THE EXIT OF VENTURE CAPITAL AND FINANCIAL DISCLOSURE
IN NEWLY-PUBLIC FIRMS

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Submitted to the Graduate Faculty of the

Joseph M. Katz Graduate School of Business

in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

University of Pittsburgh

2005

UNIVERSITY OF PITTSBURGH

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ABSTRACT

This study addresses the relation between the exit of venture capital and opportunistic behavior

in financial disclosure. Specifically, I examine whether the exit of venture capital is associated

with income-increasing earnings management in the IPO year and financial statement

restatements related to the period prior to the exit of venture capital. After controlling for the

endogenous choice of exit, I document that, consistent with earnings management, the exit of

venture capitalists (VCs) is significantly positively related to performance-matched discretionary

accruals in the IPO year. Regardless of VCs' exiting, their stockholdings prior to the expiration

of the lockup period are negatively related to discretionary accruals in the IPO year. Surprisingly,

VC representation on the audit committee has no significant relation with income-increasing

earnings management.

Restatements are less likely to happen prior to or during the period of VCs' exit, and more likely

to happen after VCs exiting. My results support this hypothesis. I find that the exit of venture

capital right after the lockup expiration is negatively associated with the probability of

announcing a restatement in the period T1, but positively associated with the probability of

announcing a restatement in the period T2. More importantly, the exit of venture capital has a

significant impact on the relation between VCs' stockholdings and the probability of announcing

a restatement prior to VCs' exiting. Only for firms with VCs' exiting, does VC representation on the audit committee have a significantly negative association with the probability of announcing a restatement prior to VCs' exiting. Neither VCs' holdings nor VCs' representation on the audit committee has a significant relation with the probability of announcing a restatement after the exit of venture capital.

The associations I find are robust to the usage of different instruments for the exit of venture capital, different measure for discretionary accruals, the inclusion of control variables for the intended use of proceeds, auditor's characteristics and CEO's incentives to manage earnings.

Finally, my results indicate that as in the case without VC exit, firms with VCs exiting have similar abnormal stock returns during the lockup period and for the period from the lockup expiration through the record date of the first proxy available thereafter. The exit of venture capital is associated with a lower likelihood of securities class action after the IPO. In addition, I find some evidence that income-increasing earnings management imposes some costs on venture capitalists, e.g., fewer new IPOs and greater underpricing for new IPOs.

Overall, my findings suggest that litigation risk and reputation cost are not strong enough to restrain venture capitalists from pursuing the benefits of opportunistic behavior in financial disclosure.

ACKNOWLEDGEMENT

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1.   INTRODUCTION

An initial public offering (IPO) is an interesting arena to examine the effect of monitors' exiting on firm performance and firm disclosure. First, the IPO as a corporate milestone places a firm in a new scenario, where it faces great informational demands from capital market participants, including shareholders, potential investors and regulatory agents. How newly public firms react to these demands through financial disclosure is critical not only for managers but also for shareholders, because disclosure has value implications. Thus, IPO firms provide a good setting to observe how firm financial disclosure evolves and how it is shaped by managers' incentives, firms' ownership and governance structures. Managers need to determine an optimal financial disclosure policy, since the situation post-IPO is more complicated than when the firms are private.

Second, an IPO provides a great opportunity for existing shareholders such as venture capitalists (VCs) to exit. Unlike institutional investors and other block-holders, VCs will eventually exit their portfolio IPO firms by selling off their investments after the expiration of lockup period, following what is termed the "venture capital cycle" (Gompers and Lerner 2004)[1]. Exiting shapes every aspect of venture capital investment -- from the ability to raise capital, to the types of portfolio firms, and the design of financial contracts to allocate voting rights and cash flows (Gompers and Lerner 2001). Gompers and Lerner (2004) suggest that an IPO can bring VCs higher returns than other exit options. VCs are not allowed to liquidate their holdings until after a lockup period, usually 180 days, required by the underwriter. Several papers provide evidence

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[1] VCs as general partners raise capital from limited partners, and then invest in start-ups and young private firms. As the portfolio firms grow, VCs exit their investments through IPOs, acquisition or liquidation. VCs then distribute capital and returns to limited partners. VCs raise new funds again and make new investments. This process is called the "venture capital cycle".

that VCs may sell off their shares after the lockup period expires (Bradley, Jordan and Yi 2001, Field and Hanka 2001). Lin and Smith (1998) find a significant decline in share ownership by VCs three years after the IPO (from 12.1 percent immediately after the IPO to 1.4 percent), and a decrease in the percentage with VC directorship (from 80.5 percent to 37.7 percent). This implies that VCs have some exit strategies that may be potentially different from the strategies of other shareholders in the IPO firm. This paper attempts to address the relationship between the exit of venture capital[2] and various aspects of financial disclosure post-IPO, specifically, earnings management and restatements of financial statements.

Venture capitalists (VCs) are a group of experts. They set up venture capital funds and raise capital from investors who are major institutions such as universities, pension funds, insurance companies, and large corporations, as well as those from very wealthy individuals. Typically, a venture capital fund takes the form of a limited partnership. VCs are general partners who make investment decisions for the partnership. Prior research documents that venture capitalists (VCs) closely monitor the start-up firms they finance and are actively involved in their corporate governance (Lerner 1995, Kaplan and Stromberg 2003 and 2004, Baker and Gompers 2003). Moreover, VCs provide valuable support and advisory service to venture-capital-backed firms, e.g. influencing product market strategies (Hellmann and Puri 2000), helping professionalize the management team (Hellmann and Puri 2002), and encouraging innovation (Kortum and Lerner 2000). Furthermore, VCs continue to influence the start-up firm's corporate governance after it goes public, such as CEO incentive contracts, and anti-takeover policies (Engel, Gordon and Hayes 2002, Hochberg 2004, and Luo, Nagarajan and Sayrak 2004). The incentive to exit may

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[2] The exit of venture capital is defined as the selling-off of VCs' investment in a firm.

change the VCs' role in corporate governance and motivate them to pursue trading profits that are related to opportunistic behavior in financial disclosure.

The ability of VCs to influence managers' financial disclosure depends on the degree of VCs' involvement in corporate governance. On the one hand, sitting on the board of directors and the audit committee enables VCs to monitor management, gain private information and influence firm disclosure. On the other hand, directors face potential litigation costs if they exploit inside information or disseminate false or misleading information. DuCharme, Malatesta and Sefcik (2004) document that the incidence of lawsuits involving stock offers as well as settlement amounts are significantly positively related to abnormal accruals around the offers. To avoid such lawsuits and SEC investigation, VCs' representatives may monitor managers on financial disclosure, and do not act opportunistically.

Even without litigation risks, VCs may not wish to take advantage of their influence within the firm to exit opportunistically because of concerns about their reputations. Partnership agreements have finite lives and the fund-raising task is a recurring one. VCs must regularly raise new funds to invest in start-up firms. To the extent that VCs opportunistically use their influence to exit, the market will update their reputation accordingly. It would punish the VCs in the future if the same VCs took other portfolio firms public, for example, through greater underpricing.[3] Do reputational concerns and litigation costs exceed the incentives to pursue trading profit at the time of exit? This is an empirical question. Trading at a time that is far from the time of the release of bad news, officer and director insurance (D&O insurance), and share

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[3] Underpricing is a real cost to VCs because there is a transfer of wealth from existing shareholders to new shareholders. The greater the underpricing, the more wealth transferred from the VCs to new shareholders.

distribution are strategies that potentially reduce litigation costs and damage to reputation. If these strategies are effective, VCs may be willing to act opportunistically in financial disclosure, which, in turn, could result in lower managerial monitoring.

This study uses data on 679 venture-capital-backed firms making initial public offerings between 1996 and 2000. I focus on the exit of venture capitalists right after the expiration of the lockup period. Since the exit of venture capital is not a random event and represents an endogenous choice, a two-stage approach is applied to investigate the relationship between the exit of venture capital and opportunistic behavior in financial disclosure. The first stage predicts the probability of VCs exiting by using an instrumental variable: investment ratio, defined as total amount of investments by the venture capital industry deflated by total amount of capital committed in the venture capital industry during the quarter preceding the IPO. The second-stage model examines the impact of the estimated probability of VCs exiting on discretionary accruals and restatements. Consistent with earnings management, the exit of venture capital is significantly positively related to performance-matched discretionary accruals in the IPO year. The number of VCs is positively associated with discretionary accruals in the IPO year. The more VCs in a firm, discretionary accruals are higher. It implies that there may be a free-rider problem in monitoring. Regardless of VCs' exiting, their stockholdings prior to the expiration of the lockup period are negatively related to discretionary accruals in the IPO year. This is consistent with the view that large shareholders have incentive to monitor managers. Surprisingly, VCs' representation on the audit committee has no significant relation with income-increasing earnings management. This may reflect the litigation concern of VC directors.

I focus on financial statement restatements for periods prior to VCs exiting and separate these restatements into two groups based on the time of announcement, i.e., either restatements announced during the period from the IPO date through the first record date after the expiration of the lockup period (T1) or restatements announced within three years after the first record date (T2). Restatements indicate accounting irregularities. If the VCs wish to exit the firm when the stock price is relatively high right after the lockup expiration, we should observe that restatements are less likely to happen prior to or during the period of VCs exiting, and more likely to happen after VC exit, because restatements normally result in substantially negative market reactions. My results support this hypothesis. I find that the exit of venture capital right after the lockup expiration is negatively associated with the probability of announcing a restatement in the period T1, but positively associated with the probability of announcing a restatement in the period T2.

More importantly, VCs' holdings prior to the lockup expiration are negatively associated with the probability of announcing a restatement in the period T1. But the exit of venture capital has a significant impact on this relation. If VCs exit, their stockholdings are positively related to the likelihood of announcing a restatement in the period T1. This indicates that high stockholdings give VCs incentives to monitor any misbehavior in financial disclosure when they do not consider exiting. If they exit, these stockholdings may motivate VCs to pursue high trading profits through misreporting. Furthermore, only for firms with VCs' exiting, does VC representation on the audit committee have a significant and negative association with the probability of announcing a restatement the period T1. This is also consistent with the litigation argument that VC directors reduce misreporting behavior before they exit the firm due to

litigation risks. Neither VCs' holdings nor VCs' representation on the audit committee has significant correlation with the probability of announcing a restatement in the period T2, no matter whether VCs exit or not.

The associations I find are robust to the usage of different instruments for the exit of venture capital, different measures for discretionary accruals, and the inclusion of control variables for intended use of proceeds, auditor's characteristics and CEO's incentives to manage earnings. Results on individual accrual items indicate that the exit of venture capital is positively associated with index of sales in accounts receivables in the IPO year, which is consistent with the hypothesis on income-increasing earnings management. By contrast, the exit of venture capital is positively associated with change in the rate of depreciation in the IPO year, which contradicts the hypothesis on income-increasing earnings management. The exit of venture capital does not have a significant association with the change in allowance for bad debts or change in R&D expenditure. The findings on individual accrual items partially supplement the results from the aggregate method of discretionary accruals.

My results also show that as with firms in which VCs do not exit, firms with VCs exiting have similar abnormal stock returns during the lockup period and for the period from the lockup expiration through the record date of the first proxy available thereafter. I further provide evidence on the correlation between the exit of venture capital and litigation risk. Specifically, the exit of venture capital is associated with a smaller probability of securities class action during the period from the IPO date through two years after the first record date following the lockup expiration. The exit of venture capital, however, has no significant relation to securities class

action within two years after exiting right after the lockup expiration. In addition, I find evidence for the view that income-increasing earnings management imposes some costs on venture capitalists. Discretionary accruals in the IPO year are negatively related to the number of new IPOs backed by same lead VCs in the first year following the expiration of lockup period. This association still holds true in the second year following the lockup expiration. These results suggest that if VCs anticipate there are more new IPOs in the near future, they do not exit opportunistically at this time. More importantly, I document that discretionary accruals in the IPO year are positively associated with underpricing of new IPOs backed by same lead VC in the first year following the expiration of lockup period. This correlation, however, does not hold true in the second year. Earnings management has a short-term impact on underpricing of new IPOs by lead VCs.

This paper contributes to the existing literature in several ways. First, it presents evidence on the impact of VCs' exit on financial disclosure in the form of both discretionary accruals and also financial statement restatements. Previous research that has explored the choice of VC exit and its determinants focuses on the choices among IPOs, takeovers and liquidations (Hellman 2003, Nahata 2004). No existing studies investigate the impact of VC exiting on firm disclosure.

Second, this paper documents VCs' opportunistic behavior related to earnings management. The results in my paper are different from those reported by two recent studies (Morsfield and Tan 2003, Hochberg 2004), which find evidence that venture capital backing is significantly associated with lower abnormal accruals in the IPO year and better long-run returns. However, these studies do not consider VCs' incentives to exit and the consequences of such incentives on

the firm's earnings. My results are related to the finding in Darrough and Rangan (2005) that venture capitalists who sell during the IPO have an influence on R&D expenditure. But Darrough and Rangan (2005) do not find any relation between the selling during the IPO by VCs and discretionary accruals in the IPO year. VCs normally do not sell many shares during the IPO, for example, the selling is only 0.2% in Darrough and Rangan (2005). Most of sellings by VCs happen after the IPO and the expiration of lockup period, which is the focus of my study.

Third, given that VCs play a critical role in corporate governance prior to the IPO, this paper adds evidence in the context of start-up companies on how and when corporate governance affects earnings management (DeChow, Sloan and Sweeney 1996, Beasley 1996, Klein 2002, Xie, Davison and DaDalt 2003 and Agrawal and Chadha 2005). The recent accounting scandals at Enron and Worldcom not only underlined how serious this issue is, but also triggered a series of corporate governance reforms, e.g. requirements for the independence of the board of directors and CEOs' accountability for financial reports. If they plan to exit the firm, however, to what extent will monitors such as directors and large shareholders continue to monitor management's financial reporting and disclosures? My study provides a preliminary answer to this question. Venture capitalists, as monitors in their portfolio firms, act opportunistically when they consider exiting the firms; and litigation risks and reputation concern are not strong enough to deter opportunistic behavior.

Fourth, this paper has implications for insider trading. Prior studies on the relation between insider trading and earnings management mainly focus on managers and directors (Summers and Sweeney 1998, Beneish 1999, Beneish and Vargus 2002, and Beneish, Press and Vargus 2004

among others). This paper adds the perspective that large shareholders also play a significant role in this process. Venture capitalists are unique large shareholders, because they engage in corporate governance in their portfolio firms and therefore may have more access to inside information.

Fifth, the finding in my study that earnings management can impose some costs on venture capitalists, adds new perspective to the importance of reputation in venture capital industry. The existing literature provides evidence on reputation-building activities in the venture capital industry, e.g. "grandstanding" (Gompers 1996, Lee and Wahal 2004). My dissertation emphasizes that if they can benefit more from exiting opportunistically, VCs are willing to bear the impairment to their reputation.

The paper proceeds as follows: Chapter 2 presents the literature review. Chapter 3 discusses theory and develops hypotheses. Chapter 4 describes the research design, including data selection, variables and models. Chapter 5 presents evidence and results of robustness tests. Chapter 6 examines litigation risks and reputation costs. Chapter 7 concludes the paper.

2.   LITERATURE REVIEW

This chapter provides a review of the literature on venture capital financing and incentives to exit by venture capitalists, and discusses the literature on corporate governance and financial disclosure, and on insider trading and financial disclosure. It also provides some evidence on the role of venture capital backing in earnings management at the IPO setting. At the end of this chapter, I summarize the main findings in the existing literature. Given that VCs play a critical role in corporate governance in their portfolio firms, one problem arises when VCs tend to exit the firms: Is this exit related to any opportunistic behavior in financial disclosure?

2.1.   Venture Capital Financing and Incentives to Exit

2.1.1.   Background on Venture Capital Financing

Over the past two decades, the venture capital industry has grown dramatically in United States. Venture capital investments increased from $1 billion in the early 1970s to $52.6 billion in the early 21st century by almost 500% (Gompers and Lerner 2004). Funds flowing into venture capital industry increased from $481 million in 1978 to $4.31 billion ten years later (in 1988), and to $32.9 billion twenty years later (in 1998). These funds peaked at $108.38 billion in year 2000, fell to $40.648 billion in year 2001 and reached $8 billion in year 2002. Along with this amazing growth, the market for initial public offerings also showed a strong impact of venture capital. In 1980, venture-capital-backed firms accounted for nearly 10 percent of all IPO firms, and 26 percent in 1997 before the "bubble years" of 1999 to 2000 (VentureOne 1999). The

percentage rose to 46 percent in 1999 and 64 percent in 2000 before falling back to 34 percent in 2001[4] (VentureEconomics 2002).

Venture capital financing can be viewed as a cycle (Gompers and Lerner 2004 refer to it as the "venture capital cycle"). Venture capitalists (VCs) are a group of experts. They set up venture capital funds and raise capital from investors who are major institutions such as universities, pension funds, insurance companies, and large corporations, as well as very wealthy individuals. These funds are often organized in the form of limited partnerships, and typically have a ten-year life, though extensions of several years are often possible. Investors are normally limited partners in these funds, while venture capitalists are general partners and responsible for managing the capital in the funds. The limited partners do not have decision-making authority in the venture capital firm or its portfolio of investments (Sahlman 1990). After the expiration of the partnership, VCs distribute profits to limited partners, in term of securities, cash or both. Some partnerships require the annual distribution of realized profits. Some are more flexible, leaving the profit distribution to the discretion of the VCs. The compensation that general partners of venture capital funds (venture capitalists) receive usually has two components: a fixed fee and a share plan of profits. The fixed fee may be specified as a percentage of committed capital, the value of fund's assets, or combination of these two measures.

(Figure 1 is here)

Venture capitalists concentrate investments in early stage companies and high technology industries. It is hard for these young firms to get financing from bank, because of great uncertainty and high information asymmetry. Start-up firms and young operate under significant uncertainty. This uncertainty is related to the question of when the firm's research project or new

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[4] Venture-capital-backed firms normally are in an early stage of their life cycle and in high technology industries. After the Internet bubble burst in late 2000, the number of IPOs in high-tech industries declined dramatically in 2001.

products will go to the product market, and whether it will succeed. Investors and entrepreneurs can not confidently predict what the firm's future will be. They are typically expected to have several years of negative earnings. Furthermore, there is an information gap between entrepreneurs and investors. An entrepreneur knows more than investors about her abilities, the company's operation, the progress of the project, the risk of the project carried out, and the firm's overall prospects. Based on her private information, the entrepreneur may act opportunistically, for example, by investing in research or projects that have higher personal benefits but lower returns for shareholders. These factors make the principle-agent problem really serious in venture capital financing.

Unlike most other financial intermediaries, such as pension funds and banks, venture capitalists are active investors. They have many mechanisms to mitigate these principal-agent conflicts suggested by Jensen and Meckling (1976). First, venture capitalists engage in a screening process (Chan 1983). They carefully screen projects and firms with great potential to succeed. They collect information before deciding whether to invest and try to identify ex ante unprofitable projects and bad entrepreneurs (Kaplan and Stromberg 2004). They carry out formal studies of the technology and market strategy, and informal assessments of the management team. Second, venture capitalists can design financial contracts to reduce investment risks, for example, convertible securities, allocation of control rights and cash flows (Berglof 1994, Hellmann 1998, Hellmann 2001, Cornelli and Yosha 2003, Kaplan and Stromberg 2003, Schmidt 2003). Sahlman (1990) suggests that three control mechanisms are common to nearly all venture capital financing: the use of convertible securities (Trester 1998), syndication of investment (Lerner 1994b), and the staging of capital infusions (Gompers 1995). Kaplan and Stromberg (2003) show how venture capitalists allocate various control and ownership rights

contingent on observable measures of financial and non-financial performance. After studying 213 investments in 119 portfolio companies by 14 venture capital firms, they find that if a portfolio company performs poorly, VCs obtain full control. As performance improves, the entrepreneur obtains more control rights.

However, these contracts are inherently incomplete, because they cannot fully specify all possible contingencies. This results in the need for post-investment monitoring. VCs monitor the firm's progress. If they learn negative information about future returns, the project is cut off from new financing. Venture capitalists have strong incentives to monitor their portfolio companies, because their individual compensation is linked to their funds' returns. Monitoring through board membership is one critical aspect of venture capitalists' control effort. They may influence board composition, such as splitting the title of CEO and chairman, fostering board independence (through the requirement of sufficient independent directors). Most importantly, they may influence the monitoring effort of the board. Lerner (1995) shows that venture capitalists' involvement as directors is more intense when the need for oversight is greater, based on the evidence that venture capitalists' representation on the board increases around the time of chief executive officer turnover, while the number of other outsiders remain constant. In addition to attending board meetings, VCs often visit entrepreneurs at the site of the firm. Prospects for the firm are periodically reevaluated. The shorter the duration of an individual round of financing, the more frequently the venture capitalist monitors the entrepreneur's progress and the greater the need to gather information. One survey by Gorman and Sahlman (1989) suggests that the lead venture capitalist visits each entrepreneur once a month on average and spends four to five hours at the company during each visit. Non-lead venture capitalists typically visit the company once a quarter for 2-3 hours. Baker and Gompers (2003) examine the impact of VC backing on

board composition, and the probability of founder as CEO in IPO setting. They find that VC backing has no impact on board size. However, insider fraction on the board is lower for VC-backed firms and the fraction of outsiders is higher by 0.24 in VC-backed firms. The probability that a founder remains in the role of CEO falls as venture firm reputation increases. As documented in prior literature, VCs put effort on monitoring their portfolio firms.

Value added by the VC may lead to more explosive growth and more sustainable advantage for their portfolio companies, although it may be difficult for researchers to distinguish between monitoring and value added. One advantage is that venture capitalists significantly influence the professionalization of start-up companies. Based on 173 start-up companies in Silicon Valley, Hellmann and Puri (2002) provide evidence that venture capitalists support firms to build up their human resources within their organizations, such as the recruitment, the overall human resource policies, and the adoption of stock option plans and the hiring of a vice president of marketing and sales. They also find that venture capital backed companies are more likely and faster to bring outsiders into companies as CEOs. The most important value added is delivered through strategic and supportive roles (Spanienza et al. 1995), such as "financier", "business advisor", and "mentor/coach". As Spanienza et al. (1995) point out, value added by VCs depends on the life cycle of the venture capital backed company, the experience of the CEO, the innovation sought by the company and the geographical distance between the VC and the company. Hellmann and Puri (2000) provide evidence that companies having an innovator strategy are more likely to obtain venture capital financing, and the presence of a venture capitalist is associated with less time to bring a product to market. Hsu (2004) presents latest evidence that entrepreneurial start-ups value the VC information network and its certification

value when considering financing offers. What venture capitalists can provide to companies is more than capital. The information they generate, the services they provide, and the monitoring they exert are as important as the capital they infuse to portfolio companies.

2.1.2. Incentives to Exit

Successful exits from portfolio firms are critical for venture capitalists. The exiting of venture capital investments not only determines returns for fund investors and venture capitalists themselves, but also ensures the continuation of the venture capital cycle. Exit also serves as a means to evaluate the performance of venture capitalists and subsequently facilitate resource allocation in the venture capital industry (Black and Gilson 1998, Smith 2001). Investors in venture capital funds can use fund return to evaluate how venture capitalists perform, and decide whether to shift their capital to more successful venture capitalists in the following fund-raising process.

Exiting from venture capital investments takes place in one of four forms: (1) sales or distribution of shares during or after an initial public offering (IPO); (2) selling shares to corporate acquirers (including acquisition and secondary sales (Cumming and MacIntosh 2000)); (3) company buyback or redemption of shares by venture capitalists; and (4) liquidation of the portfolio company. Different exiting methods yield different cash flows and consequences for venture capitalists. Typically, venture capitalists seek to take public the most successful firms in their portfolios. These firms account for most of the venture returns (Gompers and Lerner 2004). VCs have to determine the optimal time to exit. VCs exhibit some ability to time IPOs when industry returns are higher. For example, Lerner (1994a) finds that VCs are more likely to take firms public when equity values are high and more likely to use private financing when equity values are lower.

When to exit depends on whether the marginal value of VCs' efforts on holding shares is less than the marginal cost of these efforts. As the firm matures, the value VCs bring to a portfolio firm declines in the areas of product development, marketing issues, financial or non-financial discipline and so on. After the IPO, retention of ownership is costly for venture capitalists. VCs must continue to assume an ongoing monitoring role and cannot exert their time and capital to focus on other projects that appear to offer higher returns. This provides incentives for venture capitalists to reduce their holdings after the IPO. In addition, since their shares are diluted after the IPO, the benefits for venture capitalists to free-riding increase. As Lin and Smith (1998) argue, in deciding whether to sell in the IPO, venture capitalists balance the costs of continued involvement and ownership against the adverse market reaction to insider selling; and venture capitalists reduce equity holdings to redeploy their advisory service resources.

Existing literature documents that venture capitalists are reluctant to sell their shares during the IPO. Barry, Muscarella, and Vetsuypens (1990) are the first to provide empirical evidence on the role of venture capital in the IPOs. They suggest that retention of ownership gives a signal of value. The results show that holdings by venture capitalists one year after an IPO declined from 34.3% to 24.6%, but there is very little change in the number of board position held by VCs. Megginson and Weiss (1991) investigate the value of certification provided by venture capitalists. They find that a majority of venture capitalists do not sell any of their holdings at the offering date.

If they don't sell shares during the IPO, however, venture capitalists cannot trade their shares for several months, because of "lockup" agreements with underwriters[5]. These "lockup" agreements prohibit insiders from selling shares for a specific period, usually 180 days after the offering (Bradley, Jordan and Yi 2001). Once the lockup period ends, insiders can sell their shares. Such agreement ensures that insiders will maintain a significant economic interest in the firm after IPO, therefore aligning the interests of old and new shareholders. For example, if the IPO date for a firm is Oct. 28, 1999, lockup days are 180, then the lockup period expired on Apr. 25, 2000. Some VCs choose to sell off or exit right after the expiration of lockup period. Bradley, Jordan and Yi (2001) document that lockup expirations are, on average, associated with significant and negative abnormal returns, but the losses are concentrated in firms with venture capital backing. Field and Hanka (2001) find a permanent 40 percent increase in trading volume and a statistically prominent three-day abnormal return of -1.5 percent, around the unlock day. Both of these effects are roughly three times larger in venture-backed firms compared to non-venture-backed firms. They also provide direct evidence that venture capital investors sell more aggressively than other pre-IPO shareholders. However, even after the lockup expiration, some VCs continue to hold shares in their portfolio firms for months or years. Lin and Smith (1998) document that although most venture capital investors do not sell during the IPO, both their holdings and managerial involvement in the portfolio company decline thereafter. They find a significant decline in share ownership by VCs three years after the IPO (from 12.1 percent ownership by VCs immediately after the IPO to 1.4 percent ownership by VCs three years later.

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[5] Underwriters can release the lockup earlier before its expiration. It depends on market performance of firm stock. Keasler (2001) provides evidence on early lockup release.

Venture capitalists' concerns about exiting may adversely affect venture-capital-backed firms. They may occasionally encourage companies to undertake actions that boost the probability of a successful initial public offering, even if they jeopardize the firm's long-run health, such as by increasing earnings by cutting back on vital research spending (Darrough and Rangan 2005). Since venture capitalists exert active monitoring in these firms, they have more information than new shareholders. They may explore their inside knowledge when dissolving their stakes in investments. While this may benefit the limited and general partners of the venture capital fund, it may be harmful to the firm and the other shareholders.

2.2. Corporate Governance and Financial Disclosure

Perfectly credible (or equivalently, completely unbiased) disclosure is not optimal because it is too costly (Watts and Zimmerman 1986), which means managers can add some bias to disclosure at a low personal cost. If shareholders are uncertain about the direction of managers' incentives to bias disclosure, a pooling equilibrium occurs in which there is disclosure, and some disclosure contains bias (Dye 1988, Fischer and Verrechia 2000). Managers may introduce such bias through their discretion in computing earnings without violating generally accepted accounting principles (GAAP).

Managers usually make their judgments and estimates in many situations for financial reporting, from recognition of revenues, matching of costs and revenues to allocation, and amortization. There is considerable empirical evidence on managerial incentives for abusing this discretion to manage earnings (see Healy and Wahlen 1999, Dechow and Skinner 2000 for a review). The critical issue is how to distinguish earnings management from normal judgments and estimates. To date, no single consistent definition for earnings management has emerged. Davidson et al. (1987) regard managing earnings as "a process of taking deliberate steps within the constraints of

generally accepted accounting principles to bring about a desired level of reported earnings." Schipper (1989) defines it as "a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain (as opposed to, say, merely facilitating the neutral operation of the process." This dissertation adopts the definition given by Health and Wahlen (1999): "Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company, or to influence contractual outcomes that depend on reported accounting numbers." This definition not only considers the motivations and objectives of managers, but also specifies the methods of managing earnings.[6]

An accounting irregularity occurs if managers abuse their discretion and do not fairly present financial reports in accordance with GAAP. Managers are obligated to correct any errors, irregularities, or incomplete or misleading financial disclosures in a timely manner. A financial statement restatement is prompted either by the company or by auditors and regulators to revise quarterly or annual financial statements that were previously reported. The Securities and Exchange Commission ruled (SEC Dock. 1048, 1054 (1979)):

"There is a duty to correct statements made in any filing…if the statements either have become inaccurate by virtue of subsequent events, or are later discovered to have been false and misleading from the outset, and the issuer knows or should know that persons are continuing to rely on all or any material portion of the statements."

The board of directors, as one mechanism of corporate governance[7], has the responsibility to monitor managers and their opportunistic behavior in financial disclosure, such as earnings

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[6] Managers may manage earnings to communicate their private information to investors and security market. This information perspective was first enunciated by Holthausen and Leftwich (1983).
[7] Shleifer and Vishny (1997) define corporate governance as "the ways in which the suppliers of finance to corporations assure themselves of getting a return on their investment". Tirole (2001) suggests that corporate governance is the design of institutions that induce or force management to internalize the welfare of stakeholders.

management and financial statement restatements. DeChow, Sloan and Sweeney (1996) provide evidence on the corporate governance structures most commonly related to earnings manipulation. They document that firms subject to SEC enforcement actions are more likely to have weaker governance structures, i.e., they are less likely to have audit committees, more likely to have insider-dominated boards, more likely to have a CEO who is a company founder and more likely to have a CEO who is chairman of the board. Beasley (1996) finds that the presence of outside members on the board significantly reduces the likelihood of financial statement fraud. However, Agrawal and Chadha (2005) find that independence of boards or audit committees is not related to the probability of a firm restating earnings, but independent directors with financial expertise are associated with lower probability of restatements.

Peasnell et al. (1999) examine whether board composition affects earnings management. They conclude that outside directors limit earnings management for firms where separation of ownership and control is acute. Peasnell et al. (2001) find that the likelihood of managers making income-increasing abnormal accruals to avoid reporting both losses and earnings reductions is negatively related to the proportion of outsiders on the board, but they don't find the existence of an audit committee have any influences on earnings management. Klein (2002) documents a negative relation between audit committee independence/board independence and discretionary accruals. The author also finds that reductions in board or audit committee independence are associated with large increases in abnormal accruals. Xie, Davison and DaDalt (2003) show that financial expertise of directors and audit committee members, and meeting frequency are negatively related to the level of current discretionary accruals.

2.3. Insider Trading and Financial Disclosure

Managers possess private information that outside investors do not know. They may use this private information on selling or purchasing firm shares. They may take advantage of their discretion in firm disclosures to facilitate their share trading. In a theoretic study, Bar-Gill and Bebchuk (2003) suggest that as long as the market cannot tell whether known or suspected sales by insiders are due to insiders' knowledge of negative information or due to their liquidity needs, allowing insiders to sell shares in the intermediate trading period will increase their gain from misreporting and insiders have incentive to invest in creating opportunities to misreport.

Empirical studies provide some evidences on insider trading and misreporting. Summers and Sweeney (1998) document significant differences in insider trading activity between fraud-discovered firms and matched no-fraud firms. Insiders in the firms with fraudulent financial statements reduce their stockholdings through high levels of selling activities. Beneish (1999) finds that managers are more likely to sell their holdings and exercise stock appreciation rights in the period where earnings are overstated than are managers in control firms. Beneish and Vargus (2002) suggest that insider trading is informative about earnings quality. Specifically, the one-year-ahead persistence of income-increasing accruals is significantly lower when accompanied by abnormal insider selling and greater when accompanied by abnormal insider buying.

U.S. securities laws prohibit any trading on the basis of "material, non-public information" (Rule 10b-5 of the Securities Exchange Act of 1934). "Insiders" (officers, directors, and 10% shareholders) have to disclose their trades on Form 4 no later than the tenth day of the following month (by the second day following the trade since August 2002). In addition, Rule 144 adopted by the SEC puts "volume limitation" on insiders: within any three-month period corporate insiders may sell no more than the greater of a) 1 percent of class of securities outstanding or b) the average weekly volume of the security being sold during the four weeks preceding any sale.

Ke, Huddart, and Petroni (2003) provide evidence that insiders possess, and trade upon, knowledge of specific and economically significant forthcoming accounting disclosures as long as two years prior to the disclosure. Stock sales by insiders increase three to nine quarters prior to a break in a string of consecutive increases in quarterly earnings. Insider stock sales are greater for growth firms, before a longer period of declining earnings and when the earnings decline at the break is greater. Consistent with avoiding an established legal jeopardy, there is little abnormal selling in the two quarters immediately prior to the break. They only include trades by insiders identified as directors or officers. One recent paper (Beneish, Press and Vargus 2004), however, shows that in order to avoid litigation, managers manage earnings upward after they have engaged in abnormally high levels of insider selling instead of before that. Most of research on insider trading and financial disclosure focuses on officers and directors, and leaves out 10% blockholders.

VCs' exiting is related to insider trading but has its own characteristics. Once the lockup period is over, VCs can either sell shares on the open market to realize profits for the venture capital firm or distribute shares in their portfolio firms to limited partners in the venture capital fund. VCs' distributions are not considered to be "sales" and are therefore exempt from the anti-fraud and anti-manipulation provisions of securities law. In addition, such distributions are not revealed publicly at the time of the distribution. VCs can immediately declare a distribution and send limited partners their shares without registering with the SEC or filing a report under Rule 16(a). The occurrence of such distributions can only be discovered from corporate filings with a lag (such as proxies), and even then the distribution date cannot be precisely identified. By distributing shares to limited partners, who are usually not considered insiders, VCs can dispose of a large block of shares relatively quickly without the insider trading restrictions imposed on

officers, directors and 10 percent shareholders. Gompers and Lerner (1998) document that returns apparently continue to be negative in the months after share distribution by VCs, and distributions of firms brought public by lower quality underwriters and of less seasoned firms have more negative price reaction.

2.4.   Venture Capital and Earnings Management in the IPO Setting

Equity offerings (initial offerings and seasonal equity offerings) provide incentives to firms to manage earnings. Boosted earnings before the offering, raises stock prices and bring the firm more proceeds. Several studies provide evidence on earnings management in an IPO setting (Friedlan 1994, Teoh, Welch and Rao 1998, Teoh, Welch and Wong 1998, DuCharme, Malatesta and Sefcik 2004). Friedlan (1994) documents that IPO issuers make income-increasing discretionary accruals in the financial statements that are released before the offering. Teoh, Welch and Rao (1998) find that on average the earnings performance and abnormal accruals are unusually high in the IPO year. They also investigate depreciation estimates and bad debt provisions surrounding the IPO. They find that, relative to a matched sample of non-IPO firms, sample firms are more likely to have income-increasing depreciation policies and bad debt allowances in the IPO year and for several subsequent years. They also find evidence of a reversal after the IPO. Teoh, Welch and Wong (1998) document that issuers with unusually high accruals in the IPO year experience poor market return performance in the three years thereafter. DuCharme, Malatesta and Sefcik (2004) find that earnings reported around stock offers (IPOs and SEOs) on average contain positive abnormal accrual components (current working capital accruals), and that the accruals are negatively related to post-offer stock returns.

Two recent studies (Morsfield and Tan 2003, Hochberg 2004) investigate the role of venture capital in earnings management in an IPO setting. Both studies match venture-capital-backed

IPOs with a sample of non-venture-backed IPOs and find that discretionary accruals in the IPO year are significantly lower for venture-capital-backed IPO firms than for non-venture-backed IPO firms. Hochberg (2004) argues that it is because VCs have incentives to ensure that optimal governance systems are in place at the time of the IPO and, therefore, also ensure the preservation of the value of their investments. However, neither study investigates VCs' shareholdings prior to the IPO or their selling activities during and post the IPO, and considers VCs' incentives to exit their portfolio firms.

One exception is Darrough and Rangan (2005). The authors examine whether insiders (managers and venture capitalists) who sell during the IPO have influences on R&D expenditure. For a sample of 243 IPOs from 1986 to 1990, the results indicate that share selling during the IPO by managers and venture capitalists is associated with reduction on R&D expenditures in the year of the IPO. However, the study does not find significant relation between the selling by VCs and discretionary current accruals in the IPO year. This result is not surprising, because VCs normally do not sell their shares during the IPO. While the median is 0, in the sample used by Darrough and Rangan (2005), the mean of share sold by VCs is 0.96% of pre-offering shares outstanding.

2.5. Summary

The literature review discussed above yields summarized findings as following:

1. Venture capitalists play an active role in corporate governance of their portfolio firms, by designing contract to allocate control rights, influencing the board of directors, and monitoring managers directly.

2. Venture capitalists carefully structure exit strategies for their investments. They normally do not sell any shares during the IPO, but they divest their interests in a portfolio firm within several years following the IPO.

3. Independence of the board and/or audit committee is negatively associated with earnings management and the likelihood of financial statement restatement.

4. Insider selling is positively associated with opportunistic behavior in financial disclosure such as earnings management and accounting fraud. There is mixed evidence on whether earnings management is used before insider trading or after insider trading. Share distribution can exempt VCs from securities regulation on insider trading, which makes the exit of venture capital out of the notice to other investors.

5. There are positive discretionary accruals (a proxy for earnings management) in the IPO year. Venture capital backing is significantly associated with lower discretionary accruals in the IPO year.

3.   THEORY AND HYPOTHESES

This dissertation focuses on whether exiting by venture capitalists is associated with opportunistic behavior in financial reporting—earnings management and financial statement restatement. This chapter includes four sections and presents theoretical support and hypotheses development. The first section discusses conflicts of interest between venture capitalists (as large shareholders) and other shareholders on financial reporting. Exiting consideration is the most important reason for such conflicts. The second section shows how venture capitalists balance costs and benefits on taking advantage of discretion in financial reporting before they exit their portfolio firms. The third section presents hypotheses on the relationship between the exit of venture capital and earnings management. If the benefits are greater than the costs, venture capitalists may encourage income-increasing earnings management before they sell off their shares in the company. The fourth section presents hypotheses on the relationship between the exit of venture capital and financial statements restatements. I will examine in detail litigation risk and reputation costs VCs may experience in chapter 6.

3.1.   Conflicts of Venture Capitalists and Other Shareholders

The separation of ownership and control results in principal-agency problem (Berle and Means 1932). Some studies suggest that the existence of a large shareholder can potentially limit agency problem, because this large shareholder has enough incentives to get involve in monitoring or controlling activities on managers (Grossman and Hart 1980, Shleifer and Vishny 1986, Huddart 1993, Admati, Pfleiderer and Zechner 1994, Kahn and Winton 1998, and Maug 1998 among others). There is some empirical evidence to support this argument of monitoring role of large shareholders. For example, Bertrand and Mullainathan (2001) find that when a large-block

shareholder sits on the board of directors, there is less "pay for luck". They also find that there tends to be greater pay for luck as a manager's tenure with the firm increases, but it does not happen when a large shareholder is on the board. Both findings suggest monitoring by external large shareholders.

Even when there is a large shareholder; the agency problem may not be mitigated. Large shareholders may have different interests from other shareholders. On the one hand, large shareholders may bring more efficient management monitoring and share with other shareholders benefits from improved monitoring. On the other hand, however, concentrated ownership allows the large shareholder to exercise undue influence over the management to secure benefits that are to the detriment of other shareholders.

When VCs consider exiting their portfolio firms, VCs care more about current stock price and less about firm performance in the future. By contrast, other shareholders or potential investors are more concerned about long term performance of the firm. This conflict of interest may lead VCs to take advantage of the discretion allowed in mandatory disclosure and influence managers to bias earnings at the time they exit. Dye and Verrecchia (1995) show that managerial discretion in accounting choice increases current shareholders' ability to motivate management to take advantage of future shareholders. As a result, it exacerbates the conflicts between current and future shareholders, even though it reduces agency conflicts between current shareholder and management. In a similar vein, Kim (1993) presents a model to examine the issue of voluntary disclosure by firms with heterogeneous shareholders. It shows that better informed shareholders prefer less disclosure than less well-informed shareholders. Furthermore, Bar-Gill and Bebchuk (2003) suggest that as long as the market cannot tell whether known or suspected sales by insiders are due to insiders' knowledge of negative information or due to their liquidity needs,

allowing insiders to sell shares in the intermediate trading period will increase their gain from misreporting and insiders have a greater incentive to engage in creating opportunities to misreport.

When they want to leave the firm in the near future, say in several months, VCs may not take actions to stop or even encourage aggressive accounting policy that makes earnings number better and therefore stock price higher. The influence on managers depends on VCs' involvement on board activities and investment history before the firm goes public.

3.2.   Cost-Benefit Trade-offs by Venture Capitalists

Typically, a venture capital firm takes the form of a limited partnership. VCs are general partners who make investment decisions for the partnership. The money VCs invest is now primarily from pools of committed capital collected from limited partners, which are major institutions such as universities, pension funds, insurance companies and large corporations as well as those from very wealthy individuals. The limited partners do not have decision-making authority in the venture capital firm or its portfolio of investments (Sahlman 1990). This limited partnership has a finite life (normally 10 years). After the expiration of the partnership, VCs distribute profits to limited partners, in the form of securities, cash or both. Some partnerships require annual distribution of realized profits. Some are more flexible, leaving the profit distribution to the discretion of the VCs. The finite life of their funds puts pressure on the VCs to realize gains from their investments before each fund ends.

 Venture capital funds normally set up compensation contracts for general partners (venture capitalists). The compensation contract typically includes the annual fixed management fee and the share plan of profits. The fixed fee may be specified as a percentage of committed capital, the value of a fund's assets or a combination of these two measures. VCs can share certain part

of the profits the venture capital fund makes. Gompers and Lerner (2004) show that on average, the percentage of profits allocated to venture capitalists is 20%-25%. This compensation contract gives VCs strong incentives to pursue excellent performance of venture capital funds. Both VCs' compensation and their abilities to raise future funds depend on their investment returns that are determined by the price of shares at the time VCs sell or distribute their shares in portfolio firms. To maximize returns, VCs have to balance the benefits and costs of continuing to hold the shares or exit.

VCs' stockholdings in a firm determine the extent of their incentives to influence the firm's financial reporting. When VCs holdings are low, they have limited influence on management's disclosure decisions, and they may not get substantive wealth effects from stock sales. For VCs that are substantial shareholders in a company, higher VC holdings mean an increased ability to secure private benefits. Kahn and Winton (1998) show that in firms where information is difficult to gather -- smaller, younger or other less well-known firms, trading profits may loom large in the large shareholder's decision to trade or stay and intervene to improve firm performance. Large equity holdings in a firm give incentives to VCs to influence management to manage earnings upward before they sell.

Monitoring through board membership is a critical aspect of venture capitalists' control efforts. Lerner (1995) shows that venture capitalists' involvement as directors is more intense when the need for oversight is greater, based on the evidence that venture capitalists' representation on the board increases around the time of chief executive officer turnover, while the number of other outsiders remain constant. Board representation, especially representation on an audit committee, increases VCs' ability to influence management's financial reporting. VCs as directors may not quit the board immediately after they sell off their shares, even though they can resign (Lin and

Smith 1998). However, VC directors have to be concerned about litigation costs. DuCharme, Malatesta and Sefcik (2004) document that the incidence of lawsuits involving stock offers as well as settlement amounts are significantly positively related to abnormal accruals around the offer. To avoid such lawsuits and SEC investigation, VCs' representatives may monitor managers to report earnings appropriately. Two cases in Appendix B illustrate the litigation costs VCs may experience.

Gomes (2000) suggests that even without any explicit corporate governance mechanisms protecting minority shareholders at the time of an IPO, controlling shareholders can implicitly commit not to expropriate them because of reputation effects. Because venture capital investment is a "repeated game", VCs need to develop solid reputations for their investment performance. VCs with more experience and better track records find it easier to raise future capital. Gompers (1996) proposes a "grandstanding" hypothesis and argues that young venture capital firms have incentives to "grandstand"; that is, they take actions that signal their ability to potential investors. Specifically, young venture capital firms bring companies public earlier than older venture capital firms in an effort to establish a reputation and raise capital for new funds. Lee and Wahal (2004) provide the latest evidence to support this "grandstanding" hypothesis. They find that the flow of capital into a VC firm is positively related to VC age and the number of previous IPOs done by the VC firm. Reputation concerns may deter VCs from behaving opportunistically.

In sum, VCs balance benefits and costs at the time of exit in deciding whether to encourage or restrain opportunistic behavior in financial disclosure. High stockholdings in a firm motivate VCs to pursue trading profits, because VCs' compensation and fund performance are tied to

investment returns from stockholdings in portfolio firms. Litigation costs and reputation concerns prevent VCs to take advantage of other shareholders.

3.3. Hypotheses on Earnings Management

VCs balance benefits and costs at the time of exit in deciding whether to encourage earnings management or not. If the benefits are greater than the costs, VCs are more likely not to monitor earnings management or even to encourage such opportunistic behavior. If litigation risks and reputation cost are so overwhelming, however, VCs are more likely to continuing monitoring managers and won't allow opportunistic behavior in financial disclosure.

Three conditions are required for reputation market to work: (1) Related parties anticipate repeated transactions in the future. If it is only a one-time transaction, related parties may not care about reputation. According to the "venture capital cycle", fund-raising by venture capitalists and bringing portfolio firms to the public are repeated activities in the venture capital industry. Investors and venture capitalists are concerned about reputation. (2) Related parties must have common understanding and expectation of appropriate behavior. Investors and other shareholders of portfolio firms won't consider it appropriate when exiting by VCs is associated with opportunistic behavior in financial disclosure. (3) Related parties must observe or in some way figure out whether the behavior of venture capitalists is opportunistic.

Venture capitalists have many options available to reduce litigation costs and reputation costs. The first option is to sell off their shares at a time that is removed from when the bad news is revealed. Other shareholders and investors can't tell whether the selling by venture capitalists is only due to liquidity reasons or bad performance of the portfolio firm. Therefore, they can't bring lawsuits against venture capitalists and downgrade the reputation of venture capitalists. As discussed in Ke, Huddart, and Petroni (2003), stock sales by insiders increase three to nine

quarters prior to a break in a string of consecutive increases in quarterly earnings. Consistent with avoiding an established legal jeopardy, there is little abnormal selling in the two quarters immediately prior to the break. The second option is that if they serve as directors, venture capitalists can urge managers to purchase directors and officers (D&O) liability insurance, which protects directors and officers from personal financial liability in lawsuits brought against the firm and its directors and officers. Chalmers, Dann, and Harford (2002) provide evidence that D&O insurance decisions reveal the private information of managers. They analyze a sample of 72 IPO firms that went public between 1992 and 1996 and find a significant negative relation between the 3-year post-IPO stock price performance and the amount of insurance coverage in place at the IPO date. This option only reduces litigation costs of venture capitalists and can't reduce the impact of lawsuits on the reputation of venture capitalists. Furthermore, this option becomes more costly after the rash of accounting fraud litigation that has grown exponentially since the Enron case and Sarbanes-Oxley Act of 2002 (Layton 2003 and Ferrillo 2004).

The third option is to distribute shares in portfolio firms to limited partners of venture capital funds. This share distribution is exempt from anti-fraud and anti-manipulation provisions of securities law. By distributing shares to limited partners, who are usually not considered insiders, VCs can dispose of a large block of shares relatively quickly without the insider trading restrictions imposed on officers, directors and 10 percent shareholders. VCs can immediately declare a distribution and send limited partners their shares without registering with the SEC or filing a report under Rule 16(a). Limited partners also can benefit from this share distribution. It provides flexibility for limited partners to realize capital gains in order get tax benefits. Furthermore, it can satisfy mandatory distribution requirement of venture capital partnership agreement, i.e., profits from exiting an investment are required to be distributed to the limited

partners on an annual basis. Investors and other shareholders can't precisely identify the exact date of this distribution. The occurrence of such distributions can only be discovered from corporate filings with a lag (such as proxies). In this case, it is hard for investors and other shareholders to prove the link of the exit of venture capital and any opportunistic behavior in financial reporting.

Since litigation costs and reputation costs can be reduced by share distribution and other options, venture capitalists may pursue high return through income-increasing earnings management before exiting. This leads to the first hypothesis:

Hypothesis 1: Ceteris paribus, the exit of venture capital is positively associated with income-increasing earnings management prior to the exit.

VCs' holdings in a firm decide VCs' incentives to influence a firm's disclosure decision. The higher the VCs' holdings, the greater trading benefits from private information. If they have large shareholding in a firm, VCs are more likely to secure trading profits and have more incentives to influence managers to manage earnings upward before VCs exit.

Hypothesis 2: Ceteris paribus, for firms in which VCs exit, VCs' stockholdings are positively associated with income-increasing earnings management prior to the exit.

VCs may have representatives on a firm's board of directors and audit committee. Such representation increases VCs' ability to influence management on financial disclosure policy. An audit committee is in charge of hiring auditors and assumes responsibilities for accounting issues and auditing issues. Higher percentage of representation on an audit committee makes it easier for VCs to influence financial reporting in their portfolio firms.

Hypothesis 3: Ceteris paribus, for firms in which VCs exit, VCs' representation on the audit committee prior to exit is positively associated with income-increasing earnings management prior to the exit.

Earnings management can be obtained by using accrual-based manipulation and real manipulation. Accrual-based manipulation is related to using accounting methods that affect accruals. They include: choices among equally acceptable rules (such as LIFO versus FIFO, and straight line versus accelerated depreciation methods), judgments and estimates (such as economic life of fixed assets, the rate of bad debts), timing decisions (such as early or delayed realization of incomes and losses), and so on. A typical approach used by researchers is to partition total accruals into nondiscretionary and discretionary accruals. Analysis of earnings management often focuses on discretionary accruals as it is presumed to be the portion where earnings management is present if earnings are in fact managed, for example, Health (1985), Jones (1991), Kang and Sivaramakrishnan (1995), Dechow et al. (1995), Guenther et al. (1997), Calegari (2000) among others. Real manipulation is related to undertaking transactions that make reported income closer to some target number (Bartove 1993). Examples of this include asset write-offs, timing of asset sales, and altering shipment schedules, reducing or increasing R&D expenditures.

I focus on discretionary accruals to test hypotheses on earnings management. In robustness analysis, I also investigate accounts receivable, R&D expenditures, and individual accrual items such as allowance in bad debt and depreciation.

3.4.   Hypotheses on Restatements

Restatements are the results of accounting irregularities and thereby ex post indicate firms knowingly and intentionally manage earnings[8]. Restatements are disclosed either through a press release or Form 8-K (current events) filings with SEC. Details of restatements normally can be found in amended filings of 10-Qs or 10-Ks.

Market reaction to restatement announcement, however, is significantly negative. Prior literature documents a substantial price decline on announcement date. Dechow, Sloan and Sweeny (1996) find a -6% abnormal return for restatements that are under SEC enforcement actions. GAO (2002) documents a -10% abnormal return for a sample of 919 public companies announcing restatements in the period of 1997 through June 2002. The average price decline is severe, when the restatements involve fraud, large adjustment to net income, and more items in financial statements (Palmrose, Richardson and Scholz 2004). If a restatement is announced prior to the exit of venture capital, venture capitalists cannot get any benefits from opportunistic behavior in financial reporting, because of substantial price decline in response to the news of restatement. Therefore, VCs are not willing to see an announcement of restatement before they can exit the firm; even though in addition to companies, auditors and SEC are prompters of restatements. To avoid the occurrence of a restatement before the exit, VCs may assume monitoring roles and restrain opportunistic behavior in financial reporting.

Hypothesis 4: Ceteris paribus, the exit of venture capital is negatively associated with the probability of announcing a restatement prior to the exit.

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[8] Consistent with GAO (2002), my definition of restatement does not include any restatements due to changes in accounting principals, stock split and other reasons that GAAP allows.

VCs with large shareholdings will suffer substantial wealth loss if the firm announces a restatement before the VCs have the chance to exit. Large shareholdings give VCs incentives to monitor managers on financial reporting, before they exit.

Hypothesis 5A: Ceteris paribus, for firms in which VCs exit, VCs' stockholdings are negatively associated with the probability of announcing a restatement prior to the exit.

Representation on an audit committee facilitates VCs to fulfill their controlling and monitoring role in financial reporting. Furthermore, sitting on the committee has legal responsibility for accounting and auditing issue. If there is a restatement, VC directors may face shareholder class action. To avoid litigation, VC directors may monitor manager on financial disclosure before they exit the firm.

Hypothesis 5B: Ceteris paribus, for firms in which VCs exit, VCs' representation on an audit committee prior to the exit is negatively associated with the probability of announcing a restatement prior to the exit.

If venture capitalists encourage managers to manage earnings before exiting, the firm is more likely to restate its financial statements in the future. To ensure the benefits from managed earnings, either by selling off or distributing shares to limited partners, VCs have to exit the firm before the opportunistic behavior in financial reporting is revealed.

Hypothesis 6: Ceteris paribus, the exit of venture capital is positively associated with the probability of announcing a restatement related to periods prior to the exit during the post exit period.

Equity holdings motivate VCs to pursue trading profits. If misreporting can bring VCs high trading profits, VCs may encourage managers to misreport. Higher the stockholdings VCs have, the greater the benefits VCs can get.

Hypothesis 7A: Ceteris paribus, for firms in which VCs exit, VCs' stockholdings are positively associated with the probability of announcing a restatement related to periods prior to the exit, in post exit periods.

Representatives on the audit committee can help VCs influence managers on financial disclosure for exit purpose. However, this opportunistic behavior may result in legal action against VCs. If litigation risks are high, VC directors may not allow misreporting.

Hypothesis 7B: Ceteris paribus, for firms in which VCs exit, VCs' representation on an audit committee prior to the exit is negatively associated with the probability of announcing a restatement related to periods prior to the exit, in post exit periods.

4. SAMPLE, DATA AND METHODS

This chapter includes four sections and presents information on the research design. The first section describes how to select a sample for this dissertation, various data sources and distribution of sample firms. The second section discusses how to measure discretionary accruals (proxy for earnings management), restatements, the exit of venture capital, VCs' characteristics. The third section provides descriptive statistics on firm performance, discretionary accruals, details on restatements, details on VCs' investment in their portfolio firms and ownership structure. It also presents Pearson correlation among measures on discretionary accruals, restatements and VCs' characteristics. The fourth section proposes an instrumental variable for the endogeneity issue on the exit of venture capital, and presents empirical analysis on estimating the probability of VCs' exiting.

4.1. Sample and Data

The primary data source for this study is the Securities Data Company (SDC) Global New Securities Database. The initial sample consists of all venture-capital backed IPOs from January 1, 1996, through December 31, 2000. I eliminate closed-end funds, depository shares, real estate investment trusts (REITs), reversed leveraged buyouts, spin-offs, and unit issues. I also eliminate issues without lockup provisions. There are 821 U.S. IPOs that have lockup provisions during the period. All firms in the financial industry (SIC codes 6000-6999) are excluded. My final sample leaves out IPOs from January 1, 1996 through May 1, 1996, since the SEC has electronic prospectuses only after May 1996. The resulting sample consists of 679 firms, after eliminating firms for which there are no proxies or prospectuses[9].

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[9] Some firms do not have proxies after the lockup expiration, due to mergers or delistings.

I obtain data on IPO dates, offering price, offering size, usage of proceeds, and lockup days from the SDC. IPO prospectuses are used to check and correct data from the SDC. Information on firm age is collected from these prospectuses. Data on stock price and stock return come from the Center for Research in Security Prices (CRSP) file. Compustat provides information on financial statements. I use 10-Ks to supplement missing data in Compustat and get information on auditors and types of audit report. An IPO year is defined as the fiscal year in which an IPO takes place. I collect financial information for the year preceding the IPO year, the IPO year and the year following the IPO year.

It is difficult to get information on equity holdings immediately prior to and subsequent to lockup expiration. I use the last proxy prior to the expiration of lockup and the first proxy after the expiration of lockup. These proxies also provide information about boards of directors, audit committees, CEO information, and ownership structure including shareholders whose shares are larger than 5 percent of outstanding shares.

The final sample consists of 679 firms. Business services (two-digit SIC code of 73) has the highest percentage in my sample--42.5%. Other highly represented industries in my sample are Electrical (9.9 percent, SIC code of 36), Chemicals (9.2 percent, SIC code of 28), Instruments (8.3 percent, SIC code of 38), and Communications (7.2 percent, SIC code of 48).

(Table 1 is here)

4.2. Measurement of Variables

4.2.1. Measurement of Discretionary Accruals

To identify discretionary accruals, it is critical to correctly classify expected accruals or normal accruals. The Jones (1991) model and modified Jones model are criticized for not considering long-term earnings growth and potentially misspecifying normal accruals which could result in

misleading inferences about earnings management behavior (McNicols 2000). The modified Jones model treats all increases in credit sales as earnings management, and this method may show positive discretionary accruals for growth firms even if these firms have not engaged in earnings management. To mitigate this misclassification problem, I follow Kothari, Leone and Wasley (2005) and adjust firm performance in discretionary accruals. Total accruals are measured directly from the statement of cash flows and adjusted for the occurrence of mergers and acquisitions or discontinued operations (Hribar and Collins 2002). Total accruals are calculated as: TA = EBXI – CFO, where EBXI (Compustat #123) is net operating income before extraordinary items, and CFO (Compustat #308 - #124) is cash flow from continuing operations. To obtain discretionary accruals, I adopt a cross-sectional version of modified Jones model, which is different from the time-series model in Dechow et al. (1995). For the fiscal year of the IPO and the year following, I use all the firms in the same 2-digit SIC code to estimate the following model:

$$\frac{TA_t}{Assets_{t-1}} = \beta_0 + \beta_1 \frac{1}{Assets_{t-1}} + \beta_2 \frac{\Delta Sales_t - \Delta AR_t}{Assets_{t-1}} + \beta_3 \frac{PPE_t}{Assets_{t-1}}$$

Where TA is total accruals, $\Delta Sales$ is change in sales, ΔAR is change in accounts receivable, PPE is gross property, plant and equipment.

The residuals from the above model are regarded as discretionary accruals. Discretionary accruals are deflated by lagged firm assets.

Next, I use a variation of the performance-matched method suggested by Kothari, Leone and Wasley (2005). My performance-matching procedure first partitions firms in each two-digit SIC code into deciles based on current year ROA that is defined as net income before extraordinary items divided by total assets at the beginning of the year. Then, I match each sample firm-year observation with the median value of discretionary accruals from the same 2-digit SIC code and

year with the same ROA decile. Performance-adjusted discretionary accruals are calculated as the difference between a firm's discretionary accruals and the median value of discretionary accruals from its industry with the same ROA deciles, where the median calculation excludes the firm.

I estimate performance-adjusted discretionary accruals for the IPO year (MDA0) and the year following the IPO year (MDA1). Transitory accruals will be reversed in the following period. If a firm has income-increasing discretionary accruals in an IPO year, it is more likely to have reversed discretionary accruals in the year following an IPO year. Therefore, I calculate the change in discretionary accruals in the year following (ΔMDA) as MDA1 minus MDA0. Since the tests of earnings management are directional in my study, I use the raw values of performance-adjusted discretionary accruals. See Appendix A for the definitions of all variables in this study.

4.2.2. Measurement of Restatements

Data on restatements is based on a report compiled by The General Accounting Office (GAO), titled "Financial Statement Restatements: Trends, Market Impacts, Regulatory Response, and Remaining Challenges". Restatements in the GAO report are during the period from January 1997 to June 30, 2002. The database includes company name, ticker symbol, the date of the announcement, the entity that prompted the restatement, and the reason(s) for the restatement. The GAO report focuses on financial restatements resulting from accounting irregularities, including so-called "aggressive" accounting practices, intentional and unintentional misuse of facts applied to financial statements, oversight or misinterpretation of accounting rules, and fraud (see GAO-03-138 for detail description of definition and procedures). Following the procedures

in the GAO report, I supplement restatements announced in 1996 and between June 30, 2002 and May 31, 2004, by searching for variations of the word "restate" in Lexis-Nexis.

The timing of measuring restatements is summarized in Figure 2. I identify the record date of the first proxy after the expiration of the lockup period and define the period between this record date and the IPO date as VCs' early exiting period (T1). The period after that (T2) is defined as from the record date until three years thereafter. Burns and Kedia (2004) find that the number of years between the first restated year and the announcement year is 1.47 on average, and 2.40 years at 75%. Therefore, I choose three years to identify restatements.

(Figure 2 is here)

I measure restatements by two dummy variables (Restatement0 and Restatement1). The first is related to restatements announced during VCs' early exiting period T1. If there is an announcement during VCs' early exiting period (T1), then Restatement0 is 1; otherwise 0. The second is related to restatements announced during the period after the early exiting (T2). If there is an announcement during T2 and the restated period is T1, then restatement1 is 1; otherwise 0.

4.2.3. Measurement of VCs' Characteristics

For each firm, I used annual issues of *Pratt's Guide to Venture Capital Sources* to identify venture capitalists among the shareholders that are reported in firm prospectus, and I collect information on founding dates and funds under management for each VC. I sum up the shareholdings by all the venture capitalists in a firm. I define VCH0 and VCH1 as Equity holdings by all VCs in a firm prior to and post lockup expiration respectively, deflated by total outstanding common stocks in a firm. ΔVCHP is calculated as percentage change in stockholdings by VCs post lockup expiration, i.e., (VCH1-VCH0)/VCH0.

This dissertation defines the exit of venture capital as selling off 100% of VCs' stockholdings immediately after the lockup expiration. Exiting is a dummy variable, equal to 1 if VCs sell-off all their shares after the lockup expiration, i.e., $\Delta VCHP = -1$; otherwise 0.

VCs normally serve on the board of directors and their committees. I read through prospectuses and proxies. If a director is affiliated with any venture capitalist firm, I regard her as a representative of the venture capitalists. If this director also sits on audit committee, then VCs have representation on the audit committee. VCR0 and VCR1 are VCs' representation on the board prior to and post lockup expiration respectively, computed as the number of VC directors divided by board size. VCRA0 and VCRA1 are VCs' representation on an audit committee prior to and post lockup expiration respectively, computed as the number of VC members divided by the total number of audit committee members.

Venture capitalists most often syndicate their investments with other venture capitalists (Lerner 1994b). This syndication results in more than one venture capitalist in a firm. When syndication happens, one VC takes the role of lead venture capitalist. I regard the VC with largest equity stake as the lead VC, following Barry et al. (1990)[10]. Normally, this lead VC has significant control over the decisions of the portfolio firm and more actively monitors the company. In chapter 6, I investigate whether opportunistic behavior in firm financial disclosure has any impact on reputation costs for the lead VC. VCN0 and VCN1 are number of VCs in a firm prior to and post lockup expiration respectively.

4.3. Descriptive Statistics

Panel A of table 2 shows the descriptive statistics for firm performance. These firms on average raise $59.204 million during the IPO. The mean lockup period for these firms was nearly 180

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[10] Lerner (1994) defines the lead venture capitalist as the oldest VC investing in a firm. Gompers (1996) regards it as the VC that has been on the board the longest.

days, which is consistent with the findings in Bradley et al. (2001), and Field and Hanka (2001). Underpricing of these IPO firms, calculated as (first-day price – offering price)/offering price, is 69.7 percent on average, while the median is 25 percent. These firms have a mean positive cumulated abnormal return during the lockup period (CAR0) of 6.6 percent. However, the median cumulated return is -16.7 percent, indicating that the accumulated return is skewed to the right. One average, these firms have a negative cumulated abnormal return after the expiration of the lockup period (CAR1) of -12.4 percent. In addition, 28 percent of these IPO firms have one or more seasonal equity offerings from the IPO date through one year after the expiration of lockup period. "Offering" is a dummy variable and takes a value of 1 if a firm has any seasonal equity offerings from the IPO date through one year after the expiration of lockup period.

These IPO firms have a relatively short life of nearly 80 months on average and 60 months as the median. They have relatively few assets in the IPO year, with a mean (median) firm size of $147.091 million ($80.43 million). The mean (median) book-to-market ratio of equity at the end of IPO fiscal year (BEME) is equal to 0.644 (0.173). These IPO firms have a dramatic growth in sales. Sales growth in the IPO year is about 4388% on average, with the median at 117.6%; and sales growth in the year following the IPO year equal to 156.4% (61.5% as the median value). However, the profitability of these firms appears to be poor. Return on assets before the IPO (ROA-1) is -0.546, on average. It improves a little in the IPO year, -0.2989 (ROA0) and is still as bad as -0.3136 in the year following the IPO year (ROA1). These firms are lacking the ability to generate cash flows from operations in the IPO year. Cash flows from operations are -90.8 percent of the beginning assets in the IPO year (OCF0). The situation is improved in the year following. On average, cash flows form operations are -10.3 percent of the beginning assets in

the year following the IPO year (OCF1). Sample size varies because some firms accounting data are not available in the Compustat database and there are no available 10-Ks.

(Table 2 is here)

Panel B of table 2 reports performance-adjusted discretionary accruals in the IPO year and the year following. I winsorize all variables at the bottom and upper 0.5%. Performance-adjusted discretionary accruals in the IPO year (MDA0) are on average -7.58 percent of the beginning assets in the IPO year, with the median value of 1.83%. Performance-adjusted discretionary accruals in the year following the IPO year (MDA1) are on average -7.03 percent of the beginning assets in the year following the IPO year, with the median value of 0.29%. All variables are skewed to the left. My results are different from positive discretionary accruals for IPO firms documented in prior literature, for example 10.73% in Teoh, Welch and Rao (1998), 8.5% in DuCharme, Malatesta and Sefcik (2004). Hochberg (2004) documents on average discretionary accruals in the IPO year are 3.24% of firm assets for venture-capital-backed firms, with the median value of 0.089%; whereas for the non-venture-backed firms, the mean level of discretionary accruals is 9.49% of firm assets. There are several potential reasons for this difference. First, my sample period is different for those in the prior literature. Teoh, Welch and Rao (1998), and Teoh, Welch and Wong (1998) use a sample of IPOs from 1980 through 1990. DuCharme, Malatesta and Sefcik (2004) investigate IPOs from 1988 through 1997, while Hochberg (2004) examines IPOs from 1983 through 1994. My study uses a sample of venture-capital-backed IPOs from 1996 through 2000. Second, most of prior studies focus on abnormal current accruals. My study investigates discretionary total accruals that include both discretionary current accruals and discretionary long-term accruals. Third, prior studies normally use balance sheet approach to estimate discretionary accruals due to lack of statements of cash

flows. Hribar and Collins (2002) argue that estimating accruals directly from statement of cash flows has fewer errors than from balance sheet. My study applies direct method to estimate discretionary accruals by using statement of cash flows.

I identify 30 announcements of restatements related to VCs' early exiting period (T1) (Table 2, panel C). There are 9 restatements announced during VCs' early exiting period (T1), nearly 1.33% of sample firms and 21 announcements during the period post VCs' early exit (T2), nearly 3% of sample firms. Most of the restatements are prompted by companies (83.33%). Some restatements are prompted by multiple parties. 13.33 percent of restatements are prompted by SEC. Auditors have the same rate of prompting restatements as SEC. 60 percent of restatements are due to improper revenue accounting, which indicates instances that revenue was improperly recognized or questionable revenues were recognized. 40 percent are due to instances of improperly recognizing costs or expenses or improperly capitalizing expenditures or other improper cost accounting. Improperly classified accounting items compose 12.90 percent of restatements. Other reasons of restating financial statements are improper accounting for in-process research and development, acquisitions and mergers, restructuring, assets or inventory, and others not covered by the listed reasons. Some restatements result from multiple reasons. Restatements usually lead to report adjusted operating results. 76.67 percent of restatements consist of a decrease in net income of the restated period. 13.33 percent of restatements lead to an increase in net income of the restated period. Sometimes, firms restate sales and cost or expenses at the same time. Therefore, the net impact on net income can be zero. Such impact may also result from a reclassification of accounting items. 10 percent of restatements have no impact on net income of the restated period.

Panel D of Table 2 describes characteristics of VCs' investment in their portfolio firms. The mean (median) length of VCs' investment is 37.73 (32) months at the time of the IPO. Nearly 11% of IPO firms have VCs selling during the IPO (VCIPO), which is consistent with previous findings that VCs are reluctant to sell during the IPO. Lead VC has a mean age of 18.78 years at time of the IPO. In the IPO year, the amount of funds that the lead VC manages (Fund) is $1741.96 million on average with a median of $600 million. Since it is skewed, I use a natural logarithm transformation of this variable.

The mean of VC holdings prior to lockup expiration (VCH0) is 30.53 percent of outstanding shares in the portfolio firms and the maximum is 78.6 percent. The mean decreased to 22.34 percent post lockup expiration (VCH1). This is a 25.76 percentage change in their equity holdings (ΔVCHP), with 23.30 percent as the median. For 53 IPO firms, nearly 7.8% of the sample, VCs selling off or distribute all their shares immediately after the lockup expiration (Exiting). The number of VCs with stockholdings in a firm decreases from 2.67 prior to the expiration (VCN0) to 2.12 after the lockup expiration (VCN1). At the same time, the representation of VCs on the board changes a little, 34.72 percent prior (VCR0) vs. 29.61 percent post the expiration of lockup period (VCR1). These results are consistent with findings of Barry et al. (1990), and Lin and Smith (1998). Representation on the board gives VCs capacity and responsibility to monitor managers. Furthermore, representation on an audit committee enables VCs to influence firm disclosure policy. VCs directors are dominant on an audit committee, on average, representing 51 percent prior to the lockup expiration (VCRA0). The representation decreases slightly to 45 percent of the audit committee post lockup expiration (VCRA1). The results suggest that VCs have the ability to influence financial reporting, because the

responsibilities of the audit committee include hiring auditors and oversee accounting and audit matters.

Panel E of Table 2 provides additional information on ownership structure of IPO firms. The level of CEO's stockholdings implies the degree of alignment of CEOs' interests with shareholders' interests. Higher CEO's holdings mean less serious agency problems. Change in CEO's holdings, however, implies insider trading by CEO. The insider trading literature suggests that a CEO may opportunistically disclose information toward his own interests through the selling and buying of stocks. The CEO tends to reduce his stockholdings by nearly 10 percent post-lockup expiration, from 9 percent (CEOH0) to 8 percent (CEOH1).

BH0 and BH1 are defined as blockholdings other than VCs' stockholdings prior to and post lockup expiration respectively, deflated by total outstanding common stocks. Blockholders other than VCs may also exit after lockup expiration. Change in blockholdings other than VCs' stockholdings post lockup expiration (CBH), is calculated as BH1-BH0. Blockholders who exit the firm are likely to try to influence management to bias firm disclosure in the same way as VCs do. However, these blockholders may not be seasoned, and therefore reputation concerns may not affect their behavior. Panel E of Table 2 suggests that blockholdings other than VC holdings don't change much and remain at nearly 14 percent post lockup expiration.

Table 3 presents Pearson correlation coefficients among measures of financial disclosures and VCs' characteristics. The results demonstrate that discretionary accruals in the IPO year (MDA0) are positively correlated ($P<0.05$) with the exit of venture capital (Exiting), and the length of VCs' investment in the firm ($P<0.10$). However, MDA0 is negatively correlated with VCs' stockholdings prior to the expiration of lockup (VCH0), at the significant level of 1%. In addition, a negative correlation between MDA0 and ΔMDA suggests that there is a reversal of

discretionary accruals in the year following the IPO year. Interestingly, while the exit of venture capital is negatively correlated with ΔMDA, VCs' stockholdings prior to the expiration of lockup (VCH0) are positively correlated with ΔMDA ($P<0.05$). Other VCs' characteristics show no significant correlation with measures of discretionary accruals, such as the number of VCs prior to the lockup expiration (VCN0), VCs' representation on the audit committee prior to the lockup expiration (VCRA0), VCs selling or not during the IPO (VCIPO), the age of lead VC (VC Age), and fund size managed by the lead VC (Fund).

In general, there is no significant correlation between discretionary accruals and announcing restatements. In addition, no variables of VCs' characteristics are significantly correlated with the dummy variable for announcing restatements in period T1. The exit of venture capital (Exiting), however, is positively correlated to restatements during the period post VCs' early exit (Restatment1), $P<0.01$. Meanwhile, VCs' stockholdings prior to the expiration of lockup (VCH0) is negatively correlated with the dummy variable for announcing restatements in the period T2. Other variables have no significant correlation with Restatement1.

(Table 3 Here)

4.4. Endogeneity Issue for Exiting by Venture Capitalists

The exit of venture capital is an endogenous choice similar to the decision to invest. There are empirical findings that VCs invest in particular types of firms and design contracts to allocate cash flow rights and control rights (Gompers and Lerner 1996, Kaplan and Stromberg 2003 and 2004, Lee and Wahal 2004, among the others). The exit of VCs may be correlated with unobservable variables that affect earnings management and restatements. If we don't account for such endogeneity in empirical tests, we would get inconsistent estimates of coefficients in regressions and potentially make wrong inferences from the results.

In order to mitigate the econometric problems arising from endogeneity, I apply instrumental variables estimation procedure (Maddala 1983, Greene 2000, Wooldridge 2001). The method is a two-step procedure in which the first stage is the estimation of a probit regression that predicts the exit of venture capital and the second stage regression uses estimates from the first stage to provide consistent estimates of the parameters. The choice of instruments for an endogenous variable is critical for my two-step estimation procedure. These instruments should be correlated with the exit of venture capital but exogenous in the regressions on discretionary accruals and restatements, i.e., uncorrelated with the errors in these regressions.

I propose one instrument for the exit of venture capital: investment ratio (IC Ratio), defined as total amount of investments by the venture capital industry deflated by total amount of capital committed in the venture capital industry during the quarter preceding the IPO. This ratio reflects competition and investment opportunities in venture capital industry before VCs bring their portfolio firms to the public. The amount of capital inflow into venture capital funds is the balance of demand and supply of venture capital. VCs screen potential projects and balance costs, risks and returns of each project, and then decide which project to invest and how much money is invested. At the macro-level, the amount of investments provides information not only on the scope of investment space, but also on the expected returns and risks. A high value of IC ratio may signal investment opportunities in private equity market. As Cumming and MacIntosh (2000) argue, VCs will exit from an investment if the marginal value added is less than the marginal cost. If there are good investment opportunities, VCs are suffering one form of opportunity cost and have to consider it in their decisions to exit their portfolio firms. Therefore, I hypothesize that the IC Ratio is positively associated with the probability of exiting the portfolio. The most important thing is that this ratio is more likely to be exogenous to

discretionary accruals and restatements, because this measure is related to general market condition in private equity industry. I will test the validity of this instrument in robustness analyses of chapter 5.

The basic model in the first stage analysis is as following:

$$\text{Probability (Exiting} = 1) = f \text{ (IC Ratio, control variables)}$$

The dependent variable in the first stage is a dummy variable for the exit of venture capital (Exiting), while independent variable is investment ratio (IC Ratio). Control variables are industry, year, firm age, ROA in the year preceding IPO year (ROA-1), VCs' holdings prior to the lockup expiration (VCH0), the number of VCs prior to the lockup expiration (VCN0), VCs' representation on audit committee prior to the lockup expiration(VCRA0), underpricing and lockup days (Lockup), fund size managed by lead VC (Fund), lead VC's age (VC Age), VC investment length (Length), dummy variable for VCs' selling during the IPO (VCIPO), Assets0, book-to-market ratio (BEME), Sales Growth0, operating cash flow deflated by beginning assets (OCF0), CEO's stockholdings prior to the expiration of lockup (CEOH0), change in CEO's stockholdings post the lockup expiration (ΔCEOH), blockholdings other than VCs' holdings prior to the lockup expiration(BH0), change in blockholdings other than VCs' holdings post the lockup expiration (ΔBH), dummy variable for positive ROA0 (ROAP0), and dummy variable for positive change in ROA in the IPO year (CROAP0).

Table 4 reports the results on the first-stage analysis of VCs' exiting. As predicted, IC ratio is positively associated with the probability of VCs' exiting post the expiration of lockup period, at the significant level of 5%. The pseudo R^2 for the probit model is 28.48 percent. IC Ratio has a partial R^2 of 1.51 percent. χ^2 for testing IC Ratio is 5.43. The predicted probability of VCs' exiting is nearly 2.22 percent, while the observed rate of VCs' exiting in the sample is 7.85

51

percent. VCs' shareholdings prior to the expiration of lockup period (VCH0) have a significantly negative coefficient (-4.834) on the probability of VCs' exiting. VCs with higher equity holdings may find it more difficult to sell off due to liquidity problem; even though they have the option to distribute shares to limited partners. The exit of venture capital is positively correlated to positive change in ROA in the IPO year. Good firm performance is associated with high market price and therefore it provides incentives for VCs to secure high return in their investment. Both underpricing and lockup days are positively associated with the probability of VCs' exiting. A longer lockup period potentially gives the market a negative signal of firm's quality so investors may require more money to be left on the table during the IPO. This imposes costs for VCs' staying in the firm. Finally, change in blockholdings other than VCs' stockholdings is positively associated with the probability of VCs' exiting, at the significant level of 1%. If they can easily find other blockholders to take over their shares, it is more likely that VCs will exit the firm.

(Table 4 is here)

For each firm, I use the probit model to estimate probability of VCs' exiting, and then use the estimated probability in the second-stage analyses, which has financial disclosure as dependent variable.

5. MAIN RESULTS ON FINANCIAL DISCLOSURE

This chapter documents findings on the relationship between the exit of venture capital and opportunistic behavior in financial disclosure (earnings management and financial statement restatements). The first section compares firms with VCs' exiting to firms without VCs exit, by simple comparisons and various matching procedures. I find that firms with VCs' exiting have greater discretionary accruals in the IPO year and higher probability of announcing a restatement post exit of venture capital. The second section provides regression results on discretionary accruals in the IPO year and the evidence is consistent with the Hypothesis 1. The third section shows empirical results on the exit of venture capital and the probability of announcing a restatement in different stages. Hypotheses 4, 5B and 6 are supported. The fourth section shows robustness tests. They include applying a different instrument for the endogenous variable (the exit of venture capital), a different measurement of discretionary accruals, individual accrual items or proxies for earnings management (index of sales in account receivables, change in allowance for bad debts, change in rate of depreciation, and change in R&D expenditure), and additional control variables for intended use of proceeds and auditors' characteristics.

5.1. Comparison between Firms with and without VC Exit

I separate the whole sample into two groups based on whether venture capitalists dispose off all their investments in the firm or not. A firm with VCs disposing of all their stocks (exiting) is assigned to the Exiting group, while a firm without VCs' exiting is assigned to the Non-Exiting group. A comparison of these two groups can provide univariate tests on financial disclosure. The hypotheses 1 and 6 in chapter 3 suggest that firms with VCs' exiting have higher discretionary accruals in the IPO year, and are more likely to restate financial statements after VC exit. Since discretionary accruals tend to reverse in the following period, I expect firms in the

Exiting group to have negative changes in discretionary accruals in the year following the IPO year.

Panel A of Table 5 contains the univariate comparison on financial disclosure between Exiting group and Non-Exiting group. Firms in the Exiting group have positive discretionary accruals in the IPO year (MDA0), 25 percent of the beginning assets in the IPO year; while firms in the Non-Exiting group have negative discretionary accruals in the IPO year (MDA0), -10.3 percent of the beginning assets in the IPO year. The difference of 35.3 percent is significant at the level of 1%. A nonparametric test also shows there is a significant difference on median values of these two groups. Positive discretionary accruals lead to increases in earnings. The results are consistent with my first hypothesis that the exit of venture capital is associated with income-increasing earnings management. In the year following the IPO year, MDA1 is not different between the Exiting group and the Non-Exiting group. Change in discretionary accruals (ΔMDA), however, suggests different patterns in the two groups. Discretionary accruals in the Exiting group decrease in the year following the IPO (-35.1 percent), while those in the Non-Exiting group increase (4.1 percent). The reversal of discretionary accruals in the year following the IPO year confirms the results on earnings management in the Exiting group.

The probability of announcing restatements in the period of VCs' early exiting (Restatement0) is nearly the same across the two groups. However, the two groups are significantly different in the percentage of announcing restatements in the period T2 (Restatement1). Within three years after the early exit of venture capital, 11.3 percent of firms in the Exiting group announce restatements related to the periods when VCs held stock in the firm. In contrast, only 2.4 percent of firms in the Non-Exiting group announce restatements for the same period. These results suggests that venture capitalists try to exit the firms before the bad news come out, because restatements have

a substantially negative impact on stock price. This is consistent with my sixth hypothesis on the relation between the exit of venture capital and restatement1.

VCs pursue high benefits at the time of exit. Ideally, I should compare stock return with earnings management to stock return without earnings management for the same firm and test whether VCs can actually benefit from opportunistic behavior in financial disclosure. It is hard to know what the stock return would be if there was no earnings management. Therefore, I can only compare the stock returns between the Exiting group and the Non-Exiting group. Firms in the Exiting group have 3.9 percent higher cumulated abnormal return during the lockup period (CAR0) and 15.8 percent higher cumulated abnormal return from the expiration of the lockup period through the record date of the first proxy thereafter (CAR1) than firms in the Non-Exiting group. The differences, however, are not statistically significant. Nonparametric tests on median show that the median value of CAR0 in the Exiting group is higher than that in the Non-Exiting group. It indicates that stock performance of the Exiting group is not worse than that of the Non-Exiting group.

(Table 5 is here)

The exit of venture capital is not a random event but an endogenous choice. I apply a matching procedure to reduce bias in the inference from the simple comparison between the Exiting group and the Non-Exiting group. What I do in this dissertation is to use the estimated probability from the probit model in Table 4 as a propensity score and then match firms in which VCs exit with firms in which VCs do not exit. Rosenbaum and Rubin (1983) are the first to propose this propensity score matching method. I carry out one-by-one ''nearest neighborhood'' matching and one-to-many matching (Heckman et al. 1997 and 1998). One-to-many matching uses the weighted average of the outcomes of several (or perhaps all) firms without VCs' exiting. The

weight given to each firm is in proportion to the ''closeness'' of the vector of observables. I use Gaussian kernel matching and local linear regression matching. All matching is conducted with replacement. Using each matching estimator, I calculate the difference between the measures of earnings management in the Exiting group and the matched measures of earnings management in the Non-Exiting group. I use bootstrapped standard errors to conduct statistical tests and provide p-values from two-tail tests. The bootstrapping is based on 50 replications.

Panel B of Table 5 reports the results of matching firms in the Exiting group with firms in the Non-Exiting group. The average difference for discretionary accruals in the IPO year is significant in one-by-one propensity score matching and Gaussian kernel matching, but not in local linear regression matching. It suggests that firms with VCs exiting have higher discretionary accruals than matched firms in the IPO year. Change in discretionary accruals in the year following the IPO year shows some reversal of discretionary accruals in the IPO year. It is not significantly different between firms with VCs exiting and matched firms. Firms in the Exiting group have significantly higher rate of restatements announced after VCs early exit than matched firms. The difference is significant in one-by-one propensity score matching and Gaussian kernel matching, but not in local linear regression matching. All matching procedures suggest that there is no difference on stock performance between firms in the Exiting group and matched firms.

In a sum, the univariate comparison provides some evidence that the exit of venture capital is associated with opportunistic behavior in financial disclosure. Stock performance is not different between the Exiting group and the Non-Exiting group, either during the lockup period or from the expiration of the lockup period through the record date of the first proxy thereafter.

5.2.   Earnings Management

To investigate the relation between the exit of venture capital and earnings management, I use an approach involving endogenous switching regressions, described in Maddala (1983, p. 283). This approach results in the following two equations:

$$MDA0 = \beta_0 + \beta_1 Exiting + \beta_2 X_1 + \mu_1 \tag{1}$$

$$Exiting = \gamma_0 + \gamma_1 ICRatio + \gamma_2 X_1 + \mu_2 \tag{2}$$

A two-step procedure is applied. First, a probit regression of equation (2) predicts the exit of venture capital by using IC Ratio as an instrument. Second, a linear regression of equation (1) uses estimated probability from the first stage to provide consistent estimates of the parameters. X_1 is a vector of all other independent variables and control variables. It includes characteristics of VCs, such as VCs' holdings prior to the lockup expiration (VCH0), the number of VCs prior to the lockup expiration (VCN0), VCs' representation on audit committee prior to the lockup expiration (VCRA0) and lead VC's age (VC Age). Dummy variable for VCs' selling during the IPO (VCIPO) is included, because selling during the IPO gives VCs incentives to influence financial disclosure.

Control variables are industry dummies, year dummies, firm age, ROA in the year preceding IPO year (ROA-1), underpricing and lockup days (Lockup), Assets0, book-to-market ratio (BEME), Sales Growth0, operating cash flow deflated by beginning assets (OCF0). Barton and Simko (2002) suggest that balance sheet status may put restraints on earnings management. Moreover, Skinner and Sloan (2002) show that growth stocks exhibit asymmetric responses to negative earnings surprise. Maintaining a sustain growth is one reason that managers of young firms practice aggressive accounting. I use two variables to control growth potential, book-to-market ratio (BEME) and sales growth in the IPO year. Dechow, Sloan and Sweeney (1996) argue that

the desire to raise outside financing at low cost can lead firms to manipulate earnings in the first place. Subsequent seasonal equity offerings may give firms incentives to manage earnings (DuCharme, Malatesta and Sefcik 2004). A dummy variable for any seasonal equity offering seasonal equity offerings from the IPO date through one year after the expiration of lockup period (Offering) is used as a control variable.

The existing literature provides evidence that managers have incentives to meet relatively simple earnings benchmarks, including avoiding losses, reporting increases in seasonally adjusted quarterly earnings and meeting analysts' expectations for quarterly earnings (Hayn 1995, Burgstahler and Dichev 1997). Burgstahler and Eames (1998) and Degeorge, Patel and Zeckhauser (1999) document that one sees an unusually large number of zero and small positive forecast errors (cases where analyst forecasts are exactly met or just beaten) and an unusually small number of small negative forecast errors (near misses). I use two dummy variables to proxy managers' incentives to manage earnings above some kind of threshold: a dummy for positive ROA0 (ROAP0) and another dummy for positive change in ROA (CROAP0).

CEO's stockholdings prior to the expiration of lockup (CEOH0) and change in CEO's stockholdings post the lockup expiration (ΔCEOH) are also included as control variables. The level of CEO's stockholdings implies the degree of alignment of CEOs' interests with those of shareholders. Higher CEOs' holdings mean fewer serious agency problems. High CEO's stockholdings, however, may also give the CEO incentive to trade on inside information or by earnings management. Cheng and Warfield (2005) document that managers with high equity incentives are more likely to report earnings that meet or just beat analysts' forecasts.

I include blockholdings other than VCs' holdings prior to the lockup expiration (BH0), and change in blockholdings other than VCs' holdings post the lockup expiration (ΔBH). Literature

on blockholding suggests that blockholders may assume the role of monitoring managers (Shleifer and Vishny 1986, Huddart 1993 and Admati, Pfleiderer and Zechner 1994). Block-holders other than VCs may exit after lockup expiration. They may also have incentives to influence managers on financial disclosure.

To control for the impact of litigation concern on firm financial disclosure, I include a dummy variable "Litigation" for industries with high litigation risk. By using the categories in Francis, Philbrick, and Schipper (1994), the variable takes the value of 1, if a firm is in one of the following four industries: biotechnology (SIC codes 2833-2836, and 8731-8734), computers (SIC codes 3570-3577, and 7370-7374), electronics (SIC codes 3600-3674), and retailing (SIC codes 5200-5961); otherwise 0. 57 percent of firms in my sample are from these four industries with high litigation incidence.

Table 6 presents regression results on discretionary accruals in an IPO year. The Hypothesis 1 predicts that the exit of venture capital after the lockup expiration is positively associated with income-increasing discretionary accruals in the IPO year. Ordinary Least Squares (OLS) regression shows that the coefficient on Exiting is a positive 0.3309 (P-value <0.01). Firms with VCs exiting have 33.09 percent higher discretionary accruals in the IPO year. The adjusted R^2 of OLS is 9.9 percent. Two-stage-least-squares (2SLS) analysis gives our similar results on the coefficient of Exiting. The Hypothesis 1 is supported even after considering the endogeneity issue on the exit of venture capital. A Wald test suggests a rejection of independence between equation (1) and equation (2).

Several features in the Table 6 are noteworthy. First, VCs' stockholdings prior to the lockup expiration (VCH0) are negatively associated with the discretionary accruals in the IPO year. The relation is significant in OLS, but not in 2SLS. It implies that high equity holdings in a firm may

give VCs incentives to monitor managers on financial disclosure. Second, the number of VCs in a firm prior to the expiration of lockup period (VCN0) has a significant coefficient not only in OLS but also in 2SLS. VCs normally syndicate their investments. If there is more than one VC in a firm, a free-rider problem may exist among VCs. The monitoring function by VCs will be weakened if the free-rider problem is severe. This will give managers room to manage earnings for their own benefits. The coefficient of VCN0 suggests that if the number of VCs increases by one, the firm will have a 6.25 percent higher discretionary accruals in the IPO year, deflated by the beginning total assets. Third, VCs' representation on the audit committee has no significant coefficient in the models. Fourth, underpricing is negatively associated with discretionary accruals in the IPO year (-0.0565 in OLS, P-value <0.001). Firms with high first-day return have lower discretionary accruals in the IPO year. Fifth, firm age at the time of the IPO is positively related to discretionary accruals in the IPO year. It has a significant coefficient of 0.1353. As it becomes mature, a firm not only has more resources for its product development and marketing, but also has an increased business complexity. It means managers have more options and discretion on their financial reporting. Sixth, firms in industries with high litigation risk have higher discretionary accruals in the IPO year. The coefficient of dummy variable Litigation is 0.1871.

Surprisingly, dummy variables for positive ROA in the IPO year and change in ROA in an IPO year are insignificant in all the models. The results are not consistent with prior evidence that firms manage earnings to meet certain thresholds (Burgstahler and Dichev 1997, Degeorge, Patel and Zeckhauser 1999, Matsumoto 2002). However, several recent studies argue that part of such discontinuities around certain thresholds may not be due to earnings management (Dechow, Tuna and Richardson 2003, Beaver, McNicols and Nelson 2003, Durtschi and Peter 2004).

Moreover, CEO's holdings (CEOH0) and change in CEO's holdings (ΔCEOH) are not significantly related to discretionary accruals in the IPO year. In addition, Block-holdings other than VCs holdings prior to lockup expiration (BH0) are not significantly negatively associated with discretionary accruals either.

Barton and Simko (2002) indicate that high net operating assets result in less flexibility to manage earnings upward. The results in Table 6 show that total assets at the end of the IPO year are negatively associated with discretionary accruals in the IPO year. But it is not significant. Growth opportunity (book-to-market ratio) and sales growth do not have significant coefficients in the models. The findings are inconsistent with those reported by Skinner and Sloan (2002). My measure for the discretionary accruals has already been adjusted by firm performance. It is not surprising that OLS and 2SLS do not yield significant coefficients on growth opportunities and sales growth.

(Table 6 is here)

To further investigate the role of VCs' stockholdings and VCs' representation on the audit committee, I use two interactions in regression analyses, *VCE x VCH0* and *VCE x VCRA0*. The results are presented in Table 7. The Hypothesis 2 predicts that if VCs exit, VCs' stockholdings are positively associated with income-increasing discretionary accruals in the IPO year. Furthermore, the Hypothesis 3 predicts that if VCs exit, VCs' stockholdings are positively associated with income-increasing discretionary accruals in the IPO year. The results in Table 7 show that either *VCE x VCH0* or *VCE x VCRA0* has a significant association with discretionary accruals in the IPO year. This suggests that the relation between VCs' stockholdings prior to the lockup expiration and discretionary accruals in the IPO year is not altered by the exit of venture

capital. In addition, independent of whether VCs exit or not, VCs' representation on the audit committee has no significant relation on the discretionary accruals in the IPO year.

(Table 7 is here)

Accruals normally reverse in subsequent periods. Table 8 reports the results on change in discretionary accruals in the year following the IPO. 2SLS analysis in Column (1) suggests that the exit of venture capital is negatively associated with change in discretionary accruals in the year following the IPO year (P-value <0.01). After including discretionary accruals in the IPO year (MDA0) as a control variable, column (2) shows that the coefficient of Exiting is no long significant. MDA0, however, has a negative coefficient (P-value < 0.001). Results in column (1) and (2) indicate that the negative relation between the exit of venture capital and change in discretionary accruals is a result of the reversal of discretionary accruals in the IPO year. The exit of venture capital has no more direct impact on change in discretionary accruals in the year following the IPO.

(Table 8 is here)

As a summary, the results presented in this section are consistent with Hypothesis 1. The exit of venture capital is positively related to income-increasing earnings management in the IPO year. The analyses do not find evidence to support Hypothesis 2 and Hypothesis 3. No matter VCs exit or not, VCs' stockholdings prior to the expiration of lockup period are negatively related to discretionary accruals in the IPO year. In addition, VCs' representation on the audit committee has no significant relation with income-increasing earnings management.

5.3. Restatements

To analyze restatements, I use a seemingly unrelated bivariate probit model (Maddala 1983, Greene 2000). One model uses dummy variable for restatements (either Restatement0 or

Restatement1) as dependent variable and the exit of venture capital as one independent variable. Another model uses the exit of venture capital as dependent variable and ratio of investment over raised capital (IC Ratio) as instrumental variable. I estimate equations (3) and (4) below simultaneously, where X is the vector of independent variables and control variables.

Probability (Restatement0 or Restatement1=1) $= f$ (Exiting, X) $\qquad$ (3)

Probability (Exiting=1) $= f$ (Exiting, IC Ratio, X) $\qquad$ (4)

Restatements imply accounting irregularities and improper accounting practice. The underlying reasons may be managers' incentives, firm characteristics, status of corporation governance, and regulation forces.

In addition to characteristics of VCs, I control for various variables of firm characteristics, such as firm size (Assets0), firm performance (ROA-1, ROAP0, CROAP0), growth (book-to-market ratio—BEME, and Sales Growth0), and seasonal equity offerings (Offering). Prior studies find that restatements are more likely to happen in small firms, less profitable firms and slow growth firms (Kinney and McDaniel 1989, DeFond and Jiambalvo 1991). Richardson, Tuna, and Wu (2002) find that compared to non-restatement firms, restatement firms have higher market-to-book and price-to-earnings ratios, higher leverage, and greater use of external financing. They also find that restatement firms have longer strings of positive quarterly earnings growth and longer strings of positive quarterly earnings surprises than non-restatement firms.

I also include variables about ownership structure: CEOH0, BH0, ΔCEOH, and ΔBH. Findings in Summers and Sweeney (1998) and Beneish (1999) indicate that insider trading by managers is associated with improper accounting.

Firms that restate their financial statements are more likely to face lawsuits or securities class actions. Palmrose and Schoze (2004) find that restatements on items in core operations increase

the likelihood and severity of lawsuits. I include a dummy variable (Litigation) to control deterrence effect of litigation in certain industries.

Most of prior studies focus on firms that restate financial statements. One common method is to match restatement firms with non-restatement firms, based on size and industry. Richardson, Tuna, and Wu (2002) are an exception. They compare restatement-years to all other Compustat years, in order to avoid problem relating to nonrandom matched samples. My study is different because I examine the likelihood of announcing restatements for firms with relatively homogenous characteristics: IPO firms, firms backed by venture capital, and VCs have exiting incentives. Furthermore, I investigate how the exiting behavior of VCs is related to the likelihood of announcing restatements at the different stages of IPO firms.

Table 9 presents results on restatements announced during the period of VCs' early exiting (T1). Hypothesis 4 predicts that the exit of venture capital is negatively related to restatements announced during the period T1. Column (1) shows that the coefficient for Exiting is -1.5688, P-value < 0.01. It is consistent with the argument that VCs are unwilling to see improper accounting practice revealed before they exit the firm,

Column (2) includes interaction variables between the exit of venture capital and VCs' investment status. The interaction between VCs' holdings prior to the lockup expiration and the exit of venture capital (*VCH0 x Exiting*) has a positive coefficient of 18.4336, P-value < 0.001. By contrast, the coefficient of VCH0 is -4.4203, P-value <0.001. If VCs do not exit, higher VCs' stockholdings are associated with lower probability of announcing restatements in the period T1. If VCs do exit, however, the impact of VCs' stockholdings is significantly positive. The χ^2 of 9.93 implies that the joint effect of VCH0 and *VCH0 x Exiting* is significantly positive, with P-

value < 0.01. These results contradict the Hypothesis 5A that if VCs exit, VCs' stockholdings are negatively associated with the probability of announcing a restatement prior to the exit.

The Hypothesis 5B predicts that if VCs exit, VCs' representation on audit committee prior to the exit is negatively associated with the probability of announcing a restatement prior to the exit. Column (2) in Table 9 establishes such relationship. While the coefficient for VCRA0 is not significant, *VCRA0 x Exiting* has a significant and negative coefficient (-28.1549, P-value < 0.001). If VCs do not exit, VCs' representation on the audit committee is not related to restatements announced during VCs' exiting period. If VCs do exit, the join effect of VCRA0 and *VCRA0 x Exiting* is significant and negative (χ^2 = 100.12, P-value < 0.001). This finding is inconsistent with Agrawal and Chadha (2005) that audit committee independence has no impact on financial scandals.

CEO's stockholdings (CEOH0) and change in CEO's stockholdings (ΔCEOH) are significantly and negatively related to the probability of restatements announced during the period T1. Higher CEO's holdings prior to the lockup expiration are associated with lower probability of restatements. High equity holdings align managers with shareholders in accounting issues. It is inconsistent with the findings in Burns and Kedia (2004) that only stock options are associated with financial statement restatements. The negative relation between change in CEO's holdings and the probability of restatements implies that if a CEO sells shares, a restatement announcement is more likely to happen, consistent with Summers and Sweeney (1998) and Beneish (1999).

Blockholdings other than VCs' stockholdings prior to lockup expiration (BH0) has a significant coefficient of -1.8763 in Column (1). It is consistent with advocators' argument on blockholdings that a large shareholder monitors mangers (Shleifer and Vishny 1986, Huddart

1993, and Admati, Pfleiderer and Zechner 1994). In Column (2), change in blockholdings post lockup expiration (ΔBH) is significantly and negatively related to the probability of restatements announced during the period T1. It implies that an increase in blockholdings is related to a decreased probability of announcing restatement in the period T1.

Book-to-market ratio (BEME) is negatively related to the probability of announcing a restatement in the period T1. It is consistent with the finding in Richardson, Tuna, and Wu (2002). The dummy variable for subsequent seasonal equity offerings (Offering) has a significant coefficient (-0.6783 in Column (1), P-value < 0.05). It contradicts to the evidence in Richardson, Tuna, and Wu (2002) that restatement firms have greater use of external financing. My results suggest that if it has any seasonal equity offering from the IPO date through one year after the expiration of lockup period, a firm is less likely to announce a restatement of financial statements in the period T1. It is not surprising, because a restatement normally has substantial negative sequences on stock performance and will hurt the company in the seasonal equity offering.

Another finding in Table 9 is that firms in industries with high litigation risks are more likely to announce a restatement in the period T1. The coefficient is 0.4149 in Column (1), P-value < 0.05.

(Table 9 Here)

Table 10 presents results on restatements announced in the period post VCs' early exiting (T2). Consistent with my prediction, the exit of venture capital is positively associated with the likelihood of announcing restatement related to the period of VCs' exiting (2.8643 in Column (1), P-value < 0.001), in the period from the record date of the first proxy date post the lockup expiration through three years thereafter. VCH0, VCRA0, *VCH0 x Exiting* and *VCRA0 x Exiting* do not have significant coefficients in Column (2). Table 10 does not provide evidence to support

the Hypotheses 7A and 7B. Lead VC's age (VC Age) has a significant coefficient of 0.2067 in Column (1), P-value < 0.1. More experienced lead VC is associated with higher probability of announcing a restatement in the period T2.

CEO's stockholdings prior to the expiration of lockup period (CEOH0) are significantly and positively related to the likelihood of restatements announced in the period T2 (1.942 in Column (1), P-value < 0.01). In addition, book-to-market ratio (BEME) is negatively related to the probability of announcing a restatement in the period T2. The effect of BEME is consistent with what I find in Table 9.

Firm age at the time of the IPO is positively related to the likelihood of restatements announced in the period T2 (0.3284 in Column (1), P-value < 0.05). Mature firms are more likely to announce restatements in the period T2. Combining this with the findings on firm age and earnings management suggests that as firms become mature, the likelihood of improper accounting practice increases.

In contrast to the findings in Table 9, firms in industries with high litigation risk are less likely to announce a restatement in the period T2. The coefficient for Litigation is -0.3831 in Column (1), P-value < 0.05.

(Table 10 Here)

In sum, the results presented in this section are consistent with Hypothesis 4 and 6. The exit of venture capital is related to a lower probability of announcing a restatement at the time of VC exit, but a higher probability of announcing a restatement related to the period of VC exit within three years after the exit. VCs' holdings prior to the lockup expiration are negatively associated with the probability of announcing a restatement in the period T1. But the exit of venture capital has a significant impact on this relation. If VCs exit, there is a positive relation between VCs'

holdings and the likelihood of announcing a restatement in the period T1. Only for firms with VCs' exiting, does VCs' representation on the audit committee have a significant association with the probability of announcing a restatement in period T1. Neither VCs' holdings nor VCs' representation on the audit committee has significant relation with the probability of announcing a restatement in the period T2, independent of whether VCs exit or not.

5.4. Robustness Analysis

5.4.1. Validity of Instrument Variable

The validity of instrument variable—IC Ratio is critical for all my analyses. To test whether this instrument is valid, I follow procedures suggested by Larcker and Rusticus (2005). First, I estimate the error term in Equation (1) for discretionary accruals in the IPO year after 2SLS. Then, I regress this error variable on all the variables except the exit of venture capital (Exiting). The coefficient on IC Ratio is not significant and it is close to zero (0.0023). R^2 is 0.09% for this regression, and χ_2 is 0.6066. The correlation between IC Ratio and the error term is 0.0056 and not significant. The squared correlation of the instrument with the structural error term is 0.00003136 and far less than 1.5% (the partial R^2) of 0.02449, the comparable squared correlation between the exit of venture capital and the structural error. The results suggest that IC Ratio is not correlated with the structural error term and it is valid as an instrument. Since I only use one instrument, overidentifying is not a problem.

Another way to ensure the validity of instrument variable is to use different set of instruments and see whether results are robust. It is difficult to find a valid instrument for the exit of venture capital and extremely hard to find several for it.

I further use a generated instrumental variable approach introduced by Wooldridge (2001, P. 621). This approach needs three steps: (1) estimate the probit model for the exit of venture

capital by using the instrumental variable (IC Ratio) and other variables; then get the predicted probability of VCs' exiting; (2) use this predicted probability of VCs' exiting as an instrument and re-estimate the probit model for the exit of venture capital without IC Ratio; and (3) carry out the second-stage of 2SLS. This approach provides a new instrument: predicted probability of VCs' exiting.

Table 11 present the results on discretionary accruals in the IPO year by using generated instrument method. The exit of venture capital has a significant and positive coefficient both in Column (1) and Column (2). This is consistent with the Hypothesis 1. I also examine change in discretionary accruals in the year following the IPO (ΔMDA0), restatement announced in the period T1 (Restatement0) and restatement announced in the period T2 (Restatement1). Generated instrument method yields similar results as those reported in Table 8, Table 9 and Table 10. The results are not reported.

(Table 11 Here)

Overall, the instrument used in this dissertation is valid and the results are robust to different instruments.

5.4.2. Different Measure for Discretionary Accruals

I use Jones Model (1991) to estimate discretionary accruals and match these accruals based on firm performance. I define MJDA0 as performance-adjusted discretionary accruals estimated from Jones Model in the IPO year. Equation (1) and (2) are re-estimated by using MJDA0 as dependent variable in Equation (1).

Table 12 reports 2SLS results on Jones-model discretionary accruals in the IPO year. The exit of venture capital is positively associated with discretionary accruals in the IPO year (1.0585 in Column (1), P-value < 0.01). VCH0, VCRA0, *VCH0 x Exiting* and *VCRA0 x Exiting* do not have

significant coefficients in Column (2). CEO's stockholdings (CEOH0) and change in CEO's stockholdings (ΔCEOH) are significantly and positively related to discretionary accruals both in Column (1) and Column (2). Again, underpricing is negatively associated with discretionary accruals in the IPO year (-0.0642 in Column (1), P-value <0.001). Moreover, firm age at the time of the IPO has a significant coefficient of 0.1857 in Column (1). Consistent with Barton and Simko (2002), total assets in the IPO year are negatively associated with discretionary accruals in the IPO year (P-value < 0.05). Jones-model (1991) and modified Jones model give out similar results on the relation between the exit of venture capital and income-increasing earnings management in the IPO year.

(Table 12 Here)

5.4.3.   Other Proxies for Earnings Management

Many researchers criticize models of aggregate accruals because of errors and misclassifications (Bernard and Skinner 1996, Beneish 1997 and 1998, McNicols 2000, among others). Dechow et al. (1995) and Holthausen et al. (1995) point out that current techniques for estimating discretionary accruals are crude, leading to significant measurement error. Gaver et al. (1995) demonstrate that when estimates of unmanaged earnings are obtained by "backing-out" discretionary accrual estimates from reported earnings, measure error in discretionary accrual estimates can lead to spurious correlation that biases empirical tests in favor of finding earnings management. McNicols (2000) suggests one approach to investigate earnings management is to examine individual accruals items. The choice of individual accruals items, however, is lack of theoretical guidance and subject to researchers' own judgment. I use several individual accruals items to supplement my analysis in previous sections.

Earnings management can be obtained by using accrual-based manipulation and real manipulation. Accrual-based manipulation is related to using accounting methods that affect accruals. These methods include: choices among equally acceptable rules (such as LIFO versus FIFO, straight line versus accelerated depreciation methods), judgments and estimates (such as economic life of fixed assets, the rate of bad debts), timing decisions (such as early or delayed realization of incomes and losses), and so on.

Index of Sales in Account Receivables

Managers may use aggressive accounting to maintain a strong sales growth. Improper practice includes recording revenues too soon, recording questionable or false revenue, improperly using the percentage of completion method, reporting one-time gains as ordinary income, document sales in one year for contracts that last several years, recording merchandises at dealers of products as sales and so on. While cash sales are no frequently manipulated, accounts receivables are subject to manipulation. An abnormally high percentage of account receivables in sales raises concerns on whether the accounting practice is aggressive. The evidence in Chapter 4 suggests that most of restatements are due to accounting irregularities in revenue recognition (60 percent). I examine one measure – index of sales in accounts receivables. This measure is defined

as $\dfrac{Accounts\,Receivables_t}{Sales_t} \Big/ \dfrac{Accounts\,Receivables_{t-1}}{Sales_{t-1}}$. If the ratio is greater than 1, it suggests

that account receivables increase faster than sales increase. High value of this measure implies aggressive policy on sales. If there is an earnings management in revenue recognition, this ratio may increase. I predict that the exit of venture capital is positively related to index of sales in accounts receivables in the IPO year (ISA0).

Table 13 presents results on index of sales in accounts receivables in the IPO year (ISA0). The 2SLS procedure uses ISA0 as the dependent variable in the second stage. In addition to control

variables in Equation (1), industry average of index of sales in account receivables in the IPO year (IDISA0) is included as a control variable. Table 13 illustrates that the exit of venture capital (Exiting) has a positive coefficient (2.9595, P-value < 0.01). Firms with VCs' exiting have higher index of sales in account receivables in the IPO year. It is consistent with the prediction on earnings management and the exit of venture capital.

Change in Allowance for Bad Debts

Related to account receivables, firms have discretion to estimate the rate of bad debts. The high rate of bad debts increases firms' expenses. Firms may manage earnings through changes in allowance to bad debts (McNicholes and Wilson 1988). Teoh, Welch and Rao (1998) find that IPO firms on average allow significantly less for bad debts than the matched firms in the year before going public and during the offering year. I examine change in allowance for bad debts in the IPO year (ΔBad), defined as $\dfrac{AllowanceForBadDebts_t}{GrossAccounts\,Reeivables_t} - \dfrac{AllowanceForBadDebts_{t-1}}{GrossAccounts\,Receivables_{t-1}}$. If the exit of venture capital is associated with income-increasing earnings management, we should observe a negative relation between the exit of venture capital and change in allowance for bad debts in the IPO year.

Table 13 presents results on change in allowance for bad debts in the IPO year (ΔBad0). The 2SLS procedure uses ΔBad as the dependent variable in the second stage. As control variables, I include industry average change in allowance for bad debts in the IPO year (ΔIBad0), and the level of allowance for bad debts in the year preceding the IPO (Bad-1). Table 13 shows that the exit of venture capital (Exiting) is not significantly associated with change in allowance for bad debts in the IPO year (ΔBad0). The coefficient is -1.045 and P-value = 0.387. I do not find evidence on the relation between the exit of venture capital and change in allowance for bad debts in the IPO year.

Change in Rate of Depreciation

Firms can decide which depreciation method to use, how long the economic life of a fixed asset is, and how much depreciation expenses are recognized. Different depreciation policies have different impact on earnings. Teoh, Welch and Rao (1998) find that a majority of IPO firms uses depreciation methods similar to their matches in all years. But, if they deviate from industry norm, IPO firms are more likely to use income-increasing depreciation method than their matches. I examine whether the exit of venture capital is negatively related to change in rate of depreciation in the IPO year (ΔDepreciation). ΔDepreciation is measured

as $\dfrac{Depreciation_t}{Depreciation_t + NetPPE_t} - \dfrac{Depreciation_{t-1}}{Depreciation_{t-1} + NetPPE_{t-1}}$.

Table 14 presents results on change in rate of depreciation in the IPO year (ΔDepreciation). The 2SLS procedure uses ΔDepreciation as dependent variable in the second stage, and use ΔIDepreciation, Depreciation-1, and ΔCapital as control variables. ΔIDepreciation is industry average change in rate of depreciation in the IPO year; Depreciation-1 is depreciation deflated by the sum of depreciation and net PPE in the year preceding the IPO; and ΔCapital is change in capital expenditures in the IPO year, deflated by average total asset in the IPO year. Surprisingly, the exit of venture capital is significantly and positively associated with change in rate of depreciation in the IPO year (0.1395, P-value < 0.001). Firms with VCs' exiting have higher rate depreciation over PPE in the IPO year. It contradicts my prediction that the exit of venture capital is related to income-increasing earnings management in the IPO year.

Change in R&D Expenditure

R&D expenditure implies investing for the future. Stock market gives positive reactions to announcement of increasing R&D expenditure (Chan, Martin and Kensinger 1990). In the short

run, however, an increase in research and development may decrease earnings. Cutting R&D expenditure may move short-term earnings upward. Baber, Fairfield, and Haggard (1991) present evidence that firms spend less on R&D when doing so would help avoid earnings declines. Moreover, an increase in R&D expenditure makes information asymmetry between managers and shareholders or investors more severe, and managers may take advantage of it (Aboody and Lev 2000).

Darrough and Rangan (2005) finds that change in R&D spending in the year of the IPO is negatively related to managerial selling and VCs' selling during the IPO. Since few VCs sell during the IPO, it is natural to investigate whether the exit of venture capital after the expiration of lockup period is negatively related to change in R&D expenditure in the IPO year (ΔRD).

ΔRD is calculated as $\dfrac{RD_t - RD_{t-1}}{(Assets_t + Assets_{t-1})/2}$.

Table 14 presents results on change in R&D expenditure in the IPO year (ΔRD). The 2SLS procedure uses ΔRD as dependent variable in the second stage. I include control variables, such as industry average change in R&D expenditure in the IPO year (ΔIRD), R&D expenditure in the year preceding the IPO (RD-1), and change in capital expenditure deflated by average total assets in the IPO year (ΔCapital). Table 14 shows that the exit of venture capital (Exiting) is not significantly associated with change in R&D expenditure in the IPO year (ΔRD). The coefficient is -0.0273 and P-value = 0.228. I do not find evidence on the relation between the exit of venture capital and change in R&D expenditure in the IPO year. It is inconsistent with the finding in Darrough and Rangan (2005). Surprisingly, VCs' stockholdings prior to the lockup expiration (VCH0) have a significant coefficient (-0.065, P-value < 0.059). It implies that firms with higher VCs' stockholdings have less R&D expenditure in the IPO year. CEO's stockholdings also have

a significant and negative coefficient (-0.086, P-value < 0.071). Higher CEO's equity holdings are associated with less R&D expenditure in the IPO year.

(Table 14 is here)

Overall, results on individual accruals items suggest that the exit of venture capital has different relationship with different accrual items. Specifically, the exit of venture capital is positively associated with index of sales in accounts receivables in the IPO year, which is consistent with hypothesis on income-increasing earnings management. By contrast, the exit of venture capital is positively associated with change in rate of depreciation in the IPO year, which is inconsistent with hypothesis on earnings management. One drawback of the approach to examine individual accruals items is that managers may not use only one method or only one account to manage earnings. The analysis of this subsection suggests that earnings management is a complex setting, and it requires different approaches to complete our understanding on it.

5.4.4.   Usage of Proceeds and Auditors as Control Variables

An initial public offering provides a company substantial amount of capital. Different purposes of this proceed may have a different impact on the pattern of accruals in a firm. It is necessary to control such effect when investigating the relation between the exit of venture capital and income-increasing earnings management in the IPO year.

I identify eight different primary purposes of proceeds from the IPO: acquisitions and mergers, marketing or product promotion, capital expenditure, general purpose, research and development, debt payment, working capital and other. Based the information in the prospectuses, I use 7 dummy variables to measure the intended usage of proceeds: U-acquisition, U-marketing, U-capital exp, U-general, U-R&D, U-debt payment, and U-working capital. 376 firms state general purpose for the use of proceeds in their prospectuses, representing 55.4

percent of the sample. 18.1 percent of firms intend to use proceeds to pay off existing debts (123 firms), while 10.9 percent of firms clear express that they will use proceeds as working capital (74 firms). 36 firms use the proceeds for acquisitions; another 36 firms intend to increase capital expenditure; 19 firms plan to spend the proceeds on research and development; and 12 firms use for marketing activities.

Another set of control variables are related to auditors. All public firms are required to have their annual financial statements audited. Most IPO firms in my sample are audited by one of the "Big Five" (Arthur Andersen, Deloitte & Touche, Ernst & Young, KPMG, and PricewaterhouseCoopers), now the "Big Four" after Arthur Andersen went out of business. Only 36 firms have independent auditors that are not the Big Five. 189 firms have Ernst & Young as auditor, representing 27.8 percent of the sample. PricewaterhouseCoopers audit 171 firms, nearly 25.2 percent of the sample. Arthur Andersen audit 120 firms in my sample, nearly twice the number of firm audited by Deloitte & Touche (61 firms). KPMG have 102 firms as clients, consisting of 15 percent of the sample. Independent auditors serve as one monitoring mechanism on financial reporting. This mechanism works together with other monitoring mechanisms to mitigate agency problems. I create five dummy variables for Big Five audit firms in the IPO year.

Independent auditors must give an opinion on whether a financial statement is consistent with generally accepted accounting principals (GAAP). There are 9 firms in my sample that have a qualified audit report. All these qualified audit reports are related to going concern issue. I use one dummy variable to control the effect of audit report. If the audit report has a qualified opinion, the variable (Audit Report) is 1; otherwise 0.

Table 15 provides results on discretionary accruals in the IPO year, after controlling for intended usage of proceeds and auditor characteristics. The exit of venture capital (Exiting) still has a significant and positive coefficient (1.093 in Column (1), and 0.9282 in Column (2)). Surprisingly, none of variables for proceeds usage has a significant coefficient. Variables of auditor characteristics are not related to discretionary accruals in the IPO year either. All other results are similar to those in models without controlling usage of proceeds and auditor characteristics.

(Table 15 is here)

Table 16 estimates seemingly unrelated bivariate probit model for restatements announced in the period T1 after controlling usage of proceeds and auditor characteristics. During the estimation, Audit Report, Arthur Andersen, Deloitte & Touche, U-acquisition, U-marketing, U-capital exp, U-R&D, and U-debt payment are dropped off. Table 16 shows that results on the exit of venture capital and VCs' characteristics are consistent with what I find in Table 9. Added control variables are not significantly related to the probability of announcing a restatement in the period T1.

(Table 16 is here)

Table 17 presents results on the probability of announcing a restatement in the period T2 after controlling usage of proceeds and auditor characteristics. Ernst & Young, U-marketing, U-capital exp, U-R&D, U-working capital are dropped off during the estimation. The exit of venture capital is positively associated with the probability of announcing restatement related to the period of VCs' exiting after VCs exit (Restatement1), P-value < 0.001 in Column (1) and (2). Deloitte & Touche and PricewaterhouseCoopers, as auditors in the IPO year, have significant and positive correlations with the probability of announcing a restatement in the period T2.

Notably, Audit Report has a significant coefficient (-6.3069 in Column (1), P-value < 0.001). It suggests that firms with a qualified audit report in the IPO year are less likely to announce a restatement in the period T2. Furthermore, firms that intend to use proceeds for acquisition purpose or general purpose are more likely to announce a restatement in the period T2.

(Table 17 is here)

Overall, basic findings on relations between the exit of venture capital and opportunistic behavior in financial reporting—earnings management and restatements—are robust to tests including usage of proceeds and auditor characteristics as control variables.

6. LITIGATION RISK AND REPUTATION COST ON VENTURE CAPITALISTS

This chapter examines whether opportunistic behavior in financial disclosure imposes any litigation risks and reputation costs on venture capitalists. The first section finds that the probability of shareholder lawsuits against IPO firms is negatively related to the exit of venture capital. However, this relation does not hold for lawsuits filed from the first record date after the lockup expiration through two years thereafter. The second section focuses on lead venture capitalists and investigates the number of new IPOs backed by the same lead VCs and underpricing of these new IPOs. I document that discretionary accruals in the IPO year are negatively related to the number of new IPOs backed by the same lead VCs, but positively associated with underpricing for these new IPOs.

6.1. Litigation Risk

Firms with opportunistic behavior in financial disclosure are subject to legal liabilities. Existing literature provides evidence that these firms are more likely to face SEC investigation, shareholder lawsuits and securities class actions (Kellogg 1984, Feroz, Park and Pastena 1991, Francis, Philbrick and Schipper 1994, and Dechow, Sloan and Sweeney 1996). DuCharme, Malatesta, and Sefcik (2004) provide recent evidence that the incidence of shareholders' lawsuits is significantly positively related to abnormal accruals. This result is held for seasonal equity offerings. They do not find significant similar results for initial public offerings. Palmrose and Schoze (2004) find that restatements on items in core operations increase the likelihood and severity of lawsuits.

Venture capitalists are concerned about exiting. VCs have litigation risks if they engage in any opportunistic behavior at the time of exit. The case study on Monarch Dental Corporation

presents an example of such risks for venture capitalists (details in Appendix B). The charges in securities class action against the company and its venture capitalist are as follows:

"The complaint alleges that during the Class Period, the defendants stated that Monarch continued to make strategic acquisitions of quality practices and experience solid internal growth as its business fundamentals remained strong and would successfully execute its growth plans for 1998 and beyond as they were pleased with Monarch's financial performance and confident that Monarch would earn $0.58 in 1998. These statements caused the price of Monarch's common stock to increase to its Class Period high of nearly $20 per share…permit Monarch's venture capital investor to distribute one million Monarch shares to the limited partners of the various entities it controlled who could then sell Monarch shares before they collapsed in price."

The exit of venture capital is positively associated with opportunistic behavior in financial disclosure; opportunistic behavior in financial disclosure is positively associated with high likelihood of lawsuits; and therefore we should expect there is a positive relation between the exit of venture capital and the probability of lawsuits. If they anticipate litigation risks, however, venture capitalists may change their behavior or find options to reduce these risks. One option could be that venture capitalists only exit a firm with a low litigation risk. Therefore, I predict that the exit of venture capital has no association with litigation after VC exit.

I obtained a list of federal class action lawsuits between May 1996 and December 2003 from the Stanford Securities Class Action Clearinghouse (securities.stanford.edu). Following Beatty, Drake and Hogan (2002), I do not include any of the "IPO allocation" lawsuits filed during 2001, because these IPO allocation lawsuits are claims alleging underwriters' misbehavior in connection with the distribution of IPO shares, rather than claims of fraud filed against the IPO firm. For each firm, I try to find out whether it is a defendant in any class action lawsuit from the IPO date through two years after the first record date following the expiration of lockup. I identify 54 firms that have securities class actions. It represents 7.953 percent of my sample.

Table 18 reports the results on litigation risks and the exit of venture capital. I use a probit model to estimate the probability of securities class action. The dependent variable in column (1) is a dummy variable, which is 1 if a firm is a defendant of any class action lawsuit from the IPO date through two years after the first record date following the expiration of lockup; 0 otherwise. Column (1) in Table 18 documents a negative coefficient for the exit of venture capital (-0.7141, P-value < 0.05). Firms with VCs' exiting are less likely to have class action lawsuits against themselves. Firms with higher book-to-market ratio and worse situation in cash flow from operations are less likely to face a securities class action. Amazingly, IPO firms from industries with high litigation risk are less likely to have a securities class action. Since my focus is whether VCs face lawsuits after they exit the firm, I examine lawsuits filed after the early exit by VCs right after the lockup expiration. In column (2), the dependent variable is a dummy variable, which is 1 if a firm is a defendant of any class action lawsuit from the first record date following the expiration of lockup through two years thereafter; 0 otherwise. As expect, column (2) in Table 18 suggests that there is no significant relation between the exit of venture capital and class action after the exit. Firms with higher book-to-market ratio are less likely to face a securities class action filed after the first record date following the lockup expiration, while firms with longer lockup period are more likely to face the securities class action.

(Table 18 is here)

In this section, I provide some evidence that the exit of venture capital is associated with smaller litigation risks. However, this relation does not hold for lawsuits filed from the first record date after the lockup expiration through two years thereafter.

6.2.   Reputation Cost

According to "venture capital cycle", fundraising by venture capitalists and bringing portfolio firms to the public are repeated activities in venture capital industry. Investors and venture capitalists are concerned about reputation. Prior literature documents that venture capitalists try to build up their investment record and reputation. Gompers (1996) finds that young venture capital firms bring companies public earlier than older venture capital firms to signal their ability to potential investors and in an effort to establish a reputation and raise capital for new funds. Lee and Wahal (2004) provide the latest evidence to support this "grandstanding" hypothesis. They find that the flow of capital into a VC firm is positively related to VC age and the number of previous IPOs done by the VC firm. VC firms are willing to bear costs from underpricing in order to attract capital inflows.

If there is any opportunistic behavior at the time of exit, VCs may be punished by the market. If the exit of venture capital is associated with income-increasing earnings management now, sooner or later, investors and other parties in the market will find out. Then, in the near future, when the same VCs try to take another company public, the market will raise the bar and ask for more to compensate their loss from previous VC behavior. To investigate whether earnings management really impose costs on VCs, I focus on two aspects of VCs' attempts to develop solid reputation. The first is the number of IPOs brought by VCs. The second is "money left on the table"—underpricing—a cost VCs are willing to bear if they take a firm to the public. I only examine the impact on lead venture capitalists, defined as VCs with highest stockholdings in a firm.

6.2.1.   Number of IPOs

For each firm, I identify the lead VC based on stockholdings. During the lockup period of each firm, I count the number of new IPOs backed by this same VC, and define it as IPO0. IPO1 is

measured as the number of new IPOs backed by the same VC in the first year after the expiration of lockup period. IPO2 is the number of new IPOs backed by the same VC in the first year after the expiration of lockup period. I investigate whether a firm's discretionary accruals in the IPO year are related to number of new IPOs backed by the same VC.

Table 19 provides results on the number of new IPOs from Poisson models. Discretionary accruals in the IPO year (MDA0) is an independent variable in Panel A, B and C. Duration of VCs' investment (Length), funds managed by the lead VC (Fund), and the age of lead VC (VC Age) are control variables. MDA0 has significant coefficients for all the models, P-value < 0.05. Discretionary accruals in the IPO year are negatively associated with the number of new IPOs during the lockup period, within the first year after the expiration of lockup period, and within the second year after the lockup expiration. It is consistent with the view that earnings management imposes reputation costs on venture capitalists and makes IPOs more difficult for these VCs. There is an alternative explanation for the results. If he anticipates bringing many new IPOs, a lead venture capitalist may not have incentives to influence financial disclosure for exiting purpose.

<center>(Table 19 is here)</center>

6.2.2. Underpricing

Underpricing is a cost for venture capitalists, because the offering price is lower than the real value of a firm. Ritter (2003) discusses various reasons for underpricing, including information acquisition, prospect theory, corruption, the winner's curse, informational cascades, signaling, market event, and litigation risk. Underpricing can be regarded as a way to compensate investors for high information asymmetry between insiders (managers and venture capitalists) and investors. Investors do not know much about the quality of the firm. Given the previous record of

<center>83</center>

venture capitalists, what will be the move by VCs at this time? Investors weight very piece information and possible alternatives. If a VC takes advantage of investors through improper ways (say, earnings management) last time, investors would expect him to do it again this time and would require more substantial guarantees, e.g., underpricing. I expect that income-increasing earnings management in the IPO year is positively associated with underpricing of new IPOs in the near future.

I focus on new IPOs by the same lead VCs within the first year (Year 1), and within the second year (Year 2) after the expiration of the lockup period. Table 20 provides descriptive statistics on sample firm to test underpricing. There are 370 unique new IPOs in Year 1 and 314 in Year 2, while there are 348 unique firms in Year 1 and 267 in Year 2. Panel A illustrates that the sample has 149 unique lead VCs in Year 1 and 123 in Year 2. The number of VC-Firm-IPO observations is 1018 for Year 1 and 794 for Year 2. Panel B gives out distribution of number of new IPOs backed by VC-Firm.

Panel C of Table 20 describes descriptive statistics on unique new IPOs. Underpricing is 96 percent in Year 1 and 102.1 percent in Year 2. Most of these IPOs are listed at NASDQ. I use a dummy variable (NASDQ) to measure whether a firm is listed at the NASDQ. Underwriter rank on average is 8.45 in year 1 and 8.537 in year 2. If there is more than one lead underwriter, I take the average rank of underwriters. Retained stocks are calculated as common stocks by pre-IPO shareholders deflated by total outstanding shares after the IPO. Percentage of retained stocks is 79.7 percent in Year 1 and 82.2 percent in Year 2. The variable of Offering Price is defined as 1/offer price. The variable of Assets/Proceeds is defined as Pre-IPO total assets deflated by gross proceeds from the IPO. This ratio on average is 95.6 percent in Year 1 and 104.5 percent in Year 2.

(Table 20 is here)

Table 21 reports results on the relation between discretionary accruals and underpricing. I regress underpricing on discretionary accruals in the IPO year, for Year 1 and Year 2, respectively. I control fixed effects by each unique venture capitalist, IPO year dummies, and industry dummies (results are not reported). Control variables also include dummy variables for big five audit firms, offering price, offering size, assets/proceeds, firm age, lockup days, retained stocks, underwriter ranking, and NASDQ. I find that discretionary accruals in the IPO year (MDA0) are positively and significantly related to underpricing of new IPOs in the first year after the expiration of lockup period (P-value < 0.1). Income-increasing earnings management is associated with more money left on table for new IPOs backed by the same VC. In contrast, MDA0 is not associated with underpricing of new IPOs in the second year after the expiration of lockup period. It suggests that the impact of earnings management on reputation cost may be a short-term impact.

Consistent with prior literature, prestige auditors are associated with less underpricing. IPOs with longer history also experience less underpricing in Year 1. More days in lockup period are related to more underpricing for IPOs in Year 1. More stocks retained by pre-IPO shareholders are associated with more underpricing for IPOs in Year 1.

(Table 21 is here)

Overall, I find some evidence that earnings management imposes costs on lead venture capitalists. Income-increasing earnings management is associated with less new IPOs backed by the lead VC, and more underpricing for new IPOs in the first year after the expiration of the lockup period.

7. CONCLUSIONS

Discretion in financial disclosure is a double-edged sword in this modern business world characterized by the separation of ownership and control. On the one hand, managers can utilize this discretion to make better decisions, and communicate more efficiently with investors. On the other hand, managers can abuse the discretion, hide or cover up the real situation about company activities, in order to trade for their own benefits. Investors recover from this so late that the potential for Enron-type collapses emerges. How to ensure relevance, accuracy and timeliness of financial disclosure has long been the core of accounting research. We are keen to seek mechanisms to mitigate this agency problem. Auditors, board of directors, audit committee, large shareholders and institutional investors are all potential monitors. Still, we have one critical problem left: who monitors the monitors? Can litigation risk or reputation concern solve this problem?

In this study, I investigate whether venture capitalists monitor opportunistic behavior in financial disclosure when they have incentives to exit. Venture capitalists are different from normal investors. They actively monitor managers in their portfolio firms. An initial public offering, as a final stage of venture capital financing, motivates venture capitalists to exit their investment in the firm. High stockholdings in a firm motivate VCs to pursue trading profits, because VC compensation and fund performance are tied to the investment returns from stockholdings in portfolio firms. Do they continue to monitor financial disclosure? Or do they take advantage of their monitoring' role to influence financial disclosure? Facing this choice, VCs balance benefits and costs at the time of exit. One major cost is reputation impairment. Venture capital financing is not a one-time activity. Venture capitalists regularly take firms to the public. Are litigation risks and reputation concern strong enough for VCs not to allow opportunistic behavior in

financial disclosure? I focus on two aspects of financial disclosure: earnings management and restatements due to accounting irregularities.

The empirical results indicate that the exit of venture capital is positively related to income-increasing earnings management in the IPO year. Regardless of VC exit, VCs' stockholdings prior to the expiration of lockup period are negatively correlated to discretionary accruals in the IPO year. Surprisingly, VCs' representation on the audit committee has no significant relationship to income-increasing earnings management. Moreover, the exit of venture capital is related to a lower probability of announcing a restatement in the period of VCs' early exiting, but a higher probability of announcing a restatement related to the period of VCs' early exiting within three years after the exit. VCs' holdings prior to the lockup expiration are negatively associated with the probability of announcing a restatement during the period T1. But the exit of venture capital has a significant impact on this relationship. In fact, if VCs exit, it becomes a positive relationship between VCs' holdings and the likelihood of announcing a restatement in the period of VCs' early exiting. Only for firms with VCs' exiting, does VC representation on the audit committee have a significant association with the probability of announcing a restatement in the period T1. Neither VCs' holdings nor VCs' representation on the audit committee has significant relation with the probability of announcing a restatement in the period post VCs' early exiting.

The findings in my dissertation are robust to a variety of sensitivity tests. First, the generated instrument method confirms the validity of instrument variable I use for the exit of venture capital--the ratio of investment over raised capital in venture capital industry. The results from generated instrument method are qualitatively similar to the two-stage procedure using the proposed instrument. Second, the Jones model to estimate performance-matched discretionary

accruals also provides evidence on income-increasing earnings management hypothesis. Furthermore, the findings are insensitive to the inclusion of control variables for usage of proceeds and auditors' characteristics, CEOs' incentives to sell, and change in other blockholdings. Fourth, results on index of sales in account receivables and the exit of venture capital strongly support argument on earnings management. Results on change in allowance for bad debts, change in rate of depreciation and change in R&D expenditure illustrate that earnings management in individual accruals items may not the same direction.

I also investigate the litigation risk and reputation costs venture capitalists may suffer due to exiting associated with opportunistic behavior. Specifically, the exit of venture capital has no significant association with the probability of securities class actions against the company after the first record date following the lockup expiration. The number of new IPOs backed by same lead VC is negatively related to income-increasing earnings management in the IPO year. In addition, underpricing for the new IPOs backed by same lead VC in the first year after the expiration of lockup period is greater if there is income-increasing earnings management in the IPO year. Overall, the results indicate that opportunistic behavior in financial disclosure imposes costs for venture capitalists.

This paper has focused on earnings management and restatements of financial statements. One major area of financial disclosure—voluntary disclosure of financial information has been left out. IPO firms are normally young firms with high potential for growth. Voluntary disclosure can provide non-financial measures and leading indicators of future growth that are critical for the valuation of these IPO firms. Graham, Harvey, and Rajgopal (2004) report that managers make voluntary disclosures to reduce information risk associated with their stock but try to avoid setting a disclosure precedent that will be difficult to maintain and also try to prevent giving up

proprietary information to competitors. While VCs are important monitors in corporate governance, there are few studies that investigate the role of VCs in voluntary disclosure by the IPO firms. One exception, Guo, Lev, and Zhou (2004) find that the presence of a venture capitalist is positively related to quantity and specificity of product disclosure in the prospectus. An interesting extension of this study would be to examine whether venture capitalists influence voluntary financial disclosure to facilitate their exit.

I only examine VC exit right after lockup expiration. It is worth investigating whether late exit by VCs (two or three years after lockup expiration) has relationship with opportunistic behavior in financial disclosure right before the exit. Moreover, I do not separate share distribution from selling-off on the public market, when examining the exit of venture capital. If we can get information on exact time of share distribution, we can directly examine the benefits of opportunistic behavior in financial disclosure. Also, we may find out whether there is systematic difference on financial disclosure between firms with share distribution and firms with selling-off.

This paper can also be extended to examine how information intermediates such financial analysts respond to the exit by venture capitalists, and how they incorporate this intention into their forecasts.

APPENDICES

APPENDIX A: Description of Variables

Variable	Description
Exiting	Dummy variable, 1 if VCs sell off all their equity holdings in a firm right after lockup expiration, 0 otherwise
MDA0, MDA1	Discretionary accruals in fiscal year of IPO and the year following the IPO year respectively, estimated by modified cross-sectional Jones (1991) model and adjusted by performance-matched benchmark
ΔMDA	Change in discretionary accruals in the year following the IPO year
Restatement0	Dummy variable, 1 if a firm announced a restatement prior to VCs' early exit, 0 otherwise
Restatement1	Dummy variable, 1 if within 3 years post VCs' early exit a firm announced a restatement related to the periods prior to VCs' exit, 0 otherwise
VCH0, VCH1	Equity holdings by all VCs in a firm prior to and post lockup expiration respectively, deflated by total outstanding common stocks in a firm
VCN0, VCN1	Number of VCs in a firm prior to and post lockup expiration respectively
VCR0, VCR1	VCs' representation on the board prior to and post lockup expiration respectively, computed as the number of VC directors divided by board size
VCRA0, VCRA1	VCs' representation on audit committee prior to and post lockup expiration respectively, computed as the number of VC members divided by the total number of audit committee members
VC Age	Lead VC's age at the time of IPO, measured in years; Lead VC is defined as the VC with largest stockholdings in a firm at the time of the IPO; natural logarithm transformation is applied in regression analyses.
Length	Duration of VCs' investment in the firm at the time of IPO, measured in months; natural logarithm transformation is applied in regression analyses.
Fund	Fund size managed by lead VC in the year of IPO, measured in millions; natural logarithm transformation is applied in regression analyses.
VCIPO	Dummy variable, 1 if VCs sell any of their shares during the IPO, 0 otherwise
Lockup	Days of lockup period; natural logarithm transformation is applied in regression analyses

Underpricing	(first-day price – offering price)/offering price
Firm Age	Firm age at the time of IPO, measured in months; natural logarithm transformation is applied in regression analyses.
Assets-1, Assets0, Asset1	Total assets in the year preceding the IPO year, fiscal IPO year and in the year following, respectively; natural logarithm transformation is applied in regression analyses
Sales Growth0, Sales Growth1	(Sales in year t – Sales in year t-1)/ Sales in year t-1, t: IPO year, the year following the IPO year
OCF0, OCF1	Cash flows from operating activities in the fiscal year of IPO and in the year following, respectively, scaled by total assets at the beginning of year
BEME	Book-to-market ratio at the end of fiscal year of IPO, calculated as book value of stockholders' equity divided by market valuation of the equity at the end of IPO fiscal year.
ROA-1, ROA0, ROA1	Return on assets in the year preceding the IPO year, the IPO year, the year following the IPO year respectively
ROAP0, ROAP1	Dummy variables for the IPO year and in the year following the IPO year respectively, 1 if ROA is positive, 0 otherwise
CROAP0, CROAP1	Dummy variables for the IPO year and in the year following the IPO year respectively, 1 if change in ROA is positive, 0 otherwise
CEOH0, CEOH1	CEO's stockholdings prior to and post lockup expiration respectively, deflated by total outstanding common stocks
ΔCEOH	Change in CEO's stockholdings post lockup expiration, calculated as CEOH1-CEOH0
BH0, BH1	Blockholdings other than VCs' stockholdings prior to and post lockup expiration respectively, deflated by total outstanding common stocks
ΔBH	Change in blockholdings other than VCs' stockholdings post lockup expiration, calculated as BH1-BH0
Offering	Dummy variable, 1 if there is any seasonal equity offering seasonal equity offerings from the IPO date through one year after the expiration of lockup period; 0 otherwise
CAR0	Cumulated abnormal return during the lockup period
CAR1	Cumulated abnormal return from the expiration of the lockup period through the record date of the first proxy available after the expiration of the lockup period
ΔVCH	Change in VCs' stockholdings after the expiration of lockup period, calculated as VCH1-VCH0
ΔVCHP	Percentage change in VCs' stockholdings after the expiration of lockup period, calculated as (VCH1-VCH0)/VCH0
Litigation	Dummy variable, 1 if a firm is in one of the following four industries: biotechnology (SIC codes 2833-2836, and 8731-8734), computers (SIC codes 3570-3577, and 7370-7374), electronics (SIC codes 3600-3674), and retailing (SIC codes 5200-5961)
IC Ratio	Investment ratio, defined as total amount of investments by the venture capital industry deflated by total amount of capital committed

	in the venture capital industry during the quarter preceding the IPO
ISA0	Days sales in account receivables in the IPO year, calculated as $(ACCOUNT\ RECEIVABLE_t/SALES_t)/(ACCOUNT\ RECEIVABLE_{t-1}/SALES_{t-1})$
Bad0, Bad-1	Allowance for bad debts deflated by gross accounts receivable in the IPO year and the year preceding respectively
ΔBAD0	Change in rate of bad debts in the IPO year, calculated as $(ALLOWANCE\ OF\ BAD\ DEBT_t/ACCOUNT\ RECEIVABLE_t) - (ALLOWANCE\ OF\ BAD\ DEBT_{t-1}/ACCOUNT\ RECEIVABLE_{t-1})$
Depr0, Depr-1	Depreciation deflated by (Depreciation + net PPE) in the IPO year and the year preceding respectively
ΔDepr	Change in rate of depreciation in the IPO year, Depr0 – Depr-1
RD0, RD-1	R&D expenditure deflated by average total assets in the IPO year and the year preceding respectively
ΔRD0	Change in R&D expenditure deflated by average total assets in the IPO year

<h1 align="center">APPENDIX B: Case Study</h1>

<h2 align="center">Case 1: CyberMedia Inc</h2>

Background on IPO

CyberMedia, a provider of software and support services for Windows-based personal computer users, went public on October 23, 1996. CyberMedia sold 2.5 million shares at $16 apiece. All of the shares were sold by the company. The initial public offering, co-managed by Hambrecht & Quist, Lehman Brothers, and Wessels, Arnold & Henderson, left 10,982,449 shares outstanding. CyberMedia planned to use the IPO's proceeds to expand its sales, marketing and product development activities, and to pay debt.

Firm Performance

CyberMedia's ActiveHelp product line includes First Aid, to fix Windows problems automatically; Oil Change, to update PCs with the latest bug fixes, patches and drivers; UnInstaller, to clean Windows' applications; Guard Dog Deluxe, to automatically safeguard Internet security and privacy and the new CyberMedia Support Server line of automatic technical support software for corporations and midsize businesses.

The company was formed in November 1991. It has not been profitable since that time.

	t-1	t	t+1
Year	**1995**	**1996**	**1997**
Sales	4.797	38.524	71.227
Net Income	-3.352	-3.483	-11.74
ROA	-87.79%	-6.16%	-19.53%
Net Income per share	-0.43	-0.42	-0.97

Restatement and Litigation

On March 12, 1998, the company announced that it would be reissuing results from the quarter ended Dec. 31, 1997, to show an increase in return reserves of $6 million to $8 million. At the same date, a securities class action was filed against the company, its managers and directors: Unni S. Warrier, Jeffrey W. Beaumont, Srikanth Chari, Brad R. Kingsbury and Peter T. Morris.

The Complaint charges that defendants violated Sections 10(b) and 20(a) of the Securities Exchange Act of 1934 and Rule 10-b(5) by, among other things: issuing false misleading statements regarding CyberMedia's financial condition as well as its present and future business prospects and improperly accounting for its return reserves in violation of Generally Accepted Accounting Principles. The class period is from 07/22/1997 through 01/30/1998.

VCs' Investment and Exiting Activities

Equity holdings by each VC at the time of the IPO and prior to the expiration of lockup (04/21/1997) are reported as followed:

	IPO Date		Record Date of last proxy	
Date of Ownership Measured	**10/23/1996**		**4/18/1997**	
	Number of shares	%	Number of shares	%
Nazem & Company	735824	6.7	773381	6.5
New Enterprise Associates	922525	8.4	1120127	9.5

New Enterprise Associates, Nazem & Co. IV and Draper Associates were the venture investors. Peter Morris, partner at New Enterprise Associates, and Paul Dali, general partner of Nazem & Co., became board members in 1995. There were no VCs on the audit committee. Based on the ownership measured on April 20, 1998, there were no equity holdings by VCs. During the period of 04/21/1997 through 04/20/1998, I find only one Form 4 for VCs. This Form 4 was dated as 11/25/1997 and filed by Peter Morris. It reported that on 11/11/1997, Peter Morris sold 2750 shares at the price of $31.5 and owned 344537 shares thereafter.

All VCs sold out or distributed their shares prior to the announcement of the restatement. The figure shows the stock price for the company.
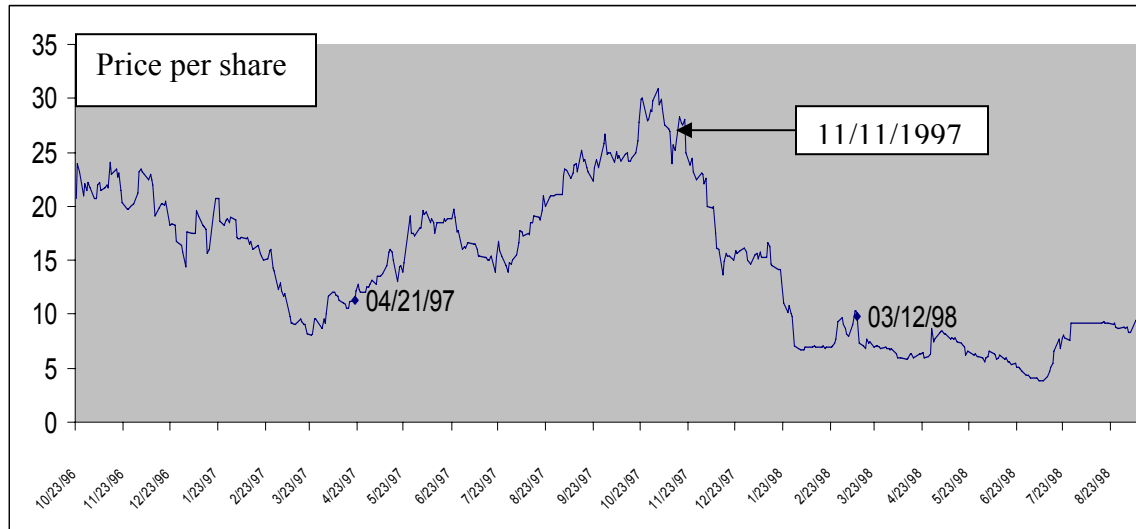
CASE 2: Monarch Dental Corporation

Background on IPO

Monarch Dental, a manager of group dental practices, completed an initial public offering on July 17, 1997. The company sold 2.75 million shares at $13 each. All of the shares were offered by the company. Hambrecht & Quist, Montgomery Securities, and Salomon Brothers were the underwriters. The IPO left 9,458,723 shares outstanding. Monarch Dental expects to use the funds to pay debt, purchase all redeemable preferred stock held by sole venture investor TA Associates and for general corporate purposes.

Firm Performance

Services provided by Monarch's 123 full-time dentists and 13 full-time specialists include general dentistry, orthodontics, oral surgery, endodontics, periodontics and pediatric dentistry. The company was founded on 1983 and has been profitable since 1992.

	t-1	t	t+1
Year	**1996**	**1997**	**1998**
Sales	24.178	45.89	128.601
Net Income	0.675	1.87	-0.424
ROA	2.07%	3.31%	-0.25%
Net Income per share	0.10	0.34	-0.04

VCs' Investment and Exiting Activities
TA Associates is the sole venture capitalist in the firm. Roger Kafker, managing director of TA Associates, has served as a Monarch director since 1996. Roger Kafker didn't serve on the audit committee until after the IPO.

The lockup period expired on 1/14/1998. Equity holdings by the VC are reported as followed:

Date of Ownership Measured	Number of shares	%
IPO date (7/17/1997)	2676818	28.3
Record Date of First proxy (3/01/1998)	2673200	26.2
Record Date of Second proxy (3/01/1999)	1695682	14

I couldn't identify any SEC filings for trading by the VC.

Litigation
A shareholder class action was announced on April 6, 1999. The class period was from 2/24/1998 through 12/22/1998. The complaint charges Monarch and certain of its officers and directors (Warren F Melamed, Gary W Cage, and Roger B Kafker) with violations of the Securities Exchange Act of 1934. The complaint alleges that during the Class Period, the defendants stated that Monarch continued to make strategic acquisitions of quality practices and experience solid internal growth as its business fundamentals remained strong, and would successfully execute its growth plans for 1998 and beyond, as they were pleased with Monarch's financial performance and confident that Monarch would earn $0.58 in 1998. These statements caused the price of Monarch's common stock to increase to its Class Period high of nearly $20 per share and permitted the defendants to use Monarch's artificially inflated stock as a currency to acquire numerous dental practices. These statements also permitted Monarch's venture capital investor to distribute one million Monarch shares to the limited partners of the various entities it controlled who could then sell Monarch shares before they collapsed in price. However, internally at Monarch, the defendants knew that Monarch's business fundamentals were anything but strong, as Monarch had acquired low quality practices, three of its Houston offices were running cash flow negative and its infrastructure was insufficient to competently manage or synthesize the numerous practices it had acquired. They knew that because of these and other negative factors, Monarch would badly miss its earnings projections of $0.18 and $0.58 for the fourth quarter and year 1998 respectively. When the defendants revealed to the securities markets on December 22, 1998 and March 11, 1999 that Monarch would post a huge $0.38 loss in the fourth quarter as a result of $7.7 million in charges that would nearly wipe out all of Monarch's earnings for the entire year 1998, the price of Monarch stock collapsed and traded below $3 per share, approximately 90% below its Class Period highs. On June 20, 2000, the Plan of Allocation of Settlement Proceeds was approved by U.S. District Judge Joe Kendall. The settlement includes a payment of $1,050,000 as attorneys' fees and $67,044.55 in reimbursed expenses, plus interest earned on such fees and expenses

FIGURES

Figure 1 Venture Capital Financing

This figure describes the process of venture capital financing, from setting up a venture capital fund, to investing in portfolio firms and distributing cash or shares back to investors.

Investors (Limited Partners) ← **Distribution of Cash or Shares**

	Going Public (IPO)
Capital	**Acquisition**
Venture capital fund → → **Firm** →	**Redemption**
	Liquidation
(1) **(2)** **(3)**	**Remaining Private**

Management Fee
Profit sharing

Venture capitalists (General Partners)
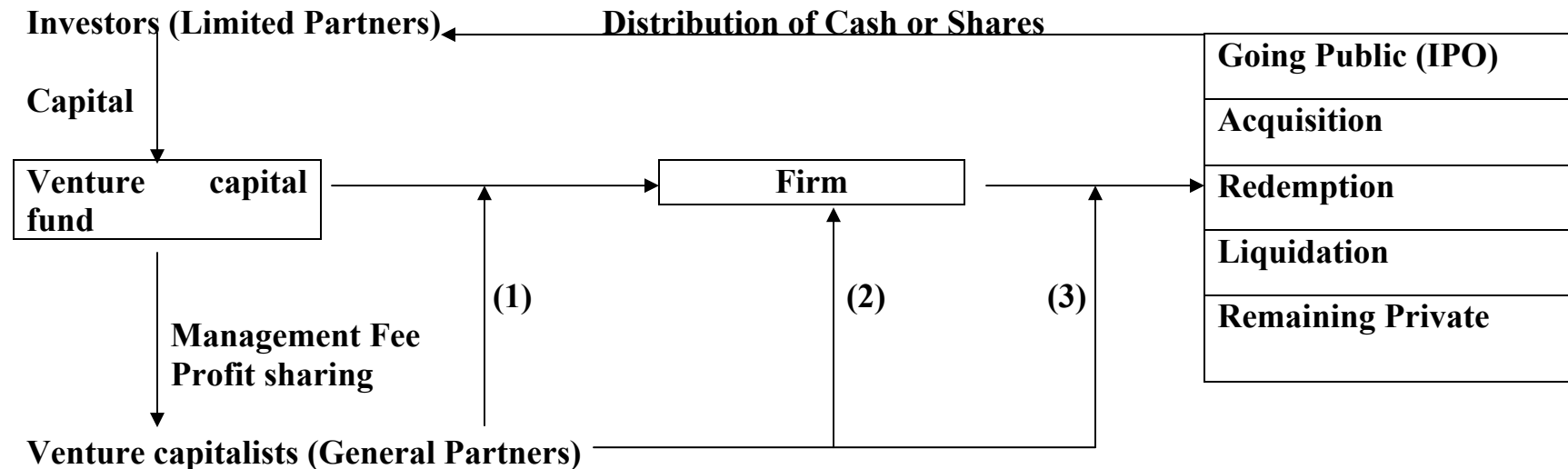
(1) Venture capitalists collect information on a firm and its projects, decide whether to invest or not, if they invest then design the contracts and make staging investments.
(2) Venture capitalists closely monitor top managers and the firm's activities.
(3) Venture capitalists decide and carry out their exit strategies.

Figure 2   Timeline of Variable Measurement

The figure shows the timeline of variable measurement. Information on the exit of venture capital is collected at the end of T1. If there is a proxy during lockup period (t1), information in the proxy is used to measure variables related to VCs' shareholdings, VCs' representation on the board of directors and on the audit committee, and ownership structure prior to lockup expiration. If not, information in IPO prospectus is used. Restatement0 is measured for the period T1, and Restatement1 is measured for the period T2.
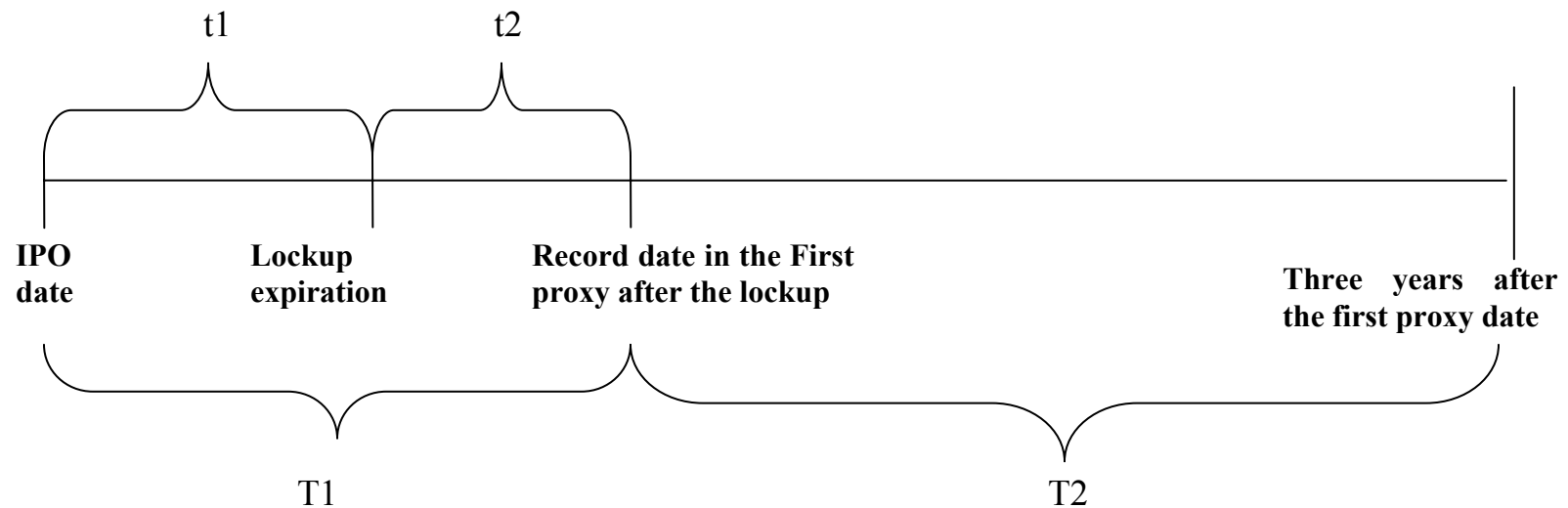
T1: periods of VCs' early exiting; t1: lockup period; t2: the period during which VCs exit right after lockup expiration.
T2: Periods post VCs' early exiting

TABLES

Table 1 Distribution of IPO firms in the Sample

This sample includes 679 IPO firms from May, 1, 1996 through Dec. 31, 2000. Data are from the Securities Data Company (SDC) Global New Securities Database. The percentage is calculated by the number of IPO firms in each 2-digit SIC divided by total number of IPO firms.

Year	Number	SIC Code	Number	%	SIC Code	Number	%
1996	135	13	4	0.59	47	5	0.74
1997	99	15	2	0.29	48	49	7.22
1998	54	17	1	0.15	49	5	0.74
1999	211	20	2	0.29	50	8	1.18
2000	180	22	1	0.15	51	3	0.44
Total	**679**	23	1	0.15	52	1	0.15
		25	1	0.15	53	2	0.29
		26	1	0.15	54	1	0.15
		27	4	0.59	55	1	0.15
		28	62	9.13	56	2	0.29
		32	1	0.15	57	7	1.03
		33	1	0.15	58	5	0.74
		35	20	2.95	59	19	2.80
		36	67	9.87	73	291	42.86
		37	2	0.29	80	16	2.36
		38	56	8.25	82	7	1.03
		39	1	0.15	83	2	0.29
		41	1	0.15	87	26	3.83
		44	1	0.15	**Total**	**679**	**100.00**

Table 2 Descriptive Statistics

This table provides descriptive statistics for 679 IPO firms from May, 1, 1996 through Dec. 31, 2000. Definitions for variables are in Appendix A. The number of observations varies from 606 to 679, depending on data availability.

Panel A Firm Performance

	N	Median	Mean	Standard Deviation	Min.	Max.
Lockup (days)	679	180	179.570	36.780	90	720
Offering size (millions)	679	45	59.204	54.191	7.2	865.3
Underpricing	679	0.250	0.697	2.732	-0.517	67.254
CAR0	679	-0.167	0.066	1.041	-0.933	10.469
CAR1	679	-0.218	-0.124	0.711	-0.986	7.158
Offering	679	0	0.28	0.449	0	1
Firm Age (months)	679	60	80	64.380	4	582
Assets-1 (millions)	679	18.06	41.257	74.835	0.37	686.86
Assets0 (millions)	677	80.430	147.091	217.529	5.1	2381.84
Assets1 (millions)	610	93.105	247.621	487.814	0.3	4770.52
BEME	679	0.173	0.644	2.321	-1.390	33.52
OCF0	675	-0.435	-0.908	2.315	-34.689	4.28
OCF1	606	-0.118	-0.134	0.270	-1.499	0.83
Sales Growth0	676	1.176	43.881	943.878	-1	24474
Sales Growth1	606	0.615	1.564	5.097	-1	97.02
ROA-1	678	-0.3853	-0.5460	0.8178	-7.5405	1.1276
ROA0	676	-0.2125	-0.2989	0.4416	-4.1501	0.6061
ROA1	606	-0.2279	-0.3136	0.5210	-5.8473	0.3062

Panel B Discretionary Accruals[a]

	N	Median	Mean	Standard Deviation	Min.	Max.
MDA0	675	0.0183	-0.0758	1.0693	-7.3879	4.2538
MDA1	606	0.0029	-0.0703	0.5261	-3.4104	1.1494
CMDA	606	-0.0156	0.0073	1.2324	-4.8262	7.0621
Total Accruals0	675	-0.1976	-0.5399	1.3944	-9.8266	1.9061
Total Accruals1	606	-0.0972	-0.2293	0.6139	-5.4918	0.4293

a. Variables on accruals are winsorized at bottom and upper 0.5%.

Panel C Details of Restatements

Restatements Announced[b]		Number	Percentage of Sample Firms	
T1		9		1.33%
T2		21		3.09%
	total	30		**4.42%**

Prompter of Restatements	Number	Percentage of All Restatements
Company	25	83.33%
SEC	4	13.33%
Auditor	4	13.33%

Reasons of Restatement[c]	Number	Percentage of All Restatements
Revenue Recognition	18	60.00%
Cost or expenses	12	40.00%
Reclassification	4	13.33%
In-process research and development	2	6.67%
Acquisitions and mergers	1	3.33%
Restructuring, assets or inventory	1	3.33%
Other	3	10.00%

Impact on Net Income of Restated Periods		Number	Percentage of All Restatements
Increase		4	13.33%
Decrease		23	76.67%
No Impact		3	10.00%
	total	30	100%

b. T1: the period from the IPO date through the record date of the first proxy after the expiration of lockup period; T2: three years from the record date of the first proxy after the expiration of lockup period

c. A restatement may result from multiple reasons.

Panel D Characteristics of VCs' investment in IPO Firms

	N	Median	Mean	Standard Deviation	Min.	Max.
VC Age (years)	679	16.00	18.78	13.60	1	98.00
Length (months)	679	32.00	37.73	27.97	3	216.00
Fund (millions)	679	600	1741.96	3849.048	2.6	3000
VCIPO	679	0	0.11	0.312		
VCH0	679	0.288	0.3053	0.1598	0.01	0.79
VCN0	679	2	2.67	1.489	1	10
VCR0	679	0.3333	0.3472	0.1641	0	0.8333
VCRA0	679	0.5	0.51	0.327	0	1
VCH1	679	0.195	0.2234	0.1624	0	0.78
VCN1	679	2	2.120	1.347	0	7
VCR1	679	0.2857	0.2961	0.1699	0	0.8
VCRA1	670	0.5	0.45	0.318	0	1
ΔVCH	679	-0.059	-0.0819	0.1130	-0.669	0.27
ΔVCHP	679	-0.2330	-0.2576	0.5727	-1	8.0833
Exiting	679	0	0.0781	0.2685		

Panel E Ownership Structure

	N	Median	Mean	Standard Deviation	Min.	Max.
CEOH0	679	0.05	0.09	0.10166	0	0.69
CEOH1	679	0.045	0.080	0.093	0	0.700
ΔCEOH	679	-0.0027	-0.0099	0.0429	-0.307	0.593
BH0	679	0.104	0.1430	0.1480	0	0.804
BH1	679	0.121	0.147	0.144	0	0.89
ΔBH	679	0	0.0044	0.0938	-0.663	0.595

Table 3 Pearson Correlations

This table presents Pearson correlations among dependent variables and variables on VCs' characteristics. Definitions for variables are in Appendix A. The number of observations varies from 606 to 679, depending on data availability. P-values are in parentheses.

Variables	MDA0	ΔMDA	Restatement0	Restatement1	Exiting	VCH0	VCN0	VCRA0	VCIPO	VC Age	Length
MDA0	1.00										
ΔMDA	-0.85	1.00									
	(0.00)										
Restatement0	0.01	-0.01	1.00								
	(0.71)	(0.83)									
Restatement1	-0.01	0.02	-0.02	1.00							
	(0.87)	(0.65)	(0.59)								
Exiting	0.09	-0.09	0.01	0.14	1.00						
	(0.02)	(0.03)	(0.71)	(0.00)							
VCH0	-0.10	0.09	-0.05	-0.06	-0.24	1.00					
	(0.01)	(0.02)	(0.22)	(0.10)	(0.00)						
VCN0	-0.01	0.03	-0.03	-0.02	-0.16	0.56	1.00				
	(0.77)	(0.50)	(0.49)	(0.64)	(0.00)	(0.00)					
VCRA0	-0.01	-0.04	-0.01	-0.05	-0.07	0.30	0.36	1.00			
	(0.90)	(0.38)	(0.81)	(0.21)	(0.06)	(0.00)	(0.00)				
VCIPO	0.04	-0.02	0.00	0.02	0.06	-0.08	-0.09	0.01	1.00		
	(0.27)	(0.58)	(0.98)	(0.61)	(0.14)	(0.03)	(0.02)	(0.86)			
VC Age	-0.02	0.04	0.00	0.03	-0.01	0.07	0.07	0.05	0.00	1.00	
	(0.59)	(0.31)	(0.90)	(0.45)	(0.77)	(0.07)	(0.08)	(0.18)	(0.99)		
Length	0.07	-0.04	0.02	-0.06	-0.05	0.25	0.28	0.15	0.12	0.13	1.00
	(0.06)	(0.37)	(0.66)	(0.14)	(0.24)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	
Fund	0.00	0.00	0.03	0.03	-0.03	0.11	-0.02	0.03	-0.04	0.41	0.00
	(0.99)	(0.99)	(0.48)	(0.40)	(0.50)	(0.00)	(0.67)	(0.50)	(0.25)	(0.00)	(0.97)

Table 4 Determinants of the Exit of Venture Capital

The table presents the results of a probit model. Dependent variable is the exit of venture capital (Exiting), a dummy variable that equals to 1 if VCs sell off all their shares right after the lockup expiration. Definitions for variables are in Appendix A. Results for industry dummies and year dummies are not reported. All tests use White (1980) heteroskedasticity-consistent robust standard errors. P-values are based on two-tail test.

Variables	B	Standard Error	P-Value
Intercept	-6.230	2.874	0.030
VCH0	-4.834	1.135	0.000
VCN0	-0.078	0.101	0.440
VCRA0	0.359	0.315	0.255
BH0	-0.158	0.662	0.811
CEOH0	-1.530	0.998	0.125
ΔCEOH	-2.037	2.345	0.385
ΔBH	3.098	0.909	0.001
ROAP0	0.377	0.242	0.120
CROAP0	0.515	0.197	0.009
ASSET0	-0.002	0.098	0.986
BEME	-0.004	0.025	0.890
Sales Growth0	-0.002	0.004	0.564
OCF0	0.024	0.087	0.780
LOCK	0.896	0.499	0.073
Underpricing	0.056	0.015	0.000
Firm Age	-0.042	0.145	0.773
ROA-1	0.125	0.229	0.584
VCIPO	-0.065	0.257	0.801
VC Age	0.003	0.122	0.979
Length	-0.013	0.125	0.919
FUND	0.030	0.058	0.601
IC ratio	0.414	0.179	0.021
Sample Size		674	
Log likelihood		-132.76	
Pseudo R^2		28.48%	
Observed Probability		7.85%	
Predicted Probability		2.22%	
χ^2 for IC Ratio		5.34	
Partial R^2 for IC Ratio		1.51%	

Table 5 Comparison between Non-Exiting and Exiting

This table provides univariate analysis on the exit of venture capital and opportunistic behavior in financial disclosure. Exiting group includes firms in which VCs exit right after the expiration of lockup period; Non-Exiting group consists of firms in which VCs do not exit. Differences are calculated as Exiting group − Non-Exiting group. See Appendix A for variable definitions. In Panel A, T-tests are two-tailed. In Panel B, each firm in Exiting group is matched with one or many firms in Non-Exiting group, by using the propensity score, Gaussian kernel, and local linear regression matching approaches described in the text. The probit model for matching purpose is reported in Table 4. Bootstrapped standard errors are based on 50 replications. P-values are based on two-tail tests.

Panel A Simple Comparison between Non-Exiting Group and Exiting Group

	Non-Exiting Mean Median (S. E.)	Exiting Mean Median (S. E.)	Difference	T-test Nonparametric Test	
MDA0	-0.103	0.250	0.353	3.251	***
	0.000	0.191		19.777	***
	(0.044)	(0.100)			
MDA1	-0.068	-0.098	-0.030	-0.394	
	0.004	-0.010		0.337	
	(0.023)	(0.063)			
ΔMDA	0.041	-0.351	-0.392	-2.809	***
	-0.003	-0.211		6.816	***
	(0.053)	(0.129)			
Restatement0	0.013	0.019	0.006	0.372	
	0.000	0.000		0.139	
	(0.004)	(0.019)			
Restatement1	0.024	0.113	0.089	3.633	***
	0.000	0.000		12.985	***
	(0.006)	(0.044)			
CAR0	0.063	0.102	0.039	0.265	
	-0.189	-0.042		3.500	*
	(0.043)	(0.086)			
CAR1	-0.136	0.022	0.158	1.549	
	-0.222	-0.170		0.528	
	(0.028)	(0.114)			

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level.

Panel B Comparison by Various Matching Methods

	One-by-One Propensity Score		Gaussian Kernel		Local Linear Regression	
	Difference (S. E.)	P-value	Difference (S. E.)	P-value	Difference (S. E.)	P-value
MDA0	0.2467	0.026	0.3062	0.064	0.1472	0.140
	(0.1103)		(0.1614)		(0.0981)	
CMDA	-0.3871	0.098	-0.3505	0.216	-0.1737	0.367
	(0.2338)		(0.2800)		(0.1908)	
Restatement0	0.0189	0.431	0.0141	0.437	0.0162	0.598
	(0.0284)		(0.0180)		(0.0184)	
Restatement1	0.0943	0.070	0.0617	0.073	0.0813	0.123
	(0.0509)		(0.0336)		(0.0518)	
CAR0	-0.1326	0.659	0.0274	0.892	0.0188	0.930
	(0.2985)		(0.2001)		(0.2138)	
CAR1	-0.1126	0.656	0.1072	0.489	0.0129	0.932
	(0.2514)		(0.1537)		(0.1508)	

Table 6 Discretionary Accruals and the Exit of Venture Capital

The table reports results from two-stage least squares (2SLS) on discretionary accruals in the IPO year. The exit of venture capital is an endogenous variable and IC Ratio is used as an instrument. Definitions for variables are in Appendix A. Results for industry dummies and year dummies are not reported. All tests use White (1980) heteroskedasticity-consistent robust standard errors. P-values are based on two-tail tests.

Variables	OLS			2SLS		
	B	S. E.	P-value	B	S. E.	P-value
Intercept	2.1319	1.4655	0.146	2.2343	1.4614	0.126
VCH0	-0.9084	0.4254	0.033	-0.6435	0.4206	0.126
VCN0	0.0625	0.0296	0.035	0.0663	0.0298	0.026
VCRA0	-0.0738	0.1068	0.490	-0.0785	0.1069	0.462
BH0	-0.5724	0.3834	0.136	-0.5966	0.3845	0.121
CEOH0	-0.2658	0.3495	0.447	-0.1742	0.3547	0.623
ΔCEOH	0.8700	0.6992	0.214	0.8797	0.7007	0.209
ΔBH	0.7686	0.5432	0.158	0.4812	0.5323	0.366
ROAP0	-0.0044	0.1265	0.972	-0.0309	0.1244	0.804
CROAP0	0.1491	0.1108	0.179	0.1228	0.1106	0.267
ASSET0	-0.0699	0.0447	0.118	-0.0630	0.0449	0.160
BEME	-0.0066	0.0083	0.426	-0.0062	0.0082	0.453
Sales Growth0	0.0001	0.0002	0.741	0.0001	0.0002	0.596
OCF0	-0.0128	0.0687	0.852	-0.0118	0.0666	0.859
LOCK	-0.4020	0.2675	0.133	-0.4502	0.2694	0.095
Underpricing	-0.0565	0.0084	0.000	-0.0647	0.0090	0.000
Firm Age	0.1353	0.0639	0.035	0.1406	0.0635	0.027
ROA-1	0.2306	0.1876	0.219	0.2214	0.1833	0.227
VCIPO	-0.0770	0.1483	0.604	-0.0854	0.1492	0.567
VC Age	-0.0248	0.0448	0.580	-0.0201	0.0446	0.651
Litigation	0.1871	0.1032	0.070	0.1717	0.1012	0.090
Offering	0.0853	0.0857	0.320	0.0498	0.0814	0.541
Exiting	0.3309	0.0965	0.001	0.9949	0.2608	0.000
Sample Size	674			674		
Adjusted R^2	9.90%					
Log likelihood				-1054		
Wald test of independent equations				$\chi^2 = 7.37$		

Table 7 Discretionary Accruals and Interactions of VCs' Characteristics

The table reports results from two-stage least squares (2SLS) on discretionary accruals in the IPO year, after including interaction variables. The exit of venture capital is an endogenous variable and IC Ratio is used as an instrument. Definitions for variables are in Appendix A. Results for industry dummies and year dummies are not reported. All tests use White (1980) heteroskedasticity-consistent robust standard errors. P-values are based on two-tail tests.

Variables	OLS			2SLS		
	B	S. E.	P-value	B	S. E.	P-value
Intercept	2.1285	1.4712	0.148	2.2499	1.4660	0.125
VCH0	-0.8994	0.4371	0.040	-0.6760	0.4242	0.111
VCN0	0.0625	0.0295	0.035	0.0661	0.0299	0.027
VCRA0	-0.0733	0.1146	0.523	-0.0741	0.1127	0.511
BH0	-0.5716	0.3855	0.139	-0.6000	0.3850	0.119
CEOH0	-0.2656	0.3501	0.448	-0.1718	0.3561	0.630
ΔCEOH	0.8700	0.6964	0.212	0.8723	0.7020	0.214
ΔBH	0.7755	0.5407	0.152	0.4266	0.5291	0.420
ROAP0	-0.0045	0.1268	0.971	-0.0316	0.1250	0.801
CROAP0	0.1491	0.1117	0.182	0.1202	0.1119	0.283
ASSET0	-0.0702	0.0447	0.116	-0.0605	0.0450	0.178
BEME	-0.0067	0.0083	0.418	-0.0056	0.0082	0.492
Sales Growth0	0.0001	0.0002	0.739	0.0001	0.0002	0.610
OCF0	-0.0128	0.0689	0.853	-0.0115	0.0668	0.863
LOCK	-0.4021	0.2682	0.134	-0.4514	0.2696	0.094
Underpricing	-0.0559	0.0091	0.000	-0.0689	0.0114	0.000
Firm Age	0.1355	0.0640	0.035	0.1397	0.0636	0.028
ROA-1	0.2306	0.1881	0.221	0.2207	0.1838	0.230
VCIPO	-0.0763	0.1498	0.611	-0.0921	0.1516	0.543
VC Age	-0.0248	0.0449	0.581	-0.0198	0.0447	0.658
Litigation	0.1880	0.1040	0.071	0.1656	0.1019	0.104
Offering	0.0868	0.0870	0.319	0.0402	0.0828	0.628
Exiting	0.3578	0.1648	0.030	0.9178	0.2490	0.000
VCH0 x Exiting	-0.1634	0.6316	0.796	0.9346	0.9674	0.334
VCRA0 x Exiting	0.0028	0.2284	0.990	-0.0972	0.2513	0.699
Sample Size	674			674		
Adjusted R^2	9.62%					
Log likelihood				-1053		
Wald test of independent equations				$\chi^2 = 6.91$		

Table 8 Change in Discretionary Accruals and the Exit of Venture Capital

The table reports results from two-stage least squares (2SLS) on change in discretionary accruals in the year following the IPO. The exit of venture capital is an endogenous variable and IC Ratio is used as an instrument. Definitions for variables are in Appendix A. Results for industry dummies and year dummies are not reported. All tests use White (1980) heteroskedasticity-consistent robust standard errors. P-values are based on two-tail tests.

Variables	Model 1			Model 2		
	B	S. E.	P-value	B	S. E.	P-value
Intercept	-2.5965	2.0611	0.208	-0.0451	0.8448	0.957
MDA0				-1.0068	0.0210	0.000
VCH0	0.6668	0.5080	0.189	-0.0763	0.1955	0.696
VCN0	-0.0511	0.0346	0.140	0.0180	0.0168	0.284
VCRA0	-0.0297	0.1446	0.837	-0.0616	0.0971	0.526
BH0	0.4038	0.4516	0.371	0.1325	0.2850	0.642
CEOH0	0.2517	0.4068	0.536	0.0491	0.2193	0.823
ΔCEOH	-1.2792	0.8249	0.121	-0.3666	0.4437	0.409
ΔBH	-0.8940	0.5989	0.135	-0.0242	0.4042	0.952
ROAP1	0.0062	0.1594	0.969	-0.1527	0.1198	0.202
CROAP1	0.1921	0.1303	0.140	0.3220	0.0846	0.000
ASSET1	-0.0447	0.0780	0.567	-0.1515	0.0524	0.004
BEME	0.0027	0.0092	0.769	-0.0041	0.0076	0.591
Sales Growth1	-0.0065	0.0132	0.621	-0.0002	0.0056	0.977
OCF1	0.1599	0.3903	0.682	-0.1351	0.2217	0.542
LOCK	0.5516	0.3693	0.135	0.1125	0.1333	0.399
Underpricing	0.0577	0.0072	0.000	-0.0124	0.0088	0.159
Firm Age	-0.1145	0.0815	0.160	-0.0130	0.0440	0.768
ROA0	-0.4071	0.4114	0.322	0.5922	0.2024	0.003
VCIPO	0.1642	0.1638	0.316	0.0367	0.0484	0.448
VC Age	0.0573	0.0625	0.359	0.0747	0.0363	0.040
Litigation	-0.2785	0.1403	0.047	-0.1777	0.0612	0.004
Offering	-0.0137	0.1352	0.920	0.0206	0.0661	0.755
Exiting	-0.9954	0.3371	0.003	0.3018	0.3525	0.392
Sample Size	606			606		
Log likelihood	-1059			-655.414		
Wald test (χ^2) for independent equations						
	5.06			0.84		

Table 9 Restatements announced in Period T1 and the Exit of Venture Capital

The table reports results from seemingly unrelated bivariate probit model. The first probit model is Pr (Restatement0=1) = (Exiting, other variables); the second probit model is Pr (Exiting=1) = (IC Ratio, other variables). The exit of venture capital is an endogenous variable and IC Ratio is used as an instrument. Definitions for variables are in Appendix A. Results for industry dummies and year dummies are not reported. All tests use White (1980) heteroskedasticity-consistent robust standard errors. P-values are based on two-tail tests.

Variables	(1)			(2)		
	B	S. E.	P-value	B	S. E.	P-value
Intercept	-0.8206	3.1863	0.797	0.8888	2.8022	0.751
VCH0	-4.3936	0.9847	0.000	-4.4203	1.1502	0.000
VCN0	-0.0730	0.0694	0.293	-0.1697	0.0948	0.073
VCRA0	-0.1487	0.3291	0.651	0.2431	0.3517	0.489
BH0	-1.8763	1.1039	0.089	-2.1013	1.0953	0.055
CEOH0	-5.7087	2.5415	0.025	-7.1876	3.2934	0.029
ΔCEOH	-9.3369	5.2563	0.076	-12.5095	4.6699	0.007
ΔBH	-3.3989	2.4198	0.160	-5.0687	2.7835	0.069
ROAP0	-0.2605	0.2870	0.364	-0.4623	0.3436	0.178
CROAP0	0.3288	0.2208	0.136	0.2470	0.2493	0.322
ASSET0	0.2083	0.1288	0.106	0.2373	0.1475	0.108
BEME	-0.9008	0.3652	0.014	-1.1269	0.4322	0.009
Sales Growth0	-0.0021	0.0041	0.620	-0.0028	0.0041	0.499
OCF0	-0.0508	0.0441	0.249	-0.0652	0.0442	0.140
LOCK	-0.2160	0.6280	0.731	-0.6056	0.6063	0.318
Underpricing	-0.0486	0.1334	0.715	-0.0744	0.0277	0.007
Firm Age	0.1833	0.1434	0.201	0.3314	0.2130	0.120
ROA-1	0.0651	0.1469	0.658	0.1120	0.1413	0.428
VCIPO	0.0198	0.3152	0.950	0.0011	0.3522	0.998
VC Age	0.1812	0.1553	0.243	0.1364	0.1601	0.394
Litigation	0.4149	0.1992	0.037	0.5078	0.2346	0.030
Offering	-0.6783	0.3389	0.045	-0.8439	0.5059	0.095
Exiting	-1.5688	0.4770	0.001	-2.5662	0.6745	0.000
VCH0 x Exiting				18.4336	4.7469	0.000
VCRA0 x Exiting				-28.1549	2.7659	0.000
Sample Size	674			674		
Log likelihood	-160			-155		
Wald Test (χ^2)	46.3			101		
Tests on Coefficients	VCH0 + VCH0 x Exiting = 0			$\chi^2 = 9.93$		
	VCRA0 + VCRA0 x Exiting = 0			$\chi^2 = 100.12$		

Table 10 Restatement in the Period T2 and the Exit of Venture Capital

The table reports results from seemingly unrelated bivariate probit model. The first probit model is Pr (Restatement1=1) = (Exiting, other variables); the second probit model is Pr (Exiting=1) = (IC Ratio, other variables). The exit of venture capital is an endogenous variable and IC Ratio is used as an instrument. Definitions for variables are in Appendix A. Results for industry dummies and year dummies are not reported. All tests use White (1980) heteroskedasticity-consistent robust standard errors. P-values are based on two-tail tests.

Variables	(1)			(2)		
	B	S. E.	P-value	B	S. E.	P-value
Intercept	-4.4302	2.9336	0.131	-5.4720	2.3793	0.021
VCH0	0.4047	0.9739	0.678	0.3541	0.9019	0.695
VCN0	0.0598	0.1015	0.556	0.0800	0.1001	0.425
VCRA0	-0.1809	0.3479	0.603	-0.1226	0.4085	0.764
BH0	0.7817	0.8201	0.341	0.8158	0.7936	0.304
CEOH0	1.9420	0.7476	0.009	1.7736	0.8714	0.042
ΔCEOH	-3.1924	2.3663	0.177	-3.5324	2.3882	0.139
ΔBH	-2.2612	1.3786	0.101	-0.9625	1.5135	0.525
ROAP0	-0.5156	0.3251	0.113	-0.2924	0.2882	0.310
CROAP0	-0.0121	0.2298	0.958	-0.0286	0.2250	0.899
ASSET0	0.0909	0.1319	0.491	0.0482	0.1404	0.731
BEME	-0.2813	0.1333	0.035	-0.2783	0.2000	0.164
Sales Growth0	-0.0021	0.0047	0.652	-0.0097	0.0126	0.440
OCF0	0.0112	0.0540	0.835	-0.0060	0.0530	0.909
LOCK	0.0260	0.4024	0.949	0.2150	0.2903	0.459
Underpricing	0.0892	0.0720	0.216	0.1603	0.0910	0.078
Firm Age	0.3284	0.1632	0.044	0.3493	0.1779	0.050
ROA-1	-0.1095	0.2331	0.639	-0.1062	0.2427	0.662
VCIPO	0.3199	0.3201	0.318	0.3260	0.3274	0.319
VC Age	0.2060	0.1082	0.057	0.1977	0.1127	0.079
Litigation	-0.3831	0.1703	0.024	-0.3724	0.1782	0.037
Offering	-0.3338	0.2130	0.117	-0.1747	0.2491	0.483
Exiting	2.8643	0.2786	0.000	1.9213	0.8481	0.023
VCH0 x Exiting				-6.3003	4.5086	0.162
VCRA0 x Exiting				0.3111	0.7508	0.679
Sample Size	674			674		
Log likelihood	-202			-204		
Wald Test of Independent equations	χ2=271.35			χ2=285.65		

Table 11 Generated Instrument Method for Discretionary Accruals in the IPO Year

The table reports results from two-stage least squares (2SLS) on discretionary accruals in the IPO year, by using a generated instrument method. The exit of venture capital is an endogenous variable and the estimated probability from Table 4 is used as an instrument. Definitions for variables are in Appendix A. Results for industry dummies and year dummies are not reported. All tests use White (1980) heteroskedasticity-consistent robust standard errors. P-values are based on two-tail tests.

Variables	(1) B	(1) S. E.	(1) P-value	(2) B	(2) S. E.	(2) P-value
Intercept	2.2296	1.4593	0.127	2.2443	1.4642	0.125
VCH0	-0.6554	0.4248	0.123	-0.6853	0.4273	0.109
VCN0	0.0662	0.0298	0.026	0.0660	0.0299	0.027
VCRA0	-0.0783	0.1066	0.463	-0.0730	0.1125	0.516
BH0	-0.5955	0.3837	0.121	-0.5986	0.3843	0.119
CEOH0	-0.1783	0.3551	0.616	-0.1756	0.3567	0.622
ΔCEOH	0.8792	0.6992	0.209	0.8710	0.7001	0.213
ΔBH	0.4941	0.5357	0.356	0.4391	0.5337	0.411
ROAP0	-0.0297	0.1241	0.811	-0.0305	0.1246	0.807
CROAP0	0.1240	0.1107	0.263	0.1211	0.1121	0.280
ASSET0	-0.0633	0.0448	0.158	-0.0608	0.0450	0.177
BEME	-0.0062	0.0082	0.451	-0.0057	0.0082	0.490
Sales Growth0	0.0001	0.0002	0.602	0.0001	0.0002	0.616
OCF0	-0.0119	0.0666	0.859	-0.0116	0.0668	0.863
LOCK	-0.4480	0.2689	0.096	-0.4494	0.2692	0.095
Underpricing	-0.0643	0.0090	0.000	-0.0686	0.0117	0.000
Firm Age	0.1404	0.0634	0.027	0.1395	0.0634	0.028
ROA-1	0.2219	0.1834	0.226	0.2210	0.1839	0.230
VCIPO	-0.0850	0.1489	0.568	-0.0919	0.1514	0.544
VC Age	-0.0203	0.0445	0.647	-0.0199	0.0446	0.655
Litigation	0.1724	0.1010	0.088	0.1663	0.1017	0.102
Offering	0.0514	0.0812	0.526	0.0419	0.0825	0.612
Exiting	0.9650	0.2766	0.000	0.8983	0.2656	0.001
VCH0 x Exiting				0.9173	0.9874	0.353
VCRA0 x Exiting				-0.1062	0.2541	0.676
Sample Size	674			674		
Log likelihood	-1055			-1054		
Wald Test of Independent equations	$\chi 2$=5.94			$\chi 2$=5.4		

Table 12 Discretionary Accruals from the Jones Model (1991) in the IPO Year

The table reports results from two-stage least squares (2SLS) on discretionary accruals in the IPO year. Discretionary accruals are estimated by Jones Model (1991) and then performance-adjusted. The exit of venture capital is an endogenous variable and IC Ratio is used as an instrument. Definitions for variables are in Appendix A. Results for industry dummies and year dummies are not reported. All tests use White (1980) heteroskedasticity-consistent robust standard errors. P-values are based on two-tail tests.

Variables	(1)			(2)		
	B	S. E.	P-value	B	S. E.	P-value
Intercept	1.6746	1.3832	0.226	1.7030	1.3860	0.219
VCH0	0.3789	0.4140	0.360	0.3425	0.4035	0.396
VCN0	0.0039	0.0255	0.878	0.0040	0.0258	0.876
VCRA0	-0.0469	0.1099	0.670	-0.0494	0.1153	0.669
BH0	-0.1986	0.3923	0.613	-0.2055	0.3920	0.600
CEOH0	0.7731	0.3989	0.053	0.7789	0.4010	0.052
ΔCEOH	1.9259	1.0547	0.068	1.9256	1.0650	0.071
ΔBH	-0.0497	0.7951	0.950	-0.1155	0.7846	0.883
ROAP0	-0.1174	0.1281	0.360	-0.1187	0.1288	0.357
CROAP0	0.1741	0.1102	0.114	0.1721	0.1114	0.123
ASSET0	-0.0967	0.0446	0.030	-0.0942	0.0443	0.034
BEME	-0.0023	0.0089	0.799	-0.0016	0.0089	0.853
Sales Growth0	0.0001	0.0003	0.734	0.0001	0.0003	0.740
OCF0	-0.0280	0.0673	0.677	-0.0278	0.0674	0.680
LOCK	-0.4034	0.2515	0.109	-0.4062	0.2514	0.106
Underpricing	-0.0642	0.0073	0.000	-0.0687	0.0105	0.000
Firm Age	0.1857	0.0687	0.007	0.1846	0.0686	0.007
ROA-1	0.2559	0.1831	0.162	0.2554	0.1835	0.164
VCIPO	0.1051	0.1155	0.363	0.0993	0.1167	0.395
VC Age	-0.0571	0.0455	0.210	-0.0566	0.0454	0.212
Litigation	0.1077	0.1046	0.303	0.1006	0.1054	0.340
Offering	0.0328	0.0896	0.714	0.0207	0.0900	0.818
Exiting	1.0585	0.3193	0.001	0.9438	0.2941	0.001
VCH0 x Exiting				1.0375	1.2362	0.401
VCRA0 x Exiting				-0.0291	0.2924	0.921
Sample Size	674			674		
Loglikelihood	-1082			-1081		
Wald Test of Independent equations	$\chi2=5.79$			$\chi2=5.58$		

Table 13 Index of Sales in Account Receivables and Change in Allowance for Bad Debts

The table reports results from two-stage least squares (2SLS) on index of sales in account receivables (ISA0) in the IPO year, and change in allowance for bad debts (ΔBad0) in the IPO year, respectively. The exit of venture capital is an endogenous variable and IC Ratio is used as an instrument. IDISA0 is industry average of index of sales in account receivables in the IPO year. ΔIBad0 is industry average change in allowance for bad debts in the IPO year. Definitions for variables are in Appendix A. Results for industry dummies and year dummies are not reported. All tests use White (1980) heteroskedasticity-consistent robust standard errors. P-values are based on two-tail tests.

Variables	ISA0			ΔBad0		
	B	**S. E.**	**P-value**	**B**	**S. E.**	**P-value**
Intercept	14.1161	8.5332	0.098	-0.1083	0.1400	0.439
VCH0	0.1537	0.5494	0.780	-0.0461	0.0818	0.573
VCN0	0.0624	0.0627	0.320	-0.0033	0.0035	0.347
VCRA0	0.0779	0.2207	0.724	0.0063	0.0192	0.743
BH0	0.2538	0.7983	0.751	-0.0183	0.0438	0.676
CEOH0	2.1583	1.4474	0.136	0.0119	0.0882	0.893
ΔCEOH	0.8108	1.9755	0.681	-0.0549	0.1115	0.623
ΔBH	-1.1930	1.0961	0.276	0.0108	0.0618	0.862
ROAP0	-0.2346	0.2603	0.368	-0.0046	0.0118	0.697
CROAP0	-0.2447	0.2623	0.351	-0.0170	0.0125	0.173
ASSET0	-0.1316	0.1125	0.242	0.0075	0.0046	0.101
BEME	0.0252	0.0259	0.331	0.0002	0.0010	0.866
Sales Growth0	-0.0012	0.0005	0.020	0.0000	0.0000	0.217
OCF0	-0.0526	0.0704	0.455	-0.0003	0.0026	0.892
LOCK	-2.1755	1.6020	0.174	0.0262	0.0287	0.361
Underpricing	-0.0342	0.0150	0.023	0.0007	0.0017	0.700
Firm Age	-0.2452	0.1575	0.120	0.0023	0.0068	0.730
ROA-1	-0.0893	0.2224	0.688	-0.0048	0.0096	0.615
VCIPO	-0.3398	0.1940	0.080	0.0009	0.0125	0.942
VC Age	0.1499	0.1638	0.360	0.0033	0.0059	0.582
Offering	0.2094	0.2242	0.350	-0.0043	0.0095	0.652
Exiting	2.9595	0.9732	0.002	-0.1045	0.1207	0.387
IDISA0	0.0534	0.0543	0.325			
Bad-1				-0.8017	0.0993	0.000
ΔIBad0				0.1326	0.0915	0.147
Sample Size	602			602		
Log likelihood	-1422			385.751		
Wald Test of Independent equations	χ2=7.08			χ2=33.74		

Table 14 Change in Rate of Depreciation and Change in R&D Expenditure

The table reports results from two-stage least squares (2SLS) on change in rate of depreciation (ΔDepreciation) in the IPO year, and change in R&D expenditure deflated by average total assets (ΔRD) in the IPO year, respectively. The exit of venture capital is an endogenous variable and IC Ratio is used as an instrument. ΔIdepreciation is industry average change in rate of depreciation in the IPO year. ΔCapital is change in capital expenditure deflated by average total assets in the IPO year. ΔIRD is industry average change in R&D expenditure deflated by average total assets in the IPO year. Definitions for variables are in Appendix A. Results for industry dummies and year dummies are not reported. All tests use White (1980) heteroskedasticity-consistent robust standard errors. P-values are based on two-tail tests.

Variables	ΔDepreciation			ΔRD		
	B	S. E.	P-value	B	S. E.	P-value
Intercept	0.1098	0.0987	0.266	0.5750	0.1288	0.000
VCH0	0.0935	0.0379	0.014	-0.0650	0.0345	0.059
VCN0	-0.0052	0.0035	0.137	0.0021	0.0032	0.524
VCRA0	0.0094	0.0124	0.450	-0.0028	0.0232	0.905
BH0	-0.0662	0.0327	0.043	0.0068	0.0344	0.842
CEOH0	-0.0268	0.0406	0.509	-0.0860	0.0477	0.071
ΔCEOH	-0.2268	0.0844	0.007	-0.1773	0.1964	0.367
ΔBH	-0.1578	0.0720	0.029	0.0251	0.0453	0.580
ROAP0	-0.0132	0.0107	0.216	-0.0598	0.0143	0.000
CROAP0	-0.0145	0.0087	0.096	-0.0400	0.0131	0.002
ASSET0	-0.0042	0.0057	0.462	-0.0399	0.0054	0.000
BEME	0.0006	0.0015	0.702	0.0003	0.0010	0.739
Sales Growth0	0.0000	0.0000	0.271	-0.0001	0.0001	0.237
OCF0	-0.0004	0.0046	0.929	0.0019	0.0024	0.430
LOCK	0.0130	0.0164	0.427	-0.0422	0.0226	0.062
Underpricing	-0.0027	0.0006	0.000	0.0000	0.0005	0.932
Firm Age	-0.0139	0.0065	0.032	-0.0090	0.0067	0.181
ROA-1	0.0012	0.0115	0.919	0.0448	0.0110	0.000
VCIPO	-0.0223	0.0129	0.085	-0.0202	0.0176	0.251
VC Age	0.0023	0.0053	0.662	0.0102	0.0066	0.123
Offering	-0.0269	0.0103	0.009	0.0141	0.0104	0.177
Exiting	0.1395	0.0327	0.000	-0.0273	0.0226	0.228
Depreciation-1	-0.4601	0.0629	0.000			
ΔIdepreciation	-0.2502	0.2481	0.313			
ΔCapital	-0.1973	0.0391	0.000			
ΔIRD				-0.0246	0.0709	0.729
RD-1				-0.8328	0.0220	0.000
Sample Size	669			520		
Log likelihood	534.7			309.619		
Wald Test of Independent Equations	χ2=15.91			χ2=4.49		

Table 15 Discretionary Accruals, Use of Proceeds, and Auditors

The table reports results from two-stage least squares (2SLS) on discretionary accruals in the IPO year, after including control variables for use of proceeds and auditors' characteristics. The exit of venture capital is an endogenous variable and IC Ratio is used as an instrument. Arthur Andersen, Deloitte&Touche, Ernst&Young, KPMG, and PricewaterhouseCoopers are five dummy variables for the Big Five audit firms. Audit Report is a dummy variable, 1 if there is a qualified option; 0 otherwise. U-acquisition, U-marketing, U-capital exp, U-general, U-R&D, U-Debt Payment, and U-Working Capital are seven dummy variables for different purposes of intended use of proceeds. Definitions for variables are in Appendix A. Results for industry dummies and year dummies are not reported. All tests use White (1980) heteroskedasticity-consistent robust standard errors. P-values are based on two-tail tests.

	(1)			(2)		
Variables	**B**	**S. E.**	**P-value**	**B**	**S. E.**	**P-value**
Intercept	1.9235	1.5749	0.222	1.9858	1.5787	0.208
VCH0	-0.6539	0.4343	0.132	-0.7038	0.4401	0.110
VCN0	0.0694	0.0300	0.021	0.0700	0.0303	0.021
VCRA0	-0.0753	0.1089	0.489	-0.0829	0.1123	0.460
BH0	-0.6247	0.3907	0.110	-0.6331	0.3907	0.105
CEOH0	-0.1364	0.3459	0.693	-0.1283	0.3477	0.712
ΔCEOH	0.9337	0.6990	0.182	0.9347	0.7093	0.188
ΔBH	0.4614	0.5026	0.359	0.3960	0.4921	0.421
ROAP0	-0.0535	0.1286	0.678	-0.0561	0.1293	0.665
CROAP0	0.0961	0.1035	0.353	0.0965	0.1040	0.354
ASSET0	-0.0551	0.0444	0.215	-0.0540	0.0445	0.225
BEME	-0.0028	0.0089	0.758	-0.0020	0.0089	0.822
Sales Growth0	0.0001	0.0002	0.666	0.0001	0.0002	0.686
OCF0	-0.0139	0.0651	0.831	-0.0139	0.0652	0.831
LOCK	-0.4603	0.2775	0.097	-0.4657	0.2776	0.093
Underpricing	-0.0664	0.0089	0.000	-0.0707	0.0112	0.000
Firm Age	0.1438	0.0612	0.019	0.1416	0.0613	0.021
ROA-1	0.2170	0.1751	0.215	0.2176	0.1754	0.215
VCIPO	-0.0895	0.1491	0.548	-0.0949	0.1519	0.532
VC Age	-0.0110	0.0444	0.804	-0.0108	0.0444	0.808
Litigation	0.1758	0.1037	0.090	0.1691	0.1039	0.103
Offering	0.0352	0.0854	0.680	0.0217	0.0868	0.803
Arthur Andersen	-0.0120	0.1805	0.947	-0.0197	0.1821	0.914
Deloitte&Touche	-0.1771	0.2246	0.430	-0.1778	0.2258	0.431
Ernst&Young	-0.0839	0.1848	0.650	-0.0842	0.1853	0.649
KPMG	-0.1067	0.2057	0.604	-0.1130	0.2072	0.586
PricewaterhouseCoopers	0.0548	0.1910	0.774	0.0590	0.1916	0.758
Audit Report	-0.2809	0.4897	0.566	-0.2821	0.4879	0.563

U-acquisition	0.2620	0.3822	0.493	0.2714	0.3823	0.478
U-marketing	0.4253	0.5117	0.406	0.4181	0.5119	0.414
U-capital exp	0.4278	0.3693	0.247	0.4285	0.3699	0.247
U-general	0.3585	0.3294	0.276	0.3516	0.3287	0.285
U-R&D	0.2468	0.3764	0.512	0.2410	0.3750	0.521
U-Debt Payment	0.3736	0.3144	0.235	0.3746	0.3141	0.233
U-working capital	0.1996	0.3500	0.568	0.1906	0.3497	0.586
Exiting	1.0930	0.2454	0.000	0.9282	0.2362	0.000
VCH0 x Exiting				1.1091	0.9987	0.267
VCRA0 x Exiting				0.0388	0.2522	0.878
Sample Size	674			674		
Log likelihood	-1041			-1040		
Wald test of Independent Equations	χ2=11.32			χ2=11.19		

Table 16 Restatements Announced in T1 and Control Variables

The table reports results from seemingly unrelated bivariate probit model after including control variables on use of proceeds and auditors' characteristics. The first probit model is Pr (Restatement0=1) = (Exiting, other variables); the second probit model is Pr (Exiting=1) = (IC Ratio, other variables). The exit of venture capital is an endogenous variable and IC Ratio is used as an instrument. Ernst&Young, KPMG, and PricewaterhouseCoopers are three dummy variables. U-general, and U-Working Capital are two dummy variables for different purposes of intended use of proceeds. Other control variables on use of proceeds and auditors' characteristics are dropped off during the estimation. Definitions for variables are in Appendix A. Results for industry dummies and year dummies are not reported. All tests use White (1980) heteroskedasticity-consistent robust standard errors. P-values are based on two-tail tests.

Variables	(1)			(2)		
	B	S. E.	P-value	B	S. E.	P-value
Intercept	0.6598	2.9731	0.824	2.2571	3.1416	0.472
VCH0	-4.8508	1.3671	0.000	-5.3237	1.5346	0.001
VCN0	-0.1147	0.0863	0.184	-0.2232	0.0977	0.022
VCRA0	-0.0740	0.3951	0.852	0.4796	0.4437	0.280
BH0	-2.7656	1.2070	0.022	-3.1978	1.3814	0.021
CEOH0	-7.1489	2.2992	0.002	-8.1813	2.1726	0.000
ΔCEOH	-12.1626	3.8830	0.002	-14.9415	3.8307	0.000
ΔBH	-5.4214	2.8588	0.058	-7.2097	3.6098	0.046
ROAP0	-0.3764	0.3392	0.267	-0.5620	0.3498	0.108
CROAP0	0.2237	0.2494	0.370	0.2302	0.2647	0.384
ASSET0	0.3285	0.1307	0.012	0.3609	0.1633	0.027
BEME	-1.2873	0.4280	0.003	-1.3254	0.3759	0.000
Sales Growth0	-0.0032	0.0031	0.301	-0.0056	0.0037	0.127
OCF0	-0.0823	0.0485	0.090	-0.0977	0.0599	0.103
LOCK	-0.6371	0.6273	0.310	-0.9154	0.5707	0.109
Underpricing	-0.0607	0.1261	0.630	-0.2507	0.2088	0.230
Firm Age	0.2535	0.1637	0.121	0.3289	0.2060	0.110
ROA-1	0.0586	0.1543	0.704	0.1347	0.1743	0.440
VCIPO	-0.2190	0.3820	0.567	-0.2228	0.3152	0.480
VC Age	0.2692	0.1895	0.155	0.2364	0.1659	0.154
Litigation	0.5154	0.2829	0.068	0.4511	0.2506	0.072
Offering	-1.2309	0.5512	0.026	-1.5123	0.7005	0.031
Ernst&Young	-0.2662	0.4069	0.513	-0.3084	0.3269	0.346
KPMG	0.2643	0.3673	0.472	-0.0288	0.3825	0.940
PricewaterhouseCoopers	0.4589	0.2843	0.106	0.4531	0.2699	0.093
U-general	0.1935	0.2389	0.418	0.2012	0.2581	0.436
U-working capital	-0.1477	0.5751	0.797	0.3790	0.5226	0.468

Exiting	-1.5000	0.5738	0.009	-3.5223	1.1066	0.001
VCH0 x Exiting				26.3557	7.3287	0.000
VCRA0 x Exiting				-35.4557	6.7898	0.000
Sample Size	674			674		
Log likelihood	-155.53			-150.8		
Wald test of Independent Equations	$\chi 2=31.91$			$\chi 2=94.1438$		
Tests on Coefficients	VCH0 + VCH0 x Exiting = 0				$\chi 2=9.77$	
	VCRA0 + VCRA0 x Exiting = 0				$\chi 2=26.25$	

Table 17 Restatements Announced in T2 and Control Variables

The table reports results from seemingly unrelated bivariate probit model after including control variables on use of proceeds and auditors' characteristics. The first probit model is Pr (Restatement1=1) = (Exiting, other variables); the second probit model is Pr (Exiting=1) = (IC Ratio, other variables). The exit of venture capital is an endogenous variable and IC Ratio is used as an instrument. Arthur Andersen, Deloitte&Touche, KPMG, and PricewaterhouseCoopers are four dummy variables for the Big Five audit firms. Audit Report is a dummy variable, 1 if there is a qualified option; 0 otherwise. U-acquisition, U-general, and U-Debt Payment are three dummy variables for different purposes of intended use of proceeds. Other control variables on use of proceeds and auditors' characteristics are dropped off during the estimation. Definitions for variables are in Appendix A. Results for industry dummies and year dummies are not reported. All tests use White (1980) heteroskedasticity-consistent robust standard errors. P-values are based on two-tail tests.

Variables	(1)			(2)		
	B	S. E.	P-value	B	S. E.	P-value
Intercept	-6.4365	3.0160	0.033	-5.7934	3.0860	0.060
VCH0	0.1236	1.1105	0.911	0.2362	1.0868	0.828
VCN0	0.0162	0.1060	0.879	0.0148	0.1065	0.889
VCRA0	0.0754	0.3397	0.824	0.0222	0.4105	0.957
BH0	0.6634	0.9291	0.475	0.7785	1.0132	0.442
CEOH0	1.7402	0.7713	0.024	1.8370	0.8098	0.023
ΔCEOH	-4.6125	2.1726	0.034	-4.6331	2.2981	0.044
ΔBH	-2.4670	1.7623	0.162	-2.3154	1.7688	0.191
ROAP0	-0.5850	0.2997	0.051	-0.6663	0.3103	0.032
CROAP0	0.1484	0.2454	0.545	0.1818	0.2651	0.493
ASSET0	0.1018	0.1615	0.528	0.1109	0.1664	0.505
BEME	-0.0853	0.0837	0.308	-0.1129	0.1081	0.296
Sales Growth0	-0.0008	0.0007	0.251	-0.0007	0.0006	0.207
OCF0	0.0314	0.0631	0.618	0.0231	0.0527	0.662
LOCK	0.1032	0.3814	0.787	-0.0748	0.3927	0.849
Underpricing	0.1238	0.0679	0.068	0.1224	0.0635	0.054
Firm Age	0.4628	0.1785	0.010	0.4697	0.2017	0.020
ROA-1	-0.1756	0.2515	0.485	-0.1580	0.2366	0.504
VCIPO	0.0814	0.3623	0.822	0.1221	0.3924	0.756
VC Age	0.2447	0.1383	0.077	0.2423	0.1431	0.090
Litigation	-0.4493	0.2030	0.027	-0.3579	0.1930	0.064
Offering	-0.3959	0.2186	0.070	-0.3511	0.2708	0.195
Arthur Andersen	0.6441	0.3950	0.103	0.8605	0.4334	0.047
Deloitte&Touche	1.3194	0.4442	0.003	1.4133	0.5251	0.007

KPMG	0.3395	0.3481	0.329	0.5446	0.4227	0.198
PricewaterhouseCoopers	0.7167	0.3705	0.053	0.8486	0.4391	0.053
Audit Report	-6.3069	0.4806	0.000	-6.6025	0.4907	0.000
U-acquisition	1.4426	0.3541	0.000	1.4144	0.4055	0.000
U-general	0.5918	0.2906	0.042	0.5924	0.2832	0.036
U-Debt Payment	0.2961	0.3833	0.440	0.2904	0.4464	0.515
Exiting	2.8606	0.3275	0.000	3.0620	0.5632	0.000
VCH0 x Exiting				-1.3642	3.7658	0.717
VCRA0 x Exiting				0.1605	0.8489	0.850
Sample Size	674			674		
Log likelihood	-185.38			-188.8		
Wald test of Independent Equations	$\chi2=190.883$			$\chi2=621.052$		

Table 18 Litigation Risk and the Exit of Venture Capital

The table reports results from a probit model for securities class action. The dependent variable in Column (1) is a dummy variable, 1 if there is any securities class action against the IPO firm from the IPO date through two years after the first record date following the lockup expiration. The dependent variable in Column (2) is a dummy variable, 1 if there is any securities class action against the IPO firm from the first record date following the lockup expiration through two years thereafter. Definitions for variables are in Appendix A. Results for industry dummies and year dummies are not reported. All tests use White (1980) heteroskedasticity-consistent robust standard errors. P-values are based on two-tail tests.

Variables	All Class Actions			Class Actions Post Early Exit		
	B	S. E.	P-value	B	S. E.	P-value
Intercept	-2.8032	2.4275	0.248	-5.9096	2.3912	0.013
VCH0	-0.4521	0.6479	0.485	0.1993	0.7087	0.779
VCN0	-0.0551	0.0669	0.410	-0.0172	0.0694	0.804
VCRA0	0.2265	0.2508	0.367	0.1026	0.2627	0.696
BH0	0.1267	0.6148	0.837	0.1070	0.6948	0.878
CEOH0	0.6704	0.7556	0.375	0.9802	0.8336	0.240
ΔCEOH	2.5710	1.6728	0.124	0.4314	1.7557	0.806
ΔBH	1.7734	0.8325	0.033	0.7833	0.9102	0.389
ROAP0	-0.2347	0.2088	0.261	-0.1509	0.2295	0.511
CROAP0	0.2061	0.1708	0.228	0.1452	0.1893	0.443
ASSET0	-0.1424	0.0914	0.119	-0.0051	0.0980	0.958
BEME	-0.0902	0.0360	0.012	-0.0697	0.0378	0.066
Sales Growth0	-0.0095	0.0104	0.360	-0.0054	0.0086	0.534
OCF0	0.1309	0.0716	0.068	0.0909	0.0669	0.174
LOCK	0.3579	0.4314	0.407	0.8091	0.4081	0.047
Underpricing	0.0027	0.0627	0.966	-0.0941	0.1017	0.355
Firm Age	0.1670	0.1186	0.159	0.1100	0.1340	0.411
ROA-1	-0.0840	0.1532	0.584	-0.1144	0.1572	0.467
VCIPO	-0.4081	0.3234	0.207	-0.3667	0.3461	0.289
VC Age	-0.0879	0.0859	0.306	-0.1276	0.0872	0.143
Litigation	-0.3864	0.1775	0.030	-0.1918	0.1811	0.290
Offering	0.0140	0.1799	0.938	0.0444	0.1909	0.816
Exiting	-0.7141	0.3408	0.037	-0.4161	0.4148	0.316
Sample Size	674			674		
Loglikelihood	-161.24			-124.01		
Pseudo R	10.75%			7.92%		

Table 19 Earnings Management and Number of New IPOs

The table reports results from Poisson model on the number of new IPOs backed by same lead VCs. The independent variable is discretionary accruals in the IPO year. Definitions for variables are in Appendix A. Results for industry dummies and year dummies are not reported. All tests use White (1980) heteroskedasticity-consistent robust standard errors. P-values are based on two-tail tests.

Panel A Number of New IPOs during the Lockup Period

	Model 1			Model 2		
	B	S. E.	P	B	S. E.	P
Constant	-2.793	0.407	0.000	-2.8334	0.4164	0.000
MDA0				-0.0993	0.0489	0.042
Length	0.030	0.071	0.675	0.0436	0.0725	0.547
Fund	0.176	0.035	0.000	0.1729	0.0350	0.000
VC Age	0.386	0.071	0.000	0.3873	0.0722	0.000
Log likelihood	-1054.1			-1045.4		
Sample Size	679			675		
Pseudo R^2	15.38%			15.66%		

Panel B Number of New IPOs within the First Year after the Lockup Expiration

	Model 1			Model 2		
	B	S. E.	P	B	S. E.	P
Constant	-2.2533	0.3731	0.000	-2.3085	0.3810	0.000
MDA0				-0.0908	0.0439	0.038
Length	0.0024	0.0666	0.972	0.0191	0.0665	0.774
Fund	0.1898	0.0293	0.000	0.1866	0.0295	0.000
VC Age	0.3766	0.0699	0.000	0.3804	0.0724	0.000
Log likelihood	-1100.3			-1090.9		
Sample Size	679			675		
Pseudo R^2	21.02%			21.22%		

Panel C Number of New IPOs within the Second Year after the Lockup Expiration

	Model 1			Model 2		
	B	S. E.	P	B	S. E.	P
Constant	-2.191	0.530	0.000	-2.2856	0.5462	0.000
MDA0				-0.1221	0.0597	0.041
Length	-0.022	0.081	0.790	0.0019	0.0784	0.981
Fund	0.283	0.040	0.000	0.2856	0.0412	0.000
VC Age	0.459	0.102	0.000	0.4563	0.1057	0.000
Log likelihood	-915.73			-906.03		
Sample Size	679			675		
Pseudo R^2	32.54%			33.00%		

Table 20 Descriptive Statistics on Underpricing

The table reports descriptive statistics on new IPOs backed by same lead VCs for Year 1 and Year 2. Year 1 is the first year after the lockup expiration; Year 2 is the second year after the lockup expiration. Underwriter Rank is lead underwriter's ranking on a 10-point scale. If there is more than one lead underwriter, I use the average ranking of lead underwriters. NASDQ is 1 if the IPO is listed on NASDAQ. Arthur Andersen, Deloitte&Touche, Ernst&Young, KPMG, and PricewaterhouseCoopers are five dummy variables for the Big Five audit firms. Offering price is reciprocal of offer price during the IPO. Retained stocks are number of common shares by pre-IPO shareholders, deflated by outstanding common shares after the IPO. Assets/proceeds is total assets preceding the IPO deflated by gross proceeds from the IPO.

Panel A Number of Observations

Category	Year 1	Year 2
Unique IPO	370	314
Unique firm	348	267
Unique Lead VC	149	123
VC-firm Observation	348	267
VC-firm-IPO Observation	1018	794
Largest VC	540	394
Non Largest VC	478	400

Panel B Distribution of Number of IPOs backed by each VC-firm

Year 1				Year 2			
Number	Frequency	Number	Frequency	Number	Frequency	Number	Frequency
1	123	8	8	1	122	9	9
2	76	9	2	2	48	10	2
3	53	10	1	3	33	11	4
4	29	11	5	4	16	12	5
5	24	12	3	5	12	13	4
6	15	13	2	6	6	14	1
7	7	**TOTAL**	**1018**	7	1	15	1
				8	3	**TOTAL**	**794**

Panel C Descriptive statistics on Unique IPOs

Variables	Mean	Std. Dev.	Median	Mean	Std. Dev.	Median
		Year 1			Year 2	
Underpricing	0.960	3.634	0.381	1.021	3.882	0.469
Firm Age	74.686	60.136	56	77.975	71.910	55
Lockup	177.141	26.228	180	176.118	21.803	180
Underwriter Rank	8.452	1.013	9.1	8.537	0.992	9.1
NASDQ	0.973	0.162		0.959	0.199	
Arthur Andersen	0.195	0.396		0.162	0.369	
Deloitte&Touche	0.086	0.281		0.099	0.298	
Ernst&Young	0.289	0.453		0.299	0.458	
KPMG	0.130	0.336		0.131	0.337	
PricewaterhouseCoopers	0.265	0.441		0.290	0.454	
Offering Price	0.080	0.030	0.071	0.076	0.027	0.071
Retained Stocks	0.797	0.410	0.832	0.822	0.091	0.831
Assets/proceeds	0.956	1.118	0.570	1.045	1.182	0.582
Number of Unique IPOs		370			314	

Table 21 Underpricing and Discretionary Accruals

The table reports results for OLS regressions on underpricing in Year 1 and Year 2. The independent variable is discretionary accruals in the IPO year. Underwriter Rank is lead underwriter's ranking on a 10-point scale. If there is more than one lead underwriter, I use the average ranking of lead underwriters. NASDQ is 1 if the IPO is listed on NASDAQ. Arthur Andersen, Deloitte&Touche, Ernest&Young, KPMG, and PricewaterhouseCoopers are five dummy variables for the Big Five audit firms. Offering price is reciprocal of offer price during the IPO. Retained stocks are number of common shares by pre-IPO shareholders, deflated by outstanding common shares after the IPO. Assets/proceeds is total assets preceding the IPO deflated by gross proceeds from the IPO. Offering size is natural logarithm transformation of gross proceeds from the IPO. Definitions for other variables are in Appendix A. Fixed effects of each lead VC are included in the regressions but not reported. Results for industry dummies and year dummies are not reported. All tests use White (1980) heteroskedasticity-consistent robust standard errors. P-values are based on two-tail tests.

Variables	Year 1			Year 2		
	B	S. E.	P	B	S. E.	P
Intercept	-0.9403	8.0708	0.907	0.9567	3.2244	0.767
MDA0	0.2938	0.1626	0.071	0.0370	0.0326	0.257
Firm Age	-1.5894	0.5554	0.004	-0.3388	0.2753	0.219
Lockup	2.6504	1.2298	0.031	-0.0099	0.3325	0.976
Underwriter Rank	0.0968	0.1339	0.470	0.1366	0.1289	0.290
NASDQ	0.3304	0.4318	0.444	0.0262	0.2740	0.924
Arthur Andersen	-2.5073	0.8761	0.004	-1.0349	0.4486	0.021
Deloitte&Touche	-2.3107	0.8109	0.004	-1.4127	0.4707	0.003
Ernst&Young	-0.8813	0.6499	0.175	-0.6767	0.4007	0.092
KPMG	-4.3352	1.4124	0.002	-1.4602	0.6430	0.023
PricewaterhouseCoopers	-3.1555	1.0508	0.003	-1.4917	0.4166	0.000
Offering Price	-55.2217	14.4287	0.000	-19.7822	6.3257	0.002
Retained Stocks	-0.7080	0.2224	0.002	0.5028	1.1597	0.665
Assets/proceeds	-0.3722	0.1637	0.023	-0.1489	0.1067	0.164
Offering Size	-0.3938	0.2639	0.136	0.4398	0.2895	0.129
Sample Size	1008			789		
Adjusted R-square	5.03%			2.87%		

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