DOES A VENTURE CAPITALIST INFLUENCE AUDITOR GOING CONCERN DECISIONS?

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ABSTRACT

A growing number of firms that go public (e.g., IPO) are financially distressed[1] often for several years of their initial existence, raising concerns about their ability to remain going concerns. Yet many IPOs do not receive going concern opinions (GCO) from their auditors who are charged with providing an assessment of their clients' going concern status.

A key feature of the IPOs is that a significant proportion of them are financed by venture capitalists (VCs). Unlike conventional sources of financing, such as banks, a VC offers financial as well as non-financial support to the new firm such as mentorship, strategic guidance and network access. The VC also provides monitoring as a member of the board of directors.

An auditor's assessment of its client's going concern situation includes an audit of its financial statements and, if the client is financially distressed and in danger of ceasing to be a going concern, a review of factors that may mitigate the need for a GCO.

I hypothesize that going concern opinions are assessed less often to financially distressed IPOs because the VC's presence is viewed by the auditor as a factor that mitigates the need for a GCO. Thus, I explore whether the presence of a VC – in contrast to the presence of a banker – tempers the likelihood of issuance of a GCO to a financially distressed firm. I also explore whether varying degrees of involvement by a VC serve to mitigate an auditor's need to issue a GCO since VCs are not all equally effective in their roles.

[1] A financially distressed firm is defined as a public firm that has experienced a net operating loss, or negative cash flow in any given year from 2011 to 2015 – the study period.

I find support for hypothesis (H1) that going concern opinions are assessed less often to financially distressed IPOs with venture capital backing than to those with other forms of financial backing (e.g., banker financing) and no support for hypothesis (H2) that the negative association between the presence of a VC and the issuance of a going concern opinion to a financially distressed IPO is stronger the greater the involvement of a VC.

This study will inform industry regulators, concerned with transparency and the adequacy of financial disclosures, determine whether financial disclosure requirements should be enhanced to account for the presence of a VC[2]. This study will also assist institutional and individual investors understand the risk that a VC-backed IPO may fail even when a GCO was not issued by an auditor.

[2] Currently, the members of the board of directors of a public firm are identified on the financial statements. However, a board member's previously affiliation with a firm remains unclear.

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CHAPTER 1

INTRODUCTION

A growing number of firms that go public (i.e., initial public offering, or IPO) are financially distressed[3] often for several years of their initial existence, raising concerns about their ability to remain going concerns. Yet many IPOs do not receive going concern opinions (GCOs) from their auditors. A key feature of the IPOs is that a significant proportion of them are financed by venture capitalists (VCs). For example, 54%[4] of IPOs in 2011 were financed by a venture capitalist (Ritter 2016). Recently, the share of IPOs that are financed by a venture capitalist has increased to 60%[5] as of 2015 (Ritter 2016). The emergence of the VC as a predominant[6] financier of firms that remain unprofitable has implications for the auditing community, since a frequently expressed concern is that auditors often do not issue GCOs to financially distressed firms (Chasan 2012 and Newquist 2012). One explanation for this low rate of GCO issuance is that an auditor views the presence of a VC as a factor that mitigates the need for a GCO. Yet, to my knowledge, the effect of the presence of a VC on an auditor's going concern determination remains unexplored.

[3] Ibid.
[4] From 1980 to 2015, only the internet (also, dot-com) bubble years of 1999 and 2000 experienced a higher percentage of IPOs financed by a venture capitalist, 58% and 64% respectively (Ritter 2016).
[5] Ibid.
[6] More than one-third of all U.S. IPOs have been VC-backed over the past twenty years (Morsfield and Tan 2006 and Venture Economics 1988). Moreover, VC financing is nearly 100 times larger in 2001 than it was in 1977, while banking financing has remained the same (or has slightly lessen) since 1977 (Ueda 2004). Gompers and Lerner (1999) find that the dramatic increase in VC financing results from an amendment to the Employee Retirement Income Security Act in 1979, which allows pension funds to invest in VC partnerships. Lerner (1994) also references the importance of this amendment on the increase in VC partnerships in his examination of a VC's ability to time an IPO (p. 295). Baker and Gompers (1999) show that VC-backing is higher for firms founded after 1979, because of this amendment, increasing from 31% to 41% (p. 10).

An auditor's assessment of its client's going concern situation includes an audit of its financial statements and, if the client is financially distressed and in danger of ceasing to be a going concern, a review of factors that may mitigate the need for a GCO. I argue that the presence of a VC as a financier of an entity pre-IPO and the involvement of the VC in the post-IPO entity sends a signal to the auditor that serves as a mitigating factor for the GCO decision. Unlike conventional sources of financing, such as banks, a VC offers financial as well as non-financial support to the new firm such as mentorship, strategic guidance and network access. In addition, and perhaps more important from an auditor's perspective, the VC provides monitoring as a member of the board of directors after the firm goes public (Barry, Muscarella, Peavy and Vetsuypens 1990). Therefore, in this study, I explore whether the presence and involvement of a VC – in contrast to the presence of a banker – may be viewed as a mitigating factor by auditors, thus tempering the likelihood of issuance of a GCO. For this paper, the terms traditional banker and non-VC backed firm, and VC and VC backed firm are used synonymously.

I expect this study to contribute to both the auditing literature and the venture capital literature. The first contribution is to the discussion on mitigating factors by advancing the influence of a VC on the GCO decision-making process of an auditor as a mitigating factor. This study examines whether a firm's VC creates an expectation of a mitigating factor that informs an auditor's decision not to issue a GCO to a financially distressed IPO. The second contribution is introducing the VC-client relationship and its influence on the GCO decisions of auditors.

This study will inform industry regulators, concerned with transparency and the adequacy of financial disclosures, determine whether financial disclosure requirements

should be enhanced to account for the presence of a VC[7]. This study will also assist institutional and individual investors understand the information asymmetry that may result when GCO decisions are influenced by the presence of a VC.

The going concern decision

A firm that issues stock to the public is required to undergo an annual financial audit to be conducted by a registered public accounting firm (henceforth, auditor). The purpose of an audit is to provide financial statement users with assurance that management has presented a fair view of the firm's financial position, results of operations and cash flows, in accordance with generally accepted accounting principles. This assurance comes in the form of an opinion expressed by an auditor. A GCO is issued when the auditor's evaluation leads to the conclusion that "there is substantial doubt about the entity's ability to continue as a going concern for a reasonable period of time, not to exceed one year beyond the date of the financial statements being audited (hereinafter referred to as *a reasonable period of time*)" ([AS 2451.02] PCAOB 2015). Professional standards require that an auditor's decision to issue a GCO be based on its evaluation of financial factors ([AS 1001] PCAOB 2015) and mitigating factors ([AS 2451] PCAOB 2015).

[7] Currently, the members of the board of directors of a public firm are identified on the financial statements. However, a board member's affiliation with a firm remains unclear.

Financial factors

The audit opinion states whether the client's financial statements are presented fairly, in all material respects, in accordance with applicable accounting standards. Professional standards require an auditor to obtain reasonable assurance about whether the financial statements are free of material misstatements before an opinion is expressed ([AS 1001] PCAOB 2015).

To obtain reasonable assurance, an auditor plans and conducts an audit in accordance with applicable auditing standards and obtains sufficient appropriate evidence to reduce audit risk to an acceptably low level. In so doing, an auditor can draw reasonable conclusions on which to base an audit opinion. This process requires an auditor to exercise professional judgment – the application of an auditor's skill and experience to form a view based upon the evidence gathered on the financial statements and maintain a level of professional skepticism throughout the audit.

An auditor ensures that controls are in place to safeguard assets and to provide reasonable assurance that a firm's transactions are properly reported and that their financial statements are complete and accurate by testing a firm's internal control mechanism. These tests may involve an auditor tracing the amounts and disclosures included in the financial statements to the company's supporting books and records and obtaining external third party documentation. These procedures include testing management's material representations and the assumptions they used in preparing their financial statements. Additionally, an auditor is required to perform further procedures to gather evidence from substantive procedures that may include a combination of the following: (1) physically observing, or inspecting assets (e.g., inventory, or property,

plant and equipment); (2) examining records to support balances and transactions; (3) obtaining confirmations from third parties the firm does business with (e.g., suppliers, customers and banks); (4) checking elements of the financial statements by comparison to relevant external information and investigating any differences (e.g., using an external market index to check pricing and valuations); and (5) checking calculations.

During the examination of the financial statements of a firm, an auditor is required to determine whether certain conditions, or events may bring into the question a firm's ability to continue as a going concern. Professional standards (e.g., *Consideration of an entity's ability to continue as a going concern* [AS 2451.06]) provide the following examples of such conditions, or events (PCAOB 2015).

- Negative trends – for example, recurring operating losses, working capital deficiencies, negative cash flows from operating activities, adverse key financial ratios.

- Other indications of possible financial difficulties – for example, default on loan, or similar agreements, arrearages in dividends, denial of usual trade credit from suppliers, restructuring of debt, noncompliance with statutory capital requirements, need to seek new sources, or methods of financing, or to dispose of substantial assets.

- Internal matters – for example, work stoppages, or other labor difficulties, substantial dependence on the success of a particular project, uneconomic long-term commitments, need to significantly revise operations.

- External matters that have occurred – for example, legal proceedings, legislation, or similar matters that might jeopardize an entity's ability to operate; loss of a key franchise, license, or patent; loss of a principal customer, or supplier; uninsured, or underinsured catastrophe such as a drought, earthquake, or flood.

Mitigating factors

Professional standards require auditors to evaluate mitigating factors (e.g., management's plans) after an audit of a firm's financial statements (and note disclosures) create substantial doubt about the firm's financial ability to pay its upcoming liabilities – bringing into question the firm's ability to remain a going concern. Mitigating factors may include management's plans for addressing the adverse effects of the conditions, or events presented earlier. For example, management may plan to increase equity, borrow money, or restructure debt and reduce spending, or dispose of assets ([AS 2451] PCAOB 2015). These factors may alleviate substantial doubt. However, they are not intended to be exhaustive (Behn, Kaplan and Krumwiede 2001). Ultimately, what constitutes a mitigating factor is left to the auditor's professional judgment. Therefore, an auditor may view other conditions, or events not reflected in the professional standards as mitigating factors.

When evaluating mitigating factors, such as management's plans, an auditor should have knowledge of the firm, the firm's business and the firm's management. An auditor should consider the elements of management's plans that are key to overcoming the adverse effects of the conditions, or events. An auditor should also consider the adequacy of support regarding management's plans and assess the likelihood that such plans can be effectively implemented ([AS 2451] PCAOB 2015). For example, if management plans to obtain additional financing, the auditor should consider the implications of such financing for a firm and the possibility that such financing will occur.

CHAPTER 2

REVIEW OF LITERATURE ON THE GCO DECISION

Research has investigated financial factors and mitigating factors, but has also identified a third factor – relationships between the various players. These relationships emerge from prior business interactions. Understanding relationships is important because research suggests that the GCO decisions of auditors are influenced by them. In general, these relationships have been shown to have adverse effects on the GCO decision making of an auditor because they lead to the impairment of auditor independence and therefore fewer GCOs. Table 1 presents an overview of these relationships.

This paper focuses on the relationship between a VC and a client. I argue that this is a different kind of relationship because it aligns the interests of management with the interests of shareholders. Consequently, management cannot easily extract the private benefits of control that leads to the loss of auditor independence discussed earlier.

Financial factors

Prior research on financial factors have been primarily limited to the review of measures of financial distressed contained in the financial statements (including note disclosures) of a firm.

These studies generally find that firms that suffer from operating net losses, or negative operating cash flows are more likely to receive a GCO. Other studies have used financial ratios as a proxy for financial distress to determine the likelihood that a firm will receive

Table 1: Overview of "bad behavior" factors related to relationships

Study (Method)	Sample	Dependent Variable(s)	Independent Variables	Key Finding(s)
Auditor-client relationships				
Lennox (2005) (Archival)	28,292 SEC registrants from 1995 to 1998.	Relationship between affiliated executives and the issuance of a GCO (dependent variable).	Affiliated executives, turnover and departure rates.	(1) Companies with affiliated executives received more clean opinions (e.g., less GCOs), (2) turnover is lower for affiliated than unaffiliated executives after the issuance of a clean report (e.g., no GCO) and (3) departure rates are higher for affiliated executives than unaffiliated executives following an unfavorable audit opinion (e.g., GCO).
Auditor-client audit committee relationships				
Carcello and Neal (2000) (Archival)	Reviewed 223 financially distressed public companies during 1994 that maintained an audit committee.	Relationship between audit committee composition and issuance of a GCO (dependent variable).	Affiliated audit committee members, debt default, prior year audit opinion, company size, financial distress and development stage of firm.	Companies with less affiliated directors received more GCOs than companies with more affiliated directors.
Carcello and Neal (2003) (Archival)	Reviewed 374 financially distressed and financially viable public companies from 1998 to 1999 that maintained an audit committee.	Relationship between audit committee characteristics and the likelihood the client dismisses its auditor after the issuance of a GCO (dependent variable).	Affiliated directors, GCO, governance expertise, tenure and financial expertise.	Companies that dismissed their auditors after the issuance of a GCO have more affiliated directors, directors with less governance expertise and directors with more stock ownership than companies that retained their auditors.

a qualified opinion (e.g., a GCO). Recent studies use other financial information, for example audit fees, to examine the economic dependence of auditors on GCO determinations.

Dopuch, Holthausan and Leftwich (1987) examined the probability of a firm receiving a qualified opinion for a contingency (e.g., a lawsuit) using a probit model and financial statement variables and stock market data. They argue that an auditor is more likely to issue a qualified opinion to a firm that has a higher probability of a large decline in stock price resulting from a higher variability in the firm's returns. They find that the financial variables (e.g., operating loss) and market data (e.g., change in residual standard deviation of stock returns) for firms more likely to receive a GCO have higher predictive value. Conversely, the financial variables and market data for firms more likely to receive litigation qualifications have lower predictive value. The study introduces other measures of a firm's financial condition (e.g., stock price of firm) that are associated with the issuance of a GCO. Moreover, Dopuch et al. (1987, 437) suggest that an auditor may use "market return measures to *infer* [emphasis added] information incorporated in market prices".

Mutchler and Williams (1990) examined the association between audit technologies and audit judgments using financial and market variables. They argue that firms using audit technology can accept riskier clients (e.g., clients with a higher likelihood of receiving a GCO) than firms that do use audit technology, since audit decisions should be more consistent in firm's using audit technology. Mutchler and Williams (1990) find that firms using audit technology have smaller and riskier clients based on GCO issuance. Firms using audit technology have clients with a higher

variability in the market variables (e.g., returns variance of a client's stock). Moreover, and counterintuitively, the researchers find that firms using audit technology experience more errors, specifically type II errors, than firms that do not use audit technology.

Bell and Tabor (1991) expand Dopuch et al.'s (1987) work by developing a predictive model of audit opinion qualifications with broader measures of financial factors. Using the ratio-level, rate-of-change and industry-standardized forms of these financial factors, they find, consistent with Dopuch et al. (1987), that their model predicts a significantly higher average probability of qualification for the more serious multiple uncertainty qualification, including going concern qualifications. However, unlike Dopuch et al. (1987), Bell and Tabor (1991) find that a change in the variance of a firm's stock price and the sign of the current year's net income did not provide significant incremental explanatory power.

DeFond, Raghunandan and Subramanyam (2002) reviewed 1,158 distressed firms with proxy statements that included audit fee disclosures from February 5, 2001 to October 31, 2001. The propensity for auditors to issue a going concern audit report was used as a proxy for auditor independence in contrast to studies that use earnings management (e.g., discretionary accruals and managers' propensity to meet earnings targets) as a proxy for auditor independence.

DeFond et al. (2002, 1254) hypothesized that (H1) that non-audit fees are inversely related to auditors' propensity to issue a going concern opinion and that (H2) total fees are inversely related to auditors' propensity to issue going opinions. Using logistic regression models to test whether non-audit fees impairs audit independence, DeFond et al. (2002) find no evidence to support a significant association between an

auditor's propensity to issue a going concern opinion and any of the fee measures (e.g., audit service fees, non-audit service fees and total services fees) and find no evidence that non-audit service fees adversely effects the auditors' going concern assessment process. They find no support for regulators' concerns that non-audit services impair auditor independence.

Their findings reflect the positive influence of market-based institutional incentives (e.g., loss of reputation and litigations cost) on auditor independence. In other words, market-based incentives outweigh the economic dependency created by higher fees suggested by regulators. Consequently, DeFond et al. (2002) suggests that the market environment is more effective at ensuring that auditors remain independent than the regulatory environment, bringing into question the regulation that bans auditors from performing most non-audit services. Geiger and Raghunandan (2002), however, suggest that shorter auditor tenures, which result in lower going concern determinations, create an economic dependency from higher fees that may outweigh the loss of reputation, or litigation costs.

The research demonstrates the influence financial information other than contained on the financial statements has on GCO decisions. Recent research, however, has demonstrated that the issuance of a GCO is influenced by other factors than financial factors or the financial information contained on the financial statements. A recent stream of literature has found, using publicly available information, that the issuance of a GCO is related (after controlling for items on a client's financial statements) to factors such as

plans to issue equity, borrow additional funds, or restructure debt, as well as, to strategic turnaround plans, for example forging cooperative agreements with other firms (Behn et al. 2001, Abbott, Parker and Peters 2003, Bruynseels, Knechel and Willekens 2011 and Bruynseels and Willekens 2012).

Mitigating factors

Mitigating factors have been traditionally limited to the review of factors other than that contained in the financial statements to evaluate management's plans (e.g., issuing equity, borrowing money, or debt structuring). For example, to examine whether GCO decisions are influenced by management's plans, Behn et al. (2001) analyzed a sample of 148 publicly traded, manufacturing companies that received a GCO from 1992 to 1995. Using publicly available voluntary disclosures, they find that management's plans to borrow additional funds from existing credit lines and issue equity have a significant negative association with the issuance of GCOs. Abbott et al. (2003) focus on management's plans to restructure debt. They analyze a sample of 124 financially stressed firms declaring bankruptcy between 1991 and 1997. The sample represents firms from various industries. In this study, Abbott et al. (2003) argue that private information is used since debtor-in-possession (DIP) financing is not made public until after the firm files for bankruptcy. Therefore, the auditor may have access to private information regarding the probability the client will obtain this type of financing[8]. Abbott et al. (2003) find that auditors are less likely to issue a GCO when they perceive that the probability of a firm receiving DIP financing is likely.

[8] Mutchler (1986) and Lennox (1999) also argue that auditors are expected to have access to private information regarding management's plans. Accordingly, it's expected that such information influences their GCO decisions.

More recently, Bruynseels et al. (2011) investigate whether auditor differentiation through industry specialization, or audit methodology (e.g., focus on business risk) influence an auditor's judgment regarding management's plans to mitigate adverse conditions or events. They examine a sample of 148 U.S. companies from manufacturing industries that went bankrupt from 1999 to 2002. They find evidence indicating that specialized auditors are more likely to issue a GCO to a firm (that subsequently goes bankrupt within a 12-month period) when management plans to use strategic initiatives to mitigate adverse conditions, or events than non-specialized auditors. This suggests that industry specialist auditors are more skilled than non-specialists at assessing mitigating factors. Bruynseels and Willekens (2012) have a similar finding. Bruynseels et al. (2011) also find that audit firms using a business risk audit methodology are less likely to issue a GCO to firms that have undertaken operating initiatives (e.g., reducing costs). Additionally, they find that firms with a management plan to raise cash in the short-term are less likely to receive a GCO.

In contrast to the above studies which focus on managements' financial and operating plans, Mutchler, Hopwood and McKeown (1997) document that nonfinancial factors (e.g., extreme negative events published in the Wall Street Journal) influence an auditor's GCO decision. To conduct their study, they examined 208 financially stressed public manufacturing companies entering bankruptcy. Mutchler et al. (1997) hypothesized (H1) that contrary information and mitigating factors will affect the auditors' going concern determinations. Using a logistic regression model to test the influence of contrary information and mitigating factors on auditor going concern decisions on bankrupt companies, they find evidence to partially support the influence of

contrary information and mitigating factors on auditor going concern decisions. Contrary information in the form of extreme negative news before the audit report date is significant at the 1% level ($p < .01$).

This study suggests, however, that factors other than the presence of extreme negative news may affect the GCO decisions of auditors. For example, they find that larger clients are less likely to receive a GCO even after controlling for the presence of contrary and mitigating factor information. One explanation is that an auditor has greater confidence or an expectation that a larger firm is more likely to recover from an adverse condition or event than a smaller firm. Mutchler et al. (1997) suggest that auditors consider factors not included in management's plans in their going concern determinations. Moreover, professional standards ([AS 2451] PCAOB 2015) suggest conditions and events analogous to the contrary information identified by Mutchler et al. (1997). Given the mandate of professional standards, an auditor may consult and scrutinize nonfinancial factors in additional to financial factors to determine whether to issue a GCO to a client because what ultimately constitutes a mitigating factor is left to the auditor's professional judgment. Therefore, an auditor may view other conditions or events not reflected in management's plans to inform their GCO decision. My study looks to further this line of inquiry.

CHAPTER 3

HYPOHESIS DEVELOPMENT: THE VC AS A MITIGATING FACTOR

The research above indicates that other factors not included in management's plans play an important role in the GCO decision of a financially distressed firm. An auditor, however, must evaluate management's plans before a determination is made that these plans mitigate the need to issue a GCO. Professional standards require an auditor to consider the elements of management's plans that are key to overcoming the adverse effects of the conditions, or events, the adequacy of support regarding management's plans and the likelihood that such plans can be effectively implemented ([AS 2451] PCAOB 2015). An auditor requires an environment free of adverse management influence to effectively evaluate management's plans. If these conditions are met the need to issue a GCO may be mitigated, which may potentially explain why seemingly financially distressed firms do not receive GCOs.

All the research, however, is focused on established firms primarily in the manufacturing sector. The studies examine the influence of financial information (other than that contained in the financial statements) and non-financial information on the GCO decisions of auditors. The firms are either financially distressed, bankrupt, or near bankruptcy. I examine the new market entrants (e.g., IPOs) which are characterized by a high incidence of VC financing. These firms are financially distressed, but not bankrupt, and therefore are potentially strong candidates for a GCO. This study examines whether the presence and degree of involvement of a VC influences the GCO decisions of auditors.

The VC-client relationship

IPOs typically have two sources of financing: VCs and traditional bankers. However, unlike a banker, a VC plays a more extensive role in the operations of the firm. I posit that this extensive role of the VC can serve as a mitigating factor in an auditor's assessment of a firm's financial condition.

There are important differences between the VC-client relationship and a banker-client relationship. First, a distinctive characteristic of the VC-client relationship is the presence of the VC on the board of directors of a firm post-IPO (after the firm goes public). This presence provides the firm with significant resources, including access to the VC's business network. These resources, among other characteristics, are absent in the banker-client relationship.

Second, the relationship between a VC and a client typically commences prior to a client going public (pre-IPO) when the client[9] seeks financing from a VC and is nurtured over a ten-year period[10] through the establishment of a contract (Metrick and Yasuda 2011), which serves as the basis for managing the VC-client relationship (Schertler 2000).

A VC has various responsibilities under the contract and as the general partner of the investment fund providing capital to a client. These responsibilities typically include:

[9] Firms that receive financing from a VC typically are questionable candidates for a banker because they have few tangible assets that can be pledged as collateral (Ueda 2004) and suffer from operating losses for numerous years. These young firms also represent high risk and potentially high reward business models, which favor a financial expert, like a VC, that also has the technological expertise and specialized industry knowledge to evaluate these type of opportunities (Gompers 1995 and Ueda 2004).

[10] Ten (10) years is the usual life of a fund (Metrick and Yasuda 2011). A fund provides capital to a VC's client. See also Masulis and Nahata (2011) who suggest that VC's face pressures to liquidate investment through sale, or IPO exit in client towards the end of a fund's life, which suggests that the VC-client relationship does not extend beyond 10 years – a fund's life.

(1) providing capital infusion to client; (2) monitoring and providing strategic support and managerial guidance (e.g., build contacts to customers and suppliers) to client (Gompers 1995, Lerner 1995 and Sahlman 1990); (3) serving on the board of directors of a client (Kaplan and Stromberg 2003 and 2004 and Lerner 1994); and (4) recruiting key management personnel (Barry 1994; Gorman and Sahlman 1989; and Hellman and Puri 2002). A VC will also provide a client with access to their established network of resources (e.g., consultants, investment bankers, lawyers, accountants, etc.) and foster innovation (Hellman and Puri 2000 and Kortum and Lerner 2000).

Thus, while a relationship between a banker and client may also be nurtured over a long period time, a banker rarely participates in how a client is managed, staffed and financed. In this regard, the VC serves as an active investor, while the banker serves as a passive investor. This interaction between the VC and the client provides the VC with insights about the firm not availed by the banker and underscores the significant distinction between the VC-client relationship and the banker-client relationship.

Research on VCs

The relationship between a VC and client extends beyond the pre-IPO years of a firm, since a VC retains a seat on the board of directors and maintains an equity interest after a client goes public (post-IPO) (Barry et al. 1990). Several studies document the characteristics and impact of VCs. These studies suggest that the presence of a VC on the board of directors has shown to have considerable positive effects on the independence of auditors, financial management and innovative capacity of the firm. Specifically, VC-backed firms entering the market (e.g., IPOs) have shown to have better performing boards of directors that lead to higher firm performance post-IPO (Baker and Gompers

2003); do not suffer from stock underperformance post-IPO (Brav and Gompers 1997); have lower earnings management, adopt better takeover defenses and have more independent boards, audit committees and compensation committees (Hochberg 2012).

Corporate governance

An auditor's decision to issue a GCO to a financially distressed firm is likely to occur after the evaluation of management's plans and extensive negotiations with management (Asare 1990). Auditors obtained private information during these negotiations, which they use to form expectations about the success of management's plans (Mutchler 1986, Lennox 1999 and Abbott et al. 2003). The information shared during these negotiations regarding management's plans to overcome financial distress may mitigate an auditor's GCO decision. This information may be prospective in nature requiring an auditor to exercise professional judgment. However, this information is less likely to be shared if management has control of the board through affiliations with directors.

To incentivize management to achieve the objectives of a firm, a VC typically provides incentives in the form of compensation and/or an equity interest in the firm. VCs, however, are concerned with providing managerial incentives (e.g., equity ownership) that may lead to management's control of a firm fearing that such control may not achieve the objectives of the firm. On the one hand, higher incentives (e.g., equity ownership) are expected to align the interests of management and shareholders, incentivizing managers to work to increase shareholder wealth. On the other hand, the same incentives also increase management's control of the firm, which may result in adverse outcomes. Therefore, VCs manage the tradeoff between management incentives and control to ensure the objectives of the firm are met. For example, management

control can lead to a risk adverse posture that may forego the higher returns associated with investments in high risk projects that shareholders prefer. Less independent boards may also emerge when management has control because management advances individuals to the board that support their agenda and tenure. Moreover, these board affiliations have an adverse effect on auditor independence because directors of the audit committee are less likely to support an auditor during negotiations with management on whether to issue a GCO. For example, Baysinger and Butler (1985) and Carcello and Neal (2000) suggest that management-director affiliations influence the GCO decisions of auditors because directors may have a personal, professional, or economic dependence on the firm's management. Consequently, an auditor may not issue a GCO to a firm, albeit warranted.

VC involvement can help alleviate the potential negative effects of management control because the VC is motivated to achieve a high IPO price given their financial interest in the firm. If management has control of the firm such objective is less likely to be achieved, resulting in lower than expected investment returns for the VC and other shareholders. Moreover, VCs that do not achieve the investment results expected by shareholders are less likely to receive investment support for future endeavors. Therefore, a VC has an interest to manage management incentives (e.g., adopting higher compensation, bonuses, etc.) and lessen management control (e.g., adopting stock options instead of stock) to achieve a higher IPO price. A VC achieves this goal by maintaining control of the firm through an equity ownership interest, which reduces management control and incentives. Baker and Gompers' (1999) study underscores a VC's attempt to lessen management's control of a firm. The researchers show that management has a

lower ownership interest in VC-backed firms (19%) than in non-VC-backed firms (35%). This statistically significant difference does not vary significantly post-IPO (Baker and Gompers 1999). The higher equity interests of VCs suggest management does not have control and thus, cannot impair an auditor's independence during discussions with management on whether to issue a GCO. These conditions are conducive to the sharing of private information freely.

Given the positive influence the involvement of a VC has on mitigating management's control, an auditor may view the reduction of management's control of a firm as a favorable condition conducive to effectively evaluating management's plans by obtaining private information, which may mitigate the need to issue a GCO.

Financial management and financial reporting behavior

The presence of a VC also positively impacts a firm's financial management and financial reporting behavior. Firms with a VC director engage in less aggressive financial reporting. Wong Sun-Wai (2007) finds that firms with a higher quality VC[11] have lower abnormal accruals and lower financial restatements. For example, firms with a lower quality VC experience a restatement in any quarter post-IPO more than 50% of the time than their higher quality VC counterparts (Wong Sun-Wai 2007). Nonetheless, Wong Sun-Wai (2007) suggests that less aggressive financial management and financial reporting behavior of a firm is related to the presence of a VC – whether of higher quality, or of lower quality – when compared to firms without a VC director.

[11] Wong Sun-Wai (2007) uses the number of prior deals (deal experience) and the number of VCs participating in each deal (syndication intensity) as a proxy for VC quality. Pre-IPO, Wong Sun-Wai (2007) finds that a higher quality VC generates better returns for the limited partners of the fund, experience better rates of exits (whether through a sale, or IPO) and contribute to better governance characteristics of a firm.

Auditors may view less aggressive financial management and financial reporting behavior as indications that management's plans may be realistic, less subject to manipulation and more likely to be successfully implement by management. However, an auditor is less likely to rely on the information included in management's plans if the financial management and financial reporting behavior of a firm is aggressive. For example, firms that exhibit this aggressive behavior suffer from higher abnormal accruals and have a higher rate of subsequent financial restatements. These restatements result in higher firm costs and are viewed unfavorably in the marketplace. Higher costs require firms to raise more funding than initially anticipated and the unfavorable market view lessens the opportunity to raise capital through additional equity offerings. Consequently, an auditor will view these plans as risky and thus, less likely to view them as mitigating their GCO decision.

Therefore, the positive influence of the VC on the financial management and financial reporting behavior of a firm may serve to mitigate an auditor's need to issue a GCO because an auditor may assess management's plans to be less risky. Plans with lower risk are more likely to be implemented by management successfully, and thus, may mitigate an auditor's decision to issue a GCO.

Investment strategies and innovative capacity

Research further indicates that the expertise provided by a VC on the board of directors, even in mature firms that did not start with VC backing, contributes positively to the investment efficacy and innovative capacity of firms. Ceilyurt, Sevilir and Shivdasani (2010) find that investment strategies (e.g., joint ventures, strategic alliances and/or corporate venture capital) and the innovative capacity of a firm are positively

influenced by a VC. Using a sample of 1,839 unique firms and 16,911 unique directors from public U.S. firms from 1998 to 2006, they examine the role of VCs in mature[12] S&P composite 1500 firms. This composite is comprised of three leading indices: S&P 500 firms, S&P mid-cap 400 firms and S&P small-cap 600 firms. They document that 30.5% of the directors that have a VC background were not associated initially with the firm before it went public (pre-IPO). Ceilyurt et al. (2010, 3) also show that the selection of a VC is not the direct result of any previous interaction between a firm and a VC, since 34.8% of the firms with VC directors in their sample had never been VC-backed. Furthermore, nearly half of the firms in their sample have a VC director that is different than the one that provided VC financing pre-IPO. Yet Ceilyurt et al. (2010) find that a VC's expertise leads to acquisition of a higher number of patent producing firms and the establishment of strategic alliances, or joint ventures with other VC-backed firms and corporate venture capital (CVC) investments in start-ups.

These strategies are an important source of innovation for a mature firm (Chesbrough 2002 and Dushnitsky and Lenox 2005 and 2006) and mitigate the risk of a firm's investments in high risk and potentially high growth business models (Robinson 2008). The expertise of the VC director is essential because they understand how to structure a deal with a VC-backed firm. These types of deals are complicated because

[12] The median age of public firms in the sample is 17 years (Celikyurt et al. 2010, 3).

VC-backed firms typically adopt better takeover defenses than their non-VC-backed counterparts to protect them against unwelcomed offers to partner with another firm. These defenses make it difficult for firms without this expertise to access the innovative capacity of these VC-backed firms (Hochberg 2012)[13].

Auditors may view the innovative capacity of a firm influenced by a VC as a favorable condition conducive to assessing the likelihood that management's plans can be effectively implemented. Plans are more likely to mitigate an auditor's decision to issue a GCO if there are more likely to be implemented. However, an auditor is less likely to be convinced that management's plans can be implemented if the innovative capacity of a firm has diminished. For example, firms that exhibit limited innovative capacity suffer from lower firm performance. The lower innovative capacity of a firm concerns an auditor that is assessing whether a firm can implement management's plans to reverse its operating losses and move towards generating income. Consequently, an auditor will assess these plans as unrealizable and thus, unlikely to mitigate their GCO decision.

Therefore, the positive influence of the VC on the innovative capacity of a firm may serve to mitigate an auditor's need to issue a GCO because an auditor may assess management's plans as realizable. Plans that are realizable are more likely to mitigate an auditor's decision to issue a GCO than unrealizable plans.

In summary, a VC usually has an equity interest in the firm, usually holds a seat on the firm's board of directors and usually has intimate knowledge of the operations of

[13] Hochberg (2012) also finds that VC-backed firms have lower earnings management and have more independent boards, audit committees and compensation committees.

the firm. Traditionally, a banker rarely has an equity interest in the firm, rarely holds a seat on the firm's board of directors and rarely has intimate knowledge of the operations of a firm. The distinctions between the client relationship embraced by a VC and a banker are illustrated in Table 2.

Table 2: Distinctions between a venture capitalist and a banker

	Venture Capitalist	Banker
Has equity interest/investment in firm	Usually	Rarely
Holds a seat on the firm's board	Usually	Rarely
Has initimate knowledge of firm's operations	Usually	Rarely

Hypothesis

Based on the discussion above, I argue first that the presence of a VC may mitigate the likelihood that an auditor will issue a going concern to a financially distressed client and second that the extent of involvement of the VC may further strengthen this moderating effect.

The auditor may view the presence of a VC as a mitigating factor because of the following reasons: (1) A VC's effort to maintain control of a firm lessens management's control, and thus, management's ability to impair an auditor's independence – creating a condition conducive to sharing private information freely. (2) The presence of a VC promotes less aggressive financial management and reporting behavior, which may be viewed by an auditor as an indication that management's plans are realistic, less subject to manipulation and likely to be implemented successfully. (3) A VC's investment expertise can reverse a firm's operating losses and help move it towards generating income, which may be viewed by an auditor as an indication that management's plans to bolster the financial health of a firm are realizable.

Thus, I posit that a VC's presence enhances the auditor's confidence in management's plans and serves as a mitigating factor because of what the auditor knows of the positive influence of a VC on the corporate governance outcomes, financial management and reporting behavior and innovative capacity of a firm. Figure I illustrates this influence. My first hypothesis therefore is:

H1. Going concern opinions are assessed less often to financially distressed IPOs with venture capital backing than to those with other forms of financial backing (e.g., banker financing).

I consider next whether, in addition to its presence as a financier of a post-IPO firm, the VC's *degree of involvement* can further influence the auditor's going concern decision since VCs are not all equally effective in their roles. For example, Hsu (2004) finds that clients prefer to affiliate with a higher quality VC (e.g., a more reputable VC) when faced with several VC financing propositions[14]. He uses the number of deals transacted by a VC in a firm's industry as a proxy for VC quality, in this case VC reputation (Hsu 2004)[15]. Lerner (1994) finds that experienced VCs (e.g., VCs above the median age of the sample) are more seasoned at bringing highly-valued firms (i.e., firms near their market peaks) to the market at the high-end of a firm's valuation than their less experienced counterparts. Nonetheless, a study by Venture Economics (1988) suggests that a VC that provides pre-IPO financing – whether experienced, or less experienced – spends more time with a firm than a VC that has not provided pre-IPO financing. Still pre-IPO financing by and of itself may not account for the varying degrees of

[14] Baker and Gompers (2003) use the reputation rank of the underwriters used by the VC in prior IPOs as a proxy for VC reputation.
[15] Hsu (2004) uses several other variables to conduct robustness checks.

involvement by a VC. Nonetheless, a VC that has financed a firm prior to an IPO will spend more time understanding the inner workings of a firm and its product and/or service offering than a VC that has not provided pre-IPO financing to the firm. Therefore, I expect the VC that contributes more time to a firm pre-IPO is more knowledgeable because of the VC's early involvement with a firm than a VC that has not contributed any time to a firm pre-IPO.

I also expect that VCs that serve on the board of the IPO firm and within the board, on a board committee, will play a monitoring role in the new company. Barry et al. (1990), using monitoring as a proxy for VC quality (e.g., more monitoring leads to higher VC quality), find that a firm with a higher quality VC experiences less underpricing of their IPO than a firm with a lower quality VC. They use the pre-IPO equity position that a VC has in a firm as a proxy for VC quality and argue that the pre-IPO equity position of the VC leads to more monitoring of a firm (Barry et al. 1990)[16]. Similar benefits may accrue to a firm after it has gone public if it is financed by a VC holding a seat on the board of directors. As a board director, a VC is responsible, along with other directors, for the overall governance of a firm. In addition to a board seat, a director may also serve on a committee of the board. Committees (e.g., the audit committee, the compensation committee, etc.) are established to deliberate on matters referred to it by the board of directors. Each committee has its own powers and responsibilities. Detailed information and data pertinent to a committee's deliberations are shared with all committee members. A VC director that serves on a committee of the board has more oversight responsibility

[16] Barry et al. (1990) uses several other variables to conduct robustness checks.

than a VC director that only serves on the board. Therefore, I expect that a VC that serves on the board and within the board, on a board committee, monitors a firm more than a VC that serves on the board only.

Wong Sun-Wai (2007) uses the number of prior deals (i.e., deal experience) and the number of VCs participating in each deal (i.e., syndication intensity) as a proxy for VC quality. Wong Sun-Wai (2007)[17] finds that a higher quality VC generates better returns for the limited partners of the VC's fund and experience better rates of exits (whether through a sale, or IPO). It may be that VCs with a higher financial interest in a firm work harder to achieve higher returns and higher rates of exits. VCs that work harder are more involved with a firm. A financial interest aligns the VC's interests with the interests of investors. An exit provides an opportunity for a VC to sell his financial interest and benefit from the high returns achieved. A VC, however, may not sell his financial interest at exit if he believes higher returns may be achievable in the future. Therefore, I expect VCs with a higher level of financial interest in a firm post-IPO will have more firm involvement than VCs with a lower level of financial interest.

Based on the discussion above, I argue that more involvement (proxy for quality) by a VC in a firm may strengthen the mitigating effect that a VC would have on the likelihood that an auditor will issue a going concern to a financially distressed IPO. Further, the degree of involvement is greater (1) when VCs possess intimate knowledge

[17] Wong Sun-Wai (2007) also finds that a higher quality VC contributes to better governance characteristics of a firm.

of a firm's operations and product and/or service offering because they spent more time with a firm pre-IPO, (2) when VCs engage in more monitoring through their board and board committee involvement and (3) when VCs retain an equity interest in the firm post-IPO.

Thus, I posit that the level of a VC's involvement (i.e., VC-ness) will influence an auditor's GCO decision. Figure I illustrates this influence. My second hypothesis therefore is:

> *H2. The negative association between the presence of a VC and the issuance of a going concern opinion to a financially distressed IPO is stronger the greater the involvement of the VC (i.e., has higher "VC-ness").*

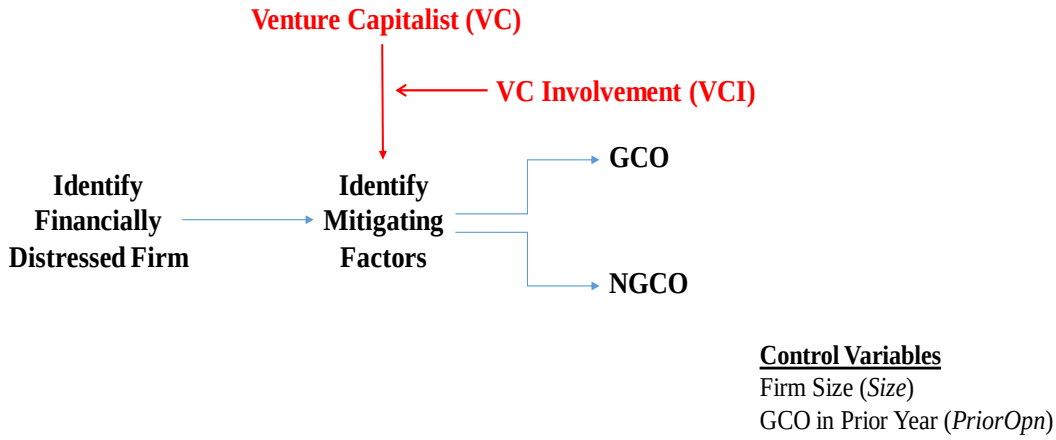

Figure I: Going Concern Opinion (GCO) Framework

CHAPTER 4

DATA AND RESEARCH DESIGN

Sample selection and data

Table 3 presents the details of my sample selection procedure. First, I identify the population of U.S.-based, publicly-held firms that went public from 2011 to 2016 using the Compustat database. For this analysis, a financially distressed firm is defined as a firm suffering from operating net losses or negative cash flows from operations in any given year of this study (Dopuch et al. 1987 and DeFond et al. 2002).

Second, I obtain the audit opinion for each firm from 2011 to 2016 by merging the population obtained from the Compustat database with the Audit Analytics database. This database provides information, derived from company filings with the Securities and Exchange Commission (SEC), that is pertinent to this study, for example auditor identity, the audit opinion, and the type of filing (e.g., 10-K filing). The analysis concludes in 2016 – the latest year audit opinions are available in the Audit Analytics database for all firms required to file an annual audit report (e.g., 10-K) with the SEC.

Third, I retain firms that suffer from financial operating losses or negative operating cash flows in any given year of this study. As discussed earlier, these characteristics define financially distressed firms. While other factors (e.g., lack of working capital) may lead the auditor to issue a GCO to a financially distressed firm, net operating losses or negative operating cash flows are cited in the Audit Analytics[18] database as frequent reasons an auditor has issued a GCO to a firm in the years observed

[18] See www.auditanalytics.com.

Table 3: Sample selection procedure for U.S.-based, public firms with an IPO from 2011 to 2016							
	2011	**2012**	**2013**	**2014**	**2015**	**2016**	**# of Firms**
Initial sample[a]	163	145	219	241	163	102	1,033
Non-distressed firms[b]	38	80	141	123	79	35	496
Firms with $0 assets	0	0	0	0	0	0	0
Missing observations	2	8	3	4	1	1	19
Final sample	**123**	**57**	**75**	**114**	**83**	**66**	**518**

[a] The sample frame is defined as U.S.-based, publicly-held firms with an IPO from 2011 and 2016 and 10-K filing.

[b] Non-distressed firms experience net operating income or positive operating cash flow.

in this study. Financially distressed firms are the focus of this study since auditors hardly ever issue a GCO to firms that are not financially distressed[19] (McKeown, Mutchler and Hopwood 1991). Therefore, I also obtain distressed factors for each firm in our population from Compustat to identify distressed firms. Auditors also use less discretion when a firm has previously filed for bankruptcy. Accordingly, firms that filed for bankruptcy prior to 2011 (the initial year of this study) are omitted from the sample.

Finally, I use the CB Insights venture capital database to determine whether a firm was financed by a venture capitalist prior to going public. This database provides information (e.g., venture capitalist, total funding, exit date (e.g., IPO date) and type of exit (e.g., IPO) that is pertinent to this study. In this study, a venture capitalist includes an institutional venture capitalist (i.e., a firm traditionally referred to as a VC), a corporate venture capitalist or a Super Angel investor, consistent with the definition used by CB Insights for a venture capitalist. An institutional venture capitalist is defined as an investor (i.e., a venture capital firm) who provides capital to early stage startup firms with the potential for above average returns; a corporate venture capitalist is the corporate

[19] Moreover, a level of distress may lead an auditor to issue a GCO. For example, Krishnan, Krishnan and Stephens (1996) find that auditors are more likely to issue a GCO when the probability of failure (using Zmijewski's [1984] financial distress prediction model) exceeds 28 percent. Nonetheless, our sample is not adjusted to account for this sensitivity.

investment arm of a firm (e.g., Google Ventures) who provides capital to early and late stage startup firms for strategic reasons; and a super angel investor is a wealthy individual who invests in very early stage startup firms with the potential for above average returns.

I focus on a specific segment, public firms with VC backing prior to going public. VC-backed firms are unique when compared to non-VC backed firms because they tend to have relatively long spells of losses, particularly in the initial years of their existence. The domain of VC-backed firms is also of interest to our study because the characteristics of VC-backed firms present an opportunity for a new relationship to emerge – the VC-client relationship.

The final sample includes 1,340 distressed U.S.-based firm-years (518 individual firms) that went public from 2011 to 2016 and filed an annual audit report (e.g., 10-K) with the SEC. Of the 2,681 firm-years in our initial sample, 1,287 firm-years were excluded since they represent financially non-distressed firms. Firm-years with missing data (n = 55) were also excluded. Since firms with no assets may also indicate distress, I excluded firm-years with no assets (n = 0). Accordingly, 1,341 firm-years are excluded from further analysis.

Since the same firm can appear multiple times in our data we perform sensitivity analyses (untabulated) to ensure that our conclusions are not sensitive to the inclusion of multiple observations per firm. The sample is evenly distributed across years, with 2013 contributing the largest proportion of observations of any single year (see Table 3).

Research design

To test my first hypothesis (H1) that going concern opinions are assessed less often to financially distressed IPOs with venture capital backing than to those with other forms of financial backing (e.g., banker financing), I will estimate the following multivariate logistic regression model of the going concern decision:

(1) $GCO = x_0 + x_1VC + x_2Size + x_3PriorOpn + \varepsilon$.

To test my second hypothesis (H2) that the negative association between the presence of a VC and the issuance of a going concern opinion to the financially distressed IPO is stronger the greater the involvement of the VC, I will estimate the following multivariate logistic regression model of the going concern decision:

(2) $GCO = x_0 + x_1VC + x_2(VC*VCI) + x_3Size + x_4PriorOpn + \varepsilon$.

This model contains a composite variable, the *venture capitalist's involvement (VCI)*, which is used to examine the relation between GCO issuance and several proxies for a venture capitalist's involvement in an IPO entity. *VCI* is comprised of the following variables: *PreIPO, BdDir, BdChair, BdCmte and Equity. VCI* is an independent indicator variable with a number from 0 to 5 (from not involved to highly involved) indicating the degree of involvement by a venture capitalist[20] as follows.

[20] While more than one venture capitalist is expected to have a financial interest in an IPO entity, the amount of the financial interest will vary. Accordingly, the venture capitalist with the largest financial interest will be examined. When more than one venture capitalist shares the largest financial interest, all venture capitalists with the largest financial interests will be examined.

VCI Score	Definition
0	Not involved
1	Slightly Involved
2	Moderately Involved
3	Involved
4	Very Involved
5	Highly Involved

PreIPO indicates the length of time (measured in years) a VC has contributed to an entity pre-IPO. The longer the VC has spent with a firm, the greater the opportunity to become more knowledgeable of a firm's product and/or service offering and operations. This knowledge may signal to auditors that management's plans are reliable. Therefore, a lengthier working relationship between a VC and a firm pre-IPO may serve to mitigate an auditor's decision to issue a GCO. *PreIPO* is an independent indicator variable equal to 1 indicating that the VC has been involved with a firm pre-IPO for half (50%)[21] or more of its life and 0 otherwise.

BdDir indicates whether a VC is a director of the board of a firm post-IPO. A VC as a board director will play a monitoring role in a new firm. This role may signal to auditors that management's plans are less risky given the less aggressive financial management and financial reporting behavior that results from monitoring suggested earlier in this paper. Accordingly, monitoring by a VC director may serve to mitigate an auditor's decision to issue a GCO. *BdDir* is an independent indicator variable with a 1 indicating a VC is a board director and a 0 otherwise.

BdChair indicates whether a VC is the chair of the board of a firm post-IPO. A VC as chair will play a monitoring role in a new firm. The board chair influences the direction and

[21] Barry et al. (1990, 460-461) observe that a VC is involved in a firm pre-IPO for about half (51.1%) the life of a firm, or an average of 35 months (median of 26 months).

priorities of the board. The chair establishes meeting agendas and recommends committee chairs for board approval. Given the influence of the board chair, this role may signal to auditors that management's plans are less risky given the less aggressive financial management and financial reporting behavior that results from monitoring suggested earlier in this paper. Accordingly, monitoring by a VC director may serve to mitigate an auditor's decision to issue a GCO. *BdChair* is an independent indicator variable with a 1 indicating a VC is a board director and a 0 otherwise.

BdCmte indicates whether the VC director also sits on a committee of the board. A VC that serves on the board and within the board on a committee monitors a firm more than a VC that serves on the board only. This additional monitoring by the VC may serve to further mitigate an auditor's GCO decision for the aforementioned reasons. *BdCmte* is an indicator variable with a 1 indicating the venture capitalist serves on (at least) one board committee and a 0 otherwise.

Equity indicates whether the VC that provided pre-IPO financing to a firm still holds an equity interest in the firm post-IPO. A VC that does not sell or increases its equity interest in the firm at exit (i.e., at IPO after the lock-up period[22]) even as the firm is financially distressed (i.e., suffering from operating net losses or negative cash flows from operations) is confident that management's plan can be achieved successfully. The equity interest, and thus confidence in a firm's prospects by a VC, may serve to mitigate an auditor's GCO decision. *Equity* is an indicator variable with a 1 indicating the VC holds 70%[23] or more of its pre-IPO

[22] A lock-up period (also known as a lock in, lock out, or locked up period) is a contractual restriction that prevents insiders who are holding a company's stock, before it goes public, from selling the stock for a period usually lasting 90 to 180 days after the company goes public.

[23] Barry et al. (1990, 460-461) observe that a VC sells less than 30% of its pre-IPO equity interest in a firm post-IPO. Moreover, a VC's equity interest remains above seventy percent (70%) a year after the IPO (Barry et al. 1990, 461-462).

equity interest in the firm post-IPO or has increased their pre-IPO equity interest in the firm post-IPO and a 0 otherwise.

Table 4 presents a summary of all the variables and their predicted signs for both models. *GCO* is a dependent indicator variable with a 1 indicating the receipt of a going concern opinion and a 0 otherwise. In models 1 and 2, *VC* is an independent indicator variable of interest with a 1 indicating that a firm was financed by a venture capitalist[24] prior to its initial public offering (IPO) and a 0 otherwise, consistent with Leone, Rice, Weber and Willenborg (2013) [25,26]. I expect a negative relationship between the presence of a VC and the issuance of a GCO. In model 2, *VCI* is an independent indicator variable with a number from 0 to 5 indicating the degree of involvement from not involved to highly involved by a venture capitalist as discussed earlier. I expect a negative relationship between the degree of involvement by a VC and the issuance of a GCO.

In addition to the independent variables of interest (*VC and VCI)*), I control for the effects of other factors – equally represented in both models – that are likely to affect an auditor's likelihood of issuing a GCO to a financially distressed firm: the size of the firm (*Size*) and whether a firm received a GCO in the prior year (*PriorOpn*).

Size. McKeown et al. (1991), Carcello, Hermanson and Huss (1995) and Mutchler (1986) find a negative relationship between client size and the issuing of GCOs. For

[24] Schultz and Zaman (2001) observed that Internet IPOs are more likely to be backed by venture capital firms and be underwritten by prestigious investment banks.
[25] When analyzing the behavior of auditors during the dot-com bubble, Leone et al. (2013) find, among other findings, a negative relationship between the presence of both a prestigious underwriter and the venture capital backing of a distressed Internet IPO registrant audited by a Big 5 firm and the issuance of a GCO. In this study, I focus on the effects of the venture capital backing of IPOs from 2011 to 2016 on auditor reporting behavior during non-euphoric periods and beyond the IPO stage of a firm.
[26] Leone et al. (2013) use data from the Securities Data Corporation (SDC) and Venture Capital Journal to code the *VC* variable.

example, Carcello et al. (1995, 136) find that large companies may be less likely to fail. Whereas, Mutchler (1986) suggest that auditors are more likely to issue a GCO to a

Table 4: Variable definitions and predicted signs in the going concern opinion model

Variable	Definition	Predicted sign
Dependent Variable		
GCO	1 if firm received a going concern opinion, 0 otherwise.	
Independent Variables		
VC	1 if firm received pre-IPO financing from a venture capitalist, 0 otherwise.	-
VCI	0 to 5 indicates the degree of involvement by a venture capitalist.	-
Control Variables		
Size	natural log of client sales (in thosands of dollars).	-
PriorOpn	1 if firm received going concern opinion in prior year, 0 otherwise.	+

smaller firm. Moreover, McKeown et al. (1991, 11) find that auditors, concerned with losing the significant fees that large clients generate, may hesitate to issue a GCO to a large client. Accordingly, our model controls for client size. *Size* is measured as the natural log of total sales in thousands of dollars, consistent with previous research. I expect a negative relationship between client size and the issuance of a GCO.

PriorOpn. Mutchler (1985) and Nogler (1995) find a positive relationship between GCOs issued in a prior year and GCOs issued in the current year (defined as the year after a GCO was issued). For example, Nogler (1995, 62) finds that a firm must display significant financial improvement not to receive a GCO in the subsequent year after receiving a GCO in the previous year. Whereas, Mutchler (1985, 675) suggests that firms are more likely to receive a GCO in the current year if they received a GCO in the previous year. Accordingly, our model controls for the effect of a GCO issued in the

previous year. *PriorOp* is an indicator variable with a 1 indicating the receipt of a GCO in the prior year and a 0 otherwise, consistent with previous research. I expect a positive relationship between a GCO issued in the prior year and a GCO issued in the current year.

CHAPTER 5

ANALYSIS

In the initial stage of my analysis, I perform univariate analyses to conduct an exploratory data analysis of VC backed firms. I expect to understand what the differences between distressed non-VC backed firms and distressed VC backed firms reveal about the relative roles of traditional bankers and venture capitalists. I also expect to understand the relation between GCO issuance and the venture capitalist's degree of involvement in an IPO entity. In the final stage of my analysis, I will estimate multivariate logistic regression models of the going concern decision to test my two hypotheses: (H1) Going concern opinions are assessed less often to financially distressed IPOs with venture capital backing than to those with other forms of financial backing (e.g., banker financing) and (H2) the negative association between the presence of a VC and the issuance of a going concern opinion to a financially distressed IPO is stronger the greater the involvement of a VC.

Characteristics of distressed non-VC backed firms and VC backed firms

Table 5 presents information on the non-financial factors for the 1,340 firm-years (513 non-VC backed and 827 VC backed) examined. Firm industry, location, filer status financing source by auditor type and auditor opinion, auditor opinion and length of distressed periods are explored. Some of the differences associated with firm industry, location and filer status are notable. For example, 96% of VC backed firms are concentrated in the manufacturing and services industry, but have no presence in the mining and construction industries. In contrast, non-VC backed firms have a presence in the mining and construction industries, and in the manufacturing and services industries,

Table 5: Distressed non-VC backed and VC backed firms				
Panel A: Industry				
Industry (SIC codes)	Non-VC Backed	Pct.	VC Backed	Pct.
Mining (1000-1400)	47	9%	0	0%
Construction (1500-1700)	4	1%	0	0%
Manufacturing (2000-3900)	183	36%	537	65%
Transp, Commun, Elect, Gas, and Sanit Svc (4000-4900)	41	8%	17	2%
Wholesale Trade (5000-5100)	13	3%	3	0%
Retail Trade (5200-5900)	8	2%	8	1%
Finance, Insurance, and Real Estate (6000-6700)	136	27%	6	1%
Services (7000-8900)	81	16%	256	31%
Total	**513**	**100%**	**827**	**100%**
Panel B: Location				
	Non- VC Backed	Pct.	VC Backed	Pct.
US Mid Atlantic	153	30%	110	13%
US Midwest	55	11%	44	5%
US New England	41	8%	162	20%
US Southeast	56	11%	39	5%
US Southwest	92	18%	23	3%
US West	116	23%	449	54%
Total	**513**	**100%**	**827**	**100%**
Panel C: Filer status				
	Non-VC Backed	Pct.	VC Backed	Pct.
Accelerated Filer	132	26%	288	35%
Large Accelerated Filer	52	10%	149	18%
Non-Accelerated Filer	163	32%	283	34%
Smaller Reporting Company	166	32%	107	13%
Total	**513**	**100%**	**827**	**100%**
Panel D: Financing source by auditor type				
	Big 4 Firm	Pct.	Non-Big 4 Firm	Pct.
Non-VC backed firms	261	26%	252	74%
VC backed firms	738	74%	89	26%
Total	**999**	**100%**	**341**	**100%**
Panel E: Financing source by auditor opinion				
	No GCO	Pct.	GCO	Pct.
Non-VC backed firms	430	36%	83	57%
VC backed firms	764	64%	63	43%
Total	**1,194**	**100%**	**146**	**100%**
Panel F: Auditor opinion				
	Non-VC backed	Pct.	VC backed	Pct.
Going concern opinion not issued	430	84%	764	92%
Going concern opinion issued	83	16%	63	8%
Total	**513**	**100%**	**827**	**100%**
Panel G: Period distressed				
	Non-VC backed	Pct.	VC backed	Pct.
One year	245	48%	271	33%
Two years	134	26%	234	28%
Three years	76	15%	168	20%
Four years	35	7%	95	11%
Five years	18	4%	39	5%
Six years	5	1%	20	2%
Total	**513**	**100%**	**827**	**100%**

albeit to a lesser degree than their VC backed counterparts. Also, non-VC firms have a broader industry presence – a less concentrated presence in any given industry than VC backed firms, except for the finance, insurance and real estate industry where 27% of non-VC backed firms have a concentrated presence. Another notable difference is the location of non-VC backed and VC backed firms. For example, while VC backed firms are concentrated in the New England and West regions of the country, non-VC backed firms are concentrated in the Mid-Atlantic and Southwest regions, as well as, the West region – but to a lesser degree than VC backed firms. The filer status of these groups also differs. While approximately a third of both non-VC backed firms and VC backed firms are non-accelerated filers the similarities end there. The next third of filers are smaller reporting company filers for non-VC backed firms and accelerated filers for VC backed firms.

Other differences relating to auditor type, auditor opinion and distressed period of time are also notable. For example, non-VC backed firms are audited largely by non-Big 4 accounting firms (see Table 5, Panel D). Conversely, VC backed firms are audited largely by Big 4 accounting firms at a similar rate that non-VC backed firms are audited by non-Big 4 firms. The use of Big 4 accounting firms predominately by VC backed firms may explain the higher audit fees incurred by VC backed firms (see Table 6). Moreover, non-VC backed firms receive more GCOs, albeit financially distressed for less periods of time than their VC backed counterparts. Yet, non-VC backed receive less clean opinions (e.g., no GCOs) than VC backed firms. The following panel discussions provide specificity.

As shown in Panel A of Table 5, non-VC backed firms are predominantly concentrated in the manufacturing (36%); finance, insurance and real estate (27%); and services (16%) industries. VC backed firms, however, are concentrated (96%) in two industries: manufacturing (65%) and services (31%). While both non-VC backed and VC backed firms have a presence in the services industry, VC backed firms' exposure in this industry is twice as much as their non-VC counterparts (31% versus 16%).

Panel B of Table 5 shows the location of non-VC backed firms and VC backed firms. It reveals that approximately 70% of non-VC backed firms are located in 3 regions: mid-Atlantic (30%), West (23%) and Southwest (18%). But 70% of VC backed firms are located in 2 regions: West (54%) and New England (20%). While both types of firms share a common location – the West region, VC backed firms' presence in this region is more than twice as much as non-VC backed firms akin to the industry comparison where both non-VC firms and VC backed firms have a presence.

Panel C presents the filer status of non-VC backed firms and VC backed firms. It shows that non-VC backed firms are primarily non-accelerated (32%) filers and small company reporting (32%) filers, while VC backed firms are primarily accelerated (35%) filers and non-accelerated (34%) filers. A non-accelerated and small company filers are defined by the SEC as a reporting company that, because of having a public float of less than $75 million, has 90 days after the end of the fiscal year to file annual audited financial statements (i.e., form 10-K). Accelerated filers are defined by the SEC as issuers that have a public float of at least $75 million, and have 75 days after the end of the fiscal year to file annual audited financial statements (i.e., form 10-K). Accelerated filers have less time (75 days versus 90 days) than non-accelerated and small company

filers to file annual audited financial statements and a higher public float than non-accelerated and small reporting company filers per SEC requirements. Accordingly, non-VC backed firms (64%) have scaled reporting and disclosure requirements and a lower public float than VC backed firms that are accelerated filers (35%) given their filer status.

Panel D presents the relationship between financing source and auditor type. The Big 4 accounting firms consist of the following entities: Ernst and Young, Deliotte, KPMG and PricewaterhouseCoopers. It appears that firms financed by a venture capitalist are predominantly audited by Big 4 firms (74%), while firms financed by a traditional banker are audited by Big 4 firms less so (26%). Conversely, venture capital backed firms are audited by non-Big 4 firms at a lower rate (26%) than banker financed firms (74%). The use of an experienced Big 4 accounting firms predominately by venture capitalists may suggest that they support the effective monitoring of their firms.

Panels E and F of Table 5 present information on the relationship between financing source and auditor opinion. In our sample, 513 firm-years are financed by a traditional banker and 827 firm-years are financed by a venture capitalist. Firms financed by venture capitalists received fewer GCOs (43%) than firms financed by bankers, which received 57% of the GCOs issued in our sample. Moreover, firms that are financed by venture capitalists receive more clean opinions (e.g., no GCOs) (64%) than firms financed by a banker (36%) even though VC backed firms are financially distressed for longer periods of time than non-VC backed firms (see discussion of Panel G below).

Panel F of Table 5 underscores the observations in Panel E. This panel presents the auditor opinion for non-VC backed firms and VC backed firms. The data reveals that non-VC backed firms received less clean opinions (e.g., no GCO) than VC backed firms

(84% versus 92%) and twice as many GCOs (16%) than VC backed firms (8%). Yet, as noted in the upcoming panel discussion, VC backed firms are financially distressed for longer periods of time than non-VC backed firms.

Panel G of Table 5 surveys the number of years a firm is financially distressed during the 6-year period (2011-2016) of my examination. It reveals that VC backed firms are financially distressed for longer periods of time than non-VC backed firms. For example, 38% of VC backed firms are financially distressed 3 or more years. In comparison, only 27% of non-VC backed firms are financially distressed for the same periods of time. Given that VC backed firms are financially distressed for longer periods of time than non-VC backed firms, it is curious that their rate of GCO issuance is considerably lower (8%) than their non-VC backed counterparts (16%).

Still, the number of years a VC backed firm is financially distressed during the 6-year period (2011-2016) of my examination does not suggest a "taper[ing] off for periods greater than five years" observed by Geiger and Raghunandan (2001, 74) during their examination of the relationship between auditor tenure and the issuance of a GCO. They find a positive relationship between auditor tenure and the receipt of a GCO. It appears that auditors are better suited to make GCO determinations over time when more client insights are gained.

On the contrary, auditors for financially distressed VC backed firms do not appear better suited to make GCO decisions given more client insight, albeit with the VC backed firms for 6 years (88%). Auditors for VC backed firms still issue less GCOs than auditors for non-VC backed firms that have approximately the same tenure (80%), which suggest that non-Big 4 firms are more receptive to the client insights gained over time.

Alternatively, this observation may suggest that Big 4 accounting firms gain more client insights from information not apparent to non-Big 4 accounting firms, like the presence of a VC, given their experience with VC backed firms.

Financial characteristics of distressed non-VC backed firms and VC backed firms

Table 6 presents comparative financial characteristics for non-VC backed firms and VC backed firms. Firm net income/(loss), revenue, book value, assets, market capitalization, total fees, audit fees and non-audit fees are analyzed. As shown, the financial characteristics between these groups differ significantly on several dimensions.

First, while both groups have experienced operating net losses, VC backed firms have experienced more operating net losses than non-VC backed firms (mean of $70.26MM versus $65.25MM, p=.748), since VC backed firms generate significantly lower revenues than non-VC backed firms (mean of $158.07MM versus $590.25MM, $p < .01$). Intuitively, one would expect a higher rate of GCOs for this group given the higher rate of operating net losses. However, as noted earlier (see discussion of Panel F), VC backed firms receive fewer GCOs than non-VC backed firms. Only 8% of VC backed firms are issued GCOs, whereas 16% of non-VC backed are issued GCOs. Put differently, VC backed firms receive more clean opinions (e.g., no GC) than non-VC backed firms (92% versus 84%). Yet, VC backed firms are financially distressed for longer periods of time than non-VC backed firms (see discussion of Panel G).

An auditor issues a GCO to a financially distressed firm when its evaluation leads to the conclusion that "there is substantial doubt about the entity's ability to continue as a going concern for a reasonable period, not to exceed one year beyond the date of the financial statements being audited" ([AS 2451.02] PCAOB 2015). Accordingly, recurring

Table 6: Financial characteristics of non-VC backed firms and VC backed firms (N=1,340 firm-years)

	Non-VC backed firms (N=513 firm-years)		VC backed firms (N=827 firm-years)		
	Median (Mean)	Std. Dev. (Range)	Median (Mean)	Std. Dev. (Range)	t-value (p-value)
Net Inc/(Loss) ($MM)	-14.46	239.45	-37.18	298.22	0.322
	(-65.25)	(-3,748.00 -- 0.00)	(-70.26)	(-8,360.45 -- -0.01)	(.748)
		N=513		N=827	
Revenue ($MM)	43.61	1,785.83	34.22	381.31	6.655
	(590.25)	(-38.30 -- 19,828.16)	(158.07)	(-9.7 -- 3,380.36)	**(< .01)**
		N=474		N=815	
Book Value ($MM)	46.36	2,115.55	72.15	298.37	-0.808
	(63.36)	(-20,241.00 -- 12,774.40)	(124.62)	(-1,048.20 -- 3,324.29)	(.419)
		N=496		N=804	
Assets ($MM)	190.29	13,087.74	142.47	795.65	4.030
	(2,205.24)	(0.00 -- 214,235.10)	(366.09)	(0.00 -- 7,011.20)	**(< .01)**
		N=513		N=827	
Mkt Cap ($MM)	181.51	1,567.68	360.81	2,726.72	-2.495
	(743.00)	(0.00 -- 16,624.45)	(1,080.77)	(0.00 -- 34,669.96)	**(< .05)**
		N=485		N=822	
Total Fees ($M)	603.00	3,204.94	947.87	1,134.44	2.463
	(1,514.63)	(4.50 -- 42,700.00)	(1,209.52)	(7.50 -- 9,817.99)	**(< .05)**
		N=484		N=809	
Audit Fees ($M)	470.16	2,298.53	844.00	929.42	1.481
	(1,188.15)	(3.50 -- 24,306.00)	(1,053.12)	(5.50 -- 8,771.20)	(.139)
		N=484		N=809	
Non-Audit Fees ($M)	52.38	1,259.72	30.35	358.73	3.605
	(326.48)	(0.00 -- 23,300.00)	(156.40)	(0.00 -- 3,224.75)	**(< .01)**
		N=484		N=809	

Results are based on two-sided tests assuming equal variances. Levene's test for equality of variances supports this assumption. Except for the net inc/(loss) variable, the remaining variables are significantly equal at the .01 level. T-tests yield mixed results for the variables reported above. Revenue, assets and non-audit fees are significantly different at the .01 level and mkt cap and total fees are significantly different at the .05 level. The t-tests for the remaining variables are not significantly different.

operating net losses over extended periods of time may raise concerns about a VC backed firm's ability to continue as a going concern (see Table 5, panel G). Moreover, Nogler (1995, 62) finds that a firm must display significant financial improvement not to receive a GCO in the subsequent year after receiving a GCO in the previous year.

The lower issuance of GCOs and higher issuance of clean opinions (e.g., no GCO) to VC backed firms experiencing recurring financial distress over extended periods of time suggest that factors other than the financial variables represented on the financial statements (e.g., nonfinancial factors) are considered by the auditor. Otherwise, one would expect financially distressed VC backed firms to be issued GCOs on par with financially distressed non-VC backed firms.

Second, VC backed firms received significantly higher valuations than non-VC backed forms. The market capitalizations of VC backed firms are 47% higher than non-VC backed firms (mean of $1,080.77MM versus $743.00MM, $p < .05$). The actual number for market capitalization (current share price x total outstanding common shares) depends on the economic concept of supply and demand which determines the share price.

According to this concept, stocks that are favored by investors (i.e., stocks purchased often by investors) receive a higher share price than stocks that are less favored by investors (i.e., stocks not purchased often by investors), *ceteris paribus*. The higher valuations for VC backed firms suggest that investors favor this group of firms. Investors, however, favor stocks that have an expectation of higher future cash flows that my result, for example, from an increase in revenues. The financial improvement resulting from higher revenues may result in lower GCOs (Nogler 1995). Therefore,

higher revenues may explain the higher valuations, and thus, the lower issuance of GCOs experienced by VC backed firms. Yet, VC backed firms generate significantly lower revenues than non-VC backed firms (mean of $158.07MM versus $590.25MM, $p < .01$). Likewise, VC backed firms have significantly less assets than non-VC backed firms (mean of $366.09MM versus $2,205.24MM, $p < .01$). Book values between VC backed firms and non-VC backed firms also differ even when these values reveal no significant difference between the two groups (mean of $124.62MM versus $63.36MM, $p = .419$).

Table 6 also indicates significant differences in auditor fees for the two groups. VC backed firms incur significantly lower total fees (mean of $1,209.52M versus $1,514.63M, $p < .05$) and lower non-audit fees (mean of $156.40M versus $326.48M, $p < .01$). Yet, no significant difference is evident for audit fees between VC backed firms and non-VC backed firms (mean of $1,053.12M versus $1,188.15M, $p = .139$).

Higher fees may result from the additional work an auditor performs due to the financially distressed nature of a firm. Nonetheless, it appears that VC backed firms incur lower overall fees generally than non-VC backed firms given the financially distressed nature of both groups. Alternatively, higher fees may impair an auditor's independence due to management control and result in no GCO, albeit warranted. However, this is not the case with VC backed firms since they experience lower overall fees. So, why do VC backed firms receive less GCOs?

An explanation may be that management control conflicts with the VC's objective to achieve a high IPO price given their financial interest in a firm. Accordingly, a VC is incentivized to limit the potential negative effects of management control, and thus, management's ability to impair an auditor's independence. Limiting management's

ability to impair an auditor's independence suggests that the presence of a VC has significant implications for auditors.

VC's degree of involvement in a financially distressed IPO entity

Table 7 presents overview information on a VC's degree of involvement in an IPO entity for the 124 financially distressed VC backed firms in our sample that lend themselves to be suitable for analysis. First, I identify a VC's involvement in a VC backed firm pre-IPO and its firm affiliation using the CB Insights venture capital database. Second, I identify the VC's involvement in a VC backed firm post-IPO and their firm affiliation using the Audit Analytics database[27]. Finally, I obtain the ownership interest for each VC firm by merging the VC involvement pre-IPO and post-IPO data obtained from the CB Insights and Audit Analytics databases with the ownership interests data obtained also from the Audit Analytics database[28,29].

Panel A presents the firms VCs represent on the boards. Of the 80 VC firms, 18 firms (23%) are represented on multiple boards (62) and the remaining 62 VC firms (77%) are represented on 1 board (62) each. New Enterprise Associates is represented on 10 boards (8%); OrbiMed Advisors is represented on 6 boards (5%); Arch Venture

[27] SEC form 8-K is used to identify director additions, departures and affiliations (see https://www.sec.gov/files/form8-k.pdf).
[28] SEC schedules 13D and 13D/A are used to identify the ownership interest of each VC firm (see https://www.ecfr.gov/cgi-bin/text-idx?SID=8e0ed509ccc65e983f9eca72ceb26753&node=17:4.0.1.1.1&rgn=div5#sg17.4.240_113b2_62.sg29). Schedule 13D is required to be filed with the SEC when any person or entity acquires beneficial ownership of more than 5% of any class of publicly traded securities in a public company. Schedule 13D/A is required when the filer of a 13D acquires or disposes 1% or more of the class of securities that are the subject of the 13D filing.
[29] SEC prospectus (forms S-1 and S-1/A), Bloomberg data services (see https://www.bloomberg.com) and Relationship Science (see https://www.relsci.com) – a professional relationship management database that provides data on VCs (and other professionals), including firm and board affiliations – are used to obtain missing variables.

Table 7: VC's degree of involvement (N=124 firms)		
Panel A: Firms represented by VCs		
	# of Deals	Pct.
New Enterprise Associates	10	8%
OrbiMed Advisors	6	5%
ARCH Venture Partners	5	4%
Polaris Partners	5	4%
Sofinnova Ventures	5	4%
Alta Partners	3	2%
Delphi Ventures	3	2%
Madrona Venture Group	3	2%
Novo A/S	3	2%
Venrock	3	2%
Clarus Ventures	2	2%
Domain Associates	2	2%
Flagship Pioneering	2	2%
MPM Capital	2	2%
Skyline Ventures	2	2%
SV Health Investors	2	2%
The Column Group	2	2%
TVM Capital	2	2%
Firms with 1 deal	62	50%
Total	**124**	**100%**
Panel B: VCs that serve on board pre-IPO		
	# of VCs	Pct.
Director pre-IPO	124	100%
Not director pre-IPO	0	0%
Total	**124**	**100%**
Panel C: VCs that serve on board post-IPO		
	# of VCs	Pct.
Director post-IPO	124	100%
Not director pre-IPO	0	0%
Total	**124**	**100%**
Panel D: VCs that serve as board chair	# of VCs	Pct.
Board chair	30	24%
Not board chair	94	76%
Total	**124**	**100%**
Panel E: Number of board committees VCs serve on		
	# of VCs	Pct.
0 Committees	16	13%
1 Committee	41	34%
2 Committees	55	46%
3 Committees	7	6%
Total	**119**	**100%**
Panel G: Board committees VCs serve on		
	# of VCs	Pct.
Nominations and Corporate Governance	82	33%
Compensation	85	34%
Audit	61	24%
Science and Technology	8	3%
Strategy	8	3%
Risk	6	2%
Total	**250**	**100%**

Partners, Polaris Partners and Sofinnova Ventures are represented on 5 boards (4%) each; Alta Partners, Delphi Ventures, Madrona Venture Group, Novo A/S, and Venrock are represented on 3 boards (2%) each; and Clarus Ventures, Domain Associates, Flagship Pioneering, MPM Capital, Skyline Ventures, SV Health Investors, The Column Group, and TVM Capital are represented on 2 boards (2%) each. The remaining 62 firms are represented on 1 board (1%) each. This may suggest a variation in the involvement (a proxy for "quality" in this analysis) of VCs given that 23% of the firms (18) in my sample are represented on 50% of the boards while 77% of the remaining firms (62) are represented also on 50% of the boards. Researchers have found a variation in the performance of VCs using varying proxies for quality. For example, Baker and Gompers (2003) found that VC-backed firms entering the market (e.g., IPOs) have shown to have *better performing* [emphasis added] boards of directors that lead to higher firm performance (2003) and do not suffer from stock underperformance (1997) post-IPO. Their research suggests, as I contend, that VCs are not all equally effective in their roles and underscores the importance of understanding how their roles differ. I attempt to further this line of inquiry by introducing an alternative proxy for quality in this paper.

Panels B and C show that VCs serve on the boards pre-IPO and post-IPO of the 124 firms in our sample.

Panel D shows whether the VC served as the chair of the board. It reveals that 24% (30) of VCs served as a board chair and 76% (94) did not serve as the board chair.

Panel E and G present the number and type of board committees VCs serve on. Panel E reveals that 16 VCs served on no committees (13%); 41 VCs served on 1

committee (34%); 55 VCs served on 2 committees (46%); and 7 VCs served on 3 committees (6%). Of the VCs serving on committees in Panel E, Panel G identifies that 82 VCs served on the nominations and governance committee (33%); 85 VCs served on the compensation committee (34%); 61 VCs served on the audit committee (24%); and 22 VCs on other committees (8%) (e.g., science and technology, strategy and risk).

Table 8 presents the characteristics of a VC's degree of involvement in an IPO entity. Age, number of board affiliations, presence on the board pre-IPO and post-IPO, ownership interest at IPO and exit, change in ownership interest at the beginning and end of this study and ownership interest retained at the end of the IPO year are analyzed. As shown, these characteristics underscore the VC's involvement in an IPO entity pre- and post-IPO.

First, VCs ages range from 38 years to 76 years of age (median of 53 years of age). Second, VCs actively are present on boards. On average, they serve on 11 boards (median of 11), but some VCs serve on as many as 31 boards during their career. The presence and effectiveness of a VC on the board has been shown to have positive effects on the governance and performance of a firm. Studies suggest that the presence of a VC on the board of directors has shown to have considerable positive effects on the independence of auditors, financial management and innovative capacity of the firm. Specifically, VC-backed firms entering the market (e.g., IPOs) have shown to have effective boards of directors that lead to higher firm performance post-IPO (Baker and Gompers 2003); do not suffer from stock underperformance post-IPO (Brav and

Table 8: Characteristics of a VC's degree of involvement (N=119 firms)		
	Median (Mean)	Std. Dev. (Range)
Age	53 (54) N=108	8.10 (38 -- 76)
No. of board affiliations	11 (11) N=119	6.81 (1 -- 31)
Board presence pre-IPO (Yrs)	4.0 (4.7) N=112	2.95 (0.0 -- 13.0)
Board presence post-IPO (Yrs)	2.0 (1.9) N=119	1.43 (0.0 -- 5.0)
Ownership interest at IPO (%)	16.1 (17.1) N=119	9.93 (1.9 -- 63.4)
Ownership interest at exit (%)	10.6 (13.0) N=119	10.26 (0.0 -- 52.3)
Change in ownership interest (%)	-1.0 (-4.18) N=119	8.83 (-44.5 -- 29.8)
Ownership interest retained at end of IPO year (%)	100.0 (99.1) N=119	19.80 (0.0 -- 253.0)

Gompers 1997); have lower earnings management, adopt better takeover defenses and have more independent boards, audit committees and compensation committees (Hochberg 2012).

The numbers in Table 8 for VCs board presence pre-IPO show that, on average, a VC contributes 4 years (median of 4.7 years) to the development of a new enterprise. VCs spend a considerable amount of time (1) providing capital infusion to clients; (2) monitoring and providing strategic support and managerial guidance (e.g., build contacts to customers and suppliers) to clients (Gompers 1995, Lerner 1995 and Sahlman 1990); (3) serving on the board of directors of a client (Kaplan and Stromberg 2003 and 2004 and Lerner 1994); and (4) recruiting key management personnel (Barry 1994; Gorman and Sahlman 1989; and Hellman and Puri 2002). A VC will also provide a client with access to their established network of resources (e.g., consultants, investment bankers, lawyers, accountants, etc.) and foster innovation (Hellman and Puri 2000 and Kortum and Lerner 2000). This interaction between the VC and the client provides the VC with insights about the firm not availed by other professionals.

However, the interaction between a VC and a young start-up may be nurtured over a 13-year period. This observation is in line with Metrick and Yasuda's (2011) observation that 10 years is the usual life of a fund that provides capital to a VC's client. Yet a shorter time frame may be necessitated by exogenous factors, which may explain the 4-year period observed in the firms in my sample. Masulis and Nahata (2011) suggest that VC's face pressures to liquidate investment through sale or IPO exit in client towards the end of a fund's life, which suggests the interaction between a VC and their client may be shorter than previously observed by researchers.

Finally, the relationship between a VC and client extends beyond the pre-IPO years of a firm, since a VC retains a seat on the board of directors and maintains an equity interest after a client goes public (i.e., post-IPO) (Barry et al. 1990). For the 6-year period of this study (i.e., 2011-2016), VCs remained on the board post-IPO 1.9 years on average, but some VCs remained on the board longer – 5 years (the period analyzed in this study). Their ownership interest at IPO represents 17.1% of a firm's equity on average – ranging from 1.9% to 63.4%. Their ownership interest at exit represents 10.6% of a firm's equity on average and as high as 52.3%, which suggests they retained a large share of their initial equity interest at IPO until they exit. Of the 119 firms in my sample, 2 (1.7%) exited during the IPO year and after the lock-up period (untabulated). Another 2 firms (1.7%) increased their initial equity interest during the IPO year. The remaining 115 firms (96%) did not exit during the IPO year.

Moreover, further analysis (untabulated) reveals that these firms retained 70.4% of their initial equity interest at IPO before they exit. This observation is in line with Barry et al.'s (1990, 460-461) observation that a VC sells less than 30% of its pre-IPO equity interest in a firm post-IPO. Likewise, a VC's equity interest remains above seventy percent (70%) a year after the IPO (Barry et al. 1990, 461-462).

The VC's degree of involvement (VCI) Score

Table 9 presents a VC's degree of involvement (VCI) score. The score is based on a VC's involvement in an IPO entity pre-IPO and post-IPO. The VCI score is comprised of the following 5 variables: *PreIPO, BdDir, BdChair, BdCmte and Equity*. Equal weights are assigned to all variables.

Table 9: VC's degree of involvement (VCI) score (N=349 firm-years)

Panel A: VCI score

Score	Definition	# of VCs	Pct
0	Not involved	0	0%
1	Slightly Involved	9	3%
2	Moderately Involved	32	9%
3	Involved	126	36%
4	Very Involved	136	39%
5	Highly Involved	46	13%
Total		**349**	**100%**

Panel B: VCI score by auditor opinion

Score	No GCO	Pct.	GCO	Pct.
0	0	0%	0	0%
1	9	3%	0	0%
2	26	8%	6	40%
3	122	37%	4	27%
4	131	39%	5	33%
5	46	14%	0	0%
Total	**334**	**100%**	**15**	**100%**

PreIPO indicates the length of time (measured in years) a VC has contributed to an entity pre-IPO with a 1 indicating that the VC has been involved with a firm pre-IPO for half (50%)[30] or more of its life and 0 otherwise. *BdDir* indicates whether a VC is a director of the board of a firm post-IPO with a 1 indicating a VC is a board director and a 0 otherwise. *BdChair* indicates whether a VC is the chair of the board of a firm post-IPO with a 1 indicating a VC is the chair of the board and a 0 otherwise. *BdCmte* indicates whether the VC director also sits on a committee of the board with a 1 indicating the VC serves on (at least) one board committee and a 0 otherwise. *Equity* indicates whether the VC that provided pre-IPO financing to a firm still holds an equity interest in the firm post-IPO with a 1 indicating

[30] Barry et al. (1990, 460-461) observe that a VC is involved in a firm pre-IPO for about half (51.1%) the life of a firm, or an average of 35 months (median of 26 months).

the VC holds 70%[31] or more of its pre-IPO equity interest in the firm post-IPO or has increased their pre-IPO equity interest in the firm post-IPO and a 0 otherwise (see the Research and Design section for a discussion on the development of the VCI score).

Accordingly, a VC can score from 0 (lowest score) to 5 (highest score) dependent on its degree of involvement. A 0 indicates no involvement; 1 indicates slight involvement; 2 indicates moderate involvement; 3 indicates involvement; 4 indicates he is very involved; and 5 indicates a high degree of involvement. For example, a score of 5 will be derived if the VC is a board director=1, board chair=1, committee member=1, involved in an entity pre-IPO 50% or more of the time=1, and retains 70% or more equity interest in an entity post-IPO=1.

Panel A of Table 9 reveals that VCs are actively involved in the firms they develop pre-IPO and post-IPO. Of the 349 firm-years, 126 (36%) are "involved" (score of 3), 136 (39%) are "very involved" (score of 4) and 46 (13%) are "highly involved" (score of 5). Overall, 308 VCs (88%) are involved to highly involved (scores of 3 to 5) compared to 41 VCs (12%) that are "slightly involved" to "moderately involved" (scores of 1 to 2). Moreover, all VCs are involved to varying degrees given that no VCs received a score of 0 indicating no involvement.

The degree of involvement of a VC underscores the observations by Baker and Gompers (2003) and Brav and Gompers (1997) of the positive performance of VC backed firms attributable to the presence of a VC on the board of directors and signals to other professionals, like auditors, the significant distinctions between a VC and other financiers. This "signaling" may influence the GCO decision of an auditor given that the presence of a VC on the board of directors has shown to have considerable positive effects on the

[31] Barry et al. (1990, 460-461) observe that a VC sells less than 30% of its pre-IPO equity interest in a firm post-IPO. Moreover, a VC's equity interest remains above seventy percent (70%) a year after the IPO (Barry et al. 1990, 461-462).

financial management a firm (Wong Sun-Wai 2007) and the independence of auditors (Hochberg 2012).

Panel B of Table 9 reveals a variation between the VCI score of a VC and the auditor opinion. It appears that higher VCI scores, which represent more involvement by a VC, receive fewer GCOs. For example, a score of 0 receives 0% (0) no GCOs; a score of 1 receives 3% (9) less GCOs; a score of 2 receives 8% (26) less GCOs; a score of 3 receives 37% (122) less GCOs; a score of 4 receives 39% (131) less GCOs. This may suggest that vary degrees of involvement by a VC sends varying "signals" to the auditor and those signals influence their GCO decisions.

Put differently, the auditor may view the governance of a firm from varying perspectives (e.g., weak to strong) based on the degree of involvement of a VC. For example, a VC's effort to maintain control of a firm lessens management's control, and thus, management's ability to impair an auditor's independence – creating a condition conducive to sharing private information freely. However, an alternative condition may exist for the auditor should the VC be less involved on the board. Likewise, the presence of a VC promotes less aggressive financial management and reporting behavior, which may be viewed by an auditor as an indication that management's plans are realistic, less subject to manipulation and likely to be implemented successfully. Nonetheless, an auditor may view management's plans as unrealistic and less likely to implemented successfully in the absence of involvement by a VC.

Curiously, a score of 5 receives only 46 (14%) less GCOs. This score receives fewer GCOs than the scores of 1 and 2, yet less than expected given the observations from the scores of 3 and 4. This result may be analogous to the "taper[ing] off" effect observed by Geiger and Raghunandan (2001, 74) during their examination of the relationship between

auditor tenure and the issuance of a GCO. They find a positive relationship between auditor tenure and the receipt of a GCO. It appears that auditors are better suited to make GCO determinations over time when more client insights are gained. In this case, it appears the degree involvement of a VC (e.g., at a score of 4) may be sufficient involvement for the auditor not to issue a GCO.

The VCI score of a VC also appears to influence the times a firm receives a GCO. It appears that higher VCI scores receive fewer GCOs. For example, a score of 0 receives 0% (0) GCOs; a score of 1 receives 0 (0) GCOs; a score of 2 receives 40% (6) GCOs; a score of 3 receives 27% (4) GCOs; a score of 4 receives 33% (5) GCOs and a score of 5 receives 0% (0) GCOs. In this case, however, it appears that the tapering-off effect occurs at a score of 3, suggesting that a higher degree of VC involvement may not be sufficient for the auditor not to issue a GCO. An alternative explanation may be that the sample of 15 firm-years is too small to draw any clear inferences.

CHAPTER 6

RESULTS

Table 10 presents the Spearman correlation coefficients for the variables in model 1. The correlation coefficients indicate a significantly correlation among the dependent variable (*GCO*) and the independent variables (*VC, Size, and PriorOpn*). These results suggest that the independent variables influence the dependent variable.

To test my hypothesis, I first created dummy variables for the *VC* and *GCO variables.* Second, I transformed the *Size* variable to the natural log of total sales in thousands of dollars. Third, I computed variance inflation factors (VIF) to examine whether multicollinearity is present between independent variables that may affect my results before testing my hypothesis for the variable not significantly correlated in model 1. Even so, the factor is below a VIF score of 1.07 indicating that the independent variable does not suffer from multicollinearity.

Tables 11 and 12 presents the results of the multivariate logistic regressions of auditor reporting behavior (model 1) and VC involvement in a financially distressed IPO (model 2). All signs are in the direction expected. Both models control for other factors that are likely to affect an auditor's likelihood of issuing a GCO to a financially distressed firm: the size of the firm *(Size*) and whether a firm received a GCO in the prior year (*PriorOpn)*. While conducting research on GCOs, McKeown et al. (1991), Carcello, Hermanson and Huss (1995) and Mutchler (1986) find a negative relationship between client size and the issuing of GCOs; Carcello et al. (1995, 136) find that large companies may be less likely to fail; and Mutchler (1985) and Nogler (1995) find a positive relationship between GCOs issued in a prior year and GCOs issued in the current year

Table 10: Spearman rank-order correlation coefficients (N=1,340 firm-years)

	GCO	VC	Size	PriorOpn	Tenure
GCO	1.000	.134**	.258**	-.533**	.106**
		0.000	0.000	0.000	0.000
VC	.134**	1.000	-0.036	-.083**	.260**
	0.000		0.185	0.002	0.000
Size	.258**	-0.036	1.000	-.173**	-0.003
	0.000	0.185		0.000	0.921
PriorOpn	-.533**	-.083**	-.173**	1.000	-.063*
	0.000	0.002	0.000		0.021

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

(defined as the year after a GCO was issued). *Size* is measured as the natural log of total sales in thousands of dollars and *PriorOpn* is measured as a 1 indicating the receipt of a GCO in the prior year and a 0 otherwise consistent with aforementioned research.

Table 11 presents goodness-of-fit measures for both models. The model chi-square is based on the likelihood ratio test and can be interpreted like the F-test for a linear regression. Other goodness-of-fit measure is Nagelkerke's R-square. Models 1 and 2 are significant (chi-square = 274.70 and 41.14, respectively) at the 1% level and explain 37.2% (Coxa & Snell R-square = 18.5%) and 30.1% (Coxa & Snell R-square = 11.5%), respectively of the variance in the dependent variable that is predictable from the independent variables.

Table 12 presents the multivariate logistic regression results of each model. Model 1 indicates that my variable of interest, *VC*, and the control variables are significant at the 1% level. This result is consistent with the hypothesis (H1) that going concern opinions are assessed less often to financially distressed IPOs with venture

Table 11: Goodness-of-fit measures

Model 1 (N=1,340 firm-years)

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	274.699	3	0.000
	Block	274.699	3	0.000
	Model	274.699	3	0.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	648.093[a]	0.185	0.372

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Model 2 (N=864 firm-years)

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	41.139	6	0.000
	Block	41.139	6	0.000
	Model	41.139	6	0.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	121.335[a]	0.115	0.301

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than .001.

capital backing than to those with other forms of financial backing (e.g., banker financing) and underscores my initial observations of the significance of a VC on auditor GCO decisions. The result, however, for Model 2 are not quite as robust. While the independent and control variables are significant at the 1% and 5% levels, the interaction variable of interest is not, *VC*VCI* (p =.20). This may suggest an interaction effect that requires further examination. The result is surprising since they differ from my initial observations. Panel B of Table 9 reveals a variation between the VCI score of a VC and the auditor opinion. It appears that higher VCI scores, which represent more involvement by a

Table 12: Logistic regression results								
Model 1 (N=1,340)								
							95% C.I.for EXP(B)	
	B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
VC	-0.796	0.214	13.842	1	0.000	0.451	0.297	0.686
Size	-0.134	0.020	43.934	1	0.000	0.875	0.841	0.910
PriorOpn	3.694	0.306	146.163	1	0.000	40.194	22.085	73.152
Constant	-1.239	0.190	42.490	1	0.000	0.290		
Model 2 (N=864)								
							95% C.I.for EXP(B)	
	B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
VC	-2.107	0.961	4.808	1	0.028	0.122	0.019	0.800
VC*VCI	0.324	0.255	1.622	1	0.203	1.383	0.840	2.278
Size	-0.149	0.024	38.175	1	0.000	0.862	0.822	0.903
PriorOpn	3.574	0.371	92.756	1	0.000	35.656	17.229	73.791
Constant	-1.138	0.201	32.208	1	0.000	0.320		

VC, receive fewer GCOs. An explanation for this result may be observed in the relation between a VC and the oversight of their equity interest in a firm. Panel A of Table 9 reveals that VCs are actively involved in the firms they develop and have an equity interest pre-IPO and post-IPO.

Conclusion

This study examined the impact of the presence of venture capitalists on the auditors' GCO decision for financially distressed firms that have had IPOs in the period 2011-2016. I hypothesize that a going concern opinion is issued less often to a financially distressed IPO in its first few years as a public firm when it is financed by a VC and that this effect is stronger the greater the degree of the VC's involvement with an IPO entity.

I find support for hypothesis (H1) that going concern opinions are assessed less often to financially distressed IPOs with venture capital backing than to those with other forms of financial backing (e.g., banker financing) and no support for hypothesis (H2) that the negative association between the presence of a VC and the issuance of a going

concern opinion to a financially distressed IPO is stronger the greater the involvement of a VC.

This study will inform industry regulators, concerned with transparency and the adequacy of financial disclosures, determine whether financial disclosure requirements should be enhanced to account for the presence of a VC[32]. This study will also assist institutional and individual investors understand the risk that a VC-backed IPO may fail even when a GCO was not issued by an auditor.

[32] Currently, the members of the board of directors of a public firm are identified on the financial statements. However, a board member's previously affiliation with a firm remains unclear.

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