC* is negatively associated with future cash flows.

⁷ <http://bear.cba.ufl.edu/ritter/foundingdates.htm>

Finally, to mitigate heteroskedasticity problem, I use the logarithm transformation. $L(\cdot)$ indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$.

I next decompose pro forma earnings adjustment based on income statement lines and rerun the regression models to examine the association between each component of pro forma earnings adjustment and future financial performance. These decomposed pro forma earnings adjustment components are defined as follows:

GPADJ is pro forma adjustment related to gross profit. *SGAADJ* is pro forma adjustment related to selling, general & administrative expenses. *RDADJ* is pro forma adjustment related to research & development expenses. *DAADJ* is pro forma adjustment related to depreciation & amortization expenses. *INTADJ* is pro forma adjustment related to interest income (loss). *OTHERADJ* is pro forma adjustment related to other income (loss). *TAXADJ* is pro forma adjustment related to income tax benefits (provisions). The control variables are defined the same as in the model on aggregated pro forma earnings adjustment.

4.2.2. Tests of pro forma earnings adjustment and IPO equity value (H2)

To test H2, I first run the OLS regressions of the IPO offer and first trading day market value on pro forma earnings adjustment controlling for other known determinants, based on the following models:

$$L(OV) = a_0 + a_1NEG_PFEADJ + a_2LOSS_GAAPNI + a_3L(PFEADJ) + a_4L(PFEADJ)*LOSS_GAAPNI + a_5L(PFEADJ)*NEG_PFEADJ +$$

$$\begin{aligned}
& a_6L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI + a_7L(GAAPNI) + \\
& a_8L(GAAPNI)*LOSS_GAAPNI + a_9L(BV) + a_{10}L(DACC) + a_{11}L(TA) + \\
& a_{12}L(AGE) + a_{13}RETENTION + a_{14}UWRANK + a_{15}BOOM + a_{16}CRASH + \\
& a_{17}TECH + a_{18}INTERNET + e,
\end{aligned}$$

$$\begin{aligned}
L(MV) = & a_0 + a_1NEG_PFEADJ + a_2LOSS_GAAPNI + a_3L(PFEADJ) + \\
& a_4L(PFEADJ)*LOSS_GAAPNI + a_5L(PFEADJ)*NEG_PFEADJ + \\
& a_6L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI + a_7L(GAAPNI) + \\
& a_8L(GAAPNI)*LOSS_GAAPNI + a_9L(BV) + a_{10}L(DACC) + a_{11}L(TA) + \\
& a_{12}L(AGE) + a_{13}RETENTION + a_{14}UWRANK + a_{15}BOOM + a_{16}CRASH + \\
& a_{17}TECH + a_{18}INTERNET + e.
\end{aligned}$$

The dependent variables are *OV* and *MV*, defined as the offer and the first trading day price multiplied by shares outstanding on completion of IPO, respectively. As Aggarwal et al. (2009) argue, all candidates for dependent variables in the specification of an IPO valuation model in the literature have their own limitations. For example, the offer price or first-day closing price per share deflated by earnings per share (Kim and Ritter 1999; Purnanandam and Swaminathan 2004) leads to the elimination of firms with negative values of earnings and reduces the generalizability of the findings. Also, the offer price or first-day closing price per share (Klein 1996; Bartov et al. 2002) is deficient on theoretical and empirical grounds given the fact that the true economic variable being priced in the IPO process is total value of equity. Underwriters partition total equity value into an arbitrary number of shares, which itself is correlated with value. To remove the arbitrary effect of number of shares issued, Aggarwal et al. (2009) recommend the usage of total IPO value as the

dependent variable and the log transformation to address heteroskedasticity problem afflicted with it. In consistent with Aggarwal et al. (2009) recommendation, I log transformed offer and first trading day market value proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $-L(W) = -\log_e(1-W)$ when $W < 0$. I also apply logarithm transformation to all independent variables to be consistent with this treatment.

The variable of interest in the models, *PFEADJ*, is defined as the difference between pro forma earnings adjustment and GAAP earnings for the year just prior to IPO. Aggarwal et al. (2009) find a v-shaped relation between IPO equity value and earnings. While income of IPOs with positive earnings is correlated with value positively, income of IPOs with negative earnings is correlated with value negatively. To address possible different IPO equity value implications arising from positive and negative pro forma earnings adjustment, I use dummy variable approach to differentiate positive from negative pro forma earnings adjustment.

The control variables and their predicted relations with $L(OV)$ and $L(MV)$ are discussed below. *GAAPNI* and *BV* are GAAP earnings and book value of equity for the year just prior to IPO. Prior research has shown that both GAAP earnings and book value of equity are significantly associated with IPO equity value. For example, Klein (1996) examines the relationship between the price per share (at the offer date and at the end of the first day of trading) and various variables for a sample of 193 IPOs with positive pre-IPO income from the year 1980 to 1991. She finds that the price per share is positively related to pre-IPO earnings per share and pre-IPO book value of equity per share. I also use dummy variable approach to differentiate positive from negative GAAP earnings and include interaction variables between *PFEADJ*

and *LOSS_GAAPNI* to address any different impacts of positive and negative GAAP earnings on pro forma earnings adjustment in explaining IPO equity value.

DACC is defined as abnormal accruals, computed as the difference between total accruals (*TACC*) and estimated normal accruals for the year just prior to IPO, where normal accruals are estimated using a non-linear Jones model suggested by Ball and Shivakumar (2008): $TACC = a_0 + a_1XSALES + a_2FASSET + a_3CFO + a_4DCFO + a_5DCFO*CFO + e$. Model parameters are estimated separately for each IPO firm from a cross-sectional of all non-IPO listed firms in its 2-digit SIC with data for the year just prior to IPO. Only industry-years with at least 10 observations are considered. *TACC* is total accruals, defined as the difference between earnings before extraordinary items and discontinued operations from cash flow statement (IBC) less cash flow from operations (OANCF) for the year just prior to IPO; *XSALES* is change in sales (*SALE*) for the year just prior to IPO; *FASSET* is book value of fixed assets (*PPEGT*) for the year just prior to IPO; *CFO* is cash flow from operations (OANCF) for the year just prior to IPO; *DCFO* takes the value 1 if $CFO < 0$ and 0 otherwise. All continuous variables are scaled by beginning total assets and trimmed 1% on both extremes.

Prior studies find that IPOs with high positive issue-year earnings and abnormal accruals have poor long-run earnings and negative abnormal accruals and experience poor long-run stock return performance, suggesting that opportunistic earnings management partially explains the mispricing of IPOs (Teoh et al. 1998a, 1998b). On contrary, recent evidence provided in the literature indicates that although IPO issuers advancing accruals to increase reported earnings in the issuing year,

investors are not systematically fooled by such window-dressing behavior (Fan 2007). Also, the findings of managers opportunistically inflate earnings by prior studies may be due to substantial endogenous effects of the IPO and do not constitute evidence of earnings management (Ball and Shivakumar 2008). The authors show that IPO firms generally exhibit negative pre-IPO current accruals and significant conditional conservatism, inconsistent with opportunistic earnings inflation. Given the mixed evidence on earnings management at IPOs, I do not expect any sign of association between pre-IPO abnormal accruals and $L(OV)$ and $L(MV)$.

TA and AGE , are total assets at the end of the year just prior to IPO and the difference between the founding year and IPO issue-year, respectively. As two important measures for firm riskiness (Fama and French 1992, 1993), firm size and age are expected to be positively associated with $L(OV)$ and $L(MV)$.

$RETENTION$ represents insider retention measured by the number of shares held by shareholders prior to the IPO divided by total shares outstanding after the IPO. Prior research has found that $RETENTION$ is positively associated with IPO value possibly because (1) stocks with less supply are likely to be priced higher (Shleifer 1986), (2) greater relative insider ownership is a positive signal to investors indicating that the IPO is not simply a vehicle for the founders to bail out (Leland and Pyle 1977; Shultz and Zaman 2001), or (3) greater insider ownership may point to lower agency costs, as the interests of managers and shareholders are better aligned (Aggarwal et al. 2009). Consistent with findings in the literature, I expect $RETENTION$ is positively associated with $L(OV)$ and $L(MV)$.

UWRANK represents the underwriter prestige ranking based on Loughran and Ritter (2004). Titman and Trueman (1986) posit that firms expecting relatively high growth or low risk in earnings and/or revenues will signal this favorable information to outside investors by selecting a more “prestigious” underwriter, who would present more accurate prospectuses than a less prestigious underwriter. This implies that, other things being equal, hiring a large underwriter will result in a higher valuation of the IPO. Klein (1996) provides empirical support for this hypothesis. I expect a positive association between *UWRANK* and $L(OV)$ and $L(MV)$.

BOOM, *CRASH*, *TECH*, and *INTERNET* are dichotomous variables, where *BOOM* is coded as 1 if IPO is completed between January 1997 and March 2000, and 0 otherwise; *CRASH* is coded as 1 if IPO is completed between April 2000 and December 2001, and 0 otherwise; *TECH* is coded as 1 if the IPO firm is a technology firm, and 0 otherwise; *INTERNET* is coded as 1 if the IPO firm is an Internet firm, and 0 otherwise. Technology firms are classified based on definitions in Loughran and Ritter (2004). I obtain the list of Internet firms from Professor Jay R. Ritter’s website.⁸ Prior research has found that IPO valuation varies across periods and industries. Aggarwal et al. (2009) propose that during the Internet bubble period and post-bubble period IPOs are priced higher because of the lower cost of capital. Hand (2003) examines a sample of 116 Internet IPOs from the years 1997-1999 whose pre-IPO book value of equity is positive and income before nonrecurring items is negative. Using a logarithmic specification, he finds that IPO valuation (based on offer price and first-day closing price) is positively and linearly related to the pre-

⁸ <http://bear.cba.ufl.edu/ritter/ipodata.htm>

income book value of equity, but negatively and concavely related to income before nonrecurring items. Bartov et al. (2002) focus on the valuation of 98 Internet IPOs and 98 offer-date and size-matched non-Internet IPOs that were completed during 1996-1999. For Internet IPOs, they find that cash flows, sales, and sales growth are significantly related to offer prices (at the filing date and at the offer date). In contrast, earnings, book value of equity, and R&D per share do not bear a significant association to offer prices. Cash flows and earnings bear an asymmetric relation with offer prices—when they are positive, they are positively related to offer prices; when they are negative, they are negatively related to prices. Consistent with findings in the literature, I expect all dummy variables are positively associated with $L(OV)$ and $L(MV)$.

I next decompose pro forma earnings adjustment based on income statement lines and rerun the regression models to examine the association between each component of pro forma earnings adjustment and IPO equity value. All these decomposed pro forma earnings adjustment components are defined the same as before in section 4.2.1.

4.2.3. Tests of pro forma earnings adjustment and future stock returns (H3)

To test H3, I first run the OLS regression of post-IPO stock returns on pro forma earnings adjustment and a set of control variables, based on the following model.

$$BH_Y1 = a_0 + a_1NEG_PFEADJ + a_2LOSS_GAAPNI + a_3L(PFEADJ) + a_4L(PFEADJ)*LOSS_GAAPNI + a_5L(PFEADJ)*NEG_PFEADJ +$$

$$\begin{aligned}
& a_6L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI + a_7L(GAAPNI) + \\
& a_8L(GAAPNI)*LOSS_GAAPNI + a_9L(BV) + a_{10}L(DACC) + a_{11}L(TA) + \\
& a_{12}L(AGE) + a_{13}RETENTION + a_{14}UWRANK + a_{15}BOOM + a_{16}CRASH + \\
& a_{17}TECH + a_{18}INTERNET + a_{19}MKT_Y1 + a_{20}L(MV) + a_{21}L(BV/MV) + \\
& a_{22}IR + e,
\end{aligned}$$

$$\begin{aligned}
BH_Y3 = & a_0 + a_1NEG_PFEADJ + a_2LOSS_GAAPNI + a_3L(PFEADJ) + \\
& a_4L(PFEADJ)*LOSS_GAAPNI + a_5L(PFEADJ)*NEG_PFEADJ + \\
& a_6L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI + a_7L(GAAPNI) + \\
& a_8L(GAAPNI)*LOSS_GAAPNI + a_9L(BV) + a_{10}L(DACC) + a_{11}L(TA) + \\
& a_{12}L(AGE) + a_{13}RETENTION + a_{14}UWRANK + a_{15}BOOM + a_{16}CRASH + \\
& a_{17}TECH + a_{18}INTERNET + a_{19}MKT_Y3 + a_{20}L(MV) + a_{21}L(BV/MV) + \\
& a_{22}IR + e,
\end{aligned}$$

$$\begin{aligned}
BH_Y5 = & a_0 + a_1NEG_PFEADJ + a_2LOSS_GAAPNI + a_3L(PFEADJ) + \\
& a_4L(PFEADJ)*LOSS_GAAPNI + a_5L(PFEADJ)*NEG_PFEADJ + \\
& a_6L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI + a_7L(GAAPNI) + \\
& a_8L(GAAPNI)*LOSS_GAAPNI + a_9L(BV) + a_{10}L(DACC) + a_{11}L(TA) + \\
& a_{12}L(AGE) + a_{13}RETENTION + a_{14}UWRANK + a_{15}BOOM + a_{16}CRASH + \\
& a_{17}TECH + a_{18}INTERNET + a_{19}MKT_Y5 + a_{20}L(MV) + a_{21}L(BV/MV) + \\
& a_{22}IR + e.
\end{aligned}$$

The dependent variable BH_Y1 , BH_Y3 and BH_Y5 are the buy-and-hold raw one, three or five year return, measured from the first aftermarket closing price to the earlier of the one, three or five-year anniversary or its CRSP delisting date.

The variable of interest in the models, *PFEADJ*, is defined as the difference between pro forma earnings adjustment and GAAP earnings for the year just prior to IPO. Consistent with previous treatment in testing H1 and H2, I use dummy variable approach to differentiate positive from negative pro forma earnings adjustment to address possible different post-IPO stock return implications arising from positive and negative pro forma earnings adjustment.

In addition to include all control variables in regressions of H2, I also include other control variables that are found to be significantly associated with post-IPO stock returns. These control variables and their predicted relations with the dependent variables are discussed below. *MKT_Y1*, *MKT_Y3* and *MKT_Y5* are the buy-and-hold CRSP value-weighted market return for the same return interval as *BH_Y1*, *BH_Y3* and *BH_Y5*. *MV* is market value of equity, defined as stock price times shares outstanding on the first trading day. *BV/MV* is logarithm of book value of equity for fiscal year -1 scaled by market value of equity on the first trading day. *MKT*, *MV* and *BV/MV* are used to proxy for Fama and French three factors that are widely recognized in the literature to be associated with the variation of long-run cross-sectional stock returns (Fama and French 1992, 1993). Consistent with the literature, I expect *MKT* and *BV/MV* are positively associated with *BH*, and *MV* is negatively associated with *BH*.

IR is the difference between offer price and first trading day closing price scaled by offer price. As Ritter and Welch (2002) noted, there is a reversal of the highest first-day returns in the long run for non-penny-stock IPOs when the Internet bubble period is included in the sample. Almost all of the IPOs from 1999 to 2000

with large first-day returns have subsequently collapsed. Since my sample period largely overlaps with the Internet bubble period, I therefore include *IR* as one of my control variables and expect it to be negatively associated with *BH*.

I next decompose pro forma earnings adjustment based on income statement lines and rerun the regression models to examine the association between each component of pro forma earnings adjustment and post-IPO stock returns. All these decomposed pro forma earnings adjustment components are defined the same as before.

The cross-sectional regression test is an excellent way to test for return anomalies while controlling for risk factors and other known anomalies. However, to implement an investment strategy that would replicate the returns implied by the coefficients the portfolio would have to take a small positive or negative position in every firm. Moreover, the regression imposes a linear relation across the entire range of data that may not correspond to the true relation between the ranked independent variables and future returns (Doyle et al. 2003). To complement the regression tests, I also examine the future returns of portfolios formed by sorting firms into quintiles of partitioned pro forma earnings adjustment. The average post-IPO one, three or five year abnormal returns calculated using alternative methods and relative to different benchmarks are then computed for each quintile and examined for systematic variation across the quintiles. A monotonic variation in the abnormal returns across the quintiles would provide evidence of a significant association between pro forma earnings adjustment and post-IPO stock return.

To implement the portfolio analysis, I need an appropriate measure and benchmark of computing abnormal return. Many studies on long-run performance report buy-and-hold returns (BH), because they are most relevant for an investor. But Fama (1998) raises a set of concerns about the use of BH returns in long-run performance studies. In particular, buy-and-hold returns are problematic because their distribution is skewed, small initial differences can be exaggerated through compounding, and time-period overlap introduces cross-correlation problems. Therefore, I report both cumulative abnormal return (CAR) and BH portfolio returns. Specifically, cumulative abnormal returns,

$$CAR_T \equiv \sum_{t=1}^T \left[\frac{1}{N} \sum_{i=1}^N (r_{i,t} - m_t) \right],$$

where $r_{i,t}$ and m_t are monthly raw and benchmark returns, are statistics computed from the event time-series of firm-average monthly abnormal returns and N is the number of surviving firms in month t . Buy-and-hold abnormal returns,

$$BH_T \equiv \frac{1}{N} \sum_{i=1}^N \left[\prod_{t=1}^T (1 + r_{i,t}) - \prod_{t=1}^T (1 + m_t) \right]$$

(when sample firm returns are missing, both $r_{i,t}$ and m_t are set to zero), are statistics computed from the cross-section of multimonth returns net of multimonth benchmark returns.

Fama (1998) further point out that long-horizon inference can be sensitive to equilibrium expected return model specification. Given the controversy about the acceptable measure for long-run performance, I report abnormal long-run returns using a variety of benchmarks (value weighted market-adjusted, equally weighted

market-adjusted, value weighted size and book-to-market-adjusted, and equally weighted size and book-to-market-adjusted). The value (equally) weighted market returns are obtained from CRSP. To construct the matched size and book-to-market portfolio, I first downloaded the size and book-to-market quintile break points from Professor Kenneth R. French's website⁹ and then formed 25 size and book-to-market portfolios by intersecting the portfolios and allocating all NYSE, Amex and NASDAQ firms (excluding the IPO firms) to be included in these portfolios. Such benchmark portfolios were reformed for each year. A value (equally) weighted returns of all firms in a given portfolio was calculated and used as the benchmark return. For the IPO firms, I calculated the market value of equity on the first trading day. The book-to-market ratio in the IPO year was the book value of equity for the year just prior to IPO divided by market value of equity on the first trading day.

4.3. Empirical findings

4.3.1. Tests of pro forma earnings adjustment and future financial performance (H1)

4.3.1.1. Univariate analysis

Table 4-1 presents descriptive statistics for each of the variables used in the future financial performance tests (H1). The sample period is trimmed to 1997-2003 to make sure post-IPO five year stock return is available from CRSP. A comparison between future GAAP earnings and operating income indicates that IPO firms, on average, are active in conducting financing and investing activities after going public,

⁹ http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

as evidenced by a much smaller GAAP earnings than operating income in post-IPO periods. A similar pattern can be also observed from a comparison of future cash flow from operations and free cash flows; the mean and median future free cash flow (\$-9.16 mil and \$-3.17 mil) are much smaller than the mean and median future cash flow from operations (\$46.30 mil and \$5.52 mil), suggesting that IPO firms, on average, are active in spending after going public. In addition, both mean and median of pro forma earnings adjustment are negative (\$-2.75 mil and -0.35 mil), suggesting that pro forma earnings adjustment, in general, has an income-decreasing effect on historical GAAP earnings. It is also noted that all financial statement variables are not normally distributed (skewness not equal to 0, kurtosis larger than 3). To mitigate heteroskedasticity problem, I use the logarithm transformation proposed by Hand (2003) in future empirical tests: $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$.

[Insert Table 4-1 here]

Panel A of Table 4-2 presents the Pearson and Spearman correlation matrix among the dependent and independent variables used in tests of H1. As the variable of interest, I find that pro forma earnings adjustment is positively correlated with future GAAP earning (the Pearson correlation coefficient, ρ , is 0.206), future operating income ($\rho = 0.216$), future operating cash flow from operations ($\rho = 0.186$) and future free cash flows ($\rho = 0.146$). The positive correlation between pro forma

earnings adjustment and future performance measures indicates that pro forma earnings adjustment has a strong predictive ability for future firm performance. In addition, the dummy variable for negative pro forma earnings adjustment is negatively correlated with future GAAP earning ($\rho = -0.182$), future operating income ($\rho = -0.218$), future operating cash flow from operations ($\rho = -0.193$) and future free cash flows ($\rho = -0.136$). The opposite sign of correlation suggests that positive and negative pro forma earnings adjustment may have different implications to predict future financial performance.

As for control variables, a similar pattern is also found between GAAP earnings and dependent variables: GAAP earnings is positively correlated with future GAAP earning ($\rho = 0.608$), future operating income ($\rho = 0.572$), future operating cash flow from operations ($\rho = 0.479$) and future free cash flows ($\rho = 0.464$), whereas the dummy variable for negative GAAP earnings is negatively correlated with future GAAP earning ($\rho = -0.513$), future operating income ($\rho = -0.493$), future operating cash flow from operations ($\rho = -0.415$) and future free cash flows ($\rho = -0.378$). I also find that both firm size and firm age are positively and significantly correlated with future financial performance measures while total accruals are found to be negatively and significantly correlated with future financial performance measures.

[Insert Panel A of Table 4-2 here]

4.3.1.2. Empirical results

I first run the cross-sectional regression model on aggregated pro forma earnings adjustment. Panel A of Table 4-3 presents the regression results; the dependent variables are future GAAP earnings $L(FGAAPNI)$, future operating income $L(FGAAPOI)$, future cash flow from operations $L(FGAAPCFO)$, and future free cash flows $L(FGAAPFCF)$.

The estimates show that pro forma earnings adjustment $L(PFEADJ)$ is positively associated with $L(FGAAPOI)$ and $L(FGAAPFCF)$ and negatively associated with $L(FGAAPNI)$ and $L(FGAAPCFO)$; however, none of the coefficients are statistically significant at conventional levels. The insignificant association between $L(PFEADJ)$ and all dependent variables indicates that positive pro forma earnings adjustment of IPO firms with positive GAAP earnings provides no significant information in forecasting the firm's future performance. In addition, the interaction variable $L(PFEADJ)*LOSS_GAAPNI$ is positively and significantly associated with all dependent variables, suggesting that positive pro forma earnings adjustment of IPO firms with negative GAAP earnings provides statistically more important information in forecasting the firm's future performance than IPO firms with positive GAAP earnings. Finally, both interaction variables $L(PFEADJ)*NEG_PFEADJ$ and $L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI$ are insignificantly associated with all dependent variables. The results provides evidence that negative pro forma earnings of IPO firms with both positive and negative GAAP earnings provides no statistically more important information in forecasting the firm's future performance than positive pro forma earnings of IPO firms with positive GAAP earnings.

As for control variables, GAAP earnings $L(GAAPNI)$ is positively and significantly associated with $L(GAAPNI)$, $L(FGAAPOI)$ and $L(FGAAPFCF)$, consistent with the literature that GAAP earnings provides persistent earnings and cash flow information into the future. It is also noted that the interaction variable $L(GAAPNI)*LOSS_GAAPNI$ is positively and significantly associated with $L(FGAAPOI)$ and $L(FGAAPFCF)$, suggesting that negative GAAP earnings is significantly more persistent than positive GAAP earnings in predicting earnings and cash flows generated from operating activities. Finally, $L(TA)$ is positively and significantly associated with $L(FGAAPNI)$, $L(FGAAPOI)$ and $L(FGAAPCFO)$, indicating that larger IPO firms are more profitable than smaller IPO firms. $L(AGE)$ is positively associated with all dependent variables but only marginally significant when $L(FGAAPCFO)$ is the dependent variable. $L(TACC)$ is negatively and significantly associated with $L(FGAAPCFO)$ and $L(FGAAPFCF)$, indicating that current total accruals will reverse in future periods leading to smaller cash flows.

[Insert Panel A of Table 4-3 here]

As shown in the correlation table, multicollinearity is a potential problem when running multivariate regressions in this study. The untabulated variance inflation factors (VIFs) of regression models of H1 provide evidence of multicollinearity among the independent variables: the largest VIF on independent

variables is above the rule of 10 as a sign of severe multicollinearity (O'Brien 2007)¹⁰. In the presence of multicollinearity, the estimate of one independent variable's impact on the dependent variable while controlling for the others tends to be less precise than if predictors were uncorrelated with one another. One of the features of multicollinearity is that the standard errors of the affected coefficients tend to be large. In that case, the test of the hypothesis that the coefficient is equal to zero against the alternative that it is not equal to zero leads to a failure to reject the null hypothesis. To mitigate multicollinearity problem, I partition the total sample into four subsamples based on different signs of pro forma earnings adjustment and GAAP earnings. Panel B1-B4 of Table 4-3 present the regression results.

Starting from Panel B1 of Table 4-3, where the subsample contains IPO firms with positive pro forma earnings adjustment and positive GAAP earnings, the estimation results show that $L(PFEADJ)$ is positively and significantly associated with $L(FGAAPOI)$, $L(FGAAPCFO)$, and $L(FGAAPFCF)$, suggesting that positive pro forma earnings adjustment provides important information in predicting the firm's future earnings and cash flow performance. As for control variables, all of them have the similar associations with dependent variables as in the regression on total sample. The only exception is $L(TA)$, which is negatively and significantly associated with both $L(FGAAPCFO)$ and $L(FGAAPFCF)$, indicating that larger IPO firms with both positive pro forma earnings and GAAP earnings exhibit less cash flows than smaller IPO firms.

¹⁰ For brevity, VIF numbers are not discussed in subsequent regression analyses. Unless being reported separately, VIF results of these analyses provide no evidence of multicollinearity.

Next let's look at Panel B2 of Table 4-3, which contains IPO firms with positive pro forma earnings adjustment and negative GAAP earnings. It is noted that $L(PFEADJ)$ is positively and significantly associated with all dependent variables, indicating that positive pro forma earnings adjustment is important in forecasting the firm's future performance. As for control variables, all of them have the similar associations with dependent variables as in the regression on total sample.

Moving from Panel B2 to Panel B3 of Table 4-3, where IPO firms with negative pro forma earnings adjustment and positive GAAP earnings are considered, $L(PFEADJ)$ is found to be insignificantly associated with $L(FGAAPOI)$, $L(FGAAPCFO)$, and $L(FGAAPFCF)$, suggesting that negative pro forma earnings adjustment provides no important information for future performance forecast. As for control variables, all of them have the similar associations with dependent variables as in the regression on total sample.

Finally, Panel B4 of Table 4-3 provides regression result for the subsample of IPO firms with both negative pro forma earnings adjustment and GAAP earnings. The coefficients of $L(PFEADJ)$ are found to be insignificant for $L(FGAAPOI)$, $L(FGAAPCFO)$, and $L(FGAAPFCF)$, and marginally significant for $L(FGAAPNI)$, suggesting that negative pro forma earnings adjustment provides no important information for future performance forecast. As for control variables, all of them have the similar associations with dependent variables as in the regression on total sample. The only exception is $L(AGE)$, which is found to be positively and significantly associated with all dependent variables, indicating that more mature IPO firms with

both negative pro forma earnings and GAAP earnings are more profitable than younger IPO firms.

[Insert Panel B1-B4 of Table 4-3 here]

I next run the cross-sectional regression model on decomposed pro forma earnings adjustment. Table 4-4 presents the regression results. The estimation results show that both $L(GPADJ)$ and $L(SGAADJ)$ are positively associated with all dependent variables and significant when the dependent variables are $L(FGAAPNI)$, $L(FGAAPOI)$ and $L(FGAAPCFO)$, indicating that pro forma adjustment related to gross profit and selling, general & administrative expenses provide important information in forecasting future financial performance. $L(DAADJ)$ is also found to be positively and significantly associated with $L(FGAAPNI)$, $L(FGAAPOI)$ and $L(FGAAPFCF)$, providing evidence that pro forma adjustment related to depreciation & amortization expenses provide important information in forecasting future financial performance. In addition, $L(TAXADJ)$ is found to be negatively and significantly associated with $L(FGAAPNI)$, $L(FGAAPOI)$ and $L(FGAAPFCF)$, providing evidence that pro forma adjustment related to income tax benefits (provisions) is useful in future performance forecast. Note that the association is negative, suggesting that if an IPO firm reports higher income tax provisions, the firm is expected to have higher earnings and cash flows in future periods. As for control variables, all of them have the similar associations with dependent variables as in the regression on total sample provided in Panel A of Table 4-3.

[Insert Table 4-4 here]

As a summary, the empirical result presented in this subsection provides evidence on the association between pro forma earnings adjustments and future financial performance measures. As expected in hypothesis H1, positive pro forma earnings adjustments are positively and significantly associated with future firm performance, suggesting that positive pro forma earnings adjustment reliably measures material transaction's effects on future financial performance. On the other hand, I fail to find a significant association between negative pro forma earnings adjustment and future performance measures, suggesting that negative pro forma earnings adjustment is not a reliable measure to reflect future performance implications associated with a particular transaction. A further examination of decomposed pro forma earnings adjustment components indicates that pro forma adjustment related to gross profit, selling, general & administrative expenses, depreciation & amortization expenses and income tax benefits (provisions) are consistently significantly associated with future financial performance measures.

4.3.2. Tests of pro forma earnings adjustment and IPO equity value (H2)

4.3.2.1. Univariate analysis

Table 4-1 presents descriptive statistics for each of the variables used in the IPO equity value tests (H2). It is noted that both mean and median of the first trading day market value (\$671.24 mil and \$274.95 mil) are much larger than the final offer

value (\$475.59 mil and \$230.87 mil), indicating that my sample pro forma IPOs experience a first-day stock price increase, consistent with the IPO underpricing phenomenon widely documented in the literature. Also, note that all continuous variables are afflicted with serious nonnormality problem (skewness not equal to 0, kurtosis larger than 3), as well as with the heteroskedasticity problem. To mitigate these problems, I employ the logarithm of all continuous variables in later empirical analyses. The logarithm transformation process is consistent with Hand (2003) and Aggarwal et al. (2009): $L(W) = \log_e(1+W)$ when $W \geq 0$ in \$millions; $L(W) = -\log_e(1-W)$ when $W < 0$ in \$millions.

Panel B of Table 4-2 presents the Pearson and Spearman correlation matrix among dependent and independent variables used in my regression tests of H2. Both $L(OV)$ and $L(MV)$ are negatively associated with pro forma earnings adjustment ($\rho = -0.156$ and -0.181 , respectively). The significant correlation between pro forma earnings adjustment and IPO equity measures indicates that IPO investors have priced pro forma earnings adjustment at IPO. In addition, the dummy variable for negative pro forma earnings adjustment is positively correlated with $L(OV)$ ($\rho = 0.123$) and $L(MV)$ ($\rho = 0.149$). The opposite sign of correlation suggests that IPO investors may have priced positive and negative pro forma earnings adjustment differently.

As for control variables, a similar pattern is also found between GAAP earnings and dependent variables: GAAP earnings is negatively correlated with $L(OV)$ ($\rho = -0.099$) and $L(MV)$ ($\rho = -0.140$), whereas the dummy variable for negative GAAP earnings is positively correlated with $L(OV)$ ($\rho = 0.198$) and $L(MV)$ ($\rho =$

0.227). I also find that $L(BV)$ is positively correlated with both $L(OV)$ ($\rho = 0.106$) and $L(MV)$ ($\rho = 0.090$). Both firm size and firm age are positively and significantly correlated with IPO equity measures, suggesting that larger and more mature IPO firms are priced higher by investors initially. Both *RETENTION* and *UWRANK* are found to be positively correlated with IPO equity measures, suggesting that IPO firms with higher insider shareholders' retention and underwritten by more prestigious investment banks are priced higher by investors initially. Finally, *BOOM* is negatively correlated with $L(OV)$ ($\rho = -0.304$) and $L(MV)$ ($\rho = -0.261$), suggesting that firms that went public during January 1997 and March 2000 are priced lower by IPO investors. *CRASH*, *TECH* and *INT* are found to be positively correlated with both dependent variables, suggesting that firms that went public during April 2000 and December 2001, that are high-technology firms and that are internet firms are priced higher by IPO investors.

[Insert Panel B of Table 4-2 here]

4.3.2.2. Empirical results

I first run the cross-sectional regression model on aggregated pro forma earnings adjustment. Panel A of Table 4-5 presents the regression results; the dependent variables are IPO offer value $L(OV)$ and IPO first-day market value $L(MV)$.

The estimates show that pro forma earnings adjustment $L(PFEADJ)$ is positively associated with both $L(OV)$ and $L(MV)$. The positive and significant

association between $L(PFEADJ)$ and both dependent variables indicates that higher positive pro forma earnings adjustment of IPO firms with positive GAAP earnings is priced higher by investors at IPO. In addition, the interaction variable $L(PFEADJ)*LOSS_GAAPNI$ is found to be negatively and significantly associated with both dependent variables, suggesting that positive pro forma earnings adjustment of IPO firms with negative GAAP earnings is priced lower by IPO investors than IPO firms with positive GAAP earnings. Also, the interaction variable $L(PFEADJ)*NEG_PFEADJ$ is found to be negatively associated with both dependent variables. The result provides evidence that negative pro forma earnings adjustment is priced differently from positive pro forma earnings adjustment of IPO firms with positive GAAP earnings. IPO firms with higher negative pro forma earnings adjustment are priced lower than lower negative pro forma earnings adjustment. Finally, the interaction term $L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI$ is found to be positively and significantly associated with both dependent variables, suggesting that negative pro forma earnings adjustment of IPO firms with negative GAAP earnings is priced lower than IPO firms with positive GAAP earnings.

As for control variables, GAAP earnings $L(GAAPNI)$ is found to be positively and significantly associated with $L(OV)$ and $L(MV)$, consistent with the literature that GAAP earnings is an important component of IPO pricing. It is also noted that the interaction variable $L(GAAPNI)*LOSS_GAAPNI$ is negatively and significantly associated with $L(OV)$ and $L(MV)$, suggesting that negative GAAP earnings is also priced by IPO investors. The result of a v-shaped association between GAAP

earnings and IPO equity value provides evidence that investors view negative GAAP earnings as a significant component of IPO firm value, possibly due to the fact that it serves as a proxy for future growth opportunities, a phenomenon widely documented by recent IPO valuation studies regarding earnings (Bartov et al. 2002; Aggregate et al. 2009). $L(BV)$ is found to be positively and marginally significantly associated with $L(MV)$, suggesting that IPO firms with higher book value of equity is also priced higher by IPO investors. $L(DACC)$ is found to be positively and marginally significantly associated with $L(MV)$, suggesting that IPO investors price firms with higher pre-IPO abnormal accruals higher initially. $L(TA)$ is positively and significantly associated with $L(OV)$ and $L(MV)$, indicating that larger firms are priced higher by investors than smaller IPO firms. The insignificant association between $L(AGE)$ and both dependent variables indicates that investors do not price differently in terms of firm age. Both $RETENTION$ and $UWRANK$ are positively associated with both dependent variables, suggesting that IPO firms with higher insider shareholders' retention and underwritten by more prestigious investment banks are priced higher by IPO investors. $BOOM$ is found to be insignificantly associated with $L(OV)$ and $L(MV)$, suggesting that firms that went public during January 1997 and March 2000 are not priced differently by IPO investors. Finally, $CRASH$, $TECH$ and $INTERNET$ are found to be positively correlated with both dependent variables, suggesting that firms that went public during April 2000 and December 2001, that are high-technology firms and that are internet firms are priced higher by IPO investors.

[Insert Panel A of Table 4-5 here]

Similarly as multivariable regression model in testing H1, the untabulated variance inflation factors (VIFs) provide evidence of multicollinearity among the independent variables in the models of H2. To mitigate multicollinearity problem, I partition the total sample into four subsamples based on different signs of pro forma earnings adjustment and GAAP earnings. Panel B1-B4 of Table 4-5 present the regression results.

Starting from Panel B1 of Table 4-5, where the subsample contains IPO firms with positive pro forma earnings adjustment and positive GAAP earnings, the estimation results show that $L(PFEADJ)$ is positively and significantly associated with $L(OV)$ and $L(MV)$, suggesting that higher positive pro forma earnings adjustment is priced higher by IPO investors. As for control variables, $L(GAAPNI)$ is found to be positively and significantly associated with both $L(OV)$ and $L(MV)$, suggesting that higher positive GAAP earnings is priced higher by IPO investors. $L(AGE)$, $RETENTION$, $UWRANK$, $BOOM$, $CRASH$ and $INTERNET$ have the similar associations with dependent variables as in the regression on total sample. $L(BV)$, $L(DACC)$, $L(TA)$, and $TECH$ are found to be insignificantly associated with both dependent variables.

Next consider Panel B2 of Table 4-5, which contains IPO firms with positive pro forma earnings adjustment and negative GAAP earnings. It is noted that $L(PFEADJ)$ is positively associated with both $L(OV)$ and $L(MV)$, indicating that higher positive pro forma earnings adjustment of IPO firms with negative GAAP earnings is priced higher by investors. However, the association is not statistically

significant at the conventional level. As for control variables, $L(GAAPNI)$ is found to be negatively and significantly associated with both $L(OV)$ and $L(MV)$, suggesting that higher negative GAAP earnings is priced lower by IPO investors. $L(TA)$, $RETENTION$, and $UWRANK$ are found to have the similar associations with both dependent variables in the main regressions. All other control variables are found to be insignificantly associated with both dependent variables.

Moving from Panel B2 to Panel B3 of Table 4-5, where IPO firms with negative pro forma earnings adjustment and positive GAAP earnings are considered, $L(PFEADJ)$ is found to be negatively and significantly associated with $L(OV)$ and $L(MV)$, suggesting that higher negative pro forma earnings adjustment is priced lower by IPO investors. As for control variables, $L(GAAPNI)$ is found to be positively and marginally significantly associated with both $L(OV)$ and $L(MV)$, suggesting that higher positive GAAP earnings is priced higher by IPO investors. $L(TA)$, $RETENTION$, $UWRANK$, $CRASH$, $TECH$ and $INTERNET$ are found to have the similar associations with both dependent variables in the main regressions. All other control variables are found to be insignificantly associated with both dependent variables.

Finally, Panel B4 of Table 4-5 provides regression result for the subsample of IPO firms with both negative pro forma earnings adjustment and GAAP earnings. The coefficients of $L(PFEADJ)$ are found to be negatively and significant for $L(OV)$ and $L(MV)$, suggesting that higher negative pro forma earnings adjustment is priced lower by IPO investors. As for control variables, $L(GAAPNI)$ is found to be negatively and significantly associated with both $L(OV)$ and $L(MV)$, suggesting that

higher negative GAAP earnings is priced lower by IPO investors. $L(BV)$, $RETENTION$, $UWRANK$, and $INTERNET$ are found to have the similar associations with both dependent variables in the main regressions. $L(AGE)$ is found to be negatively and significantly associated with both dependent variables, suggesting that younger firms are priced higher by IPO investors than more mature firms. All other control variables are found to be insignificantly associated with both dependent variables.

[Insert Panel B1-B4 of Table 4-5 here]

I next run the cross-sectional regression model on decomposed pro forma earnings adjustment. Table 4-6 presents the regression results. The estimation results show that $L(GPADJ)$ and $L(SGAADJ)$ are both positively and significantly associated with $L(OV)$ and $L(MV)$, indicating that pro forma adjustments related to gross profit and/or selling, general & administrative expenses are priced by IPO investors. In specific, IPO firms with higher pro forma adjustments related to gross profit and/or selling, general & administrative expenses are expected to have higher first-day offer and market value. $L(DAADJ)$ is found to be negatively and significantly associated with $L(OV)$ and $L(MV)$, providing evidence that pro forma adjustment related to depreciation & amortization expenses is also priced by IPO investors. The negative association indicates that IPO investors price IPO firms with higher depreciation & amortization expenses higher, possibly due to their interpretation of higher depreciation & amortization expenses as evidence of future firm expansion. None of

other components of pro forma earnings adjustment are found to be significantly associated with both dependent variables. As for control variables, all of them have the similar associations with dependent variables as in the main regression on total sample provided in Panel A of Table 4-5.

[Insert Table 4-6 here]

As a summary, the empirical result presented in this subsection supports my hypothesis on the association between pro forma earnings adjustment and IPO equity value. As expected in hypothesis H2, pro forma earnings adjustment is significantly associated with IPO equity value. However, the association is in a nonlinear way: positive pro forma earnings adjustment is found to be positively associated with IPO equity value but negative pro forma earnings adjustment is found to be negatively associated with IPO equity value. After I decompose pro forma earnings adjustment into various adjusting items and examine the association between these items and IPO equity value, I find that pro forma adjustment related to gross profit is positively associated with IPO equity value, and pro forma adjustment related to depreciation & amortization expenses is negatively associated with IPO equity value. The result indicates that IPO investors price not only profitability arising from pro forma transaction but also price expenses that are related to future potential growth opportunities.

4.3.3. Tests of pro forma earnings adjustment and future stock returns (H3)

4.3.3.1. Univariate analysis

Panel C of Table 4-2 presents the Pearson and Spearman correlation matrix among the dependent and independent variables used in the cross-sectional regression test of H3. Due to space constraint, I only report correlation table for *BH_Y5* as the dependent variable. *BH_Y5* is found to be positively associated with pro forma earnings adjustment ($\rho = 0.072$). The marginal significant correlation between pro forma earnings adjustment and post-IPO stock returns indicates that IPO investors' reaction to pro forma earnings adjustment at IPO may be incomplete. In addition, the dummy variable for negative pro forma earnings adjustment is insignificantly correlated with *BH_Y5* ($\rho = -0.048$).

As for control variables, a similar pattern is also found between GAAP earnings and dependent variables: GAAP earnings are positively correlated with *BH_Y5* ($\rho = 0.169$), whereas the dummy variable for negative GAAP earnings is negatively correlated with *BH_Y5* ($\rho = -0.118$). *L(DACC)* is found to be insignificantly correlated with *BH_Y5*, suggesting that IPO investors' initial reaction to pre-IPO abnormal accruals is complete. Both firm size and firm age are positively and significantly correlated with IPO equity measures, suggesting that larger and more mature IPO firms are priced higher by investors for post-IPO periods. Both *RETENTION* and *UWRANK* are found to be positively correlated with IPO equity measures, suggesting that IPO firms with higher insider shareholders' retention and underwritten by more prestigious investment banks are priced higher by IPO investors. *BOOM* is found to be negatively correlated with *L(OV)* ($\rho = -0.304$) and

$L(MV)$ ($\rho = -0.261$), suggesting that firms that went public during January 1997 and March 2000 are priced lower by IPO investors. *CRASH*, *TECH* and *INTERNET* are found to be positively correlated with both dependent variables, suggesting that firms that went public during April 2000 and December 2001, that are high-technology firms and that are internet firms are priced higher by IPO investors. *MKT_Y5* and $L(BV/MV)$ are found to be positively correlated with *BH_Y5*, suggesting that market returns and firm's book-to-market ratio are important factors in predicating firm's future stock performance. Finally, the negative correlation between *IR* and *BH_Y5* indicates that IPO firms that are underpriced initially are priced lower subsequently.

[Insert Panel C of Table 4-2 here]

4.3.3.2. Empirical results

I first run the cross-sectional regression model on aggregated pro forma earnings adjustment. Panel A of Table 4-7 presents the regression results; the dependent variables are buy-and-hold post-IPO first year returns (*BH_Y1*), buy-and-hold post-IPO three year returns (*BH_Y3*), and buy-and-hold post-IPO five year returns (*BH_Y5*).

The estimates show that pro forma earnings adjustment $L(PFEADJ)$ is negatively associated with all dependent variables and the association is significant when the dependent variable is *BH_Y3* and marginally significant when the dependent variables is *BH_Y5*. The negative and significant association between

$L(PFEADJ)$ and both dependent variables indicates that IPO investors have not completely priced positive pro forma earnings adjustment of firms with positive GAAP earnings. Subsequent to the IPO, higher positive pro forma earnings adjustment is priced lower. In addition, the interaction variable $L(PFEADJ)*LOSS_GAAPNI$ is found to be positively and significantly associated with both BH_Y3 and BH_Y5 , suggesting that positive pro forma earnings adjustment of IPO firms with negative GAAP earnings is priced higher by investors than IPO firms with positive GAAP earnings subsequently. Also, the interaction variable $L(PFEADJ)*NEG_PFEADJ$ is found to be positively associated with both BH_Y3 and BH_Y5 . The result provides evidence that negative pro forma earnings adjustment of IPO firms with positive GAAP earnings is priced differently from positive pro forma earnings adjustment for the post-IPO period. Higher negative pro forma earnings adjustment is priced higher than lower negative pro forma earnings adjustment. Finally, the interaction term $L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI$ is found to be negatively and significantly associated with BH_Y3 , suggesting that negative pro forma earnings adjustment of IPO firms with negative GAAP earnings is priced lower than IPO firms with positive GAAP earnings.

As for control variables, both $L(GAAPNI)$ and $L(GAAPNI)*LOSS_GAAPNI$ are found to be insignificantly associated with all dependent variables, indicating that IPO investors' reaction to both positive and negative GAAP earnings is complete at the time of IPO. $L(BV)$ is found to be insignificantly associated with all dependent variables, suggesting that IPO investors' reaction to book value of equity is complete

at the time of IPO. $L(DACC)$ is found to be insignificantly associated with all dependent variables, suggesting that IPO investors' initial reaction to pre-IPO abnormal accruals is complete at the time of IPO. $L(TA)$ is positively and significantly associated with all dependent variables, indicating that larger firms are priced higher by investors than smaller IPO firms for the post-IPO periods. $L(AGE)$ and $RETENTION$ are found to be insignificantly associated with both dependent variables, indicating that investors do not price differently in terms of firm age and insider shareholders' retention. $UWRANK$ is positively associated with both BH_Y3 and BH_Y5 , suggesting that IPO firms underwritten by more prestigious investment banks are priced higher by investors for the post-IPO periods. $BOOM$ is found to be negatively and marginally significantly associated with both BH_Y1 and BH_Y3 , suggesting that firms that went public during January 1997 and March 2000 are priced lower by investors for post-IPO periods. $CRASH$ and $INTERNET$ are found to be insignificantly associated with all dependent variables. $TECH$ is positively correlated with BH_Y1 and BH_Y3 , suggesting that firms that are high-technology firms are priced higher by investors for post-IPO periods. MKT is found to be positively and significantly associated with all dependent variables. The association between $L(MV)$ and $L(BV/MV)$ are consistent with the literature but not significant. Finally, IR is found to be negatively and significantly associated with BH_Y3 , suggesting that underpriced IPO firms are priced lower by investors subsequently.

[Insert Panel A of Table 4-7 here]

Similarly as multivariable regression model in testing H1 and H2, the untabulated variance inflation factors (VIFs) provide evidence of multicollinearity among the independent variables of regression models in testing H3. To mitigate multicollinearity problem, I partition the total sample into four subsamples based on different signs of pro forma earnings adjustment and GAAP earnings. Panel B1-B4 of Table 4-7 presents the regression results.

Starting from Panel B1 of Table 4-7, where the subsample contains IPO firms with positive pro forma earnings adjustment and positive GAAP earnings, the estimation results show that $L(PFEADJ)$ is insignificantly associated with all dependent variables, suggesting that IPO investors' initial reaction to positive pro forma earnings adjustment is complete at the time of IPO. In addition, $L(GAAPNI)$ is found to be insignificantly associated with all dependent variables.

Next consider Panel B2 of Table 4-7, which contains IPO firms with positive pro forma earnings adjustment and negative GAAP earnings. It is noted that $L(PFEADJ)$ is insignificantly associated with all dependent variables, suggesting that IPO investors' initial reaction to positive pro forma earnings adjustment is complete at the time of IPO. In addition, $L(GAAPNI)$ is found to be insignificantly associated with all dependent variables.

Moving from Panel B2 to Panel B3 of Table 4-7, where IPO firms with negative pro forma earnings adjustment and positive GAAP earnings are considered, $L(PFEADJ)$ is found to be positively and significantly associated with BH_Y3 , suggesting that investors' initial reaction to negative pro forma earnings adjustment is not complete; higher negative pro forma earnings adjustment is priced higher by

investors for the post-IPO periods. In addition, $L(GAAPNI)$ is found to be insignificantly associated with all dependent variables.

Finally, Panel B4 of Table 4-7 provides regression result for the subsample of IPO firms with both negative pro forma earnings adjustment and GAAP earnings. The coefficients of $L(PFEADJ)$ are found to be insignificant for all dependent variables, suggesting that IPO investors' initial reaction to negative pro forma earnings adjustment is complete at the time of IPO. In addition, $L(GAAPNI)$ is found to be insignificantly associated with all dependent variables.

[Insert Panel B1-B4 of Table 4-7 here]

I next run the cross-sectional regression model on decomposed pro forma earnings adjustment. Table 4-8 presents the regression results. The estimation results show that none of pro forma earnings adjustment components are found to be significantly associated with all dependent variables, suggesting that IPO investors' initial reaction to them is complete at the time of IPO.

[Insert Table 4-8 here]

The results of portfolio analysis are reported in Table 4-9 and pictured in Figure 4-1. Panel A of Table 4-9 reports the distribution of both cumulative and buy-and-hold abnormal returns based on alternative benchmarks across positive pro forma earnings adjustment quintiles. It is noted that the mean cumulative abnormal stock

does not monotonically change from Q1 to Q5. In fact, there is often an increase in cumulative abnormal stock returns from Q1 to Q2, and a significant decrease from Q2 to Q3, followed by an increase from Q3 to Q4 and a decrease from Q4 to Q5. Q3 often turns out to be the worst-performing portfolio. As for the future buy-and-hold abnormal returns, there is often a decrease from Q1 to Q3, then a increase from Q3 to Q5. Q3 again often turns out to be the worst-performing portfolio. The non-monotonic change of future cumulative stock return across positive pro forma earnings adjustment quintiles suggests that investors completely price positive pro forma earnings adjustment at the time of IPO.

[Insert Panel A of Table 4-9 here]

Panel B of Table 4-9 reports the distribution of both cumulative and buy-and-hold abnormal returns based on alternative benchmarks across negative pro forma earnings adjustment quintiles. It is noted that the mean cumulative abnormal stock does not monotonically change from Q1 to Q5. In fact, there is often an increase in cumulative abnormal stock returns from Q1 to Q3, and a significant decrease from Q3 to Q5. Q3 often turns out to be the best-performing portfolio. As for the future buy-and-hold abnormal returns, there is often an increase from Q1 to Q3, then a decrease from Q3 to Q5. Q3 again often turns out to be the best-performing portfolio. The non-monotonic change of future cumulative stock return across negative pro forma earnings adjustment quintiles suggests that investors completely price negative pro forma earnings adjustment at the time of IPO.

[Insert Panel B of Table 4-9 here]

Overall, the empirical result presented in this subsection examines whether IPO investors completely price pro forma earnings adjustment at the time of IPO (**H3**). Both regression and portfolio analysis show that positive pro forma earnings adjustment is insignificantly associated with future stock return, suggesting that investors completely price positive pro forma earnings adjustment initially. On the other hand, regression analysis provides some evidence that negative pro forma earnings adjustment is not completely priced by IPO investors at the time of IPO. However, the result is not supported by portfolio analysis.

4.4. Chapter summary

This chapter discusses methodologies used in this study to test my hypotheses and presents empirical results. I propose three hypotheses to empirically examine the usefulness of pro forma earnings adjustment to IPO investors. My first hypothesis focuses on the relation between pro forma earnings adjustment and future financial performance. The rationale behind this hypothesis is that if pro forma earnings adjustment is truly a reflection of continuing effects arising from a particular transaction, this reflection will materialize in future periods when the transaction actually occurs. Thus, I should expect a significant association between pro forma earnings adjustment and future financial performance. To test this hypothesis, I employ four future financial performance measures (two earnings and two cash flows

measures) as dependent variables regressed on pro forma earnings adjustment and a set of control variables. The estimation results show that positive pro forma earnings adjustment is significantly and positively associated with all dependent variables, but negative pro forma earnings are insignificantly associated with them. Moreover, I also examine the association between decomposed pro forma earnings adjustment and future financial performance measures. The estimation result indicates that pro forma adjustments related to gross profit, SG&A expenses, D&A expenses and income tax benefits (provisions) are significantly associated with future financial performance.

My second hypothesis focuses on the relation between pro forma earnings adjustment and IPO equity value. The rationale behind this hypothesis is that if pro forma earnings adjustment is truly reliable to reflect future performance implication of a particular transaction and investors are rational to price this implication at the time of its disclosure, I should expect pro forma earnings adjustment be significantly associated with IPO equity value. I run regressions of the IPO offer and first trading day market value on pro forma earnings adjustment and a set of control variables. The estimation results show a significant association between pro forma earnings adjustment and IPO offer and market value in a nonlinear pattern: positive pro forma earnings adjustment is positively associated with the offer and market value, and negative pro forma earnings adjustment is negatively associated with the offer and market value. Moreover, I also examine the association between decomposed pro forma earnings adjustment and IPO offer and market value. The estimation result indicates that investors price pro forma adjustments related to gross profit, SG&A expenses and D&A expenses at the time of IPO.

My third hypothesis focuses on the relation between pro forma earnings adjustment and post-IPO long run stock return to examine whether IPO investors completely price pro forma earnings adjustment at the time of IPO. The regression estimation results show that positive pro forma earnings adjustment is insignificantly associated with future stock return, suggesting that investors completely price positive pro forma earnings adjustment at the time of IPO. The regression estimation also provides some evidence that negative pro forma earnings adjustments is positively and significantly associated with future stock returns, suggesting that investors do not completely price negative pro forma earnings adjustment at the time of IPO. However, the result is not supported by portfolio analysis. Moreover, an examination of the association between decomposed pro forma earnings adjustment and future stock return indicate that none of its decomposed components are found to be significantly associated with future stock return.

Collectively, empirical evidence provided in this chapter indicates that the usefulness of pro forma earnings adjustment to IPO investors should be interpreted with caution. Positive pro forma earnings adjustment is a reliable measure of future performance implications associated with a particular transaction and is priced completely by investors at the time of its disclosure in an IPO prospectus. Negative pro forma earnings adjustment (especially related to D&A expenses), on the other hand, does not provide useful information in forecasting firm's future performance. However, investors fail to identify this at the time of its disclosure in an IPO prospectus and incorporate it as a component of IPO equity value.

CHAPTER 5

SENSITIVITY TESTS

5.1. Sensitivity to concentration of pro forma IPOs – time horizon

As noted in Chapter 3, 69 percent of pro forma IPOs' pro forma transactions occur within the fiscal year 0 (pro forma time horizon larger than 12 but smaller than or equal to 24 months). To examine whether my empirical results are sensitive to these clustering observations, I redo all regression tests by including interaction terms that capture the clustering. Table 5-1 reports the corresponding results for each of my three hypotheses on the total sample.

Panel A-C of Table 5-1 presents regression results on the total sample of H1, H2 and H3 by interacting *NEG_PFEADJ*, *L(PFEADJ)*, *L(PFEADJ)*NEG_PFEADJ*, *L(PFEADJ)*LOSS_GAAPNI*, and *L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI* with the dummy variable *TIME*, which is equal to one if pro forma transactions occur within the fiscal year 0 and 1, and zero otherwise. After this treatment, the base sample represents pro forma transactions that occur within the fiscal year -1. It is noted that none of these interaction variables are consistently significantly associated with all dependent variables, suggesting that the clustering of IPO firms with pro forma transaction happening within the fiscal year 0 and 1 does not drive the result of H1, H2 and H3.

[Insert Panel A-C of Table 5-1 here]

5.2. Sensitivity to concentration of pro forma IPOs – M&A transaction

As noted in Chapter 3, 59 percent of pro forma IPOs in my sample are in the merger and transaction (*M&A*) transaction category. To examine whether my empirical results are sensitive to these clustering observations, I redo all regression tests by including dummy variables that capture the clustering. Table 5-2 reports the corresponding results for each of my three hypotheses.

Panel A-C of Table 5-2 presents regression results on the total sample of H1, H2 and H3 by interacting *NEG_PFEADJ*, *L(PFEADJ)*, *L(PFEADJ)*NEG_PFEADJ*, *L(PFEADJ)*LOSS_GAAPNI*, and *L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI* with the dummy variable *MA*, which is equal to one if pro forma transaction is related to merger and acquisition activities, and zero otherwise. It is noted that none of these interaction variables are consistently significantly associated with all dependent variables, suggesting that the clustering of IPO firms with pro forma M&A transactions does not drive the result of H1, H2 and H3.

[Insert Panel A-C of Table 5-2 here]

5.3. Sensitivity to concentration of pro forma IPOs – Internet firms

Prior studies (Bartov et al. 2002; Aggarwal et al., 2009) suggest that Internet IPO firms with higher D&A expenses in GAAP earnings have higher valuation because the market expects the internet IPO firms to expand their value-enhancing

operations. To make sure my empirical results are not driven by the Internet IPOs, I redo all regression tests by including dummy variables that capture the internet IPOs. Table 5-3 reports the corresponding results for each of my three hypotheses.

[Insert Panel A-C of Table 5-3 here]

Panel A of Table 5-3 presents the regression result for H1. The variables of interest here are *INTERNET*, *PFEADJ*INTERNET*, *NEG_PFEADJ*INTERNET*, and *PFEADJ*NEG_PFEADJ*INTERNET*. Notice that none of these variable are consistently significantly associated with dependent variables in regressions of H1, suggesting that Internet IPOs do not have a material impact on the overall finding of H1. On contrary, it is also noted that all of these variables are significantly associated with all dependent variables and the signs of their coefficients are the same as those in the base sample in Panel B and C. The estimation results indicate that Internet IPO firms exhibit a stronger pattern in terms of the associations between pro forma earnings adjustment and IPO equity value as well as future stock returns than non-Internet IPO firms.

5.4. Sensitivity to the calculation of pro forma time horizon

Note that I calculate pro forma time horizon as the difference between the pro forma date and the average actual date of pro forma transaction and use this measure to define the future periods following the pro forma transaction year in test of H1.

However, the usage of average actual date of pro forma transaction may bias the definition of pro forma transaction date. For example, if an IPO firm reports two pro forma events in their prospectuses, one of which actually occurs in the fiscal year -1 and the other occurs in the fiscal year 1. If I use the average pro form transaction date, I will be likely to define the pro forma transaction actually occurs in the fiscal year 0. As a consequence, the future periods I define for this IPO firm will be year 1, year 2 and year 3; however year 1's firm performance measures only reflect the continuing effects arising from the first pro forma transaction not the second one. To make sure my empirical results are not sensitive to the calculation of pro forma time horizon in this way, I alternatively use the maximum actual date of pro forma transaction to calculate the pro forma time horizon and redo the regression tests of H1.

Table 5-4 reports the corresponding results for the total sample. Note that positive pro forma earnings adjustment is found to be positively and significantly associated with $L(FGAAPNI)$, $L(FGAAPOI)$, and $L(FGAAPFCF)$, but negative pro forma earnings adjustment is found to be less reliable, consistent with the main results of H1. Overall, the above sensitivity test demonstrates that the regression results in the main tests of H1 are robust to alternative measure of pro forma time horizon used.

[Insert Table 5-4 here]

5.5. Chapter summary

This chapter provides additional tests to examine the sensitivity of the main empirical results provided in Chapter 4. The results demonstrate that the reported main results in Chapter 4 are not driven by pro forma IPOs whose pro forma transactions occur during the fiscal year 0 and pro forma earnings adjustment related to M&A transactions. In addition, the results are even stronger for Internet IPOs than for non-Internet IPOs. Finally, the main results are not sensitive to alternative measure of pro forma time horizon.

CHAPTER 6

CONCLUSIONS

6.1. Summary

In this thesis, I examine characteristics and evolution of pro forma accounting information disclosure mandated in IPO prospectuses, a particular SEC filing regulated by Article 11 of Regulation S-X and investigate whether this pro forma accounting disclosure is useful for equity investors in the market.

First, I gather descriptive empirical evidence on characteristics and trends of pro forma earnings disclosed in IPO prospectuses from 1997 through 2008. I find that pro forma IPOs are more likely to occur in the service industry and increase significantly during the Internet bubble period (1999-2000). I also find that pro forma IPO firms are more mature than non-pro forma IPO firms. An examination of characteristics of pro forma transactions indicates that pro forma transactions are more likely to occur during the IPO year and related to mergers and acquisitions. In addition, pro forma earnings adjustment has, on average, an income-decreasing effect on historical GAAP earnings. A decomposition of pro forma earnings adjustment indicates that positive pro forma earnings adjustment is more likely associated with gross profit, selling, general & administrative (SG&A) expenses, but negative pro forma earnings adjustment is more likely associated with depreciation & amortization (D&A) expenses.

Next, I propose three hypotheses to empirically examine the usefulness of pro forma earnings adjustment to IPO investors. My first hypothesis focuses on the relation between pro forma earnings adjustment and future financial performance. The rationale behind this hypothesis is that if pro forma earnings adjustment is truly a reflection of continuing effects arising from a particular transaction, this reflection will materialize in future periods when the transaction actually occurs. Thus, I should expect a significant association between pro forma earnings adjustment and future financial performance. To test this hypothesis, I employ four future financial performance measures (two earnings and two cash flows measures) as dependent variables regressed on pro forma earnings adjustment and a set of control variables. The estimation results show that positive pro forma earnings adjustment is significantly and positively associated with all dependent variables, but negative pro forma earnings are insignificantly associated with them. Moreover, I also examine the association between decomposed pro forma earnings adjustment and future financial performance measures. The estimation result indicates that pro forma adjustments related to gross profit, SG&A expenses, D&A expenses and income tax benefits (provisions) are significantly associated with future financial performance.

My second hypothesis focuses on the relation between pro forma earnings adjustment and IPO equity value. The rationale behind this hypothesis is that if pro forma earnings adjustment is truly reliable to reflect future performance implication of a particular transaction and investors are rational to price this implication at the time of its disclosure, I should expect pro forma earnings adjustment be significantly associated with IPO equity value. I run regressions of the IPO offer and first trading

day market value on pro forma earnings adjustment and a set of control variables. The estimation results show a significant association between pro forma earnings adjustment and IPO offer and market value in a nonlinear pattern: positive pro forma earnings adjustment is positively associated with the offer and market value, and negative pro forma earnings adjustment is negatively associated with the offer and market value. Moreover, I also examine the association between decomposed pro forma earnings adjustment and IPO offer and market value. The estimation result indicates that investors price pro forma adjustments related to gross profit, SG&A expenses and D&A expenses at the time of IPO.

My third hypothesis focuses on the relation between pro forma earnings adjustment and post-IPO long run stock return to examine whether IPO investors completely price pro forma earnings adjustment at the time of IPO. The regression estimation results show that positive pro forma earnings adjustment is insignificantly associated with future stock return, suggesting that investors completely price positive pro forma earnings adjustment at the time of IPO. The regression estimation also provides some evidence that negative pro forma earnings adjustments is positively and significantly associated with future stock returns, suggesting that investors do not completely price negative pro forma earnings adjustment at the time of IPO. However, the result is not supported by portfolio analysis. Moreover, an examination of the association between decomposed pro forma earnings adjustment and future stock return indicate that none of its decomposed components are found to be significantly associated with future stock return.

Overall, empirical evidence provided in this dissertation indicates that the usefulness of pro forma earnings adjustment to IPO investors should be interpreted with caution. Positive pro forma earnings adjustment is a reliable measure of future performance implications associated with a particular transaction and is priced completely by investors at the time of its disclosure in an IPO prospectus. Negative pro forma earnings adjustment (especially related to D&A expenses), on the other hand, does not provide useful information in forecasting firm's future performance. However, investors fail to identify this at the time of its disclosure in an IPO prospectus and incorporate it as a component of IPO equity value.

6.2. Future research opportunities

This study can be extended in the following aspects. First, this study finds that negative pro forma earnings adjustments are insignificantly associated with future financial performance measures, indicating that negative pro forma earnings adjustment is not reliable to reflect future financial performance implications arising from a particular transaction. However, the reasons behind this could be due to (1) imperfect information of managers to forecast future financial performance implications of the transaction or (2) opportunistic behaviors of managers to manipulate pro forma accounting data. Since this study does not provide further empirical evidence to support or refute these two explanations, it can be examined in the future.

Second, market efficiency test (H3) in this study is measured by the aggregate level. However, sophisticated investors (e.g., institutional investors, analysts) may differ in their behavior and incentives to interpret pro forma accounting data. For future research, this study can be extended by using different groups of sophisticated investors to examine the process in which they incorporate pro forma accounting data.

Finally, this study selects a particular SEC filing – IPO prospectus as the media to examine the usefulness of pro forma accounting information for equity investors. To enable the generalizability of the result, it is necessary to look at other SEC filings that disclose pro forma accounting information mandated by Article 11 of Regulation S-X, such as the 10-K form, in the future research.

APPENDICES

EXAMPLES OF PRO FORMA IPO PROSPECTUSES

Exhibit 1

Company Name: CardioNet, Inc.

IPO date: March 18, 2008

Coding of this prospectus:

This is an example of pro forma financial statement giving effect to acquisition, which is completed on March 8, 2007. Also it shows that the pro forma earnings adjustment has an income-increasing effect on the historical GAAP earnings for the fiscal year 2007. This prospectus is coded: (1) pro forma time horizon equal to 2 months (see Figure 3-5), (2) adjustment category of M&A (see Figure 3-6), (3) positive pro forma earnings adjustment (see Figure 3-8).

UNAUDITED PRO FORMA CONSOLIDATED STATEMENTS OF OPERATIONS

The following unaudited pro forma consolidated statements of operations for the year ended December 31, 2007 are based on the historical statements of operations of CardioNet, Inc. and PDSHeart, Inc. giving effect to our acquisition of PDSHeart as if the acquisition had occurred on January 1, 2007.

The unaudited pro forma consolidated statements of operations are based on estimates and assumptions which are preliminary and subject to change, as set forth

in the related notes to such statements. The unaudited pro forma consolidated financial statements are presented for illustrative purposes only and are not necessarily indicative of the combined results of operations to be expected in any future period or the results that actually would have been realized had the entities been a single entity during these periods. This information should be read in conjunction with the historical financial statements and related notes of CardioNet and PDSHeart included in this prospectus, and in conjunction with the accompanying notes to these unaudited pro forma consolidated statements of operations.

CardioNet, Inc.
 Unaudited Pro Forma Consolidated Statement of Operations
 Year ended December 31, 2007
 (in thousands, except share and per share data)

	Twelve Months Consolidated CardioNet	January 1 to March 7 PDSHeart	Notes	Pro Forma Adjustments	Pro Forma Consolidated
Revenues:					
Net patient revenues	\$ 72,357	4,055		\$ —	\$ 76,412
Other revenues	635	14		—	649
Total revenues	72,992	4,069		—	77,061
Cost of revenues	25,526	(1,646)		—	27,172
Gross profit	47,466	2,423			49,889
Operating expenses:					
Research and development	3,782	—		—	3,782
General and administrative	26,675	1,128	(a)	(88)	27,715
Sales and marketing	15,968	1,098	(b)	(36)	17,030
Amortization	799	32	(c)	154	985
Total expenses	47,224	2,258		30	49,512
Income (loss) from operations	242	165		(30)	377
Other income (expense):					
Interest income	1,622	5		—	1,627
Interest expense	(2,222)	(122)	(d)	80	(2,264)
Total other income (expense)	(600)	(117)		80	(637)
Income tax (expense) benefit	—	—		—	—
Net income (loss)	(358)	48		50	(260)
Dividends on and accretion of mandatorily redeemable convertible preferred stock	(8,346)	—		—	(8,346)
Net loss available to common shareholders	\$ (8,704)	\$ 48		\$ 50	\$ (8,606)

Basic and diluted net loss available to common shareholders per share	\$ (2.89)	\$ (2.86)
Shares used to compute basic and diluted net loss available to common shareholders per share	3,011,699	3,011,699

CardioNet, Inc.

Notes to Unaudited Pro Forma Consolidated Statements of Operations

Basis of Pro Forma Presentations

On March 8, 2007, we acquired PDSHeart, Inc. for an aggregate purchase price of \$51.6 million. The \$51.6 million purchase price was comprised of \$44.3 million in cash at closing, \$5.2 million in assumed debt, \$1.4 million in transaction expenses and the assumption of a \$0.7 million liability related to payments due to certain key employees of PDSHeart on March 8, 2008. Approximately \$1.5 million of the assumed debt was satisfied through the issuance of 1,456 shares of our mandatorily redeemable convertible preferred stock at an original issue price per share of \$1,000. In addition to the \$51.6 million, we agreed to pay PDSHeart shareholders \$5.0 million of contingent consideration in the event of a qualifying liquidation event, including a public offering or acquisition. Due to the contingent nature of this payment, no liability has been recorded in our historical financial statements.

The unaudited pro forma consolidated statements of operations are based on the historical financial statements of the Company and PDSHeart after giving effect to our acquisition of PDSHeart, as if it occurred on January 1, 2006, in the case of the year ended December 31, 2006, as if the acquisition had occurred on January 1, 2007

in the case of the year ended December 31, 2007 and as if the acquisition had occurred on October 1, 2006 in the case of the quarter ended December 31, 2006.

The pro forma consolidated statements of operations do not give effect to any restructuring or integration costs or any potential cost savings or other operating efficiencies that could result from the acquisition.

The effects of the acquisition have been presented using the purchase method of accounting under Statement of Financial Accounting Standards ("SFAS") No. 141, Business Combinations. The total estimated purchase price of the acquisition has been allocated to assets and liabilities based on management's preliminary estimate of their fair values. The preliminary allocation of the purchase price will be subject to further adjustments, as the Company finalizes its allocation of purchase price in accordance with U.S. generally accepted accounting principles ("GAAP").

Under the purchase method of accounting, the total purchase price is allocated to tangible and identifiable intangible assets acquired and liabilities assumed based on their estimated fair values. The purchase price was allocated using information currently available, and we may adjust the preliminary purchase price allocation. The following is a summary of our preliminary purchase price allocation (in thousands):

Aggregate purchase price consideration	\$ 50,178
Acquisition related costs	1,415
Total purchase price	\$ 51,593
Net tangible assets	\$ 7,334
Other accruals	(510)
Identifiable intangible assets	
Trade Name	1,810
Customer Relationships	1,551
Non Compete Agreements	245
Goodwill	41,163
Total allocated purchase price	\$ 51,593

Pro Forma Adjustments

The following table summarizes the pro forma adjustments for the respective periods presented (in thousands):

	Year Ended December 31, 2007
(a) Elimination of executive salary	\$ 88
(b) Elimination of marketing salary	36
(c) Additional amortization expense	(154)
(d) Reduction of interest expense	80
Net reduction in net loss	\$ 50

(a) Reflects the elimination of salary paid to PDSHeart's Chief Executive Officer whose employment was terminated in connection with the acquisition.

(b) Reflects the elimination of salary paid to PDSHeart's Vice President of Marketing whose employment was terminated in connection with the acquisition.

(c) Reflects the adjustment required to increase amortization expense related to the acquisition of PDSHeart. The following table summarizes the intangible assets acquired and the estimated useful lives (\$ in thousands):

	Amount	Useful Life	Annual Amortization
Trade Name	\$ 1,810	3.0	\$ 603
Customer Relationships	1,551	6.0	259
Non Compete Agreements	245	2.0	123
	\$ 3,606		\$ 985

(d) Adjustment reflects the reduction of interest expense related to the repayment of \$5.0 million of debt assumed in the acquisition. The adjustment was calculated using the average interest rate on the assumed debt of 8.9% for both periods. For the period ended December 31, 2007, the adjustment represents 66 days of interest expense.

Exhibit 2

Company Name: SRA International Inc.

IPO date: May 23, 2002

Coding of this prospectus:

This is an example of pro forma financial statement giving effect to sales of businesses. Also it shows that the pro forma earnings adjustment has an income-decreasing effect on the historical GAAP earnings for the fiscal year 2001. This prospectus is coded: (1) pro forma time horizon equal to 8 months (see Figure 3-5), (2) adjustment category of *Disposition* (see Figure 3-6), (3) negative pro forma earnings adjustment (see Figure 3-8).

Unaudited Pro Forma Financial Data

The pro forma statement of operations data for the fiscal year ended June 30, 2001 presented below gives effect to three transactions that occurred during fiscal 2001: the formation of Mantas, Inc. as a separate company in May 2001, the closure of our legal systems integration segment as of December 31, 2000, and the sale of our minority interest in Mail2000, Inc. in February 2001. For more information regarding each of these transactions, you should read “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our financial statements and the related notes included in this prospectus.

We have prepared the pro forma statement of operations for the fiscal year ended June 30, 2001 to give effect to each of the transactions described above as if it had

occurred on July 1, 2000. Since each of these transactions was completed during fiscal 2001, the impact of each is fully reflected in our historical results of operations for the nine months ended March 31, 2002. As a result, no pro forma financial information is presented as of or for the nine months ended March 31, 2002.

You should read this pro forma financial information in conjunction with our financial statements and the related notes included in this prospectus. The pro forma financial information is presented for informational purposes only and may not reflect our future results of operations or what our results of operations would have been had these transactions not occurred.

	Historical	Pro Forma Adjustments				Pro Forma
		Mantas (a)	LSI (b)	Mail2000 (c)	Other	
Revenues	\$ 312,548	\$ (8,190)	\$ (3,488)	\$ —	\$ —	\$ 30
Operating costs and expenses:						
Cost of services	221,835	(6,332)	(1,597)	—	—	213,906
Selling, general, and administrative	84,985	(10,556)	(5,620)	—	3,333(d)	72,142
Depreciation and amortization	8,045	(552)	(158)	—	1569(e)	7,491
Reimbursement of expenses upon formation of Mantas, Inc.	(6,485)	6,485	—	—	—	—
Total operating costs and expenses	308,380	(10,955)	(7,375)	—	3,489	293,539
Operating income (loss)	4,168	2,765	3,887	—	(3,489)	7,331
Interest expense, net	(797)	—	—	—	—	(797)
Other expense	(2,391)	—	—	—	—	(2,391)
Gain on equity method investment	11,776	—	—	(11,776)	—	—
Income before taxes	12,756	2,765	3,887	(11,776)	(3,489)	4,143
Provision for taxes	5,383	1,078(f)	1,516(f)	(4,593)(f)	(1,437)(f)	1,947
Net income	\$ 7,373	\$ 1,687	\$ 2,371	\$ (7,183)	\$ (2,052)	\$ 2,196
Earnings per share:						
Basic	\$ 0.54					\$ 0.16
Diluted	\$ 0.45					\$ 0.13
Weighted-average shares:						

Basic	13,563,723	13,563,723
Diluted	16,401,370	16,401,370

- (a) Reflects the elimination of the historical revenues, expenses and allocated expenses of our Mantas service offering prior to the formation of Mantas, Inc. as a separate company on May 24, 2001 and the subsequent reimbursement by Mantas, Inc. of approximately \$6.5 million of net operating expenses we incurred between January 1, 2001 and May 24, 2001. You should read “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Reimbursement of Expenses Upon Formation of Mantas, Inc.” and note 11 to our consolidated financial statements for additional discussion of these transactions.
- (b) Reflects the elimination of the historical revenues, expenses, and allocated expenses of our legal systems integration, or LSI, segment, which we closed as of December 31, 2000.
- (c) In February 2001, we sold our interest in Mail2000, Inc. and recognized a pre-tax gain of \$10.9 million. We also reversed a \$900,000 accrual for probable losses under funding commitments we made to Mail2000, Inc. You should read “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Gains and Losses on Equity Method Investments” and note 10 to our financial statements for additional discussion of these transactions.
- (d) Reflects corporate selling, general, and administrative expenses allocated to Mantas and LSI that were not actually eliminated upon disposition.

- (e) Reflects a portion of depreciation and amortization allocated to Mantas and LSI that was not actually eliminated upon disposition.
- (f) Reflects federal and state income taxes allocated to Mantas, Inc., LSI, and Mail2000, Inc. at our statutory rate of approximately 38.9%.
- (g) Reflects an adjustment to a 47.0% effective tax rate. This rate was higher than our historical effective tax rate of approximately 42.2% because nondeductible expenses for tax purposes were not allocated to Mantas, Inc., LSI, or Mail2000, Inc.

Exhibit 3

Company Name: Hotel Reservations Network, Inc.

IPO date: February 25, 2000

Coding of this prospectus:

This is an example of pro forma financial statement giving effect to an acquisition, issuance of common shares, and recapitalization. All transactions occur on the IPO date. Also it shows that the pro forma earnings adjustment has an income-decreasing effect on the historical GAAP earnings for the fiscal year 1999. This prospectus is coded: (1) pro forma time horizon equal to 14 months (see Figure 3-5), (2) adjustment category of *M&A, Proceeds, and Recapitalization* (see Figure 3-6), (3) negative pro forma earnings adjustment (see Figure 3-8).

Unaudited Pro Forma Combined Condensed Statement of Operations

The following unaudited pro forma combined condensed statement of operations has been prepared to give effect to the following capital transactions that will occur in connection with this offering:

- (1) the acquisition of substantially all the assets of our predecessor business, which was accounted for under the purchase method of accounting;
- (2) the issuance of 9,999,900 shares of our class A common stock to a party designated by TMF, Inc. and HRN Marketing Corp. immediately prior to the closing of this offering;

- (3) the issuance of our class A common stock in this offering, assuming no exercise of the overallotment option; and
- (4) the recapitalization of our capital stock.

The pro forma combined condensed statement of operations reflects some assumptions regarding these transactions and the acquisition and is based on the historical statement of operations of our company and the historical combined statements of operations of our predecessor business. The combined condensed statement of operations, including the notes accompanying it, is qualified in its entirety by reference to, and should be read in conjunction with, the audited and unaudited combined financial statements, including the notes accompanying them, of our predecessor business, and the financial statements, including the notes accompanying them, of our company, all of which are included in this prospectus.

The pro forma combined condensed statement of operations for the year ended December 31, 1999 reflects the audited combined statement of operations of our predecessor business for the period January 1 to May 10, 1999 and the audited statement of operations of our company for the period May 11 to December 31, 1999, including the pro forma effects of the acquisition referred to in item (1) above and the capital transactions referred to in items (2) through (4) above, that will occur in connection with this offering as if such transactions had occurred as of January 1, 1999.

The pro forma combined condensed statement of operations is presented for illustrative purposes only. It is not necessarily indicative of the results of operations which actually would have been reported had these transactions occurred as of

January 1, 1999, nor are they necessarily indicative of our future financial results of operations.

Hotel Reservations Network, Inc.

Unaudited Pro Forma Combined Condensed Statement of Operations

Year Ended December 31, 1999

(In thousands, except share data)

	Predecessor	Registrant	Pro Forma Adjustments	Pro Forma Combined
Net revenues	\$ 37,701	\$ 124,113		\$ 161,814
Operating costs and expenses:				
Cost of sales	26,538	89,385		115,923
Selling, general and administrative	5,669	16,177	\$ 176 (1)	22,022
Non-recurring acquisition-related costs	20,257	--	(20,257)(2)	--
Amortization of goodwill	--	12,897	23,134 (3)	36,031
Total operating costs and expenses	52,464	118,459	3,053	173,976
Operating profit (loss)	(14,763)	5,654	(3,053)	(12,162)
Interest and other, net	429	889	(84)(4)	1,234
Gain on sale of securities	471	--	--	471
	900	889	(84)	1,705
Earnings (loss) before income taxes	(13,863)	6,543	(3,137)	(10,457)
Income tax benefit (expense)	--	(2,421)	2,421(5)	--
Net earnings (loss)	\$(13,863)	\$ 4,122	\$ (716)	\$ (10,457)
Basic and diluted earnings (loss) per share		\$ 0.11		\$ (0.19)
Basic and diluted weighted average shares outstanding(6)		38,999,100		54,399,000

Hotel Reservations Network, Inc.

Notes to unaudited pro forma combined condensed financial statement

(in thousands, except share data)

- (1) We have new compensation arrangements with our officers. The following table presents historical compensation expense, the amount of compensation

expense that would have been incurred had the new compensation arrangements been in place and the net amount which represents the pro forma adjustment.

	Year ended December 31, 1999
Historical compensation	\$ 74
Compensation under new arrangements	\$ 250
Net pro forma expense adjustment	\$ (176)

(2) Represents elimination of discretionary compensation and bonuses of \$0.4 million paid to its employees (other than Messrs. Litman and Diener) and professional and advisory fees of \$0.2 million related directly to the acquisition. In connection with the sale of substantially all the assets of TMF, Inc. and HRN Marketing Corp., the principal owners entered into an agreement to pay an executive of TMF, Inc., for past services, 5% of all net sales proceeds, including all contingent payments, received by the principal owners in connection with the sale. During the period January 1 to May 10, 1999, the predecessor business recorded a charge of \$19.7 million in connection with this obligation. These payments were directly attributable to the sale and would not have been paid if the sale had not occurred.

(3) Reflects additional amortization expense resulting from the increase in goodwill due to the acquisition of substantially all of the assets and assumption of substantially all of the liabilities of our predecessor business.

The determination and the allocation of the purchase price is set forth below:

Promissory note	\$150,000
-----------------	-----------

Initial contingent payments	50,000
Working capital adjustment	(798)
Transaction costs	611
	199,813
Plus: net liabilities assumed	495
Amount initially allocated to goodwill	200,308
Issuance of 4,899,900 shares of class A common stock to sellers	78,398
Issuance of 5,100,000 shares of class A common stock to sellers in lieu of contingent payments	81,600
Total allocation of goodwill	\$360,306
Allocation of initial purchase price:	
Current assets	\$ 29,977
Non-current assets	1,285
Goodwill	200,308
Current liabilities	31,653
Non-current liabilities	104

The purchase price was \$149.2 million, net of a working capital adjustment of \$0.8 million based on the specified level of working capital agreed to in the asset purchase agreement, plus contingent payments based on our operating performance during (a) the four fiscal quarters for the year ended December 31, 1999, (b) the year ended December 31, 1999 and (c) the twelve-month period ended March 31, 2000. Through December 31, 1999, we have paid a total of \$37.5 million for the amounts due for the fiscal quarters ended March 31, June 30, and September 30, 1999. Our management has determined that, based on our operating performance, the remaining \$12.5 million of the 1999 contingent payment will be due to a party designated by TMF, Inc. and HRN Marketing Corp. This payment will be made during the first fiscal quarter of 2000 and will be funded by a \$12.5 million capital contribution from USAi. See "Certain Transactions."

The pro forma information does not reflect the incremental amount of goodwill amortization that will occur from the payment of any additional purchase price by us or by USAi for the twelve-month period ended March 31, 2000. Based on currently available financial information, management believes that the additional payment will total between \$30.0 million and \$40.0 million. If the payment totals \$35.0 million, amortization expense, on a pro forma basis, would increase by \$3.5 million and pro forma loss per share would increase by \$0.06.

- (4) Represents incremental interest expense at 4.75% on the promissory note of \$5.0 million issued in connection with the acquisition.
- (5) Represents the income tax effect of the pro forma adjustments related to the acquisition of our predecessor business.
- (6) Shares outstanding reflect all 38,999,100 shares of our class B common stock owned by USAi; 9,999,900 shares of our class A common stock to be issued to a party designated by TMF, Inc. and HRN Marketing Corp. immediately prior to the closing of this offering; and 5,400,000 shares of our class A common stock to be issued in this offering, assuming no exercise of the underwriters' overallotment option. Shares outstanding exclude approximately 1,500,000 shares underlying options that will be granted at the closing of this offering and 1,428,365 warrants to purchase our class A common stock at the initial public offering price that will be issued upon completion of this offering.

Exhibit 4

Company Name: DreamWorks Animation SKG Inc.

IPO date: October 28, 2004

Coding of this prospectus:

This is an example of pro forma financial statement giving effect to an autonomous transaction. Also it shows that the pro forma earnings adjustment has an income-increasing effect on the historical GAAP earnings for the fiscal year 2003. This prospectus is coded: (1) pro forma time horizon equal to 22 months (see Figure 3-5), (2) adjustment category of *Independence* (see Figure 3-6), (3) positive pro forma earnings adjustment (see Figure 3-8).

Pro Forma Financial Information

The following pro forma financial information should be read in conjunction with our “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our combined financial statements and the notes to our combined financial statements included elsewhere in this prospectus. The pro forma combined statements of operation were prepared (i) as if the Distribution Agreement had become effective on January 1, 2003 and had been in effect in all periods since and (ii) as if we had been taxable as a corporation since January 1, 2003 in all periods presented. The pro forma combined balance sheet was prepared as if the Distribution Agreement had become effective on June 30, 2004. For a description of the pro forma

effect of our separation from DreamWorks Studios, including the effects of the debt to be assumed by us in the separation, please refer to “Capitalization.”

The pro forma adjustments are based upon available information and assumptions that we believe are reasonable and do not give effect to any transactions other than those mentioned above, including those contemplated by the Services Agreement. Please see the notes to our pro forma combined financial statements for a more detailed discussion of how the adjustments described above are presented in our pro forma combined financial statements.

The primary effect on our pro forma combined statement of operations of giving pro forma effect to the Distribution Agreement as of January 1, 2003 is that we recognize revenue net of (i) DreamWorks Studios’ 8.0% distribution fee and (ii) the distribution and marketing costs that DreamWorks Studios incurs for our films. In all periods presented, this results in a substantial reduction to our revenue. In addition, our costs of revenue decline because we no longer incur distribution and marketing costs and third-party distribution and fulfillment services fees. Also, selling, general and administrative expenses are reduced because we are no longer allocated overhead costs related to DreamWorks Studios’ marketing and distribution departments.

The pro forma effect of these adjustments is to decrease our net income in the six month period ending June 30, 2004 and to decrease our net loss in the year ended December 31, 2003. As a result of the timing differences arising from giving effect to the Distribution Agreement, DreamWorks Studios generally will recoup in later periods the distribution and marketing costs incurred by it in earlier periods, thereby lowering our revenue and net income in later periods, as was the case in the first six

months of 2004. In addition, during the periods presented the pro forma distribution fee is approximately equal to or greater than allocated overhead costs and third-party distribution and fulfillment services fees to be borne by DreamWorks Studios, which, for the first six months of 2004, is due to *Shrek 2*'s success in the domestic theatrical market.

The pro forma effects of the Distribution Agreement also shift the timing of amortization of film inventory from period to period, although the total amount of film inventory amortized does not change. Under the Distribution Agreement, the revenue that we recognize from our films will be net of the distribution fee and the distribution and marketing costs that DreamWorks Studios incurs. Because amortization of film inventory is based on the ratio that current period actual revenue bears to estimated remaining unrecognized revenue, the pro forma reductions in revenue result in pro forma changes in film amortization for the periods presented.

Because DreamWorks Studios will recoup its distribution and marketing costs and 8% distribution fee on a cash basis, the primary effect of giving pro forma effect to the Distribution Agreement as of June 30, 2004 on our unaudited pro forma combined balance sheet is to reclassify amounts from accounts receivable to receivable from affiliate (DreamWorks Studios) and to partially offset these amounts with a reduction in our accrued liabilities. Both our accounts receivables and accrued liabilities are reduced upon implementation of the Distribution Agreement because they would be assets and liabilities of DreamWorks Studios under the Distribution Agreement. In addition, DreamWorks Studios would be entitled to receive a distribution fee on cash collections related to the receivables upon effectiveness of the

Distribution Agreement, which will have the effect of reducing our accounts receivable without increasing our revenue from affiliate.

The pro forma combined statement of operations also include a provision for pro forma income tax to reflect federal income taxes that we would have been required to pay had we been a taxable corporation since January 1, 2003. These pro forma federal income taxes are separate from and in addition to the foreign withholding taxes and state franchise taxes shown in our historical financial statements.

The following pro forma combined financial statements have been derived from the combined financial statements included elsewhere in this prospectus and do not purport (i) to represent what our financial position and results of operations actually would have been had we been a stand-alone taxable corporation operating under the Distribution Agreement for the periods presented or (ii) to project our financial performance for any future period.

DreamWorks Animation

Pro Forma Combined Statement of Operations

For the Year Ended December 31, 2003

	Historical	Adjustments	Pro Forma
	(In thousands except per share data)		
Revenue from affiliate	\$300,986	\$ (134,198)(1)	\$166,788 (2)
Merchandising and licensing revenue	—	6,060(3)	6,060
Operating revenue(3)	300,986	(128,138)	172,848
Costs of revenue	438,959	(144,801)(4)	294,158
Gross profit (loss)	(137,973)	16,663	(121,310)
Provision for doubtful accounts	824	—	824
Selling, general and administrative expenses	28,498	(12,633)(5)	15,865
Operating income (loss)	(167,295)	29,296	(137,999)
Interest income (expense), net	(12,360)	—	(12,360)
Other income (expense), net	(3,145)	—	(3,145)
Total income (loss) before income taxes	(182,800)	29,296	(153,504)
Provision for income taxes	(1,839)	(580)(6)	(2,419)
Income (loss) before cumulative effect of accounting	(184,639)	28,716	(155,923)

change			
Cumulative effect of accounting change	(2,522)	—	(2,522)
Net income (loss)	\$(187,161)	\$28,716	\$(158,445)
Pro forma:			
Basic and Diluted loss per share before cumulative effect of accounting change(7)			\$(2.03)
Basic and diluted net loss per share(7)			\$(2.07)
Basic and Diluted(7)			76,636

(1) Reflects the reduction in operating revenue that would have occurred had the Distribution Agreement been in effect as of January 1, 2003. Under the terms of the Distribution Agreement, DreamWorks Studios would have been entitled to retain a distribution fee equal to 8.0% of revenue (without deduction for any distribution and marketing costs or third-party distribution and fulfillment services fees) with respect to our films, or approximately \$23.4 million. DreamWorks Studios would also have been entitled to recoup distribution and marketing costs out of this revenue in the amount of approximately \$104.8 million.

(2) Distribution and marketing costs for our films incurred prior to the effective date of the Distribution Agreement are reflected in costs of revenue in our historical financial statements for the year ended December 31, 2002. Had we given pro forma effect to the Distribution Agreement in 2002, these expenses, to the extent they would not have been recouped in 2002, would have reduced our pro forma operating revenue in 2003.

(3) Following the effectiveness of the Distribution Agreement, most of our revenue will be derived from DreamWorks Studios. As a result, for so long as DreamWorks Studios is an affiliated party, we will reflect revenue from DreamWorks Studios as revenue from affiliate. Historical operating revenue is reflected in revenue

from affiliate. The pro forma adjustment for merchandising and licensing revenue has been included to show the amount of revenue we earned in this market. DreamWorks Studios' distribution fee will not apply to merchandising and licensing revenue.

(4) In addition to the other adjustments noted in the following paragraph, the pro forma adjustment reflects a reduction in distribution and marketing costs of approximately \$142.0 million as these costs are borne by DreamWorks Studios under the terms of the Distribution Agreement. This amount does not match the \$104.8 million of marketing and distribution costs noted in footnote 1 above that DreamWorks Studios would have recouped under the Distribution Agreement for the following reasons. To the extent distribution and marketing costs were incurred during 2003, but the related film was released in 2004, the costs are deducted in our pro forma costs of revenue but there is no corresponding reduction to pro forma revenue. Likewise, in the situation where distribution and marketing costs exceeded the amount of revenue generated by a film that was released in 2003, pro forma costs of revenue are reduced by the amount of distribution and marketing costs (as well as the 8% distribution fee), but pro forma revenue is reduced only to the extent that revenue was generated by the film in the period. For the 2003 pro forma period, distribution and marketing costs were incurred but revenue from the related film either (i) had not been generated because the film had not been released (as was the case with Shrek 2) or (ii) was insufficient to recoup 100% of the distribution and marketing costs and the 8% distribution fee related to it (as was the case with Sinbad: Legend of the Seven Seas).

This adjustment also reflects the elimination of distribution and fulfillment services fees payable primarily to Universal Studios and CJ Entertainment, in the amount of approximately \$9.9 million, as these costs are solely borne by DreamWorks Studios pursuant to the Distribution Agreement. These reductions are partially offset by an increase in production costs amortization of approximately \$7.2 million as, under the individual-film-forecast-computation-method, the revenue that we would have recognized in this period would have represented a higher proportion of the total revenue that we would have estimated our released films to ultimately produce.

(5) Reflects the elimination of allocated overhead costs that are primarily related to the salaries and benefits of employees in DreamWorks Studios' distribution and marketing departments, as these costs will be solely borne by DreamWorks Studios pursuant to the Distribution Agreement.

(6) Reflects additional federal and state income taxes that we would have been required to pay had we been a taxable corporation since January 1, 2003.

(7) Pro forma basic and diluted per share amounts are calculated using the number of shares of common stock that were outstanding immediately following our separation from DreamWorks Studios as if such shares were outstanding for all periods presented, excluding 3,501,007 shares which will be granted upon consummation of the offering.

Exhibit 5

Company Name: Golfsmith International Holdings Inc.

IPO date: June 15, 2006

Coding of this prospectus:

This is an example of pro forma financial statement giving effect to issuance of common shares, recapitalization of borrowings and payment of management consultancy fees. All transactions occur on the IPO date. Also it shows that the pro forma earnings adjustment has an income-increasing effect on the historical GAAP earnings for the fiscal year 2001. This prospectus is coded: (1) pro forma time horizon equal to 17 months (see Figure 3-5), (2) adjustment category of *Proceeds, Recapitalization* and *Other* (see Figure 3-6), (3) positive pro forma earnings adjustment (see Figure 3-8).

Unaudited Pro Forma Condensed Consolidated Financial Statements

The following unaudited pro forma condensed consolidated financial statements have been derived by the application of pro forma adjustments to our historical consolidated financial statements appearing elsewhere in this prospectus.

The unaudited pro forma condensed consolidated balance sheet gives effect to:

- this offering;
- \$41.2 million of borrowings under our new senior secured credit facility;

- the redemption of \$93.75 million aggregate principal amount at maturity of our 8.375% senior secured notes due 2009 issued on October 15, 2002, which had an accreted book value of \$83.2 million as of April 1, 2006;
- the repayment of outstanding borrowings of \$5.5 million under our existing senior secured credit facility;
- the payment of a one-time \$3.0 million fee to terminate our management consulting agreement with First Atlantic Capital, Ltd. upon completion of this offering; and
- the payment of (i) \$7.8 million related to the underwriting discount and other fees and expenses associated with this offering and (ii) \$1.0 million of fees and expenses related to our new senior secured credit facility, as if these transactions (the “Transactions”) had occurred on April 1, 2006.

The unaudited pro forma condensed consolidated statements of operations for the fiscal year ended December 31, 2005 and for the three months ended April 1, 2006 give effect to the Transactions as if they had occurred on January 2, 2005, the first day of fiscal year 2005, except for the payment of the one-time \$3.0 million fee described above to terminate our management consulting agreement with First Atlantic Capital, Ltd. due to the non-recurring nature of such payment. Furthermore, such unaudited pro forma condensed consolidated statements of operations also do not reflect (i) any charges related to the expected loss on extinguishment of debt resulting from the repayment of the above-referenced debt due to the non-recurring nature of such repayment, or (ii) any impact on income tax expense due to our net operating loss carry-forwards that are expected to exist on a pro forma basis for the

fiscal year ended December 31, 2005 and the three months ended April 1, 2006. We estimate that we will record a loss of approximately \$12.0 million related to the extinguishment of such debt in fiscal 2006.

The unaudited pro forma adjustments are based upon available information and certain assumptions that we believe are reasonable, but which are subject to change and are described in the accompanying notes. The unaudited pro forma condensed consolidated financial statements:

- are presented for informational purposes only;
- do not purport to represent what our results of operations or financial condition would have been had the Transactions actually occurred on the dates indicated;
- do not purport to project our results of operations or financial condition for any future period or as of any future date; and
- should be read in conjunction with the information contained in “Selected Consolidated Financial and Other Data”, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our consolidated financial statements and related notes appearing elsewhere in this prospectus.

Golfsmith International Holdings, Inc.

Unaudited Pro Forma Condensed Consolidated Statement of Operations

	Historical	Adjustments	Pro Forma
Net revenues	\$323,794,225	\$ —	\$323,794,225
Cost of products sold	208,044,286	—	208,044,286
Gross profit	115,749,939	—	115,749,939
Selling, general and administrative	99,310,158	(681,000)(1)	98,629,158
Store pre-opening expenses	1,764,685	—	1,764,685
Total operating expenses	101,074,843	(681,000)	100,393,843
Operating income	14,675,096	681,000	15,356,096
Interest expense	(11,744,232)	7,986,194(2)	(3,758,038)

Interest income	73,263	—	73,263
Other income	469,841	—	469,841
Other expense	(116,331)	—	(116,331)
Income (loss) from operations before income taxes	3,357,637	8,667,194	12,024,831
Income tax expense	(400,003)	—	(400,003)
Net income (loss)	2,957,634	\$8,667,194	\$11,624,828
Basic net income (loss) per share of common stock ⁽³⁾	\$0.30		\$0.74
Basic weighted average common shares outstanding ⁽³⁾	9,803,712		15,803,712
Diluted net income (loss) per share of common stock ⁽³⁾	0.30		0.73
Diluted weighted average common shares outstanding ⁽³⁾	9,943,443		15,943,443

See Notes to Unaudited Pro Forma Condensed Consolidated Statement of Operations

(1) Adjustment reflects the elimination of \$0.7 million in expenses recorded during the year ended December 31, 2005 related to management advisory services provided by First Atlantic Capital, Ltd.

(2) The adjustments to interest expense are comprised of the following:

	\$7,829,992
Elimination of interest related to historical coupon value	
Elimination of amortization of original issue discount of senior secured notes	2,641,968
Elimination of amortization of historical deferred financing costs	1,063,999
Elimination of interest for senior secured credit facility	208,273
Total	\$11,744,232
Amortization of deferred financing costs related to new credit facility(a)	(200,000)
Interest under new credit facility borrowings at 6.5%(b)	(3,558,038)
Total	\$(3,758,038)
Net pro forma adjustment	\$ 7,986,194

(a) Assumes \$1.0 million of debt issuance costs related to the new senior secured credit facility amortized over a 5-year estimated life of the new senior secured credit facility.

(b) Represents historical interest expense under our existing senior secured credit facility of \$0.2 million on historical borrowings used for working capital purposes plus estimated interest expense of \$3.6 million related to borrowings under the new senior secured credit facility. Borrowings under the new senior secured credit facility are estimated to be \$51.7 million if the Transactions had occurred at January 1, 2005. Interest is calculated assuming a 6.5% interest rate and assuming pro forma borrowings of \$51.7 million are outstanding for the entire period presented.

(3) Pro forma weighted average shares and net income (loss) per share assume that the 9,803,712 shares outstanding and the 6,000,000 shares expected to be issued pursuant to this offering were outstanding for the year ended December 31, 2005. The number of shares outstanding includes 331,569 shares of common stock issuable immediately following the closing of this offering upon the conversion, for no additional consideration, of equity units held by certain of our existing and former officers and employees.

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Figure 3-1
Industry Classification of Pro Forma IPOs and Total IPOs (1997-2008)

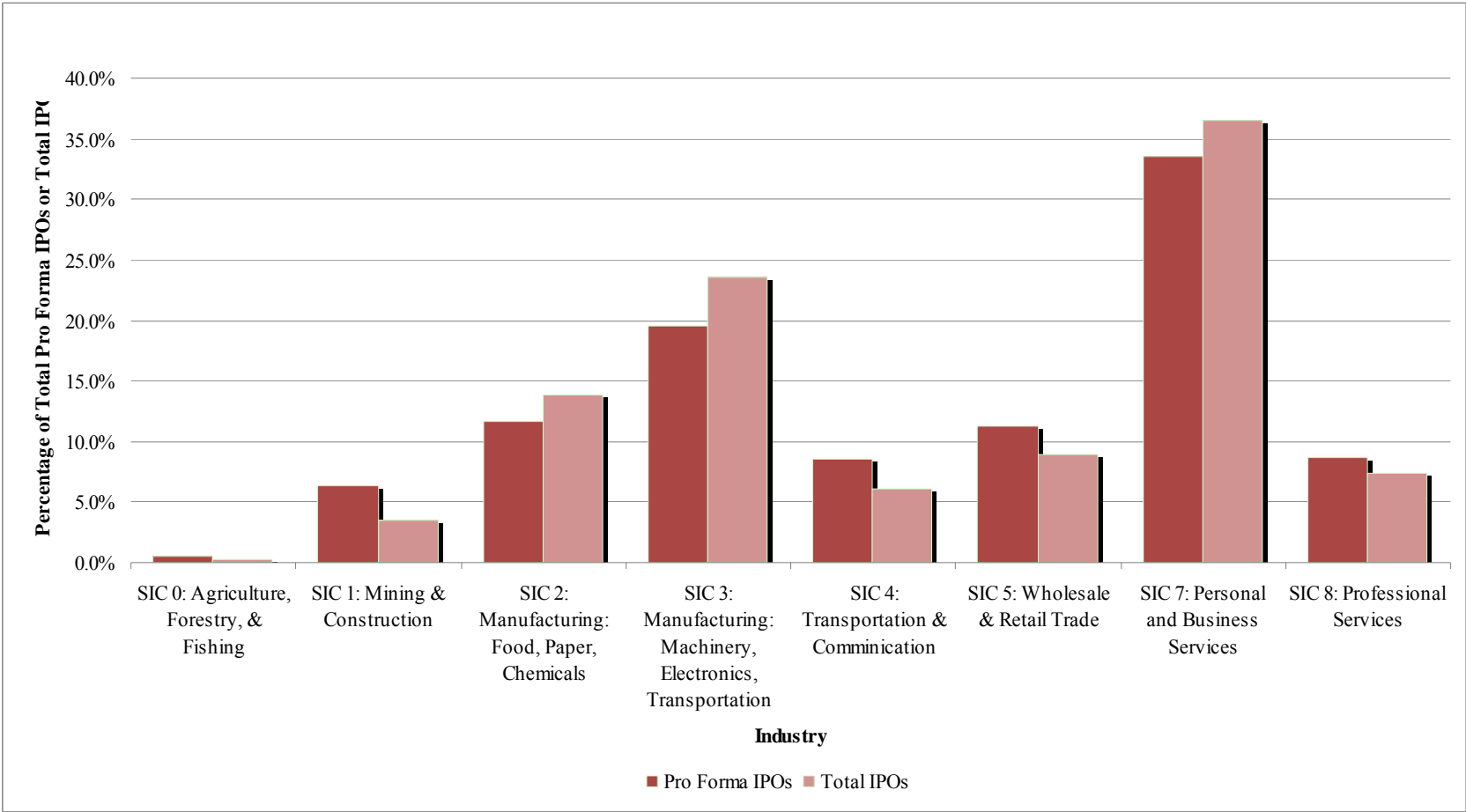


Figure 3-2
Trends in the Relative Frequency of Pro Forma IPOs by Industry

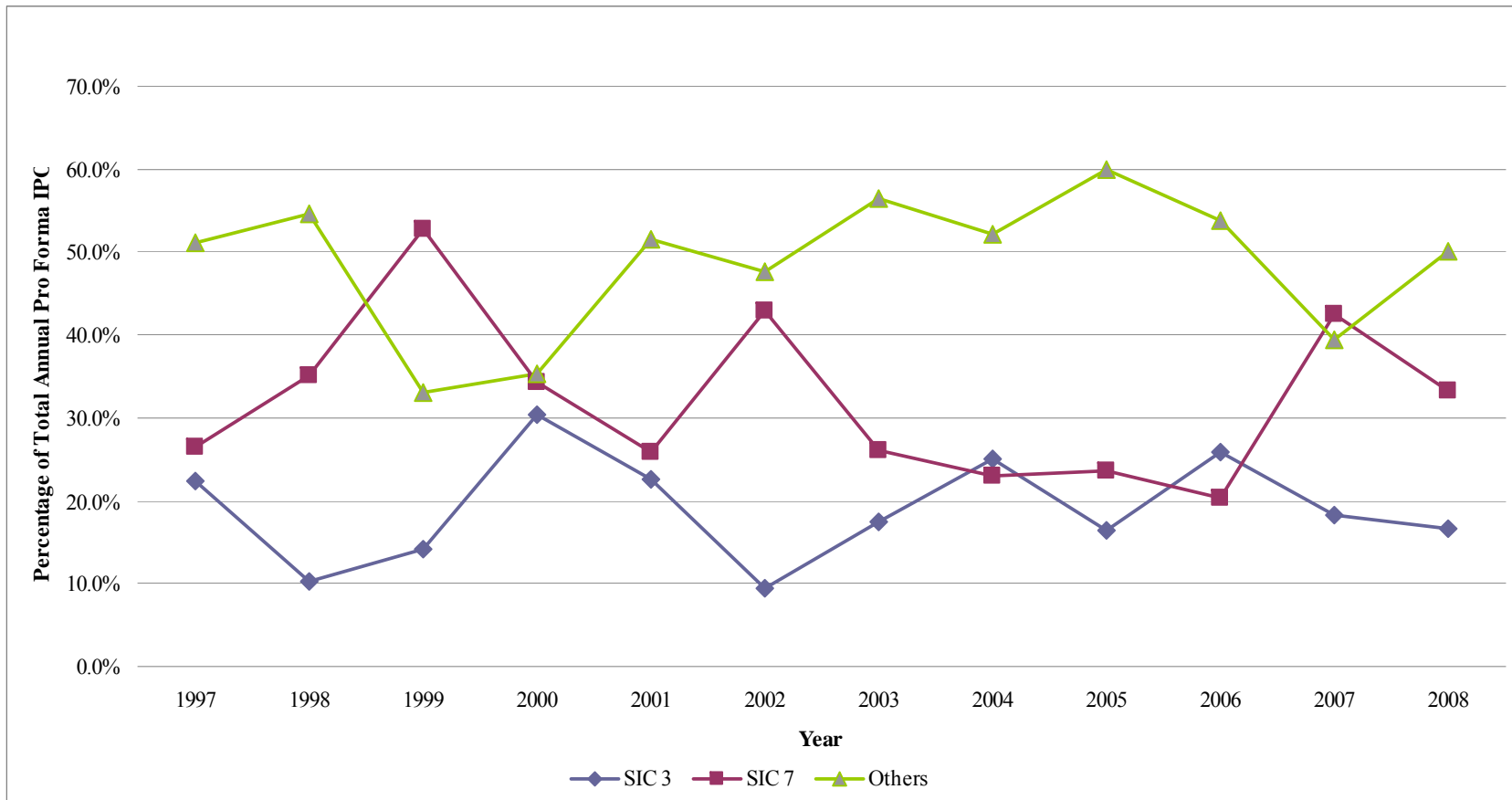


Figure 3-3
Evidence on the Age of Pro Forma IPOs Relative to Non-Pro Forma IPOs by Year

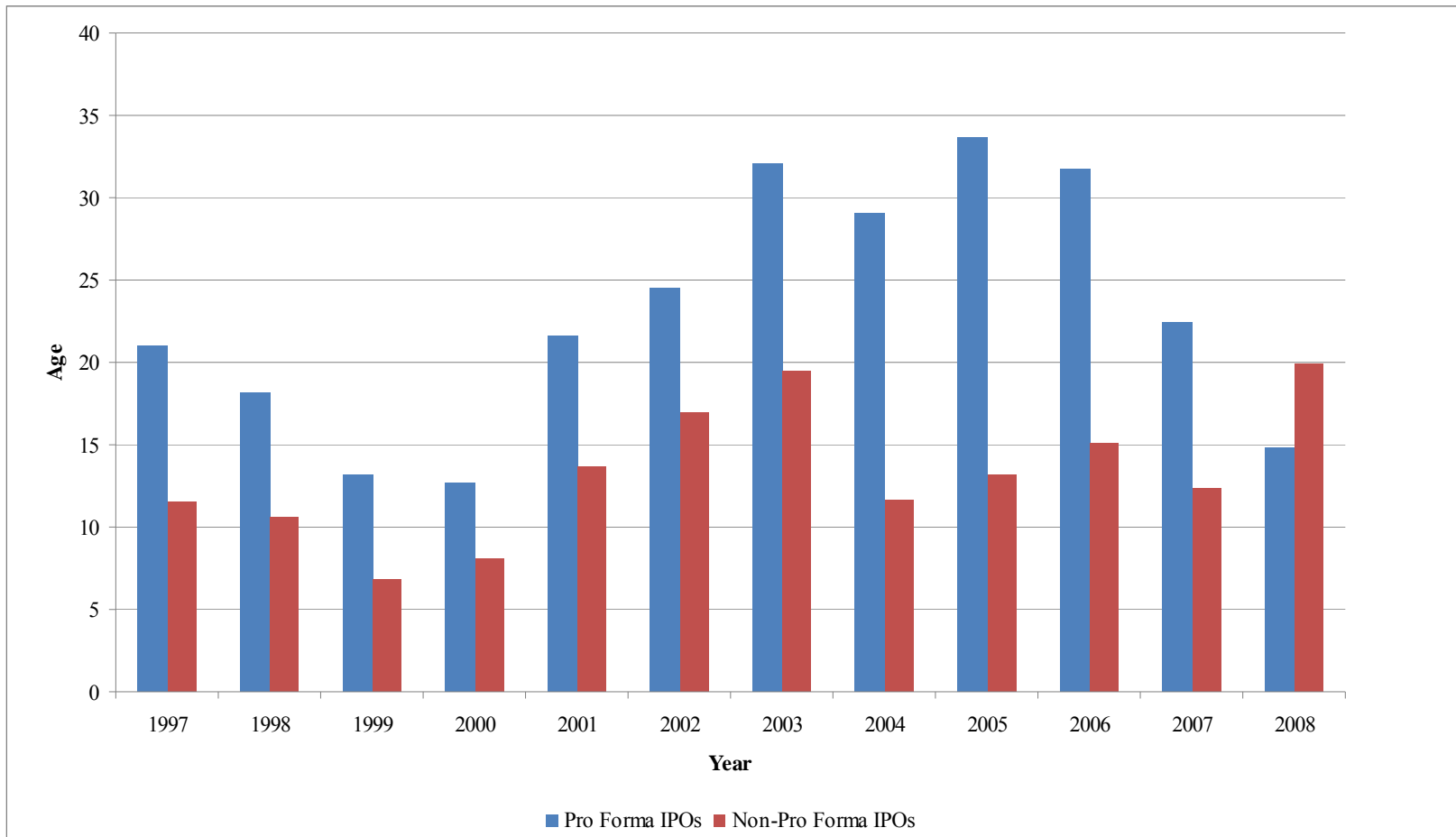


Figure 3-4
Time line

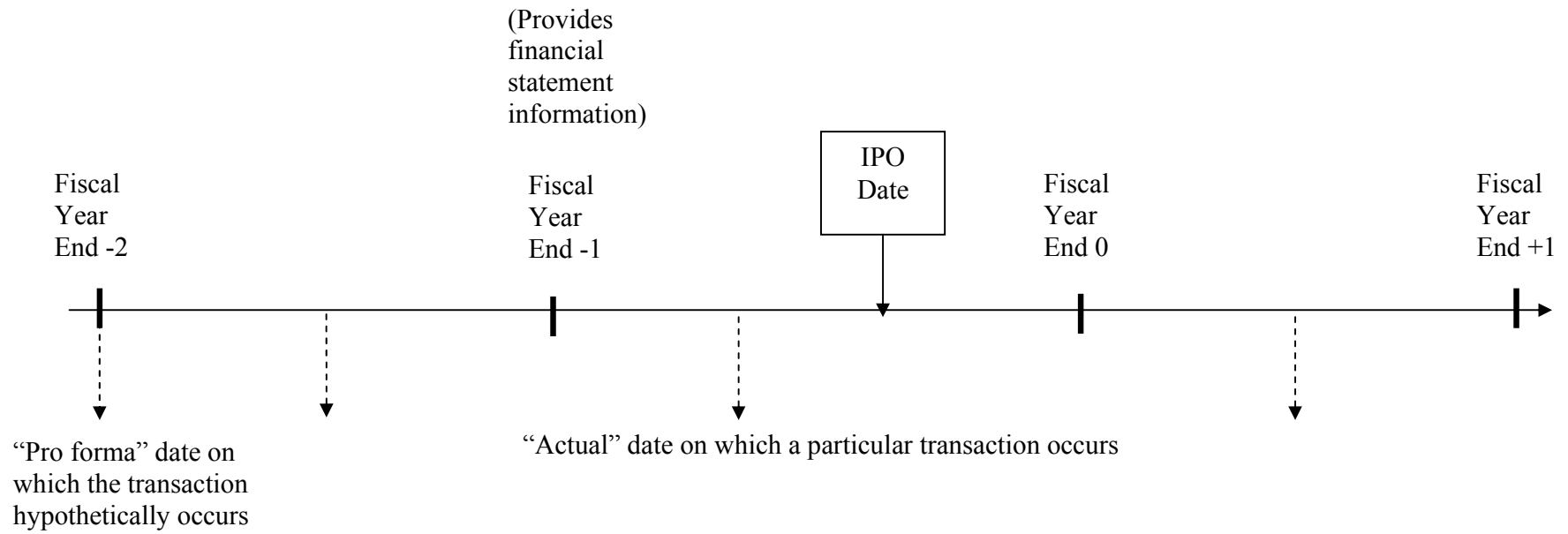


Figure 3-5
Concentration of Pro Forma IPOs by Pro Forma Time Horizon (Months between “Pro Forma” and “Actual” Dates)

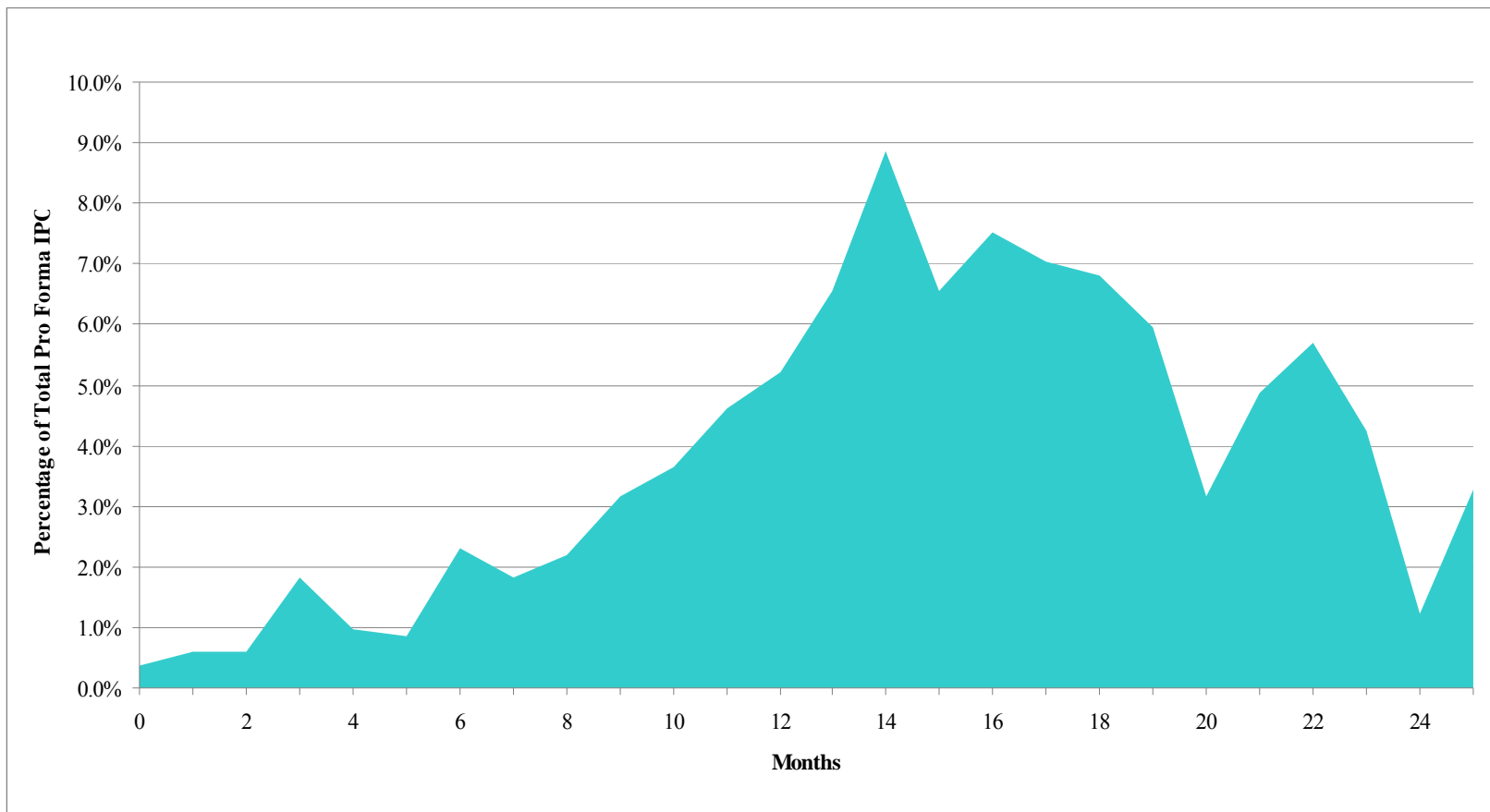
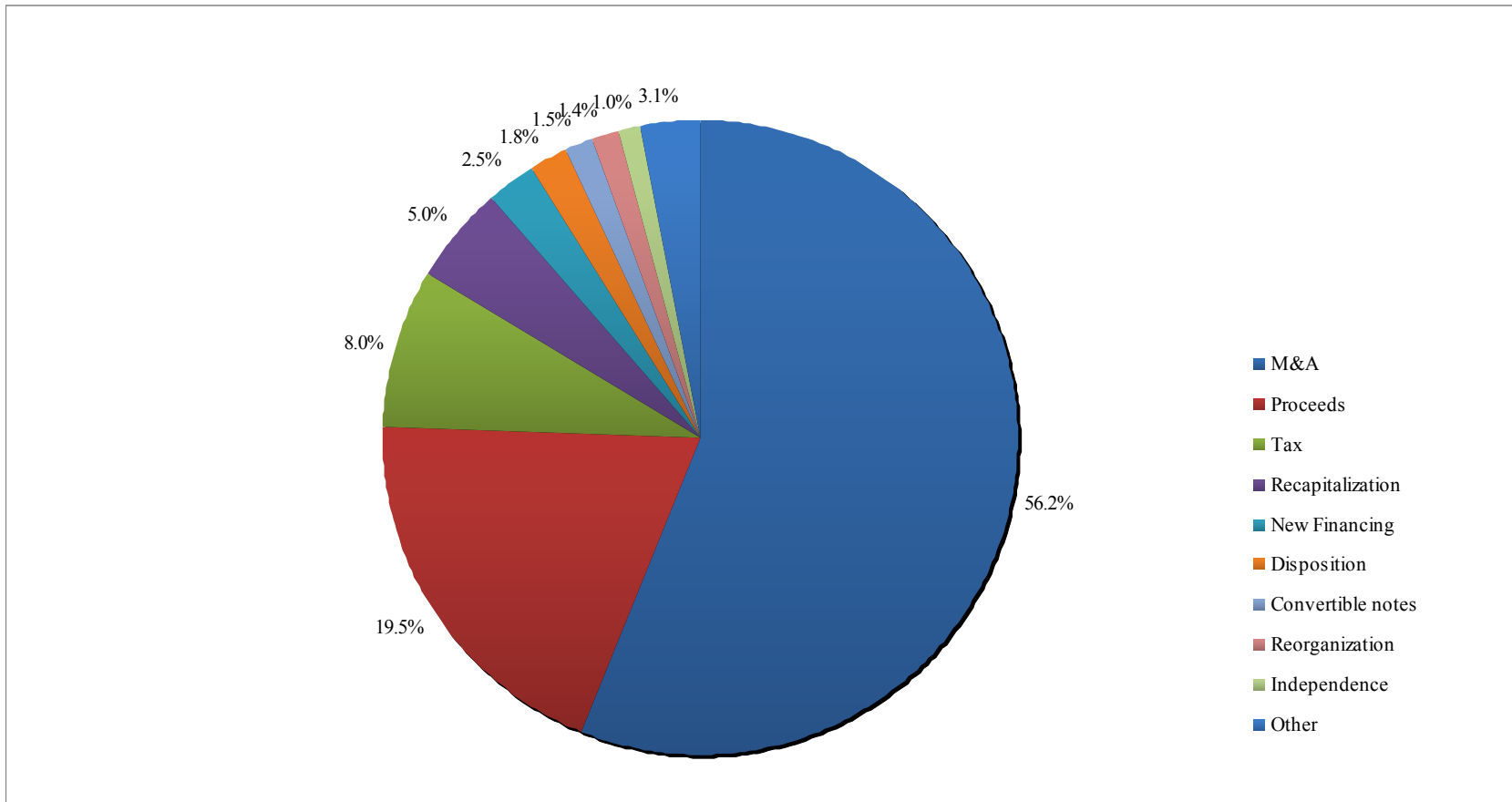


Figure 3-6
Concentration of Pro Forma IPOs by Adjustment Categories



**Figure 3-7
Trends in Pro Forma IPOs by Adjustment Categories**

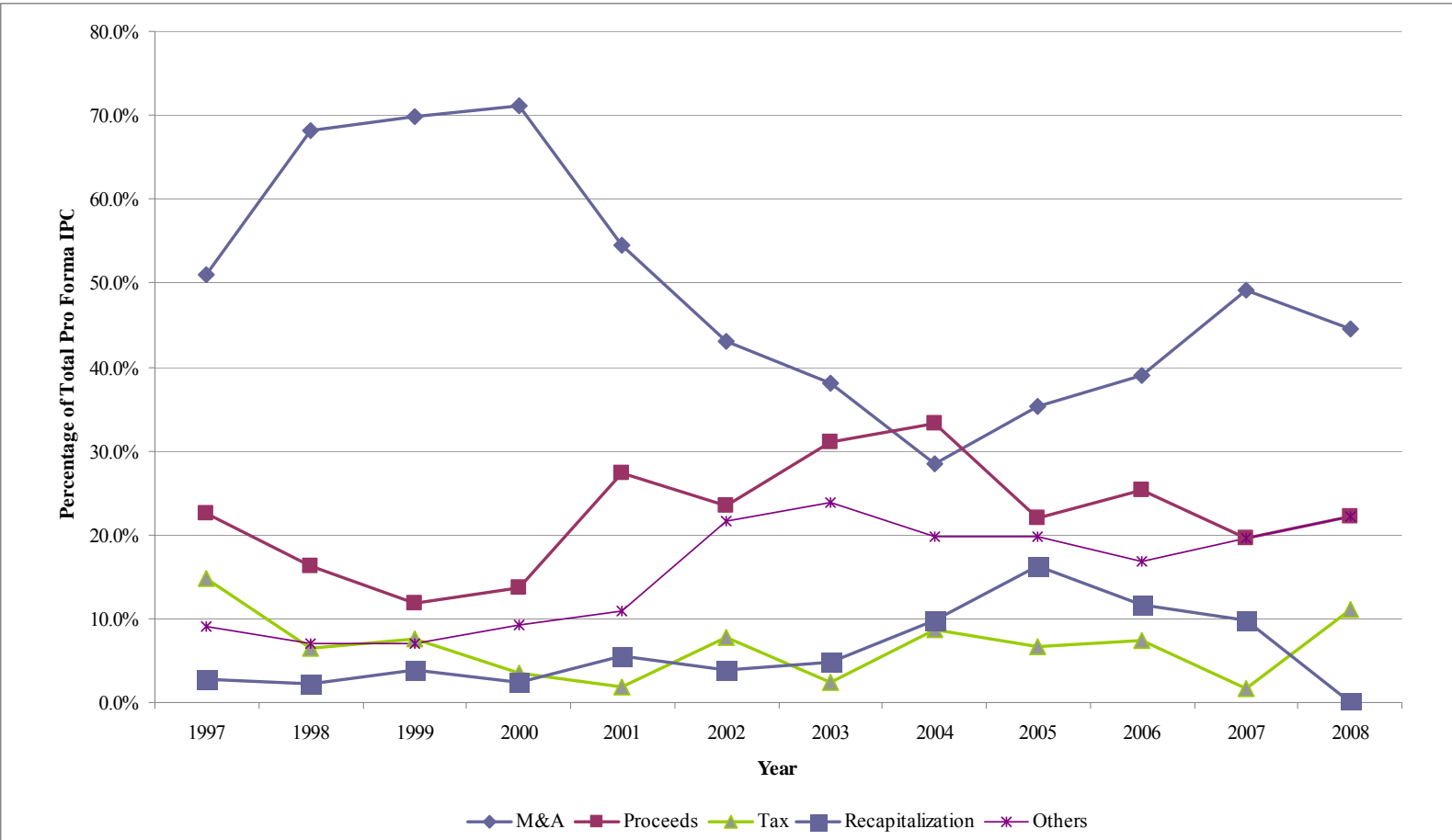


Figure 3-8
Magnitude of IPO Pro Forma Earnings Adjustment by Adjusting Items

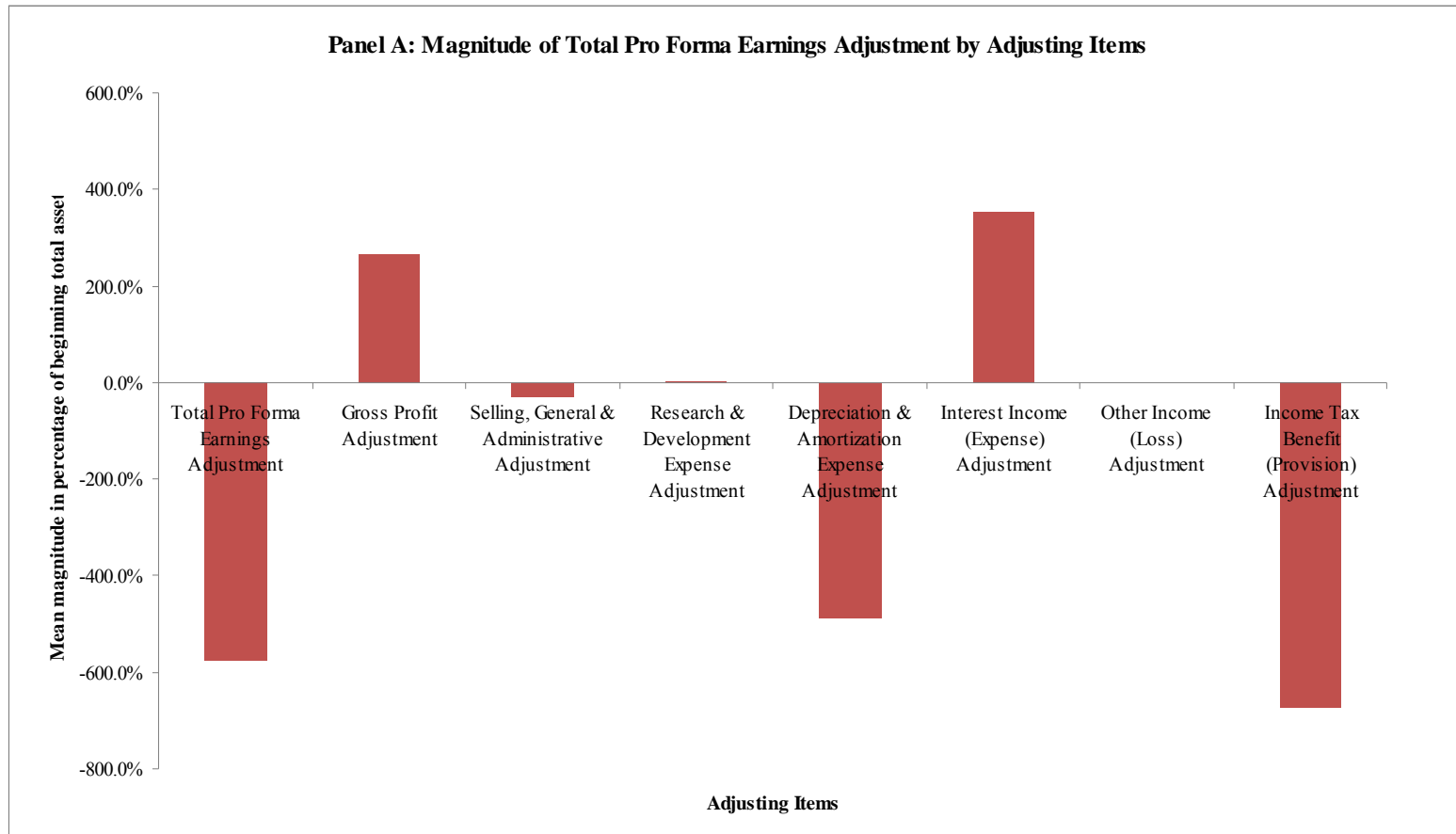


Figure 3-8 (Continued)
Magnitude of IPO Pro Forma Earnings Adjustment by Adjusting Items

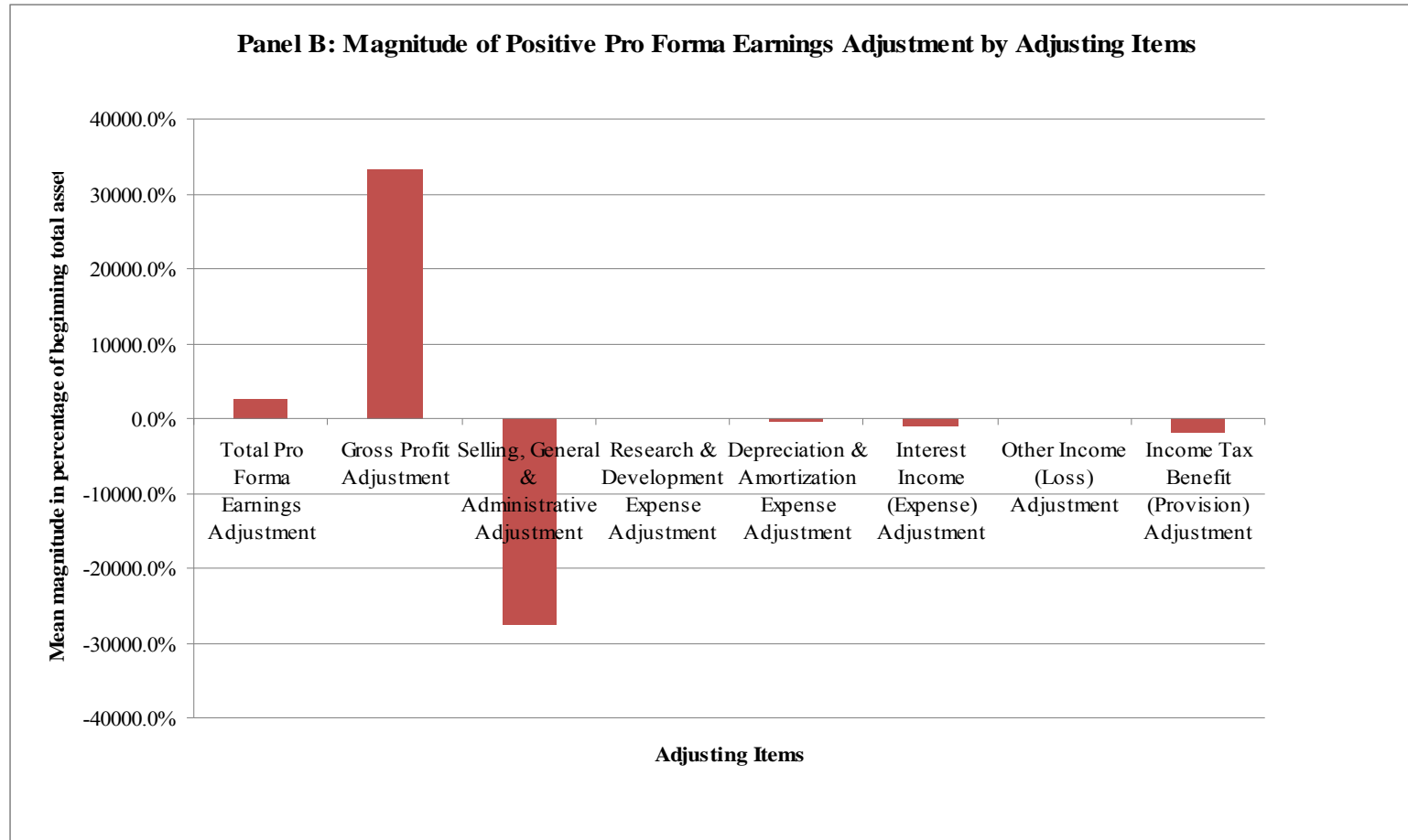


Figure 3-8 (Continued)
Magnitude of IPO Pro Forma Earnings Adjustment by Adjusting Items

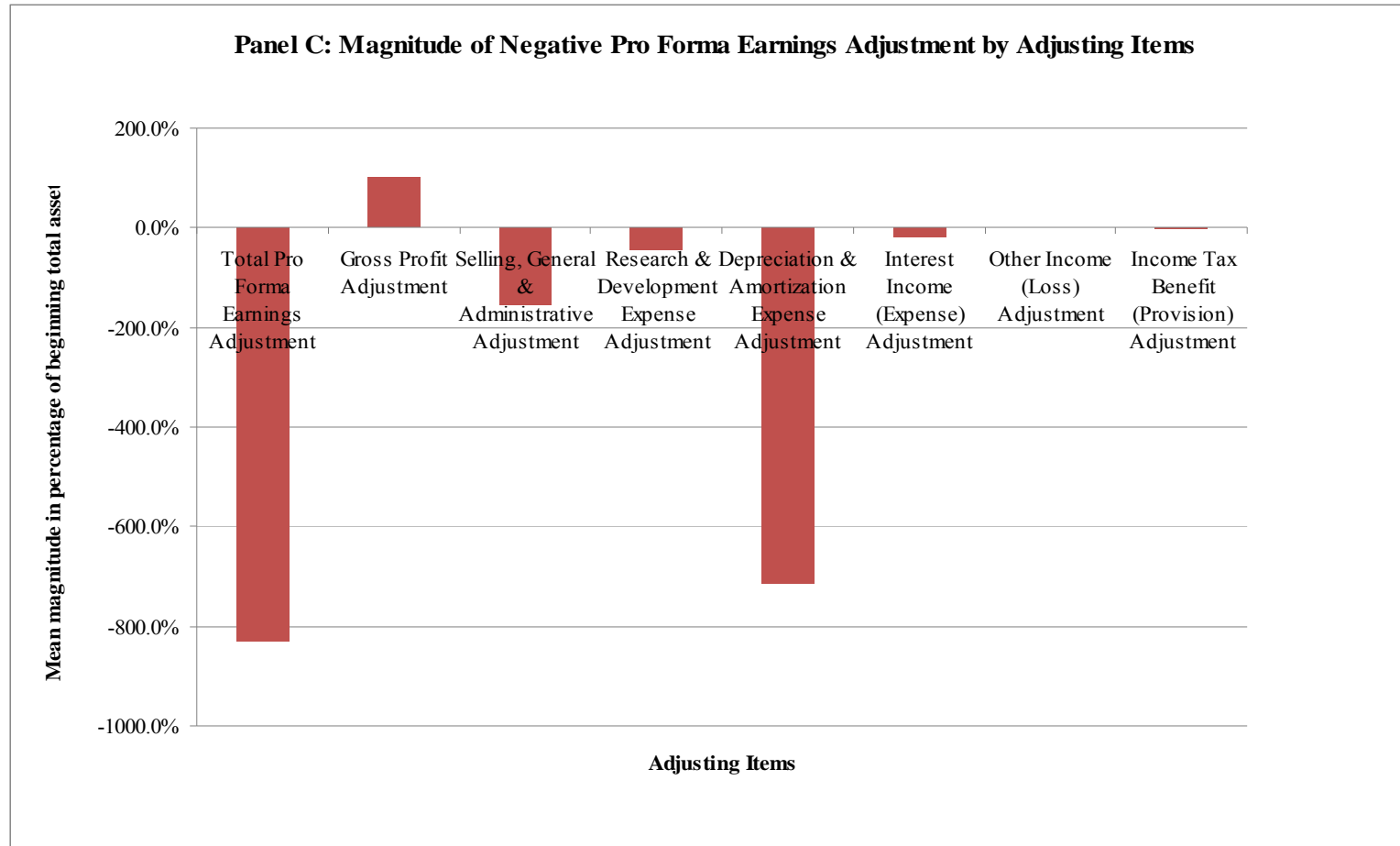


Figure 3-9
Relative Frequency of Pro Forma IPOs of Different Signs by Year

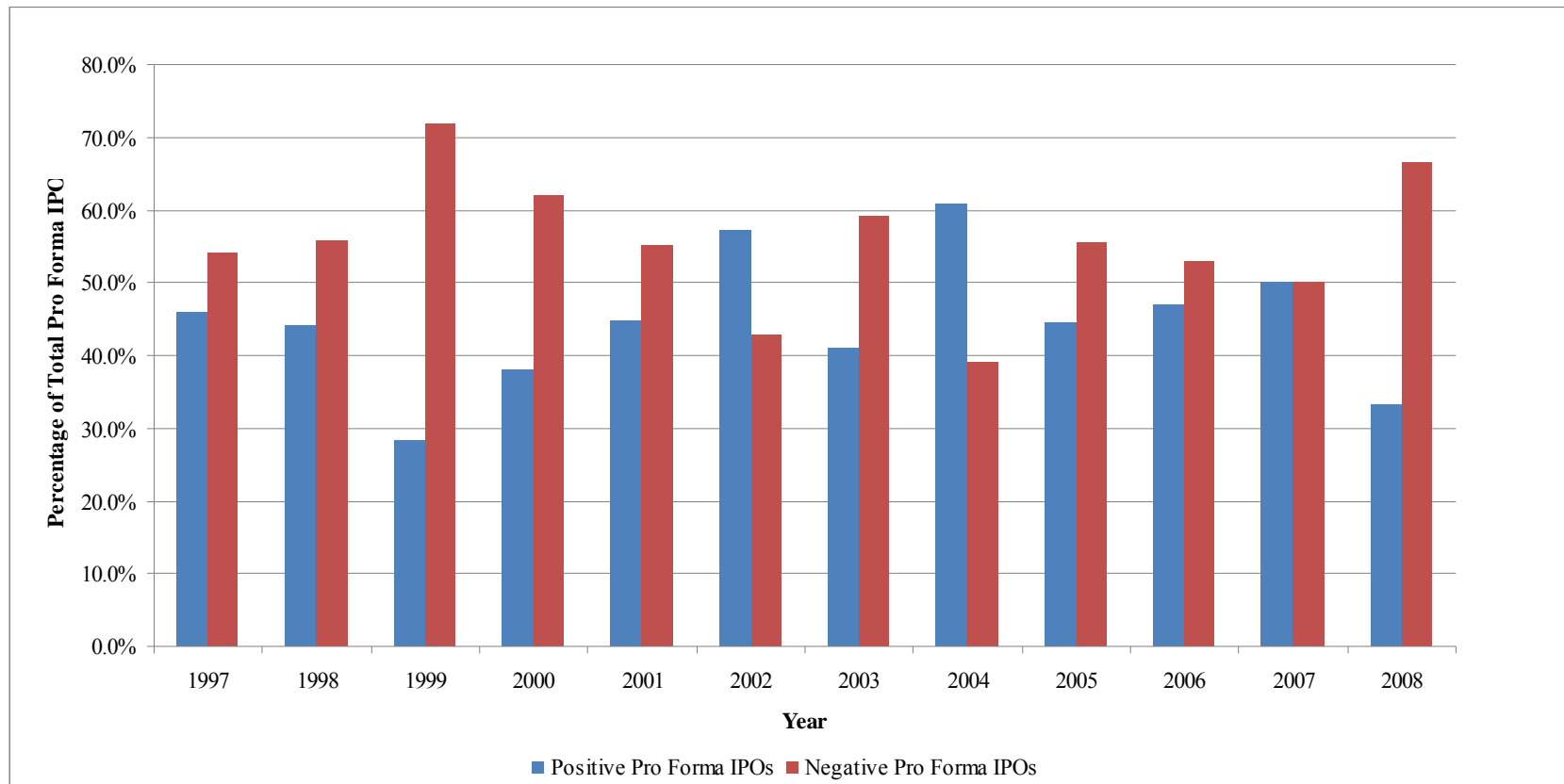


Figure 4-1
Post-IPO five year Returns based on Alternative Methodologies and Benchmarks

Panel A: Subsample of positive pro forma earnings adjustment

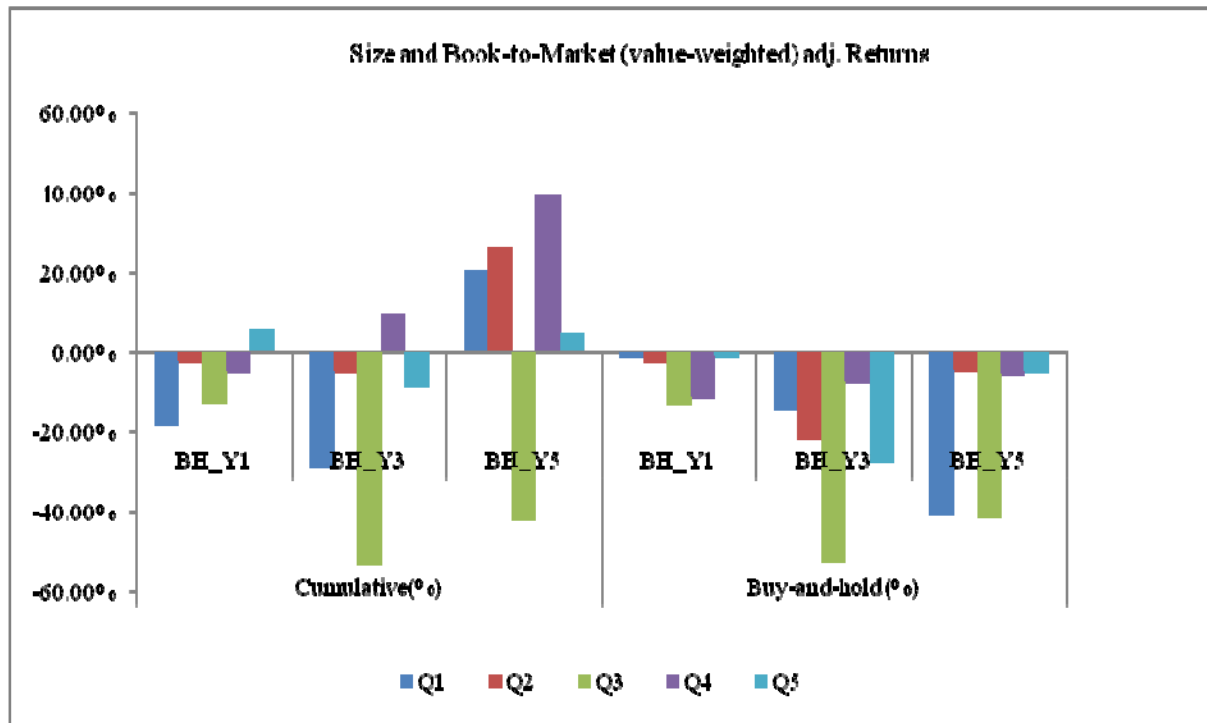


Figure 4-1 (Continued)
Post-IPO five year Returns based on Alternative Methodologies and Benchmarks

Panel B: Subsample of negative pro forma earnings adjustment

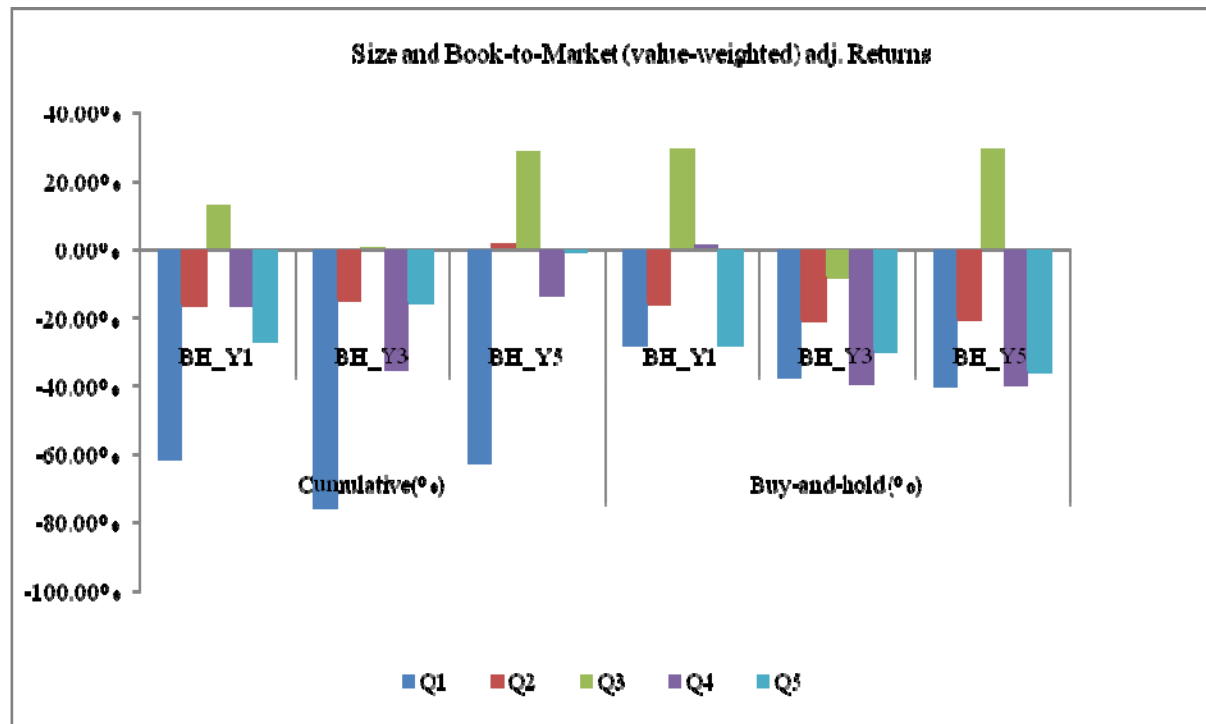


Table 3-1
Sample Selection Process

Initial sample of IPOs from SDC U.S. new issues database, 1997-2008	3,589
Less IPOs:	
With miscellaneous data problems (including multiple issues on the same day)	3
Of regulated utility and financial issues	1,106
On registration forms other than S-1	511
Of penny stocks (offer price < \$5)	4
By firms that do not match to a CRSP firm	31
Of non-ordinary/common shares	74
Total IPOs	1,860
Less IPOs:	
Without pro forma earnings adjustment	322
With pro forma earnings adjustment related to “below the bottom line” items	711
Final sample of pro forma IPOs	827

This table describes the sample selection process of this study. Regulated utility and financial issues are issues with SIC codes in the range 4900-4942 and 6000-6999 respectively. Non-ordinary/common shares issues are identified based on CRSP share code (not equal to 11). Examples of pro forma earnings adjustment related to “below the bottom line” items include reporting of pro forma adjustment related to extraordinary items, discontinued operations, cumulative effect of changes in accounting principles, dividends on preference shares, and the calculation of weighted average outstanding shares.

Table 3-2
Descriptive Statistics of Pro Forma Earnings Adjustment by
Adjustment Category

Adjustment Category	N	25 th Percentile	Mean	Median	75 th Percentile
<i>M&A</i>	888	-38.8%	-1130.1%	-5.3%	1.0%
<i>Proceeds</i>	323	-2.5%	-3.0%	0.8%	3.5%
<i>Tax</i>	138	-12.7%	-7.7%	-5.8%	-1.3%
<i>Recapitalization</i>	85	-1.3%	-11.7%	1.3%	8.5%
<i>New Financing</i>	43	-9.1%	-35.1%	-0.9%	1.1%
<i>Disposition</i>	31	-1.6%	-18.0%	1.3%	3.5%
<i>Convertible Notes</i>	27	1.1%	20.0%	2.2%	14.5%
<i>Reorganization</i>	22	-11.6%	-78.0%	-0.4%	1.7%
<i>Independence</i>	18	-1.4%	-0.5%	-1.0%	1.0%
<i>Other</i>	66	-70.4%	-240.8%	-1.0%	2.9%

This table presents the magnitude of pro forma earnings adjustment in percentage of total assets at the beginning of the fiscal year just prior to IPO by adjustment categories. Adjustment categories are defined as follows: *M&A*: mergers and acquisitions. *Proceeds*: use of IPO proceeds. *Tax*: income tax related adjustment. *Recapitalization*: recapitalization of current debt structure. *New Financing*: issuance of new debt. *Disposition*: sale of businesses. *Convertible Notes*: conversion of convertible notes. *Reorganization*: reorganization of businesses. *Independence*: separation from parent company. *Other*: other specific pro forma earnings adjustment related to stock-related compensation, elimination of management fees, agreement amendment, asset transfer, sale leaseback, spin-off, switch from capital to operating leases, change of amortization policies, change of compensation plan for consultants, purchases of intangible assets, equity buyouts, purchase of minority interests, roll-up, and capital stock transfer.

Table 4-1
Descriptive Statistics of Variables Used in Empirical Analyses

Variable	N	Mean	Std. Dev.	Skewness	Kurtosis	25%	Median	75%
<i>FGAAPNI</i>	541	-17.50	235.13	1.45	96.24	-26.10	-1.02	12.18
<i>FGAAPOI</i>	541	23.46	342.42	9.51	170.80	-15.51	3.68	29.36
<i>FGAAPCFO</i>	541	46.30	254.36	10.44	136.39	-6.71	5.52	27.55
<i>FGAAPFCF</i>	541	-9.16	281.39	-7.92	174.40	-19.41	-3.17	8.09
<i>PFEADJ</i>	587	-2.75	36.83	6.26	129.70	-3.38	-0.35	1.74
<i>SALEADJ</i>	587	46.99	325.17	21.04	480.14	0.00	0.63	19.08
<i>COGSADJ</i>	587	-27.60	197.15	-18.54	397.33	-8.81	0.00	0.00
<i>SGAADJ</i>	587	-13.33	130.02	-20.93	483.44	-6.80	-0.77	0.00
<i>RDADJ</i>	587	0.47	12.90	21.27	481.22	0.00	0.00	0.00
<i>DAADJ</i>	587	-4.75	19.73	-6.79	61.33	-1.53	0.00	0.00
<i>INTADJ</i>	587	-3.32	38.23	-14.06	259.72	-0.30	0.00	0.48
<i>OTHERADJ</i>	587	-0.04	6.82	-3.66	117.58	0.00	0.00	0.00
<i>TAXADJ</i>	587	-1.17	11.16	-1.52	56.79	-1.72	-0.01	0.00
<i>OV</i>	587	475.59	1081.28	9.91	128.09	110.00	230.87	449.40
<i>MV</i>	587	671.24	1675.65	10.36	144.31	125.71	274.95	618.80
<i>BV</i>	587	111.65	842.06	11.31	153.32	-6.31	3.20	20.06
<i>GAAPNI</i>	587	3.14	110.70	10.75	203.23	-7.77	0.22	4.53
<i>TACC</i>	587	-32.52	177.63	-10.01	119.25	-11.43	-2.42	-0.05
<i>DACC</i>	587	-0.36	3.02	-11.40	168.45	-0.11	0.01	0.11
<i>L(TA)</i>	587	3.43	1.94	0.70	0.32	2.01	3.09	4.67
<i>L(AGE)</i>	587	2.39	1.04	0.27	-0.37	1.61	2.30	3.04
<i>RETENTION</i>	587	0.70	0.21	-1.66	2.73	0.64	0.75	0.84
<i>UWRANK</i>	587	7.99	1.49	-1.92	3.80	7.00	9.00	9.00
<i>BOOM</i>	587	0.76	0.43	-1.24	-0.46	1.00	1.00	1.00
<i>CRASH</i>	587	0.16	0.37	1.82	1.33	0.00	0.00	0.00
<i>TECH</i>	587	0.36	0.48	0.60	-1.65	0.00	0.00	1.00
<i>INTERNET</i>	587	0.20	0.40	1.50	0.24	0.00	0.00	0.00
<i>BH_Y5</i>	573	-0.20	1.05	2.13	5.32	-0.93	-0.64	0.19
<i>MKT_Y5</i>	573	0.17	0.22	0.80	0.42	0.01	0.13	0.27
<i>IR</i>	573	0.30	0.52	2.76	8.09	0.01	0.13	0.32
<i>L(MV)</i>	573	5.67	1.19	0.21	0.10	4.79	5.59	6.47
<i>L(BV/MV)</i>	573	0.04	0.16	0.30	8.25	-0.02	0.01	0.08

This table shows descriptive statistics for variables used in various empirical analyses in this study. The sample covers from 1997 to 2003. *FGAAPNI* is average earnings before extraordinary items and discontinued operations from cash flow statement (IBC) for years 1 through 3 following the pro forma transaction year (in \$millions). *FGAAPOI* is average operating income after depreciation (OIADP) for years 1 through 3 following the pro forma transaction year (in \$millions). *FGAAPCFO* is average cash flow from operations (OANCF) for years 1 through 3 following the pro forma transaction year (in \$millions). *FGAAPFCF* is average cash flow from operations (OANCF) less capital expenditure (CAPX) for years 1 through 3 following the pro forma transaction year (in \$millions). *PFEADJ* is pro forma earnings adjustment calculated as the difference between pro forma earnings and GAAP earnings for the year just prior to IPO (in \$millions). *SALEADJ* is pro forma adjustment related to sales (in \$millions). *COGSADJ* is pro forma adjustment related to cost of goods sold (in \$millions). *SGAADJ* is pro forma adjustment related to

selling, general and administrative expenses (in \$millions). *RDADJ* is pro forma adjustment related to research & development expenses (in \$millions). *DAADJ* is pro forma adjustment related to depreciation & amortization expenses (in \$millions). *INTADJ* is pro forma adjustment related to interest income (loss) (in \$millions). *OTHERADJ* is pro forma adjustment related to other income (loss) (in \$millions). *TAXADJ* is pro forma adjustment related to income tax benefit (loss) (in \$millions). *OV* is the final offer price times shares outstanding on completion of IPO (in \$millions). *MV* is the first trading day price times shares outstanding on completion of IPO (in \$millions). *BV* is book value of equity (CEQ) at the end of the year just prior to IPO (in \$millions). *GAAPNI* is GAAP earnings defined as earnings before extraordinary items and discontinued operations (IBC) for the year just prior to IPO (in \$millions). *TACC* is earnings before extraordinary items and discontinued operations from cash flow statement (IBC) less cash flow from operations (OANCF) for the year just prior to IPO (in \$millions). *DACC* is defined as abnormal accruals, computed as the difference between total accruals (*TACC*) and estimated normal accruals for the year just prior to IPO, where normal accruals are estimated using a non-linear Jones model suggested by Ball and Shivakumar (2008): $TACC = a_0 + a_1XSALES + a_2FASSET + a_3CFO + a_4DCFO + a_5DCFO * CFO + e$. Model parameters are estimated separately for each IPO firm from a cross-sectional of all non-IPO listed firms in its 2-digit SIC with data for the year just prior to IPO. Only industry-years with at least 10 observations are considered. *TACC* is total accruals, defined as the difference between earnings before extraordinary items and discontinued operations from cash flow statement (IBC) less cash flow from operations (OANCF) for the year just prior to IPO; *XSALES* is change in sales (SALE) for the year just prior to IPO; *FASSET* is book value of fixed assets (PPEGT) for the year just prior to IPO; *CFO* is cash flow from operations (OANCF) for the year just prior to IPO; *DCFO* takes the value 1 if *CFO* < 0 and 0 otherwise. All continuous variables are scaled by beginning total assets and trimmed 1% on both extremes. *L(TA)* is logarithm of book value of assets (AT) at the end of the year just prior to IPO (in \$millions). *L(AGE)* is logarithm of the difference between the founding year and IPO issue-year, where I obtain the founding year of IPO firms from Professor Jay R. Ritter's website <http://bear.cba.ufl.edu/ritter/foundingdates.htm>. *RETENTION* is the percentage of shares retained by shareholders and is calculated as outstanding shares after the offering minus total primary and secondary shares offered all divided by shares outstanding after the offering. *UWRANK* is the underwriter reputation ranking based on Loughran and Ritter (2004). *BOOM* is an indicator variable equal to one if an IPO is completed between January 1997 and March 2000, and zero otherwise. *CRASH* is an indicator variable equal to one if an IPO is completed between April 2000 and December 2001, and zero otherwise. *TECH* is an indicator variable equal to one if an IPO firm is in the high technology industry and zero otherwise. *INTERNET* is an indicator variable equal to one if an IPO firm is an Internet firm and zero otherwise. *BH_Y5* are buy and hold raw five year returns, measured from the first aftermarket closing price to the earlier of the five-year anniversary or its CRSP delisting date. *MKT_Y5* is the buy and hold CRSP value-weighted market return for the same return interval as *BH_Y5*. *IR* is the difference between final offer price and first trading day price scaled by final offer price. *L(MV)* is logarithm of market value of equity at the

beginning of the holding period. $L(BV/MV)$ is logarithm of book value of equity scaled by market value of equity at the beginning of the holding period. To retain negative values of variables, I use the logarithm transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$.

Table 4-2
Correlation Table (Pearson above and Spearman below the diagonal)

Panel A: variables used in tests of H1

Variable	<i>L(FGAAPNI)</i>	<i>L(FGAAPOI)</i>	<i>L(FGAAPCFO)</i>	<i>L(FGAAPFCF)</i>	<i>L(PFEADJ)</i>	<i>NEG_ PFEADJ</i>	<i>L(GAAPNI)</i>	<i>LOSS_ GAAPNI</i>	<i>L(TA)</i>	<i>L(AGE)</i>	<i>L(TACC)</i>
<i>L(FGAAPNI)</i>		0.898	0.748	0.722	0.206	-0.182	0.608	-0.513	0.446	0.379	-0.067
<i>L(FGAAPOI)</i>	0.902		0.833	0.708	0.216	-0.218	0.572	-0.493	0.578	0.423	-0.139
<i>L(FGAAPCFO)</i>	0.747	0.849		0.751	0.186	-0.193	0.479	-0.415	0.622	0.432	-0.274
<i>L(FGAAPFCF)</i>	0.728	0.709	0.740		0.146	-0.136	0.464	-0.378	0.425	0.324	-0.148
<i>L(PFEADJ)</i>	0.229	0.230	0.179	0.182		-0.786	<i>-0.081</i>	0.010	<i>0.110</i>	0.186	-0.006
<i>NEG_PFEAD</i>	-0.194	-0.216	-0.184	-0.161	-0.862		0.036	-0.040	-0.137	-0.130	-0.005
<i>L(GAAPNI)</i>	0.598	0.553	0.456	0.469	-0.042	0.033		-0.852	0.284	0.300	0.243
<i>LOSS_GAAPNI</i>	-0.502	-0.466	-0.377	-0.403	0.006	-0.040	-0.866		-0.223	-0.242	-0.285
<i>L(TA)</i>	0.451	0.615	0.645	0.361	0.138	-0.162	0.299	-0.256		0.529	-0.441
<i>L(AGE)</i>	0.401	0.445	0.439	0.331	0.178	-0.124	0.328	-0.269	0.520		-0.142
<i>L(TACC)</i>	-0.049	-0.166	-0.300	<i>-0.083</i>	0.011	0.009	0.286	-0.308	-0.413	-0.125	

See Table 4-1 for variable definitions. Numbers in italic, bold italic, bold denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 4-2 (Continued)
Correlation Table (Pearson above and Spearman below the diagonal)

Panel B: variables used in tests of H2

Variable	<i>L(OV)</i>	<i>L(MV)</i>	<i>L(PFE ADJ)</i>	<i>NEG_ PFEADJ</i>	<i>L(GAA PNI)</i>	<i>LOSS_ GAAPNI</i>	<i>L(BV)</i>	<i>L(DACC)</i>	<i>L(TA)</i>	<i>L(AGE)</i>	<i>RETE_ NTION</i>	<i>UW_ RANK</i>	<i>BOOM</i>	<i>CRASH</i>	<i>TECH</i>	<i>INTER_ NET</i>
<i>L(OV)</i>		0.969	-0.156	0.123	<i>-0.099</i>	0.198	<i>0.106</i>	-0.058	0.441	0.140	0.386	0.557	-0.304	0.265	0.131	0.203
<i>L(MV)</i>	0.973		-0.181	0.149	-0.140	0.227	<i>0.090</i>	-0.052	0.331	<i>0.077</i>	0.393	0.542	-0.261	0.240	0.199	0.302
<i>L(PFEADJ)</i>	-0.183	-0.200		-0.788	-0.063	-0.007	-0.060	-0.029	0.109	0.166	<i>-0.069</i>	-0.027	0.023	-0.034	-0.174	-0.276
<i>NEG_ PFEADJ</i>	0.125	0.144	-0.860		0.022	-0.020	0.048	0.004	-0.143	-0.113	0.109	-0.012	0.007	0.011	0.160	0.290
<i>L(GAAPNI)</i>	-0.167	-0.190	-0.023	0.016		-0.854	0.394	0.302	0.299	0.315	<i>-0.081</i>	<i>-0.070</i>	<i>0.081</i>	-0.151	-0.285	-0.371
<i>LOSS_ GAAPNI</i>	0.225	0.244	-0.013	-0.020	-0.866		-0.343	-0.310	-0.233	-0.258	<i>0.088</i>	0.123	-0.145	0.203	0.265	0.402
<i>L(BV)</i>	0.107	<i>0.090</i>	-0.034	0.035	0.397	-0.344		0.120	0.324	0.142	-0.039	0.034	0.033	-0.050	-0.188	-0.161
<i>L(DACC)</i>	<i>-0.083</i>	-0.086	-0.065	<i>0.088</i>	0.407	-0.429	0.177		0.175	0.141	-0.053	<i>-0.082</i>	-0.033	0.017	<i>-0.092</i>	-0.251
<i>L(TA)</i>	0.342	0.257	0.133	-0.168	0.308	-0.265	0.341	0.065		0.526	-0.144	0.312	-0.242	0.111	-0.273	-0.391
<i>L(AGE)</i>	0.059	0.020	0.155	-0.108	0.336	-0.281	0.146	<i>0.094</i>	0.512		-0.059	<i>0.084</i>	-0.099	0.031	-0.211	-0.316
<i>RETENTION</i>	0.540	0.538	-0.168	0.166	-0.107	0.126	0.014	0.007	<i>-0.091</i>	-0.092		0.142	-0.063	<i>0.096</i>	0.227	0.197
<i>UWRANK</i>	0.599	0.581	-0.048	-0.008	<i>-0.072</i>	0.116	<i>0.094</i>	-0.063	0.325	0.060	0.276		-0.200	0.177	0.055	<i>0.100</i>
<i>BOOM</i>	-0.326	-0.291	0.030	0.007	<i>0.093</i>	-0.145	0.013	0.006	-0.247	-0.106	-0.115	-0.204		-0.794	-0.044	0.049
<i>CRASH</i>	0.273	0.256	-0.038	0.011	-0.168	0.203	-0.035	-0.046	0.111	0.044	0.147	0.182	-0.794		<i>0.083</i>	-0.015
<i>TECH</i>	0.145	0.203	-0.187	0.160	-0.283	0.265	-0.192	<i>-0.079</i>	-0.289	-0.193	0.259	0.010	-0.044	<i>0.083</i>		0.344
<i>INTERNET</i>	0.233	0.309	-0.300	0.290	-0.380	0.402	-0.166	-0.184	-0.421	-0.348	0.279	0.115	0.049	-0.015	0.344	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. Numbers in italic, bold italic, bold denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 4-2 (Continued)
Correlation Table (Pearson above and Spearman below the diagonal)

Panel C: variables used in tests of H3

Variable	<i>BH_Y5</i>	<i>L</i> (PFE ADJ)	<i>NEG_</i> <i>PFEADJ</i>	<i>L</i> (GAAP NI)	<i>LOSS_</i> <i>GAAPNI</i>	<i>L</i> (DACC)	<i>L</i> (TA)	<i>L</i> (AGE)	<i>RETEN_</i> <i>TION</i>	<i>UW_</i> <i>RANK</i>	<i>BOOM</i>	<i>CRASH</i>	<i>TECH</i>	<i>INTE_</i> <i>RNET</i>	<i>MKT_</i> <i>Y5</i>	<i>L</i> (MV)	<i>L</i> (BV /MV)	<i>IR</i>
<i>BH_Y5</i>		<i>0.072</i>	-0.048	0.169	-0.118	0.053	0.322	0.152	-0.054	0.128	-0.187	<i>0.092</i>	-0.163	-0.172	0.237	0.022	0.138	-0.191
<i>L</i> (PFEADJ)	0.136		-0.788	-0.062	-0.000	-0.019	0.159	0.182	-0.055	-0.012	0.031	-0.045	-0.176	-0.285	0.112	-0.155	-0.061	-0.164
<i>NEG_</i> <i>PFEADJ</i>	-0.110	-0.861		0.024	-0.028	-0.001	-0.170	-0.121	<i>0.106</i>	-0.028	0.004	0.017	0.159	0.291	<i>-0.080</i>	0.144	0.053	0.159
<i>L</i> (GAAPNI)	0.286	-0.028	0.021		-0.859	0.320	0.274	0.310	<i>-0.078</i>	<i>-0.083</i>	<i>0.071</i>	-0.150	-0.283	-0.371	0.233	-0.148	0.319	-0.187
<i>LOSS_</i> <i>GAAPNI</i>	-0.231	-0.005	-0.028	-0.866		-0.318	-0.226	-0.256	<i>0.082</i>	0.122	-0.142	0.206	0.262	0.397	-0.199	0.211	-0.284	0.187
<i>L</i> (DACC)	0.043	-0.070	<i>0.091</i>	0.416	-0.432		0.183	0.148	-0.058	<i>-0.088</i>	-0.024	0.004	<i>-0.100</i>	-0.264	0.144	-0.066	0.053	0.012
<i>L</i> (TA)	0.396	0.161	-0.184	0.296	-0.260	0.070		0.524	-0.131	0.306	-0.269	0.133	-0.263	-0.392	0.214	0.325	0.287	-0.262
<i>L</i> (AGE)	0.253	0.165	-0.114	0.336	-0.280	<i>0.101</i>	0.507		-0.068	<i>0.073</i>	<i>-0.100</i>	0.038	-0.203	-0.311	0.185	0.062	0.128	-0.187
<i>RETENTION</i>	-0.116	-0.153	0.159	<i>-0.105</i>	0.124	0.009	<i>-0.093</i>	<i>-0.100</i>		0.153	-0.062	<i>0.104</i>	0.231	0.200	-0.137	0.391	-0.119	0.153
<i>UWRANK</i>	0.043	-0.032	-0.021	<i>-0.085</i>	0.122	-0.066	0.318	0.049	0.276		-0.203	0.180	0.052	<i>0.099</i>	<i>-0.102</i>	0.552	-0.004	0.142
<i>BOOM</i>	-0.149	0.036	0.004	<i>0.085</i>	-0.142	0.012	-0.260	-0.106	-0.114	-0.208		-0.794	-0.044	0.054	-0.126	-0.296	-0.006	<i>0.071</i>
<i>CRASH</i>	0.052	-0.048	0.017	-0.169	0.206	-0.058	0.123	0.050	0.154	0.187	-0.794		<i>0.081</i>	-0.022	<i>-0.078</i>	0.258	-0.022	-0.015
<i>TECH</i>	-0.225	-0.187	0.159	-0.280	0.262	<i>-0.084</i>	-0.282	-0.183	0.263	0.009	-0.044	<i>0.081</i>		0.342	-0.184	0.189	-0.192	0.289
<i>INTERNET</i>	-0.318	-0.307	0.291	-0.379	0.397	-0.192	-0.418	-0.342	0.285	0.116	0.054	-0.022	0.342		-0.292	0.272	-0.125	0.463
<i>MKT_Y5</i>	0.284	<i>0.107</i>	<i>-0.077</i>	0.225	-0.181	0.157	0.201	0.181	-0.169	-0.131	<i>-0.093</i>	-0.039	-0.178	-0.304		-0.133	<i>0.101</i>	-0.198
<i>L</i> (MV)	-0.055	-0.193	0.145	-0.186	0.221	<i>-0.091</i>	0.260	-0.001	0.515	0.571	-0.320	0.269	0.194	0.276	-0.127		0.001	0.456
<i>L</i> (BV/MV)	0.176	0.017	0.010	0.429	-0.408	0.187	0.293	0.139	<i>-0.083</i>	-0.030	<i>0.082</i>	-0.100	-0.259	-0.218	0.178	-0.108		<i>-0.075</i>
<i>IR</i>	-0.196	<i>-0.106</i>	<i>0.095</i>	-0.142	0.116	-0.041	-0.227	-0.154	0.204	<i>0.099</i>	0.015	0.023	0.270	0.335	-0.142	0.408	-0.120	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. Numbers in italic, bold italic, bold denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 4-3
Cross-Sectional Regression Results of H1 – Aggregated PFEADJ

Panel A: Total Sample

Independent Variable	<i>L(FGAAPNI)</i>		<i>L(FGAAPOI)</i>		<i>L(FGAAPCFO)</i>		<i>L(FGAAPFCF)</i>	
	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	-1.694	-0.70	-1.887	-0.87	-1.975	-0.98	-3.464	-1.55
<i>NEG_PFEADJ</i>	0.123	0.40	-0.114	-0.37	-0.416	-1.54	-0.049	-0.16
<i>LOSS_GAAPNI</i>	0.210	0.50	0.101	0.23	-1.022	-2.75***	-0.673	-1.55
<i>L(PFEADJ)</i>	-0.068	-0.27	0.032	0.15	-0.202	-1.07	0.102	0.40
<i>L(PFEADJ)*LOSS_GAAPNI</i>	0.675	2.11**	0.516	1.80*	0.955	4.14***	0.582	1.92*
<i>L(PFEADJ)*NEG_PFEADJ</i>	0.418	1.01	0.000	0.00	0.076	0.27	0.104	0.24
<i>L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI</i>	-0.640	-1.26	-0.336	-0.74	-0.859	-2.22**	-0.714	-1.35
<i>L(GAAPNI)</i>	0.855	5.08***	0.325	2.12**	0.140	0.96	0.460	2.45**
<i>L(GAAPNI)*LOSS_GAAPNI</i>	-0.135	-0.59	0.507	2.41**	0.599	2.85***	0.304	1.21
<i>L(TA)</i>	0.372	3.80***	0.777	7.62***	0.524	5.08***	0.169	1.38
<i>L(AGE)</i>	0.086	0.71	0.071	0.64	0.185	1.91*	0.177	1.41
<i>L(TACC)</i>					-0.316	-5.38***	-0.239	-3.40***
<i>INDUSTRY_DUMMIES</i>	Included		Included		Included		Included	
<i>YEAR_DUMMIES</i>	Included		Included		Included		Included	
Adj.R ²	54.11%		60.78%		57.96%		40.38%	
No. of Obs.	541		541		541		541	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 4-3 (Continued)
Cross-Sectional Regression Results of H1 – Aggregated *PFEADJ*

Panel B1: Subsample of positive *PFEADJ* and positive *GAAPNI*

Independent Variable	<i>L(FGAAPNI)</i>		<i>L(FGAAPOI)</i>		<i>L(FGAAPCFO)</i>		<i>L(FGAAPFCF)</i>	
	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	0.582	0.65	0.944	1.18	2.100	2.33**	-3.752	-3.87***
<i>L(PFEADJ)</i>	0.407	1.39	0.600	2.58**	0.450	2.35**	0.883	3.41***
<i>L(GAAPNI)</i>	1.126	4.25***	0.770	3.62***	0.843	3.92***	0.668	3.05***
<i>L(TA)</i>	-0.010	-0.05	0.148	0.82	-0.338	-1.95*	-0.380	-2.13**
<i>L(AGE)</i>	-0.194	-0.94	-0.155	-0.79	-0.029	-0.20	-0.171	-0.82
<i>L(TACC)</i>					-0.294	-3.50***	-0.112	-1.34
<i>INDUSTRY_DUMMIES</i>	Included		Included		Included		Included	
<i>YEAR_DUMMIES</i>	Included		Included		Included		Included	
Adj. R ²	34.24%		37.40%		44.78%		44.00%	
No. of Obs.	121		121		121		121	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 4-3 (Continued)
Cross-Sectional Regression Results of H1 – Aggregated *PFEADJ*

Panel B2: Subsample of positive *PFEADJ* and negative *GAAPNI*

Independent Variable	<i>L(FGAAPNI)</i>		<i>L(FGAAPOI)</i>		<i>L(FGAAPCFO)</i>		<i>L(FGAAPFCF)</i>	
	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	-0.999	-1.05	-0.066	-0.09	-1.641	-2.46**	-2.305	-2.87***
<i>L(PFEADJ)</i>	0.706	2.16**	0.690	2.18**	0.565	2.31**	0.696	2.24**
<i>L(GAAPNI)</i>	1.039	3.79***	1.166	4.45***	0.831	3.77***	1.211	4.03***
<i>L(TA)</i>	0.265	1.33	0.695	4.38***	0.581	3.39***	0.152	0.71
<i>L(AGE)</i>	0.389	1.45	0.291	1.27	0.442	1.92*	0.562	2.43**
<i>L(TACC)</i>					-0.436	-2.68***	-0.357	-1.76*
<i>INDUSTRY_DUMMIES</i>	Included		Included		Included		Included	
<i>YEAR_DUMMIES</i>	Included		Included		Included		Included	
Adj.R ²	21.93%		40.53%		50.88%		29.49%	
No. of Obs.	124		124		124		124	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 4-3 (Continued)
Cross-Sectional Regression Results of H1 – Aggregated *PFEADJ*

Panel B3: Subsample of negative *PFEADJ* and positive *GAAPNI*

Independent Variable	<i>L(FGAAPNI)</i>		<i>L(FGAAPOI)</i>		<i>L(FGAAPCFO)</i>		<i>L(FGAAPFCF)</i>	
	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	-6.024	-5.07***	-5.873	-6.11***	-5.727	-4.90***	-3.977	-1.97*
<i>L(PFEADJ)</i>	0.714	2.49**	0.315	1.19	-0.142	-1.01	0.610	1.60
<i>L(GAAPNI)</i>	1.275	4.44***	0.826	3.17***	0.625	3.29***	1.425	3.52***
<i>L(TA)</i>	0.342	1.79*	0.633	4.08***	0.236	1.57	-0.384	-1.35
<i>L(AGE)</i>	-0.097	-0.50	-0.110	-0.67	-0.125	-0.94	0.037	0.16
<i>L(TACC)</i>					-0.236	-3.06***	-0.263	-2.09**
<i>INDUSTRY_DUMMIES</i>	Included		Included		Included		Included	
<i>YEAR_DUMMIES</i>	Included		Included		Included		Included	
Adj. R ²	41.61%		50.96%		54.95%		26.85%	
No. of Obs.	158		158		158		158	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 4-3 (Continued)
Cross-Sectional Regression Results of H1 – Aggregated *PFEADJ*

Panel B4: Subsample of negative *PFEADJ* and negative *GAAPNI*

Independent Variable	<i>L(FGAAPNI)</i>		<i>L(FGAAPOI)</i>		<i>L(FGAAPCFO)</i>		<i>L(FGAAPFCF)</i>	
	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	0.608	0.34	-1.408	-0.70	-3.135	-1.81*	-1.156	-0.57
<i>L(PFEADJ)</i>	0.304	1.91*	0.096	0.47	-0.249	-1.47	-0.049	-0.32
<i>L(GAAPNI)</i>	0.379	1.94*	0.674	3.69***	1.050	4.76***	0.818	3.83***
<i>L(TA)</i>	0.279	1.61	0.878	4.19***	0.441	2.16**	0.192	0.92
<i>L(AGE)</i>	0.889	2.43**	0.985	2.36**	1.062	2.80***	0.681	2.09**
<i>L(TACC)</i>					-0.769	-5.15***	-0.522	-3.69***
<i>INDUSTRY_DUMMIES</i>	Included		Included		Included		Included	
<i>YEAR_DUMMIES</i>	Included		Included		Included		Included	
Adj. R ²	29.84%		44.18%		47.66%		31.48%	
No. of Obs.	138		138		138		138	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 4-4
Cross-Sectional Regression Results of H1 – Decomposed *PFEADJ*

Independent Variables	<i>L(FGAAPNI)</i>		<i>L(FGAAPOI)</i>		<i>L(FGAAPCFO)</i>		<i>L(FGAAPFCF)</i>	
	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	-2.659	-1.28	-2.813	-1.51	-3.116	-1.73*	-4.512	-2.25**
<i>L(GPADJ)</i>	0.279	1.86*	0.477	3.27***	0.507	5.12***	0.167	0.98
<i>L(SGAADJ)</i>	0.262	1.79*	0.311	2.26**	0.414	4.83***	0.060	0.34
<i>L(RDADJ)</i>	-0.107	-0.57	-0.148	-0.60	-0.364	-1.39	-0.268	-1.34
<i>L(DAADJ)</i>	0.410	3.21***	0.315	2.44**	0.059	0.55	0.304	2.05**
<i>L(INTADJ)</i>	-0.026	-0.23	-0.162	-1.50	0.074	0.85	-0.097	-0.82
<i>L(OTHERADJ)</i>	0.211	0.93	-0.034	-0.18	-0.180	-1.20	-0.112	-0.42
<i>L(TAXADJ)</i>	-0.235	-2.32**	-0.213	-2.08**	-0.100	-1.11	-0.354	-2.48**
<i>L(GAAPNI)</i>	0.599	4.44***	0.219	1.73*	0.135	1.04	0.192	1.14
<i>LOSS_GAAPNI</i>	0.484	1.22	0.317	0.79	-0.529	-1.41	-0.423	-1.03
<i>L(GAAPNI)*LOSS_GAAPNI</i>	0.112	0.50	0.529	2.44***	0.411	1.90*	0.452	1.80*
<i>L(TA)</i>	0.458	4.90***	0.806	8.88***	0.579	5.91***	0.282	2.55***
<i>L(AGE)</i>	0.101	0.82	0.114	1.03	0.240	2.42**	0.212	1.68*
<i>L(TACC)</i>					-0.304	-4.91***	-0.235	-3.31***
<i>INDUSTRY_DUMMIES</i>	Included		Included		Included		Included	
<i>YEAR_DUMMIES</i>	Included		Included		Included		Included	
Adj.R ²	53.91%		61.49%		57.42%		40.10%	
No. of Obs.	541		541		541		541	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 4-5
Cross-Sectional Regression Results of H2 – Aggregated *PFEADJ*

Panel A: Total sample

Independent Variables	<i>L(OV)</i>		<i>L(MV)</i>	
	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	1.622	8.22***	1.507	6.62***
<i>NEG_PFEADJ</i>	0.107	1.36	0.093	0.95
<i>LOSS_GAAPNI</i>	0.268	2.55**	0.253	2.04**
<i>L(PFEADJ)</i>	0.345	6.48***	0.349	5.45***
<i>L(PFEADJ)*LOSS_GAAPNI</i>	-0.188	-3.15***	-0.201	-2.78***
<i>L(PFEADJ)*NEG_PFEADJ</i>	-0.574	-6.94***	-0.593	-6.28***
<i>L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI</i>	0.267	2.60***	0.313	2.54**
<i>L(GAAPNI)</i>	0.203	4.28***	0.199	3.82***
<i>L(GAAPNI)*LOSS_GAAPNI</i>	-0.412	-6.41***	-0.435	-5.91***
<i>L(BV)</i>	0.010	0.88	0.020	1.68*
<i>L(DACC)</i>	0.051	0.78	0.145	1.74*
<i>L(TA)</i>	0.136	5.22***	0.099	3.29***
<i>L(AGE)</i>	-0.018	-0.65	-0.013	-0.43
<i>RETENTION</i>	1.582	10.83***	1.609	9.96***
<i>UWRANK</i>	0.155	8.65***	0.191	9.01***
<i>BOOM</i>	-0.030	-0.27	0.015	0.13
<i>CRASH</i>	0.309	2.48**	0.343	2.46**
<i>TECH</i>	0.111	1.91*	0.193	2.61***
<i>INTERNET</i>	0.377	4.29***	0.666	5.88***
Adjusted R ²	71.23%		65.00%	
No. of Obs.	587		587	

See Table 4-1 for variable definitions. *L(.)* indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 4-5 (continued)
Cross-Sectional Regression Results of H2 – Aggregated *PFEADJ*

Panel B1: Subsample of positive *PFEADJ* and positive *GAAPNI*

Independent Variables	<i>L(OV)</i>		<i>L(MV)</i>	
	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	1.782	6.46***	1.761	5.20***
<i>L(PFEADJ)</i>	0.423	7.44***	0.417	6.42***
<i>L(GAAPNI)</i>	0.256	4.00***	0.238	3.22***
<i>L(BV)</i>	-0.019	-1.25	-0.021	-1.14
<i>L(DACC)</i>	0.344	0.99	0.453	0.80
<i>L(TA)</i>	0.094	1.65	0.084	1.22
<i>L(AGE)</i>	-0.001	-0.03	-0.004	-0.07
<i>RETENTION</i>	1.696	5.81***	1.770	5.30***
<i>UWRANK</i>	0.128	3.77***	0.145	3.56***
<i>BOOM</i>	-0.123	-0.82	-0.098	-0.60
<i>CRASH</i>	0.263	1.65	0.333	1.92*
<i>TECH</i>	0.211	1.55	0.280	1.51
<i>INTERNET</i>	0.456	1.93*	1.019	2.76***
Adjusted R ²	77.89%		70.81%	
No. of Obs.	129		129	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 4-5 (continued)
Cross-Sectional Regression Results of H2 – Aggregated *PFEADJ*

Panel B2: Subsample of positive *PFEADJ* and negative *GAAPNI*

Independent Variables	<i>L(OV)</i>		<i>L(MV)</i>	
	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	2.600	6.37***	2.557	5.69***
<i>L(PFEADJ)</i>	0.048	0.88	0.026	0.39
<i>L(GAAPNI)</i>	-0.246	-3.98***	-0.283	-3.72***
<i>L(BV)</i>	0.009	0.48	0.018	0.77
<i>L(DACC)</i>	-0.098	-0.70	-0.045	-0.27
<i>L(TA)</i>	0.194	3.95***	0.166	2.93***
<i>L(AGE)</i>	-0.021	-0.37	-0.018	-0.28
<i>RETENTION</i>	1.497	4.53***	1.612	4.25***
<i>UWRANK</i>	0.101	2.25**	0.114	2.32**
<i>BOOM</i>	-0.273	-1.25	-0.214	-0.87
<i>CRASH</i>	-0.050	-0.22	0.002	0.01
<i>TECH</i>	-0.046	-0.35	0.076	0.46
<i>INTERNET</i>	0.237	1.28	0.258	1.08
Adjusted R ²	67.13%		58.47%	
No. of Obs.	129		129	

See Table 4-1 for variable definitions. *L(.)* indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 4-5 (continued)
Cross-Sectional Regression Results of H2 – Aggregated *PFEADJ*

Panel B3: Subsample of negative *PFEADJ* and positive *GAAPNI*

Independent Variables	<i>L(OV)</i>		<i>L(MV)</i>	
	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	0.936	3.29***	0.908	2.76***
<i>L(PFEADJ)</i>	-0.166	-2.62***	-0.175	-2.64***
<i>L(GAAPNI)</i>	0.149	1.97*	0.146	1.89*
<i>L(BV)</i>	-0.028	-1.42	-0.020	-1.02
<i>L(DACC)</i>	0.411	1.62	0.337	1.18
<i>L(TA)</i>	0.247	5.63***	0.223	4.39***
<i>L(AGE)</i>	0.015	0.31	0.012	0.22
<i>RETENTION</i>	1.707	7.82***	1.624	6.68***
<i>UWRANK</i>	0.182	6.42***	0.213	6.47***
<i>BOOM</i>	0.143	0.84	0.184	1.05
<i>CRASH</i>	0.771	3.53***	0.838	3.84***
<i>TECH</i>	0.247	2.33**	0.326	2.45**
<i>INTERNET</i>	0.760	2.69***	1.253	3.57***
Adjusted R ²	77.80%		73.09%	
No. of Obs.	171		171	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 4-5 (continued)
Cross-Sectional Regression Results of H2 – Aggregated *PFEADJ*

Panel B4: Subsample of negative *PFEADJ* and negative *GAAPNI*

Independent Variables	<i>L(OV)</i>		<i>L(MV)</i>	
	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	2.944	5.44***	2.689	4.19***
<i>L(PFEADJ)</i>	-0.166	-3.82***	-0.145	-2.54**
<i>L(GAAPNI)</i>	-0.290	-4.38***	-0.346	-4.25***
<i>L(BV)</i>	0.053	2.62***	0.077	3.31***
<i>L(DACC)</i>	0.079	1.08	0.213	2.18**
<i>L(TA)</i>	0.061	1.13	-0.021	-0.32
<i>L(AGE)</i>	-0.174	-2.16**	-0.162	-1.63
<i>RETENTION</i>	1.548	3.80***	1.558	3.47***
<i>UWRANK</i>	0.084	2.10**	0.148	3.03***
<i>BOOM</i>	0.047	0.17	0.060	0.18
<i>CRASH</i>	0.308	1.02	0.241	0.71
<i>TECH</i>	0.058	0.56	0.148	1.12
<i>INTERNET</i>	0.232	2.00**	0.485	3.23***
Adjusted R ²	58.37%		52.42%	
No. of Obs.	158		158	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 4-6
Cross-Sectional Regression Results of H2 – Decomposed *PFEADJ*

Independent Variables	<i>L(OV)</i>		<i>L(MV)</i>	
	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	1.659	8.76***	1.550	7.19***
<i>L(GPADJ)</i>	0.065	2.40**	0.067	2.28**
<i>L(SGAADJ)</i>	0.044	1.74*	0.057	2.08**
<i>L(RDADJ)</i>	-0.020	-0.37	-0.013	-0.21
<i>L(DAADJ)</i>	-0.193	-6.26***	-0.208	-5.79***
<i>L(INTADJ)</i>	0.018	0.75	0.029	1.10
<i>L(OTHERADJ)</i>	0.021	0.59	0.019	0.51
<i>L(TAXADJ)</i>	-0.012	-0.45	0.000	0.00
<i>L(GAAPNI)</i>	0.322	8.41***	0.330	7.74***
<i>LOSS_GAAPNI</i>	0.197	2.02**	0.178	1.56
<i>L(GAAPNI)*LOSS_GAAPNI</i>	-0.583	-9.84***	-0.610	-9.06***
<i>L(BV)</i>	-0.000	-0.03	0.010	0.77
<i>L(DACC)</i>	0.055	0.89	0.151	1.89*
<i>L(TA)</i>	0.148	6.15***	0.111	3.95***
<i>L(AGE)</i>	0.008	0.30	0.014	0.45
<i>RETENTION</i>	1.760	12.85***	1.782	11.83***
<i>UWRANK</i>	0.144	8.11***	0.179	8.49***
<i>BOOM</i>	-0.117	-1.08	-0.069	-0.59
<i>CRASH</i>	0.166	1.37	0.198	1.47
<i>TECH</i>	0.108	1.93*	0.188	2.65***
<i>INTERNET</i>	0.383	4.37***	0.656	5.85***
Adjusted R ²	72.22%		66.01%	
No. of Obs.	587		587	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 4-7
Cross-Sectional Regression Results of H3 – Aggregated *PFEADJ*

Panel A: Total sample

Independent Variables	<i>BH_Y1</i>		<i>BH_Y3</i>		<i>BH_Y5</i>	
	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	-0.696	-2.92***	-0.786	-2.25**	-0.820	-2.32**
<i>NEG_PFEADJ</i>	0.047	0.40	0.091	0.62	0.112	0.81
<i>LOSS_GAAPNI</i>	0.010	0.06	-0.139	-0.77	0.088	0.49
<i>L(PFEADJ)</i>	-0.042	-0.67	-0.194	-2.24**	-0.168	-1.67*
<i>L(PFEADJ)*LOSS_GAAP</i>	0.005	0.07	0.294	3.13***	0.205	1.84*
<i>L(PFEADJ)*NEG_PFEADJ</i>	0.038	0.43	0.342	2.30**	0.300	1.85*
<i>L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI</i>	0.067	0.53	-0.422	-2.51**	-0.264	-1.39
<i>GAAPNI</i>	-0.048	-0.90	0.062	0.79	0.060	0.71
<i>L(GAAPNI)*LOSS_GAAPNI</i>	0.089	1.14	0.067	0.68	0.052	0.47
<i>L(BV)</i>	-0.014	-0.79	-0.020	-0.81	-0.028	-1.15
<i>L(DACC)</i>	-0.031	-0.58	-0.031	-0.47	-0.048	-0.73
<i>L(TA)</i>	0.081	2.48**	0.091	2.13**	0.165	3.73***
<i>L(AGE)</i>	0.012	0.36	-0.034	-0.70	-0.055	-1.16
<i>RETENTION</i>	0.025	0.17	0.011	0.05	0.145	0.58
<i>UWRANK</i>	0.030	1.33	0.067	2.48**	0.084	2.79***
<i>BOOM</i>	-0.222	-1.88*	-0.319	-1.85	-0.314	-1.45
<i>CRASH</i>	-0.142	-1.15	-0.235	-1.21	-0.127	-0.53
<i>TECH</i>	0.249	2.74***	0.239	2.03**	-0.088	-0.89
<i>INTERNET</i>	-0.035	-0.30	0.022	0.17	0.169	1.24
<i>MKT</i>	2.058	5.00***	0.790	3.08***	0.649	2.98***
<i>L(MV)</i>	0.015	0.23	0.018	0.23	-0.059	-0.82
<i>L(BV/MV)</i>	0.308	1.04	0.651	1.35	0.721	1.46
<i>IR</i>	-0.067	-0.66	-0.172	-2.06**	-0.136	-1.61
Adj.R ²	9.87%		11.86%		14.05%	
No. of Obs.	573		573		573	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 4-7 (Continued)
Cross-Sectional Regression Results of H3 – Aggregated *PFEADJ*

Panel B1: Subsample of positive *PFEADJ* and positive *GAAPNI*

Independent Variables	<i>BH_Y1</i>		<i>BH_Y3</i>		<i>BH_Y5</i>	
	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	-0.319	-0.70	-0.116	-0.12	-0.237	-0.33
<i>L(PFEADJ)</i>	-0.058	-0.54	-0.161	-1.12	-0.091	-0.67
<i>L(GAAPNI)</i>	0.023	0.23	0.064	0.43	0.137	1.03
<i>L(BV)</i>	-0.040	-0.88	-0.022	-0.29	-0.062	-1.07
<i>L(DACC)</i>	-0.648	-1.96*	0.467	0.87	-0.066	-0.16
<i>L(TA)</i>	-0.058	-0.83	0.020	0.17	0.022	0.22
<i>L(AGE)</i>	0.066	1.40	-0.056	-0.59	-0.026	-0.33
<i>RETENTION</i>	-0.160	-0.60	0.310	0.58	0.479	0.82
<i>UWRANK</i>	-0.030	-0.77	0.037	0.68	0.071	1.00
<i>BOOM</i>	-0.402	-1.78*	-0.764	-2.07**	-0.730	-1.58
<i>CRASH</i>	-0.224	-0.84	-0.319	-0.72	0.136	0.27
<i>TECH</i>	0.181	0.62	0.357	0.84	-0.031	-0.14
<i>INTERNET</i>	-0.683	-2.51**	-1.070	-1.94*	-0.962	-2.06**
<i>MKT</i>	1.610	2.15**	0.177	0.26	0.434	1.02
<i>L(MV)</i>	0.162	1.41	0.048	0.21	-0.085	-0.50
<i>L(BV/MV)</i>	1.006	1.15	1.141	0.91	2.263	1.69*
<i>IR</i>	-0.101	-0.40	-0.488	-1.34	-0.146	-0.57
Adj.R ²	6.96%		-1.42%		11.86%	
No. of Obs.	119		119		119	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 4-7 (Continued)
Cross-Sectional Regression Results of H3 – Aggregated *PFEADJ*

Panel B2: Subsample of positive *PFEADJ* and negative *GAAPNI*

Independent Variables	<i>BH_Y1</i>		<i>BH_Y3</i>		<i>BH_Y5</i>	
	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	-0.383	-0.80	-0.310	-0.46	-0.030	-0.04
<i>L(PFEADJ)</i>	-0.151	-1.24	0.061	0.72	0.021	0.24
<i>GAAPNI</i>	-0.036	-0.44	0.114	1.56	0.115	1.36
<i>L(BV)</i>	-0.004	-0.18	-0.028	-0.88	-0.033	-0.86
<i>L(DACC)</i>	-0.163	-1.50	-0.057	-0.32	-0.043	-0.25
<i>L(TA)</i>	0.128	2.57**	0.129	1.90*	0.212	3.05***
<i>L(AGE)</i>	0.056	0.97	-0.031	-0.41	-0.095	-1.12
<i>RETENTION</i>	0.466	1.84*	0.570	1.30	0.542	0.98
<i>UWRANK</i>	0.030	0.75	0.038	0.71	0.081	1.14
<i>BOOM</i>	-0.065	-0.20	-0.338	-0.83	-0.490	-0.96
<i>CRASH</i>	-0.069	-0.30	-0.306	-0.69	-0.339	-0.63
<i>TECH</i>	-0.002	-0.01	0.114	0.50	-0.244	-1.29
<i>INTERNET</i>	-0.071	-0.32	-0.154	-0.81	0.160	0.83
<i>MKT</i>	1.432	2.34**	0.786	1.51	0.890	2.07**
<i>L(MV)</i>	-0.127	-1.54	-0.121	-0.98	-0.204	-1.43
<i>L(BV/MV)</i>	0.323	0.72	0.648	1.33	0.332	0.55
<i>IR</i>	-0.245	-1.04	-0.073	-0.29	0.025	0.08
Adj.R ²	8.41%		6.33%		13.44%	
No. of Obs.	129		129		129	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 4-7 (Continued)
Cross-Sectional Regression Results of H3 – Aggregated *PFEADJ*

Panel B3: Subsample of negative *PFEADJ* and positive *GAAPNI*

Independent Variables	<i>BH_Y1</i>		<i>BH_Y3</i>		<i>BH_Y5</i>	
	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	-0.708	-1.57	-0.841	-1.26	-1.169	-1.74*
<i>L(PFEADJ)</i>	0.050	0.69	0.272	2.05**	0.200	1.52
<i>GAAPNI</i>	0.018	0.19	0.150	1.08	0.090	0.63
<i>L(BV)</i>	0.010	0.27	-0.049	-0.74	-0.034	-0.54
<i>L(DACC)</i>	-0.720	-1.71*	-0.415	-0.70	-0.403	-0.67
<i>L(TA)</i>	-0.083	-0.84	-0.057	-0.44	-0.032	-0.26
<i>L(AGE)</i>	-0.046	-0.76	-0.021	-0.19	-0.031	-0.29
<i>RETENTION</i>	-0.688	-2.49**	-1.021	-1.98**	-0.680	-1.33
<i>UWRANK</i>	0.017	0.43	0.082	1.45	0.095	1.65
<i>BOOM</i>	-0.208	-1.22	-0.269	-1.01	-0.122	-0.48
<i>CRASH</i>	0.086	0.38	-0.126	-0.30	0.025	0.06
<i>TECH</i>	0.245	1.10	0.347	1.22	-0.178	-0.73
<i>INTERNET</i>	0.171	0.39	0.208	0.48	0.085	0.22
<i>MKT</i>	2.755	3.24***	0.953	2.08**	0.330	0.84
<i>L(MV)</i>	0.264	1.60	0.240	1.15	0.240	1.24
<i>L(BV/MV)</i>	0.362	0.53	1.383	1.07	1.406	1.11
<i>IR</i>	-0.530	-2.77***	-0.384	-1.89*	-0.381	-1.70*
Adj.R ²	11.58%		2.65%		2.73%	
No. of Obs.	166		166		166	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 4-7 (Continued)
Cross-Sectional Regression Results of H3 – Aggregated *PFEADJ*

Panel B4: Subsample of negative *PFEADJ* and negative *GAAPNI*

Independent Variables	<i>BH_Y1</i>		<i>BH_Y3</i>		<i>BH_Y5</i>	
	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	0.014	0.02	-0.850	-1.38	-0.497	-0.73
<i>L(PFEADJ)</i>	0.053	0.81	-0.005	-0.10	0.043	0.64
<i>GAAPNI</i>	0.100	1.38	0.067	1.05	0.098	1.48
<i>L(BV)</i>	-0.040	-1.08	-0.014	-0.39	-0.026	-0.65
<i>L(DACC)</i>	0.020	0.30	-0.065	-1.07	-0.136	-1.96*
<i>L(TA)</i>	0.204	2.57**	0.193	2.47**	0.320	3.35***
<i>L(AGE)</i>	-0.216	-1.57	-0.122	-1.00	-0.202	-1.40
<i>RETENTION</i>	0.379	0.89	0.665	2.24**	1.282	2.67***
<i>UWRANK</i>	0.116	2.03**	0.030	0.82	0.053	0.98
<i>BOOM</i>	-0.455	-1.53	-0.211	-0.64	-0.594	-1.15
<i>CRASH</i>	-0.598	-1.54	-0.150	-0.44	-0.501	-0.90
<i>TECH</i>	0.452	3.02***	0.093	0.79	-0.059	-0.38
<i>INTERNET</i>	-0.076	-0.53	0.204	1.18	0.284	1.45
<i>MKT</i>	1.575	1.27	1.032	2.20**	1.257	2.61***
<i>L(MV)</i>	-0.200	-1.49	-0.091	-1.18	-0.202	-2.11**
<i>L(BV/MV)</i>	0.798	1.01	0.376	0.55	0.402	0.37
<i>IR</i>	0.185	1.22	-0.063	-0.68	-0.002	-0.02
Adj. R ²	8.22%		13.71%		16.23%	
No. of Obs.	152		152		152	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 4-8
Cross-Sectional Regression Results of H3 – Decomposed *PFEADJ*

Independent Variables	<i>BH_Y1</i>		<i>BH_Y3</i>		<i>BH_Y5</i>	
	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	-0.640	-2.75***	-0.796	-2.31**	-0.761	-2.12**
<i>L(GPADJ)</i>	-0.046	-1.52	-0.008	-0.23	0.002	0.06
<i>L(SGAADJ)</i>	-0.032	-1.28	0.016	0.56	0.008	0.23
<i>L(RDADJ)</i>	-0.008	-0.20	0.100	1.33	0.037	0.55
<i>L(DAADJ)</i>	0.008	0.23	0.001	0.03	0.002	0.04
<i>L(INTADJ)</i>	-0.017	-0.81	-0.005	-0.15	0.005	0.12
<i>L(OTHERADJ)</i>	0.014	0.45	0.014	0.25	0.038	0.60
<i>L(TAXADJ)</i>	-0.039	-1.70*	0.014	0.45	0.031	0.82
<i>GAAPNI</i>	-0.047	-1.01	-0.008	-0.13	0.018	0.28
<i>LOSS_GAAPNI</i>	-0.001	-0.01	-0.046	-0.27	0.132	0.79
<i>L(GAAPNI)*LOSS_GAAPNI</i>	0.108	1.40	0.107	1.18	0.085	0.86
<i>L(BV)</i>	-0.015	-0.83	-0.017	-0.65	-0.024	-1.00
<i>L(DACC)</i>	-0.035	-0.66	-0.006	-0.10	-0.039	-0.59
<i>L(TA)</i>	0.079	2.51**	0.093	2.30**	0.160	3.73***
<i>L(AGE)</i>	0.012	0.35	-0.024	-0.50	-0.046	-0.99
<i>RETENTION</i>	-0.018	-0.11	0.064	0.26	0.221	0.82
<i>UWRANK</i>	0.027	1.19	0.067	2.47**	0.085	2.82***
<i>BOOM</i>	-0.209	-1.72*	-0.275	-1.57	-0.285	-1.27
<i>CRASH</i>	-0.129	-1.05	-0.188	-0.95	-0.094	-0.38
<i>TECH</i>	0.265	2.81***	0.228	1.91*	-0.087	-0.86
<i>INTERNET</i>	-0.059	-0.53	0.014	0.11	0.145	1.13
<i>MKT</i>	2.043	4.96***	0.826	3.18***	0.688	3.15***
<i>L(MV)</i>	0.016	0.24	-0.002	-0.02	-0.091	-1.20
<i>L(BV/MV)</i>	0.326	1.12	0.586	1.13	0.656	1.28
<i>IR</i>	-0.058	-0.58	-0.160	-2.10**	-0.108	-1.31
Adj.R ²	9.46%		10.66%		12.82%	
No. of Obs.	573		573		573	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 4-9
Long-Horizon Mean Abnormal Returns (in percent) by $L(PFEADJ)$ Quintiles Using Alternative Benchmarks

Panel A: Subsample of positive $PFEADJ$

	<i>BH_Y1</i>					<i>BH_Y3</i>					<i>BH_Y5</i>				
	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
<u>Cumulative(%)</u>															
Raw	-16.47%	3.26%	-16.42%	-4.88%	9.55%	-5.8%	25.6%	-23.4%	19.6%	16.8%	38.3%	52.0%	-23.8%	52.9%	32.2%
Market-adj. value-weighted	-26.25%	-9.72%	-27.10%	-14.63%	3.58%	-22.7%	0.6%	-46.6%	6.8%	-1.2%	20.5%	29.7%	-45.3%	35.0%	9.7%
Market-adj. equal-weighted	-22.42%	-2.19%	-19.63%	-10.57%	5.59%	-28.4%	1.5%	-44.4%	-1.6%	-13.0%	-1.2%	15.4%	-56.0%	12.1%	-16.4%
Size and Book-to-Market adj.	-18.32%	-2.31%	-12.67%	-4.98%	5.74%	-28.7%	-5.0%	-53.3%	9.5%	-8.7%	20.6%	25.9%	-42.2%	39.4%	4.4%
Size and Book-to-Market adj.	-15.49%	0.03%	-11.71%	-4.30%	6.34%	-24.1%	1.2%	-46.8%	12.9%	-6.3%	22.0%	29.0%	-38.1%	40.5%	4.3%
<u>Buy-and-hold (%)</u>															
Raw	-2.13%	1.72%	-19.19%	-13.11%	1.06%	-0.7%	-1.4%	-31.1%	-3.2%	-9.0%	-40.4%	5.9%	-38.7%	-5.0%	13.9%
Market-adj. value-weighted	-11.94%	-11.08%	-29.59%	-22.54%	-4.50%	-18.4%	-28.0%	-55.0%	-15.4%	-26.9%	-56.2%	-15.2%	-59.1%	-20.8%	-8.4%
Market-adj. equal-weighted	-7.55%	-3.41%	-21.63%	-18.01%	-2.11%	-22.4%	-25.9%	-51.1%	-23.8%	-41.0%	-85.3%	-35.6%	-74.0%	-53.6%	-46.8%
Size and Book-to-Market adj.	-1.18%	-2.38%	-12.92%	-11.50%	-1.27%	-14.4%	-21.9%	-52.7%	-7.5%	-27.5%	-40.9%	-4.6%	-41.5%	-5.5%	-5.0%
Size and Book-to-Market adj.	1.86%	-0.12%	-11.48%	-9.71%	-0.25%	-7.9%	-13.9%	-43.6%	-1.2%	-23.5%	-36.2%	0.9%	-35.3%	-1.2%	-3.8%

Quintile 1 firms have the smallest $L(PFEADJ)$ and Quintile 5 firms have the largest $L(PFEADJ)$. See Table 4-1 for variable definitions. $L(\cdot)$ indicates that the natural log was taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$; $L(W) = -\log_e(1-W)$ when $W < 0$.

Table 4-9 (Continued)Long-Horizon Mean Abnormal Returns (in percent) by $L(PFEADJ)$ Quintiles Using Alternative Benchmarks**Panel B: Subsample of negative $PFEADJ$**

	<i>BH_Y1</i>					<i>BH_Y3</i>					<i>BH_Y5</i>				
	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
<u>Cumulative(%)</u>															
Raw	-57.89%	-13.53%	25.13%	-11.75%	-24.90%	-72.62%	-13.80%	21.26%	-24.67%	1.02%	-51.4%	14.0%	50.3%	-2.2%	16.6%
Market-adj. value-weighted	-63.35%	-18.73%	12.52%	-20.51%	-36.61%	-76.56%	-18.91%	2.27%	-34.83%	-15.00%	-62.0%	-1.1%	28.4%	-16.2%	-3.7%
Market-adj. equal-weighted	-66.82%	-20.98%	16.00%	-18.36%	-31.88%	-94.81%	-37.99%	-2.15%	-43.61%	-18.41%	-87.6%	-30.3%	8.6%	-37.1%	-20.3%
Size and Book-to-Market adj.	-61.15%	-16.44%	12.95%	-16.37%	-27.08%	-75.52%	-14.86%	0.42%	-34.96%	-15.46%	-62.4%	1.4%	28.7%	-13.6%	-0.8%
Size and Book-to-Market adj.	-60.08%	-14.52%	15.49%	-13.83%	-23.61%	-77.24%	-14.84%	4.62%	-31.24%	-10.20%	-65.2%	-1.1%	30.8%	-12.4%	0.8%
<u>Buy-and-hold (%)</u>															
Raw	-25.49%	-14.82%	39.78%	5.41%	-28.28%	-38.23%	-25.06%	4.48%	-37.26%	-21.33%	-35.6%	-14.5%	37.2%	-42.5%	-36.8%
Market-adj. value-weighted	-30.57%	-19.64%	27.07%	-2.85%	-39.78%	-41.63%	-29.62%	-15.60%	-47.44%	-37.96%	-44.7%	-28.7%	16.0%	-54.5%	-55.7%
Market-adj. equal-weighted	-34.09%	-21.74%	30.84%	-0.60%	-34.70%	-60.99%	-50.15%	-19.06%	-55.12%	-39.47%	-79.9%	-70.0%	-11.8%	-82.8%	-79.0%
Size and Book-to-Market adj.	-28.14%	-16.11%	29.51%	1.22%	-27.85%	-37.20%	-20.69%	-7.89%	-39.49%	-29.81%	-40.1%	-20.5%	29.7%	-39.8%	-35.7%
Size and Book-to-Market adj.	-26.33%	-14.16%	31.97%	5.21%	-24.14%	-35.75%	-17.56%	-1.69%	-33.34%	-21.79%	-39.5%	-19.8%	34.5%	-35.7%	-31.1%

Quintile 1 firms have the smallest $L(PFEADJ)$ and Quintile 5 firms have the largest $L(PFEADJ)$. See Table 4-1 for variable definitions. $L(\cdot)$ indicates that the natural log was taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$; $L(W) = -\log_e(1-W)$ when $W < 0$.

Table 5-1
Sensitivity of regression results to the concentration of pro forma
IPOs – Time Horizon

Panel A: cross-sectional regression results of H1

Independent Variable	<i>L(FGAAPNI)</i>		<i>L(FGAAPCFO)</i>		<i>L(FGAAPOI)</i>		<i>L(FGAAPFCF)</i>	
	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	-1.342	-0.56	-1.877	-0.84	-2.511	-1.40	-3.788	-1.70*
<i>NEG_PFEADJ</i>	-0.387	-0.66	-0.291	-0.48	0.122	0.25	-0.024	-0.04
<i>LOSS_GAAPNI</i>	0.244	0.57	0.148	0.33	-0.998	-2.54**	-0.601	-1.34
<i>L(PFEADJ)</i>	0.206	0.48	0.452	0.87	0.622	1.35	0.630	1.46
<i>L(PFEADJ)*LOSS_GAAPNI</i>	0.349	0.83	0.052	0.11	0.183	0.42	0.150	0.37
<i>L(PFEADJ)*NEG_PFEADJ</i>	0.108	0.17	-0.552	-0.82	-0.496	-0.83	-0.382	-0.54
<i>L(PFEADJ)*NEG_PFEADJ</i> <i>*LOSS_GAAPNI</i>	-0.428	-0.66	0.176	0.26	-0.284	-0.45	-0.360	-0.50
<i>L(GAAPNI)</i>	0.863	5.03***	0.358	2.28**	0.160	1.05	0.459	2.38**
<i>L(GAAPNI)*LOSS_GAAPNI</i>	-0.141	-0.59	0.469	2.13**	0.559	2.54**	0.291	1.12
<i>L(TA)</i>	0.379	3.92***	0.771	7.60***	0.510	4.84***	0.175	1.44
<i>L(AGE)</i>	0.084	0.69	0.076	0.69	0.176	1.83*	0.167	1.34
<i>L(TACC)</i>					-0.323	-5.44***	-0.239	-3.37***
<i>TIME</i>	-0.319	-0.56	-0.064	-0.11	0.942	2.15**	0.520	0.94
<i>NEG_PFEADJ*TIME</i>	0.687	1.01	0.250	0.36	-0.544	-0.94	0.052	0.07
<i>L(PFEADJ)*TIME</i>	-0.301	-0.65	-0.475	-0.89	-0.953	-2.00**	-0.608	-1.33
<i>L(PFEADJ)*LOSS_GAAPNI*TIME</i>	0.347	0.74	0.552	1.10	0.957	2.12**	0.433	0.93
<i>L(PFEADJ)*NEG_PFEADJ*TIME</i>	0.374	0.59	0.651	0.96	0.715	1.19	0.591	0.82
<i>L(PFEADJ)*NEG_PFEADJ</i> <i>*LOSS_GAAPNI*TIME</i>	-0.192	-0.31	-0.609	-0.98	-0.763	-1.31	-0.325	-0.47
<i>INDUSTRY_DUMMIES</i>	Included		Included		Included		Included	
<i>YEAR_DUMMIES</i>	Included		Included		Included		Included	
Adj.R ²	53.80%		60.46%		58.56%		40.12%	
No. of Obs.	541		541		541		541	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 5-1 (Continued)
Sensitivity of regression results to the concentration of pro forma
IPOs – Time Horizon

Panel B: cross-sectional regression results of H2

Independent Variables	<i>L(OV)</i>		<i>L(MV)</i>	
	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	1.820	7.37***	1.782	5.99***
<i>NEG_PFEADJ</i>	0.063	0.37	-0.006	-0.03
<i>LOSS_GAAPNI</i>	0.243	2.21**	0.226	1.74*
<i>L(PFEADJ)</i>	0.355	3.77***	0.345	2.94***
<i>L(PFEADJ)*LOSS_GAAPNI</i>	-0.215	-2.32**	-0.218	-1.94*
<i>L(PFEADJ)*NEG_PFEADJ</i>	-0.474	-3.29***	-0.468	-2.59***
<i>L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI</i>	0.225	1.57	0.237	1.34
<i>L(GAAPNI)</i>	0.209	4.18***	0.205	3.73***
<i>L(GAAPNI)*LOSS_GAAPNI</i>	-0.420	-6.16***	-0.441	-5.69***
<i>L(BV)</i>	0.008	0.76	0.019	1.56
<i>L(DACC)</i>	0.057	0.87	0.155	1.83*
<i>L(TA)</i>	0.135	5.03***	0.099	3.23***
<i>L(AGE)</i>	-0.020	-0.74	-0.016	-0.52
<i>RETENTION</i>	1.561	10.65***	1.581	9.84***
<i>UWRANK</i>	0.154	8.45***	0.188	8.75***
<i>BOOM</i>	-0.037	-0.34	0.007	0.06
<i>CRASH</i>	0.308	2.47**	0.340	2.45**
<i>TECH</i>	0.104	1.82*	0.183	2.51**
<i>INTERNET</i>	0.377	4.23***	0.668	5.84***
<i>TIME</i>	-0.186	-1.32	-0.263	-1.41
<i>NEG_PFEADJ*TIME</i>	0.054	0.29	0.121	0.50
<i>L(PFEADJ)*TIME</i>	-0.012	-0.11	0.005	0.04
<i>L(PFEADJ)*LOSS_GAAPNI*TIME</i>	0.035	0.34	0.019	0.15
<i>L(PFEADJ)*NEG_PFEADJ*TIME</i>	-0.106	-0.72	-0.133	-0.75
<i>L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI*TIME</i>	0.021	0.15	0.067	0.40
Adjusted R ²	71.17%		64.98%	
No. of Obs.	587		587	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 5-1 (Continued)
Sensitivity of regression results to the concentration of pro forma
IPOs – Time Horizon

Panel C: cross-sectional regression results of H3

Independent Variables	<i>BH_Y1</i>		<i>BH_Y3</i>		<i>BH_Y5</i>	
	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	-0.961	-3.19***	-0.875	-2.15**	-1.012	-2.57**
<i>NEG_PFEADJ</i>	-0.206	-1.35	-0.037	-0.13	-0.093	-0.39
<i>LOSS_GAAPNI</i>	0.048	0.31	-0.111	-0.63	0.127	0.72
<i>L(PFEADJ)</i>	-0.053	-0.57	-0.158	-0.96	-0.205	-1.05
<i>L(PFEADJ)*LOSS_GAAPNI</i>	0.008	0.08	0.233	1.34	0.231	1.24
<i>L(PFEADJ)*NEG_PFEADJ</i>	-0.152	-0.93	0.310	1.29	0.315	1.20
<i>L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI</i>	0.086	0.46	-0.587	-2.43**	-0.511	-1.91*
<i>L(GAAPNI)</i>	-0.073	-1.32	0.047	0.57	0.028	0.31
<i>L(GAAPNI)*LOSS_GAAPNI</i>	0.125	1.53	0.114	1.08	0.117	1.02
<i>L(BV)</i>	-0.014	-0.83	-0.025	-0.98	-0.033	-1.38
<i>L(DACC)</i>	-0.060	-1.23	-0.036	-0.55	-0.063	-0.98
<i>L(AT)</i>	0.092	2.88***	0.100	2.34**	0.181	4.08***
<i>L(AGE)</i>	0.014	0.41	-0.032	-0.66	-0.056	-1.18
<i>RETENTION</i>	0.071	0.47	0.031	0.14	0.174	0.71
<i>UWRANK</i>	0.029	1.27	0.066	2.52**	0.082	2.76***
<i>BOOM</i>	-0.188	-1.57	-0.333	-1.93*	-0.319	-1.47
<i>CRASH</i>	-0.146	-1.15	-0.317	-1.60	-0.174	-0.71
<i>TECH</i>	0.262	2.91***	0.248	2.10**	-0.076	-0.78
<i>INTERNET</i>	-0.031	-0.27	0.015	0.11	0.178	1.32
<i>MKT</i>	1.915	4.67***	0.686	2.70***	0.609	2.83***
<i>L(MV)</i>	0.024	0.35	0.023	0.31	-0.046	-0.64
<i>L(BV/MV)</i>	0.326	1.11	0.699	1.44	0.800	1.63
<i>IR</i>	-0.070	-0.70	-0.188	-2.25**	-0.148	-1.76*
<i>TIME</i>	0.199	1.31	0.096	0.39	0.146	0.67
<i>NEG_PFEADJ*TIME</i>	0.366	1.88*	0.210	0.65	0.322	1.13
<i>L(PFEADJ)*TIME</i>	0.019	0.20	-0.042	-0.22	0.045	0.21
<i>L(PFEADJ)*LOSS_GAAPNI*TIME</i>	-0.019	-0.22	0.107	0.53	-0.020	-0.10
<i>L(PFEADJ)*NEG_PFEADJ*TIME</i>	0.215	1.34	0.054	0.23	-0.007	-0.03
<i>L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI*TIME</i>	0.055	0.38	0.210	0.84	0.349	1.44
Adj.R ²	11.29%		12.69%		15.38%	
No. of Obs.	573		573		573	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by

Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 5-2
Sensitivity of regression results to the concentration of pro forma
IPOs – M&A transaction

Panel A: cross-sectional regression results of H1

Independent Variable	<i>L(FGAAPNI)</i>		<i>L(FGAAPCFO)</i>		<i>L(FGAAPOI)</i>		<i>L(FGAAPFCF)</i>	
	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	-2.033	-0.89	-2.595	-1.28	-2.066	-1.12	-3.872	-1.97*
<i>NEG_PFEADJ</i>	0.553	1.06	0.377	0.75	-0.596	-1.32	-0.176	-0.33
<i>LOSS_GAAPNI</i>	0.455	1.05	0.366	0.82	-0.868	-2.27**	-0.442	-0.99
<i>L(PFEADJ)</i>	-0.305	-0.96	-0.247	-0.92	-0.438	-1.55	-0.310	-0.87
<i>L(PFEADJ)*LOSS_GAAPNI</i>	1.074	2.28**	0.836	2.00**	0.988	2.90***	1.003	2.32**
<i>L(PFEADJ)*NEG_PFEADJ</i>	0.821	1.50	0.400	0.96	0.320	0.78	0.486	0.79
<i>L(PFEADJ)*NEG_PFEADJ</i> <i>*LOSS_GAAPNI</i>	-1.240	-1.64	-0.951	-1.10	-1.304	-1.82*	-1.706	-1.93*
<i>L(GAAPNI)</i>	0.944	5.27***	0.452	2.82***	0.209	1.39	0.607	3.08***
<i>L(GAAPNI)*LOSS_GAAPNI</i>	-0.196	-0.84	0.401	1.87*	0.573	2.70***	0.226	0.87
<i>L(TA)</i>	0.376	3.72***	0.779	7.77***	0.501	5.00***	0.132	1.14
<i>L(AGE)</i>	0.007	0.46	0.052	0.47	0.161	1.70*	0.148	1.19
<i>L(TACC)</i>					-0.339	-5.25***	-0.276	-3.53***
<i>MA</i>					-0.418	-1.05	-0.154	-0.34
<i>NEG_PFEADJ*MA</i>	-0.110	-0.22	0.391	0.78	0.472	0.81	0.394	0.56
<i>L(PFEADJ)*MA</i>	-0.437	-0.64	-0.714	-1.04	0.557	1.62	0.870	2.06**
<i>L(PFEADJ)*LOSS_GAAPNI*MA</i>	0.557	1.34	0.537	1.49	-0.159	-0.47	-0.765	-1.74*
<i>L(PFEADJ)*NEG_PFEADJ*MA</i>	-0.761	-1.65	-0.610	-1.53	-0.494	-1.19	-0.645	-1.09
<i>L(PFEADJ)*NEG_PFEADJ</i> <i>*LOSS_GAAPNI*MA</i>	-0.669	-1.24	-0.543	-1.28	0.569	0.89	1.242	1.59
<i>INDUSTRY_DUMMIES</i>	Included		Included		Included		Included	
<i>YEAR_DUMMIES</i>	Included		Included		Included		Included	
Adj.R ²	54.11%		61.03%		58.01%		40.90%	
No. of Obs.	541		541		541		541	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 5-2 (Continued)
Sensitivity of regression results to the concentration of pro forma
IPOs – M&A transaction

Panel B: cross-sectional regression results of H2

Independent Variables	<i>L(OV)</i>		<i>L(MV)</i>	
	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	1.559	7.88***	1.437	6.27***
<i>NEG_PFEADJ</i>	0.156	1.36	0.147	1.05
<i>LOSS_GAAPNI</i>	0.233	2.14**	0.202	1.58
<i>L(PFEADJ)</i>	0.374	5.40***	0.401	5.09***
<i>L(PFEADJ)*LOSS_GAAPNI</i>	-0.199	-2.41**	-0.226	-2.34**
<i>L(PFEADJ)*NEG_PFEADJ</i>	-0.468	-4.42***	-0.503	-4.12***
<i>L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI</i>	0.282	1.66*	0.351	1.76*
<i>L(GAAPNI)</i>	0.222	4.59***	0.214	3.94***
<i>L(GAAPNI)*LOSS_GAAPNI</i>	-0.453	-7.04***	-0.475	-6.37***
<i>L(BV)</i>	0.015	1.44	0.028	2.28**
<i>L(DACC)</i>	0.061	0.95	0.156	1.90*
<i>L(TA)</i>	0.130	5.07***	0.093	3.13***
<i>L(AGE)</i>	-0.006	-0.23	0.000	0.00
<i>RETENTION</i>	1.624	11.59***	1.653	10.63***
<i>UWRANK</i>	0.152	8.64***	0.188	8.99***
<i>BOOM</i>	-0.052	-0.50	-0.010	-0.09
<i>CRASH</i>	0.263	2.25**	0.291	2.21**
<i>TECH</i>	0.094	1.64	0.174	2.38**
<i>INTERNET</i>	0.347	3.85***	0.631	5.51***
<i>MA</i>	0.192	1.76*	0.242	1.72*
<i>NEG_PFEADJ*MA</i>	-0.138	-0.89	-0.169	-0.89
<i>L(PFEADJ)*MA</i>	-0.157	-1.77*	-0.221	-2.05**
<i>L(PFEADJ)*LOSS_GAAPNI*MA</i>	0.099	1.08	0.141	1.33
<i>L(PFEADJ)*NEG_PFEADJ*MA</i>	-0.028	-0.24	0.020	0.15
<i>L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI*MA</i>	-0.062	-0.39	-0.107	-0.60
Adjusted R ²	72.26%		66.08%	
No. of Obs.	587		587	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 5-2 (Continued)
Sensitivity of regression results to the concentration of pro forma
IPOs – M&A adjustments

Panel C: cross-sectional regression results of H3

Independent Variables	<i>BH_Y1</i>		<i>BH_Y3</i>		<i>BH_Y5</i>	
	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	-0.716	-2.84***	-0.728	-2.02**	-0.758	-2.07**
<i>NEG_PFEADJ</i>	-0.041	-0.24	0.050	0.18	0.008	0.03
<i>LOSS_GAAPNI</i>	-0.022	-0.14	-0.095	-0.50	0.135	0.72
<i>L(PFEADJ)</i>	-0.030	-0.44	-0.280	-2.46**	-0.285	-1.97**
<i>L(PFEADJ)*LOSS_GAAPNI</i>	-0.002	-0.02	0.320	2.67***	0.243	1.65*
<i>L(PFEADJ)*NEG_PFEADJ</i>	-0.058	-0.45	0.424	1.81*	0.391	1.54
<i>L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI</i>	0.247	1.48	-0.321	-1.38	-0.150	-0.57
<i>L(GAAPNI)</i>	-0.063	-1.03	0.060	0.69	0.064	0.70
<i>L(GAAPNI)*LOSS_GAAPNI</i>	0.098	1.14	0.073	0.69	0.052	0.45
<i>L(BV)</i>	-0.013	-0.73	-0.022	-0.88	-0.029	-1.19
<i>L(DACC)</i>	-0.025	-0.46	-0.031	-0.49	-0.047	-0.71
<i>L(AT)</i>	0.084	2.52**	0.097	2.22**	0.172	3.81***
<i>L(AGE)</i>	0.015	0.43	-0.040	-0.83	-0.060	-1.26
<i>RETENTION</i>	0.019	0.13	-0.002	-0.01	0.135	0.54
<i>UWRANK</i>	0.030	1.29	0.062	2.20**	0.079	2.54**
<i>BOOM</i>	-0.220	-1.82*	-0.298	-1.71*	-0.293	-1.35
<i>CRASH</i>	-0.150	-1.19	-0.226	-1.15	-0.121	-0.50
<i>TECH</i>	0.253	2.77***	0.236	2.02**	-0.093	-0.94
<i>INTERNET</i>	-0.033	-0.29	0.020	0.15	0.168	1.22
<i>MKT</i>	2.060	5.03***	0.792	3.11***	0.644	2.96***
<i>L(MV)</i>	0.018	0.26	0.030	0.39	-0.047	-0.64
<i>L(BV/MV)</i>	0.330	1.09	0.662	1.36	0.714	1.41
<i>IR</i>	-0.074	-0.73	-0.176	-2.12**	-0.141	-1.66*
<i>MA</i>	0.054	0.31	-0.269	-1.34	-0.298	-1.62
<i>NEG_PFEADJ*MA</i>	0.081	0.34	0.157	0.49	0.260	0.90
<i>L(PFEADJ)*MA</i>	-0.039	-0.37	0.227	1.74*	0.289	1.80*
<i>L(PFEADJ)*LOSS_GAAPNI*MA</i>	0.015	0.17	-0.122	-0.92	-0.149	-0.97
<i>L(PFEADJ)*NEG_PFEADJ*MA</i>	0.142	1.03	-0.218	-1.11	-0.244	-1.12
<i>L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI*MA</i>	-0.206	-1.63	-0.023	-0.13	-0.029	-0.14
Adj.R ²	9.20%		11.37%		15.34%	
No. of Obs.	573		573		573	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 5-3
Sensitivity of regression results to the concentration of pro forma
IPOs – Internet firms

Panel A: cross-sectional regression results of H1

Independent Variable	<i>L(FGAAPNI)</i>		<i>L(FGAAPCFO)</i>		<i>L(FGAAPOI)</i>		<i>L(FGAAPFCF)</i>	
	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	-1.590	-0.65	-1.735	-0.81	-1.920	-1.00	-3.449	-1.61
<i>NEG_PFEADJ</i>	0.127	0.39	-0.188	-0.55	-0.297	-1.01	0.054	0.16
<i>LOSS_GAAPNI</i>	0.137	0.31	0.009	0.02	-0.937	-2.55**	-0.656	-1.49
<i>L(PFEADJ)</i>	-0.019	-0.08	0.127	0.63	-0.133	-0.73	0.191	0.75
<i>L(PFEADJ)*LOSS_GAAPNI</i>	0.677	2.04**	0.557	1.88*	1.012	4.41***	0.586	1.88*
<i>L(PFEADJ)*NEG_PFEADJ</i>	0.318	0.76	-0.216	-0.75	0.074	0.26	-0.008	-0.02
<i>L(PFEADJ)*NEG_PFEADJ</i> <i>*LOSS_GAAPNI</i>	-0.613	-1.13	-0.533	-1.03	-1.179	-2.59***	-0.855	-1.43
<i>L(GAAPNI)</i>	0.868	5.12***	0.374	2.63***	0.257	1.79	0.502	2.58**
<i>L(GAAPNI)*LOSS_GAAPNI</i>	-0.196	-0.83	0.411	1.90*	0.442	2.07**	0.247	0.93
<i>L(TA)</i>	0.330	3.24***	0.677	6.95***	0.443	4.38***	0.104	0.88
<i>L(AGE)</i>	0.072	0.59	0.042	0.40	0.163	1.77	0.164	1.32
<i>L(TACC)</i>					-0.335	-5.47***	-0.251	-3.51***
<i>INTERNET</i>	0.098	0.12	-0.071	-0.10	0.336	0.50	0.422	0.64
<i>NEG_PFEADJ*INTERNET</i>	-0.514	-0.58	-0.300	-0.38	-1.071	-1.43	-1.007	-1.35
<i>L(PFEADJ)*INTERNET</i>	-2.379	-1.48	-2.467	-1.45	0.620	0.48	-0.338	-0.25
<i>L(PFEADJ)*LOSS_GAAPNI*INTERNET</i>	1.614	1.07	1.327	0.82	-2.054	-1.65	-0.515	-0.41
<i>L(PFEADJ)*NEG_PFEADJ*INTERNET</i>	2.923	1.78*	3.469	2.00**	-1.245	-0.94	0.547	0.40
<i>L(PFEADJ)*NEG_PFEADJ</i> <i>*LOSS_GAAPNI*INTERNET</i>	-2.177	-1.39	-1.928	-1.17	2.902	2.26**	0.464	0.36
<i>INDUSTRY_DUMMIES</i>	Included		Included		Included		Included	
<i>YEAR_DUMMIES</i>	Included		Included		Included		Included	
Adj.R ²	54.13%		61.90%		59.27%		40.47%	
No. of Obs.	541		541		541		541	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 5-3 (Continued)
Sensitivity of regression results to the concentration of pro forma
IPOs – Internet firms

Panel B: cross-sectional regression results of H2

Independent Variables	<i>L(OV)</i>		<i>L(MV)</i>	
	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	1.630	7.91***	1.540	6.47***
<i>NEG_PFEADJ</i>	0.094	1.11	0.058	0.56
<i>LOSS_GAAPNI</i>	0.273	2.53**	0.251	1.99**
<i>L(PFEADJ)</i>	0.341	6.18***	0.336	5.05***
<i>L(PFEADJ)*LOSS_GAAPNI</i>	-0.187	-2.99***	-0.186	-2.48**
<i>L(PFEADJ)*NEG_PFEADJ</i>	-0.569	-6.43***	-0.575	-5.68***
<i>L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI</i>	0.274	2.43**	0.304	2.29**
<i>L(GAAPNI)</i>	0.206	4.31***	0.210	3.99***
<i>L(GAAPNI)*LOSS_GAAPNI</i>	-0.423	-6.28***	-0.461	-5.98***
<i>L(BV)</i>	0.009	0.85	0.020	1.66*
<i>L(DACC)</i>	0.048	0.71	0.142	1.66*
<i>L(TA)</i>	0.136	5.20***	0.099	3.24***
<i>L(AGE)</i>	-0.018	-0.66	-0.015	-0.48
<i>RETENTION</i>	1.582	10.40***	1.609	9.56***
<i>UWRANK</i>	0.153	8.47***	0.186	8.76***
<i>BOOM</i>	-0.020	-0.18	0.025	0.21
<i>CRASH</i>	0.315	2.52**	0.349	2.50**
<i>TECH</i>	0.112	1.91*	0.196	2.62***
<i>INTERNET</i>	0.229	1.16	0.433	1.76*
<i>NEG_PFEADJ*INTERNET</i>	0.158	0.66	0.286	0.96
<i>L(PFEADJ)*INTERNET</i>	0.713	1.90*	0.941	1.31
<i>L(PFEADJ)*LOSS_GAAPNI*INTERNET</i>	-0.729	-2.14**	-1.043	-1.51
<i>L(PFEADJ)*NEG_PFEADJ*INTERNET</i>	-0.778	-1.97**	-1.088	-1.49
<i>L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI*INTERNET</i>	0.789	2.18**	1.195	1.70*
Adjusted R ²	71.08%		65.06%	
No. of Obs.	587		587	

See Table 4-1 for variable definitions. *L(.)* indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 5-3 (Continued)
Sensitivity of regression results to the concentration of pro forma
IPOs – Internet firms

Panel C: cross-sectional regression results of H3

Independent Variables	<i>BH_Y1</i>		<i>BH_Y3</i>		<i>BH_Y5</i>	
	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	-0.648	-2.78***	-0.729	-2.10**	-0.835	-2.37**
<i>NEG_PFEADJ</i>	0.019	0.15	0.084	0.50	0.144	0.93
<i>LOSS_GAAPNI</i>	0.006	0.04	-0.136	-0.76	0.118	0.67
<i>L(PFEADJ)</i>	-0.070	-1.03	-0.229	-2.50**	-0.200	-1.93*
<i>L(PFEADJ)*LOSS_GAAPNI</i>	0.017	0.21	0.307	3.04***	0.205	1.74*
<i>L(PFEADJ)*NEG_PFEADJ</i>	0.091	0.98	0.428	2.76***	0.402	2.40**
<i>L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI</i>	0.062	0.43	-0.408	-2.26**	-0.235	-1.16
<i>L(GAAPNI)</i>	-0.032	-0.66	0.088	1.18	0.088	1.07
<i>L(GAAPNI)*LOSS_GAAPNI</i>	0.060	0.78	0.017	0.17	0.000	0.00
<i>L(BV)</i>	-0.012	-0.67	-0.015	-0.61	-0.023	-0.95
<i>L(DACC)</i>	-0.020	-0.36	-0.015	-0.23	-0.037	-0.56
<i>L(AT)</i>	0.081	2.50**	0.092	2.20**	0.169	3.95***
<i>L(AGE)</i>	0.013	0.37	-0.032	-0.67	-0.052	-1.11
<i>RETENTION</i>	0.007	0.05	-0.020	-0.09	0.120	0.47
<i>UWRANK</i>	0.029	1.28	0.066	2.44**	0.084	2.77***
<i>BOOM</i>	-0.247	-2.11**	-0.356	-2.12**	-0.341	-1.59
<i>CRASH</i>	-0.167	-1.36	-0.278	-1.47	-0.157	-0.66
<i>TECH</i>	0.256	2.76***	0.246	2.06**	-0.085	-0.85
<i>INTERNET</i>	-0.186	-0.85	-0.099	-0.50	0.124	0.53
<i>MKT</i>	2.043	4.99***	0.748	2.94***	0.655	3.02***
<i>L(MV)</i>	0.018	0.29	0.022	0.30	-0.053	-0.77
<i>L(BV/MV)</i>	0.278	0.93	0.601	1.23	0.669	1.35
<i>IR</i>	-0.082	-0.82	-0.202	-2.34**	-0.162	-1.85*
<i>NEG_PFEADJ*INTERNET</i>	0.137	0.50	-0.012	-0.05	-0.208	-0.72
<i>L(PFEADJ)*INTERNET</i>	-1.084	-2.99***	-1.509	-2.79***	-1.680	-3.38***
<i>L(PFEADJ)*LOSS_GAAPNI*INTERNET</i>	1.106	3.52***	1.434	2.72***	1.617	3.53***
<i>L(PFEADJ)*NEG_PFEADJ*INTERNET</i>	0.931	2.26**	1.173	2.06**	1.210	2.38**
<i>L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI*INTERNET</i>	-1.010	-2.80***	-1.249	-2.21**	-1.357	-2.84***
Adj.R ²	9.74%		12.16%		14.75%	
No. of Obs.	573		573		573	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by

Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.

Table 5-4
Sensitivity of regression results of H1 to alternative calculation of pro forma time horizon

Independent Variable	<i>L(FGAAPNI)</i>		<i>L(FGAAPOI)</i>		<i>L(FGAAPCFO)</i>		<i>L(FGAAPFCF)</i>	
	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.	Coeff.	T-stat.
Intercept	-1.738	-0.72	-1.925	-0.88	-2.106	-1.06	-3.628	-1.62
<i>NEG_PFEADJ</i>	0.438	1.07	-0.069	-0.21	-0.007	-0.03	0.057	0.13
<i>LOSS_GAAPNI</i>	0.859	5.00***	0.266	1.68*	0.030	0.22	0.396	2.10**
<i>L(PFEADJ)</i>	0.176	0.56	-0.096	-0.30	-0.444	-1.64	-0.067	-0.21
<i>L(PFEADJ)*LOSS_GAAPNI</i>	-0.085	-0.34	0.060	0.28	-0.170	-0.93	0.130	0.52
<i>L(PFEADJ)*NEG_PFEADJ</i>	0.161	0.37	0.005	0.01	-1.166	-3.12***	-0.718	-1.65
<i>L(PFEADJ)*NEG_PFEADJ*LOSS_GAAPNI</i>	0.671	2.07**	0.460	1.56	0.925	4.17***	0.573	1.92*
<i>L(GAAPNI)</i>	-0.614	-1.20	-0.231	-0.49	-0.863	-2.28**	-0.731	-1.38
<i>L(GAAPNI)*LOSS_GAAPNI</i>	-0.180	-0.76	0.562	2.57**	0.748	3.79***	0.399	1.58
<i>L(TA)</i>	0.385	3.78***	0.796	7.59***	0.575	5.73***	0.182	1.46
<i>L(AGE)</i>	0.069	0.55	0.066	0.58	0.185	1.89*	0.213	1.67*
<i>L(TACC)</i>					-0.306	-5.12***	-0.230	-3.28***
<i>INDUSTRY_DUMMIES</i>	Included		Included		Included		Included	
<i>YEAR_DUMMIES</i>	Included		Included		Included		Included	
Adj.R ²	53.04%		59.73%		58.66%		39.82%	
No. of Obs.	541		541		541		541	

See Table 4-1 for variable definitions. L(.) indicates that the natural log is taken of the variable. To retain negative values of variables, I use the transformation proposed by Hand (2003): $L(W) = \log_e(1+W)$ when $W \geq 0$; $L(W) = -\log_e(1-W)$ when $W < 0$. T-statistics are white heteroscedasticity-consistent. *, **, *** denote significance at the 10 percent, 5 percent and 1 percent levels (for a two sided test), respectively.