

Financing under Extreme Uncertainty: Evidence from PIPEs

Susan Chaplinsky* and David Haushalter

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*Corresponding Author. University of Virginia, Darden Graduate School of Business Administration, Email: chaplinskys@virginia.edu, (434) 924-4810. Part of this research was completed while Haushalter was with the Lundquist College of Business, University of Oregon. We thank Antonio Mello, Randall Heron, Audra Boone and seminar participants at the University of Wisconsin for their helpful comments. We thank the Batten Institute at the Darden Graduate School of Business Administration and individuals at Placementtracker, especially Bobbie Sue Richardson, for technical and financial assistance in obtaining the data on PIPEs. Hyoung Goo Kang and Sangwon Suh provided excellent research assistance on the project.

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Abstract

Prior work on capital raising consistently finds that firms raising external capital experience good performance *prior to* fund raising events. By contrast, financially constrained firms – those faced with operating problems or informational asymmetries – frequently encounter difficulty raising capital through traditional financing instruments. This study examines the use of private investments in public equities (PIPEs), an increasingly common form of financing that can be structured to provide investors with varying degrees of asymmetric exposure to an issuer's equity. The PIPE market has evolved to fill in a gap left by traditional forms of financing. In contrast to more traditional forms of capital, nearly 80 percent of companies issuing PIPEs have negative operating income and more than 60 percent have falling stock prices in the two years prior to issue. Although PIPE issuers realize negative returns following a PIPE issue on average, there is a large amount of cross sectional variation in these returns. Consistent with investors' ability to rationally choose contracting terms, this variation is associated with the degree of the investors' asymmetric exposure to the issuer's equity.

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1. Introduction

Access to capital has been an issue of longstanding interest in finance due to its central role in the growth of firms and the overall economy. In recent years considerable attention has focused on financing constraints and on the ways they can limit or make more costly a firm's access to external capital.¹ Less attention, however, has been paid to marketplace innovations that have arisen to provide alternative forms of financing to financially constrained firms. In this study we examine an increasingly common type of financing called private investments in public equity, generally referred to as PIPEs. PIPEs are sales of public securities to private investors on a negotiated basis which can take the form of Floating Rate Convertible Preferred Stock, Floating Rate Convertible Debt, Convertible Resets, Common Stock Resets, Structured Equity Lines, and Common Stock. Since the market's inception in 1995, a total of 1,062 firms engaged in 2,158 PIPE transactions. By 2000, the market had grown \$13 billion, roughly the equivalent of eight percent of the volume of seasoned equity offerings (SEO).

Previous work on capital raising provides rather uniform evidence of favorable firm performance *prior to* external capital raising events. Numerous studies, for example, of firms making follow-on equity offerings find that an issuer's stock price increases 30 percent or more on average in the months leading up to the issue and that earnings are positive and growing ahead of the offer.² Similarly, Chaplinsky and Hansen (1993) find that public debt issuers are profitable firms with an average return on assets (ROA) of approximately 12.0 percent in the two

¹ For example, see Fazzari, Hubbard, and Petersen (1988), Kaplan and Zingales (1997), Whited (1992), and Hoshi, Kashyap, and Scharfstein (1991).

² For a discussion of returns and earnings around equity offerings see among others, Heron and Lie (2003), Ritter and Loughran (1997), Korajczyk, Lucas and McDonald (1990), Asquith and Mullins (1986), Masulis and Korwar (1986), and Mikkelson and Partch (1986).

years prior to issue. Houston and James (1997) report that firms with one banking relationship, those likely to be most comparable to PIPE issuers, have an average ROA of 4.4 percent (median 9.5 percent). Hertz and Smith (1993) find for a sample of 106 private placements of equity that 80 percent experience positive earnings in the two years prior to issue. By comparison, in the two years prior to issue, PIPE issuers have an average ROA of -30.0 percent, nearly 80 percent of the issuers have negative operating income, and over 60 percent of the issuers experience falling stock prices. By any standard, PIPE issuers are poorly performing firms - yet they are able to raise new capital.

As the above suggests, companies with extreme operating difficulties or informational asymmetries frequently face hurdles in raising capital through traditional financing instruments, such as follow-on equity offerings, public or private debt. PIPEs differ from traditional forms of financing because they can be structured to provide the necessary protection or potential rewards to investors to allow these companies to raise capital, albeit at high costs. Specifically, PIPEs can be negotiated with a variety of terms and features, such as caps, floors, mandatory redemption, trading restrictions, warrants, and discounts which provide investors with asymmetric exposure to the firm's equity. As we describe in more detail later, common stock PIPEs offer investors significantly enhanced returns in circumstances of positive post-issue stock price performance, but offer no downside protection ("price unprotected.") Alternatively, Floating Rate Convertibles and Convertible Resets allow investors upside potential but substantially reduce exposure to downside risk ("price protected.") Therefore, although PIPEs are either common stock or securities that will eventually convert into common stock, these customized terms allow investors to significantly alter their exposure to the underlying value of the issuer's equity.

We find that the market reaction to PIPE announcements varies significantly with the degree of downside price protection demanded by investors. The average return around the announcement of a price unprotected PIPE is significantly positive. In contrast, the average return around the announcement of price protected PIPEs is significantly negative. This variation is consistent with the Hertzæl and Smith (1993) notion that the terms of a private investment conveys information to the market.

The longer term stock performance of PIPE issuers further exemplifies the amount of uncertainty around these companies. Approximately 70 percent of PIPE issuers realize negative benchmark adjusted returns in the year following issue. Further, approximately 12 percent of companies issuing unprotected PIPEs and 7 percent of companies issuing protected PIPEs realize returns greater than 100 percent in the year following issue.

Although it may seem that PIPE investors fare poorly, it is important to realize that the returns earned by the issuer's public shareholder's are not the returns earned by PIPE investors. It is precisely because PIPE investors can differentiate their returns from the public shareholders' return that makes them willing to provide financing when others will not. For example, although unprotected PIPEs do not provide downside price protection, these securities usually have warrants. Therefore, the payoffs for unprotected PIPEs are asymmetric, allowing PIPE investors to capitalize on issuers that realize abnormally good performance. Moreover, the long term returns following issue are positively related to the PIPE investors' degree of exposure to the issuer's equity as "price unprotected" PIPEs outperform "price protected" in the year following issuance. These results demonstrate some ability on the part of investors to structure PIPE investments in line with their pre-issue expectations of the company.

Our study is most similar to Hillion and Vermelaen (2003) that focuses on floating conversion rates, or one type of PIPE, sometimes referred to as a “toxic convert” or “death spiral.” Like us, Hillion and Vermelaen find that companies perform poorly after issuing floating rate convertibles. They conclude that these are faulty contracts due to the short selling pressure created by their issue.³ Our purpose is to provide a more comprehensive look at the PIPE market to understand the motivations of firms to use this form of financing and of investors to provide it. The terms “toxic convert” and “death spiral” themselves connote some type of pejorative behavior on the part of investors and issuers in the PIPE market. However, floating rate convertibles are not the most common type of PIPE. Nor *a priori* is there reason to believe that the parties entering the contracts are not making the best decision among those available to them at the time. As we show, the companies issuing these PIPEs, particularly floating rate convertibles, appear to be highly distressed and have a high probability failure regardless of the actions taken by management. Therefore, it is difficult to judge the success of these contracts based solely on the issuer’s post issue performance. Our analysis does however show that the PIPE market has evolved to provide financing for companies for which funding through traditional markets would be impossible.

The plan of the paper is as follows. Section 2 provides a brief overview of the issue process and institutional features of the PIPE market. In section 3, we describe the sample of PIPEs and present information on the characteristics of the PIPE market. In this section we also examine the degree of financial constraint faced by PIPE issuers and how this influences the availability of other forms of financing. In section 4, we conceptually describe the different

³ As we discuss further later, Hillion and Vermelaen (2003) do not specifically measure short-selling around PIPE issues. Our data suggests it is difficult to short the shares because the issuer’s stock is difficult to borrow. Nonetheless, some of the extreme dilution associated with these offers has motivated the National Security Dealers Association (NASD) to propose certain restrictions on their terms and use. These restrictions arose after the period

types of PIPE securities and the properties that alter private equity investor's exposure to the future performance of the company. Predictions are generated about the type of PIPE contract chosen and the announcement date price reactions and long run performance associated with it. In section 5, we examine the firm's post-issuance performance and the characteristics associated with the relative performance across PIPEs. Section 6 gives our conclusion.

2. Background on PIPE Contracts and the Issue Process

2.1 Issue Process

A PIPE describes one of several different types of securities that can be issued under the U.S. Security and Exchange Commission's (SEC) Regulation D. This regulation enables a public company to issue equity or a security convertible into equity to a group of private investors prior to registering the shares with the SEC. Because the shares are placed privately with investors, a PIPE generally requires less disclosure, time, and underwriting fees than alternative forms of public financing. However, once the shares underlying a PIPE are registered with the SEC and this registration becomes effective, these shares can be traded publicly.

A company wishing to issue a PIPE initially employs an investment bank or placement agent to assist with the offering and to contact potential investors. PIPE investors do not necessarily need to meet SEC's standards for being an "accredited investor" to participate in the deal. However no more than 30 percent of the investors can be non-accredited.⁴ Inspection of the top 15 PIPE investors based on the dollar amount invested between 1995 and 2000 reveals that hedge funds (9 of the 15) are the most common PIPE investors.

examined by Hillion and Vermaelen (2003). See footnote 12 for further description of these regulatory changes.

⁴ The SEC classifies an investor as "accredited" if it meets one of several requirements. For a full list of these requirements see <http://www.sec.gov/answers/accred.htm>.

Before agreeing to make an investment in the PIPE issuer, a potential investor has the opportunity to conduct extensive due diligence on the issuer and to negotiate the terms of the security. This due diligence and negotiation process usually involves an extensive review of public filings and discussions with management. Although these activities do not necessarily result in the investors obtaining non-public information, such activities can potentially enable the investors to overcome some of the informational asymmetries associated with these firms. As discussed in the next section, the terms of the PIPE that the investor negotiates with the issuer has a large effect on the degree of the investors' exposure to movements in the issuer's stock price following the offering. Therefore, these terms likely reflect investors' perception of the issuers' risk and potential returns.

If the company and investors reach an agreement on the terms, the company will issue a press release describing the PIPE transaction at closing. An example of a typical press release is provided in the Appendix. Although the press release describing the deal is often quite general, the company usually files an accompanying 8-K form with the SEC containing a more detailed description of the terms and a list of the investors participating in the deal. This 8-K filing is the basis by which the PIPE becomes known to investors and Placementtracker.com, an on-line market for PIPE investments, and the source of data for this study.

2.2 Types of PIPE Contracts

In this section, we briefly describe the basic features and pay-offs of PIPE contracts. Later, we explore the institutional features and the costs of executing and investing in these instruments further. There are important distinctions among the different types of PIPE securities that affect the exposure an investor faces with respect to an issuer's future

performance. Certain PIPEs are constructed such that they limit investors' downside exposure, while offering investors the ability to benefit from strong post-issue stock performance. Alternatively, PIPEs can provide little downside protection but include features, such as warrants, that increase investors' ability to benefit from strong post-issue stock performance. Based on the terms of the PIPE, we separate PIPEs into two broad categories: "Price Protected" and "Unprotected." Price Protected PIPEs allow investors to adjust the terms of the contract *after* the initial contract is closed, whereas Unprotected PIPEs do not permit such adjustments.

2.2.1 Price Protected PIPEs

Of the five types of PIPEs we consider, Floating Rate Convertible Preferred Stock or Debt (FRC), Convertible Resets (CVR), and Common Stock Resets (CSR) offer investors downside protection from adverse movements in the issuer's stock price. The familiar fixed rate convertible typically has a single conversion price above the current market price of the common stock that is maintained throughout the term of the contract. Relative to fixed rate convertibles, the conversion price (or rate) on a floating rate convertible changes on a daily basis in accordance with movements in the issuer's stock price. Reset convertibles allow for a discrete number of changes of the conversion price at specified intervals (e.g. six months, one year, and two years from closing). Prior to the reset points, the security is convertible only at the last fixed conversion price. Because of this adjustment feature, Brennan (1985) has argued that floating rate convertibles are an ideal form of financing for high risk and high asymmetric information firms.⁵ The most important distinction between a PIPE and a conventional floating rate

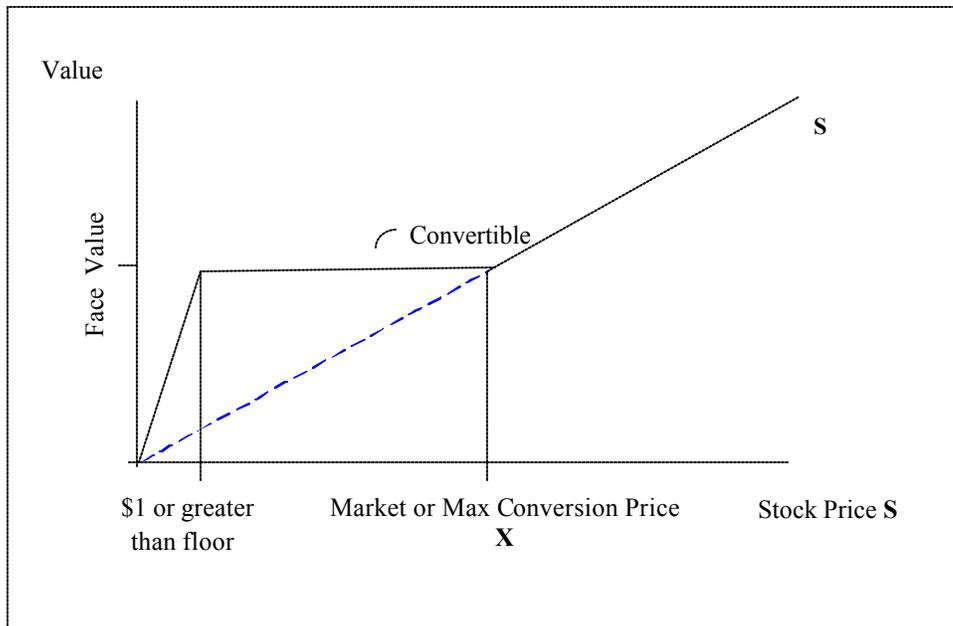
⁵If management believes that the firm's equity is currently undervalued and possesses positive information that will eventually lead to a higher price, floating rate convertibles in effect allow shares to be issued at a higher price after the good news is revealed. However, Hillion and Vermaelen (2003) find no evidence that this argument characterizes the performance of floating rate convertibles or resets.

convertible is that roughly 50 percent of the time the PIPE's conversion price *can only be adjusted downward*.⁶

While a number of variations to the basic contract exist, in a typical PIPE an investor purchases an amount (\$50 million) in newly issued convertible preferred stock from a company for a certain number of shares (5,000) at stated par value per share (\$10,000). The issuer will register the shares, in part or in whole via a shelf registration, with the appropriate regulatory bodies within 30 days after this deal closes. Once the registration becomes effective, the shares can be publicly traded – typically 90 days after registration. Thus, the registration process is key to transforming what would otherwise be a private (non-liquid) asset into a public (liquid) asset.

Following issuance, if the stock price of the issuer falls, the investor will receive more shares upon conversion. If the stock price of the issuer rises, the conversion will usually take place at the originally agreed upon contract price. Therefore, issuers generally do not benefit from stock price appreciation following issuance of a PIPE. In addition to these features, PIPEs usually require the payment of dividends or interest in cash or additional shares. The basic features of floating rate and reset convertibles are depicted in the following diagram:

⁶In some instances, PIPEs will allow for the maximum conversion price to be set at a premium over the current price but unlimited upsides are not observed.



The holder of a floating rate or convertible reset can be viewed as being long stock (S) at the price at which the PIPE is issued, assuming this is the maximum conversion price of the security, and long a put option at this price. The put option or downside protection offered from the contract results from the larger number of shares obtained upon conversion as the price company's stock decreases. As long as the shares can be sold, the adjustment of the conversion ratio over time ensures that investors maintain the face value of the instrument and their investment principal. However, the protection offered by this put option is limited by the degree of liquidity in the stock and can cease to exist as the stock price approaches zero in the event of distress or delisting. This is depicted in the diagram as being short a put at a \$1 share price (delisting price).⁷ To control the liquidation process, PIPE contracts frequently stipulate a maximum number of shares that can be converted within a given time period (usually a month). However, if the issuer's stock price drops below some minimum stipulated price (e.g., \$2 or \$3

⁷ In theory, if the stock price is delisted immediately and the investor has not converted any of the position, the short put value takes on an amount approximately $-(S-X)$ or the loss experienced by investor in that circumstance.

per share), investors have the right to accelerate conversion of the remaining unconverted portion of the security without regard to the original schedule. This permits investors to liquidate their remaining position ahead of a possible delisting.⁸ Any interest paid on these securities is usually payment in kind rather than cash interest.

A common stock reset (CRS) is similar to the floating rate and convertible resets in its payoff. The common stock reset allows investors to buy common stock at a set price less a discount. The reset, which usually occurs once during contract term, adjusts the purchase price downward in the event an issuer's stock declines following issuance. Most CSR, however, allow for the reset to occur only once within a relatively short time, 30 – 60 days, after closing. Thus, the main difference between CRS and floating rate convertibles and resets is that the period of price protection is of shorter duration.

2.2.2 *Unprotected PIPEs*

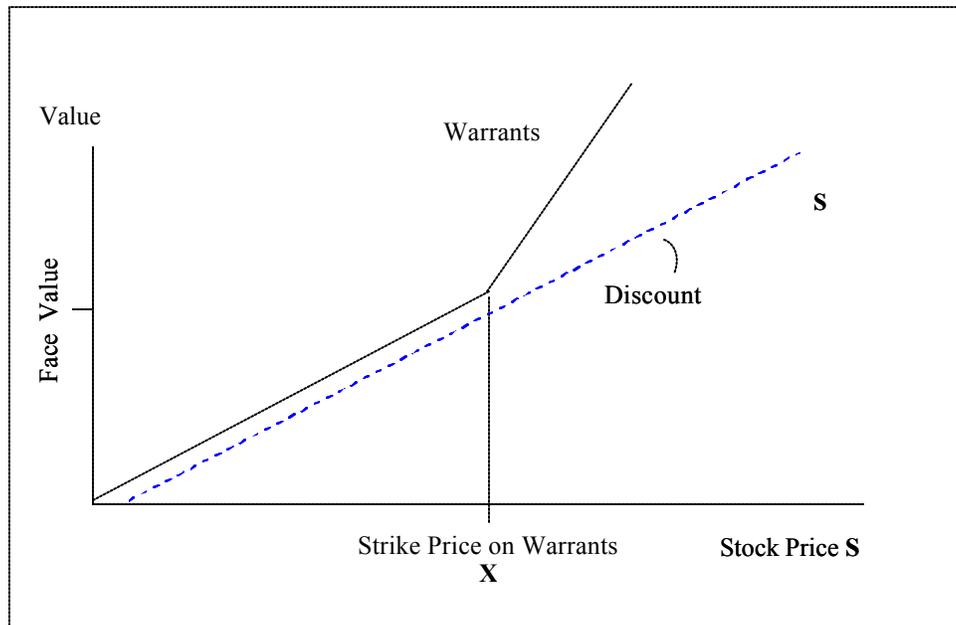
Unlike the former price protected PIPEs, Common Stock PIPEs (CS) and Structured Equity Lines (SEL) do not allow the purchase price of the shares to be adjusted after the contact closing date and thus do not provide investors with downside protection.⁹ Rather these contracts frequently enhance investors' upside with warrants to purchase the company's stock at a price generally at or above the current market price of the stock. Whereas CS PIPEs typically involve one lump sum upfront investment, SELs can be thought of as a series of CS PIPEs. An investor in a SEL agrees to purchase a given dollar amount of the company's common stock within a specified time period. The company selects when during this period that it wishes to sell shares

⁸ An additional feature that differentiates this instrument from a fixed rate convertible bond is that investors almost always convert their positions into shares of the company's common stock.

⁹ Differences in the degree of the PIPE investors exposure to the issuer's equity is not clear for Common Stock Resets and Structured Equity Lines. The results are robust if we consider change the classifications of these

to the investor.¹⁰ Investors purchase the company's stock at a discount to the current market price or at some average of prices in a short interval before the issue.

The basic features of a Common Stock PIPE and SEL are depicted in the diagram.



Hence, investors can vary significantly the degree of upside and downside exposure they face to an issuer's common equity through their choice of PIPE contract.

3. Sample and Market Characteristics of PIPEs

instruments, for example, including Common Stock Resets as a type of unprotected PIPE.

¹⁰ *Placementtracker* classifies SEL as structured PIPEs or "price protected." By their definition, structured PIPEs have prices that can be adjusted if there is a change in market conditions or fundamentals of the company. However, in the case of an SEL shares will be purchased at a lower price than the initial tranche price if the price declines but

3.1 Sample Description

We collect a sample of 2,631 PIPEs from *Placementtracker* over 1995 – 2000, which is reduced to 2,158 PIPEs after imposing the requirement that issuers have stock price data available on *CRSP*. The *Placementtracker* database is to the best of our knowledge an exhaustive list of all PIPEs issued since 1995.¹¹ We use *Placementtracker* data to identify the type of PIPE issued, the terms of the contract, and the closing date of the agreement. Table 1 shows summary statistics for the five types of PIPE instruments. The two most commonly issued PIPEs are Common Stock PIPEs and Floating Rate Convertibles. Common Stock PIPEs account for almost 50 percent of the total number of PIPEs and roughly 66.6 percent of the capital raised from these transactions. Floating Rate Convertibles account for 37.5 percent of the PIPE transactions and approximately 22.7 percent of the capital raised. The use of Common Stock PIPEs increases each year of the sample period, whereas Floating Rate Convertibles increase from 30 in 1995 to a peak of 233 in 1997, but then trail off to 90 in 2000.¹² In total, \$26.7 billion is raised over the sample period. The number of PIPEs issued and the amount of capital raised through PIPE transactions increases steadily over the sample period, reaching a high of \$12.7 billion in 2000. By comparison, 344 seasoned equity offerings (SEO) totaling \$86.8 billion were

there is no adjustment of the price thereafter. Therefore we classify SEL as unprotected PIPEs.

¹¹ We check the sample of PIPEs from *Placementtracker* against press announcements of PIPEs. All of the companies identified from press announcements are in *Placementtracker*. For a description of *Placementtracker*, see <http://www.placementtracker.com>

¹² The reduced number of FRCs may be partially due to the pending implementation of NASD Rule 4350. The National Association of Securities Dealers (NASD) views structured equity lines and floating rate convertibles and resets as “future priced securities.” Certain NASDAQ listing rules regarding future priced securities are codified in NASD Rule 4350 which was approved in March 2002 after several years of consideration. Under this rule, the issuance of certain PIPEs requires a vote by shareholders if the lowest possible conversion price is below the book or market value of the stock at the time of issuance of the security or if investors can receive more than 20% of the shares upon conversion from such low prices. To eliminate the need for shareholder approval, an issuer can place a cap on the number of shares that can be issued upon conversion to 20% of the common stock or voting power outstanding before the issuance of the PIPE or place a floor on the conversion price, such that the conversion price will always be at least as high as the greater of the book or market value of the common stock prior to the issuance of the PIPE. See the *Federal Register*, Vol. 67, Number 45, March 7, 2002.

made in 2000, implying that PIPEs roughly amount to eight percent of the funds raised through SEOs. Consequently, the results in Table 1 indicate that PIPEs are an increasingly important source of funding.¹³

3.2 *Prior Operating Performances of PIPE Contracts*

Table 2 presents information on selected financial and operating characteristics of the companies issuing PIPEs by contract type. Notably, there is evidence of poor performance regardless of the type of PIPE. With the exception of CS Resets, all categories of PIPEs experience negative median stock returns in the six months prior to issue. All categories of PIPEs have negative ROA and high cash burn rates. Additionally, consistent with the arguments of Almeida, Campello, and Weisbach (2003) that constrained firms appear to hoard cash, the cash to asset ratio across the PIPE categories ranges from 20.1 percent to 39.1 percent. To put these values in perspective the median cash to asset ratio for *Compustat* firms during the 1995 to 2000 is 16.2 percent (not tabulated).¹⁴ Further, debt usage and the payment of dividends are exceptionally low across the contracts which can also be a sign of financial constraint and poor performance.

In the bottom panel of Table 2, we report several frequently used composite measures of financial constraint or distress: Kaplan and Zingales' (KZ) (1997) Index and Altman's Z-score. Higher values of the KZ Index indicate greater constraint, whereas lower values of the Z-score indicate more constraint or distress with values below 1.8 generally viewed as "unhealthy."

¹³ We do not find a strong industry pattern to PIPEs issues. Chemicals (SIC Code 2800) and Business Services (SIC Code 7300) each account for 20 percent of the issues and Instruments and Related Products (SIC Code 3800) accounts for 10 percent. The top two industry groups include firms in respectively, pharmaceutical and biotech, and computer programming, software and system design. The other issues are scattered among a number of industries.

¹⁴ We also ran the regression that Almeida, et. al (2003) specify in equation 8 of their paper (page 12) in which the change in cash is regressed on ROA, Q ratio, and assets for the year prior to the PIPE issue. Consistent with their results, the coefficient on ROA is positive (constrained firms keep more of their cash flow). However, this

Among companies on *Compustat* during the 1995 to 2000, excluding the companies that issued PIPEs, the median KZ score is 0.46 and the median Z-score is 3.1. Somewhat surprisingly, both the KZ Index and the Z-score indicate that the median *Compustat* firm is more constrained than the median PIPE issuer. All categories of PIPEs have a KZ Index value well below 0.46 and a Z-score above, and typically well above, 3.1. Several reasons may account for this. For one, the Z-score places significant weight on a firm's leverage and the KZ Index on both a firm's leverage and payment of dividends, of which PIPE issuers have little. Second, Baker, Stein, and Wurgler (2003) note the KZ Index does not adequately capture a firm's "equity dependence." Finally, Almeida, et. al (2003) argue that the cash ratio is more revealing of financial constraint than the KZ Index. The results for PIPE issuers also suggest that it is not a revealing measure of constraint and henceforth we rely on the cash burn rate and cash ratio as measures of constraint.

3.3 *Availability of Other Forms of Financing*

Based on the negative operating characteristics of PIPE issuers, it is clear that PIPE issuers firms will require additional financing to continue operations. This raises the question of what alternative forms of financing might be available to PIPE issuers. The generally small size of PIPE issues and issuers, along with their poor operating performance likely rule out public debt issuance and otherwise make other forms of debt (e.g., bank debt) ill advised. Therefore the most likely available alternative funding source appears to be common stock.

Table 3 provides information on selected financial and operating characteristics of the companies issuing PIPEs in relation to SEO issuers.¹⁵ The table presents medians of the variables for the year prior (year -1) and the year of issuance (year 0). PIPE issuers have

coefficient is insignificant for the rest of the *Compustat* universe.

¹⁵ We collect information on 2,594 Seasoned Equity Offerings (SEOs) from the *Security Data Corporation New*

significantly smaller sales, total assets, and market value of equity compared to SEOs issuers. The performance measurements also show the relatively poor performance of PIPEs in the period before issue. The median pretax operating income is negative in both year -1 and year 0 compared to the positive operating income of SEOs. Likewise, return on assets (ROA) is respectively -30.0 percent and -29.8 percent over the same two years. Moreover, the performance in operating income, ROA, and the market value of equity from year -1 to year 0 is decreasing for the PIPE issuers and increasing for SEOs issuers. Further evidence of the widespread nature of the financial difficulty of PIPE issuers is that 78 percent of PIPE issuers have negative operating income (versus 21 percent for SEO issuers) and less than one year's worth of cash on average to sustain operations compared to two years for SEOs issuers. Consequently, the pervasive nature of the poor performance associated with PIPE issuers suggests that even common stock financing is out of reach for many of the issuers.

Although the foregoing result show the typical PIPE issuer experiences poor performance, there is high degree of variability in the performance of the group. To appreciate the range of uncertainty associated with PIPEs, Figure 1 compares the abnormal stock returns of PIPE and Seasoned Equity Offering (SEO) issuers in the 12 months prior to issue. These cumulative abnormal stock returns are calculated using a wealth relative of monthly returns for the sample firm and a benchmark portfolio for 12 months prior to the month of the PIPE offering or Seasoned Equity Offering. Sample firms are assigned to the benchmark portfolio using the market value of assets and the book to market ratio in the calendar year prior to the offer date.¹⁶ In terms of extreme performance, 25 percent of PIPEs experience returns greater than 50 percent

Issues (SDC) database over 1995 to 2000 which have data available on *CRSP*.

¹⁶The breakpoints used to assign the sample firms to a benchmark portfolio and the subsequent returns on the benchmark portfolio are from the Research Return Data Files available on Ken French's webpage: <http://mba.tuck.dartmouth.edu/pages/faculty/ken.french>.

and 32 percent less than -50 percent. By comparison, 46 percent of SEOs experience returns greater than 50 percent and 2 percent less than -50 percent.¹⁷ By now the point should be clear – PIPE issuers are not candidates for any type of debt financing and even equity, their best chance, is difficult to raise. However, often without funding, these firms will soon run out of cash.

3.4 *Announcement Date Returns to PIPEs*

The announcement date price reactions to private placements of equity have been attributed in prior studies to information effects (Hertzel and Smith (1993)), greater monitoring due to increased ownership concentration (Wruck (1989)), and liquidity costs due to resale restrictions on the shares. PIPEs differ from the private placements previously examined in two ways. First, resale restrictions on the shares are eliminated from consideration by registration of the offers, and second, investors intend to dispose of their shares relatively soon after the offer. Thus by design, PIPEs are intended to be passive investments and do not involve greater opportunity for monitoring.

Hertzel and Smith (1993) argue that the extended discussions and negotiations between a firm and private investors during a private placement can allow private investors to resolve some of the asymmetric information about a firm's value. The announcement of the issuance of a private placement reveals this information to the market. PIPE transactions are particularly well suited for testing this "information hypothesis." First, given the uncertainty, small size and poor performance of PIPE issuers, it is likely that even greater informational asymmetries exist for these firms than for others. Second, unlike traditional private placements, PIPEs vary in the

¹⁷ However, also noteworthy, is the fact the some 42 percent of PIPE issuers experience positive returns. In unreported results, we find that the correlation between the annual number of SEOs and the number of PIPEs is – 0.64. One interpretation of this negative correlation is that PIPEs become more prevalent as other forms of equity financing become more difficult to obtain.

degree of the private investors' exposure to the post-issue performance of the issuer's stock. As discussed above, PIPE investors face substantially greater exposure to the firms' post-issue performance if they invest in unprotected PIPEs rather than protected PIPEs. Therefore, the private investors' decision to invest and the type of PIPE selected could be particularly informative to the market for PIPE transactions. Specifically, based on information hypothesis we predict that the market will react more favorably to the announcement of the placement of unprotected PIPEs than protected PIPEs.

In Table 4 we report the cumulative abnormal returns around the announcement date of protected and unprotected PIPEs. Relative to previous studies of SEOs, the announcement date is measured less precisely for PIPEs as the exact details of a PIPE issue including the terms of the PIPE and the identify of the private investors might not be publicly disclosed until several days after the initial disclosure of the PIPE. Therefore a larger window around the offering is examined.

From Day -1 to +1, unprotected PIPEs experience a significantly positive price reaction of 3.49 percent (median 0.95 percent) at their announcement compared to 0.92 percent (median -0.66 percent) for protected PIPEs. One also observes in the days leading up to and the days following the announcement that unprotected PIPEs perform substantially better than protected PIPEs. Figure 2 traces the cumulative abnormal returns around the PIPE announcements over the 40 day period around the announcement date. As shown in the figure, there is an ever widening gap between the cumulative returns for protected and unprotected PIPEs. Over the period from Day -10 to +10, unprotected PIPEs increase by almost 11 percent (median 2.01 percent) versus a decrease of -1.95 percent (median -6.44 percent) for protected PIPEs. The mean and median differences in returns over the announcement date window between the groups

are significant at the 1 percent level. Thus, the results suggest that the market does infer different signals about the firm's performance from private investors' choice of contract.

To further examine the association between the stock returns around the announcement of the PIPE offering and the type of PIPE that is issued, we estimate regressions on the cumulative abnormal return for the 21 day window around a PIPE issue. The explanatory variables in the regressions include a dummy variable that indicates whether the PIPE is unprotected (UNPROTECT=1) or protected (UNPROTECT=0). Other explanatory variables in these regressions that are related to the characteristics of the PIPE offering include the ratio of the proceeds from the PIPE offering to the market value of equity at the time of the offering and the discount at which the PIPE investor can convert or purchase the stock relative to the market price. Explanatory variables that are proxies for the stock performance and operating characteristics of the PIPE issuers include the abnormal stock performance for the 12 months prior to the issuance of a PIPE, a dummy variable indicating whether sales increased (1) or not (0) between year -2 and year -1, the inverse of the number of years until cash is projected to be depleted (for firms with positive cash flow this variable is set equal to zero), and the log of the market value of equity. We also include the years since the IPO to control for any effect that length of time that a firm has been publicly traded might have on the market's reaction to this announcement.

The regression results are presented in Table 5. In column 1 we include the entire sample of PIPEs. The regression results presented in Column 2 are only estimated using stocks trading above \$3 at the time of the PIPE offering. The results presented in Column 3 are estimated on the first PIPE issued by a company. The coefficient on UNPROTECT is positive and statistically significant (p-value = 0.02 or less) in all three specifications. The coefficient on

UNPROTECT indicates that after controlling for the other characteristics in the regressions, the abnormal returns around the announcement of an unprotected PIPE is roughly 11 percent greater than the announcement returns for protected PIPEs. These results are consistent with the analysis of the announcement returns presented in Table 5 and support Hertz and Smith's (1993) claim that private investors' investment decisions convey information to the market about a firm's quality.

In addition to the specifications presented here, we conduct several robustness checks. For example, the results are similar when we winsorize returns at different levels or use alternative specifications for the regression model including other operating characteristics and features of the PIPE contract. We also separate the 21 day announcement into three different windows: day -10 to -2, day -1 to 1, and days 2 to 10. The coefficient of UNPROTECT is insignificant in the day -10 to -2 window, and statistically positive for the day -1 to 1 window and the day 2 to 10 window. For the day -1 to 1 window, the coefficient of UNPROTECT is 0.027, and for the day 2 to 10 window, it is 0.066. This indicates that it generally takes at least several days following the announcement of the PIPE issue for investors to learn and assess the important details of the issue.

4. Post-Issue Performance of PIPE Issuers

To this point we have shown that PIPEs issuers tend to be generally poor performers prior to issue which makes other forms of financing difficult to obtain. Consistent with the notion that the actions of private investors can signal information to the market, the market reaction to the announcement of a PIPE varies according to terms of the PIPE. The market reacts negatively to PIPEs that limits private equity investors' downside exposure and reacts positively

for PIPEs without downside protection. In this section we provide further evidence of investors' expectations and the signal associated with PIPE issuance by examining the post-issue performance of PIPE issuers.

4.1 Operating Performance: Pre versus Post Issue

In Table 6, we report financial and operating characteristics over a period from year -1 to year +1 for protected and unprotected PIPEs. To illustrate the susceptibility of the sample to outliers, Table 6 shows both the mean and median values of the variables. The large difference in the means and medians observed for most variables is again reflective of the large uncertainty associated with PIPE issuers. For this reason, our discussion focuses primarily on the median values. Of note, in year-1, with the exception of the "Years until Cash Depletion," the medians of the operating characteristics between protected and unprotected PIPEs do not differ significantly.

Over the period from year-1 to year +1, there is modest improvement for unprotected PIPEs with respect to the median return on assets, market value of equity, and total assets, whereas protected PIPEs exhibit similar or deteriorating performance in these characteristics over the same period. Thus, by year +1, unprotected PIPEs now differ significantly from protected PIPEs on the dimensions of total assets, return on assets and the market value of equity.

The differences between the groups are most evident for the market value of equity and the years until cash depletion. From year -1 to year +1, the market value of equity increases 16.7 percent for unprotected PIPEs compared to a decline of 16.9 percent for protected PIPEs. In addition, although both groups experience a cash infusion in year 0, the years until cash depletion falls from 8.3 months to less than six months for protected PIPEs, but stays at about 11

months for unprotected PIPEs. Thus, the post-issue analysis of operating characteristics is consistent with the previous results that indicated a somewhat better outlook for unprotected PIPE than protected PIPE issuers.

4.2. Post-Issue Stock Performance

We now turn to the issue of the post-issue stock returns to PIPE investors relative to the firm's common shareholders. As noted earlier, the terms of a PIPE contract allow investors to differentiate their returns from the raw returns on the issuer's common equity. Therefore we begin by discussing those contract features and certain market conditions, such as liquidity and the potential shorting of shares that can enhance or detract from PIPE investors' returns relative to public shareholders. We then compare the long-run returns of PIPE investors to those of the company's public shareholders.

4.2.1 Features of PIPE contracts

In principle, there are a number of terms and features that can be included in a PIPE contract that potentially differentiate the PIPE investors' returns from those of public shareholders. In Table 7, we present selected characteristics of the offer, contract, and market which affect PIPE investors' returns relative to public shareholders. We report the averages (top row) and medians (bottom row) of the characteristics on Table 7, but as before, due to the skewness in the data, we rely on the medians when interpreting the results. One way investors can reduce the risk of market acceptance is to simply offer smaller amounts of capital. Two measures of offer size, the absolute median offer size and the relative offer size (Proceeds/Market Value) are included in the Table 7. Price Protected PIPEs are significantly

smaller offers than Unprotected PIPEs in terms of their absolute and relative size. Also, in 47.0 percent of issues, investors in price protected PIPEs receive additional compensation in warrants versus 34.9 percent of unprotected PIPEs. Despite the smaller size and higher percentage of warrants, price protected PIPEs have a significantly higher median discount (14.7 percent) than unprotected PIPEs (12.0 percent). Although not shown in the table, we find that 77 percent of price protected PIPEs and 80 percent of unprotected PIPEs have an exercise price that is at a discount to the market price.

Table 7 also provides some evidence that liquidity is a concern for PIPE investors. The “Shares Issued/Volume” variable is the ratio of the amount of shares issued in the PIPE to the average daily trading volume in the security. Although in general the size of PIPE offerings is small in relation to other forms of publicly available financing, the shares issued in a PIPE are a median 22.2 and 13.9 times the average daily trading volume of the shares for price protected and unprotected PIPEs, respectively. Were an investor to attempt to liquidate his or her position all at once, this evidence suggests that the sale would place unusual demands for liquidity on the market and likely negatively impact the price received for the shares.

In theory the payoffs to PIPE securities could be further altered by shorting the underlying common stock of the issuer, if shares are available to borrow. To examine the possibility for shorting, following D’Avolio (2002) and Gezcy, Musto, and Reed (2002), we characterize a stock as hard to borrow if the equity lender is not paying a full rebate, usually the Fed Funds rate, on the collateral an investor deposits with the lender providing the stock. Stocks in which the lender is not paying a full rebate are commonly labeled as “on special.” Using data from the equity lending market for PIPEs issued between 1998 and 2000, in Table 7 we report that 51.9 percent of the companies issuing unprotected PIPEs are on special in the year of issue

and this increases to 56.9 percent in the year after issue. For companies issuing protected PIPEs, 57.7 percent are on special in the year of issue and 65.7 percent are on special in the year following issue. By comparison, D'Avolio (2002) using a database that includes about 70 percent of the companies in the *CRSP* database, reports that on an average day only 8.7 percent of all stocks are on special in 2000 and 2001. Thus, the shares of PIPE issuers tend to be unusually difficult to borrow, thereby reducing the opportunity of investors to profit from short sales.¹⁸

4.2.2 *Calculating Abnormal Returns to Public Shareholders*

To calculate the abnormal post-issue stock performance to an issuer's common shareholders, we compare the monthly performance of a company issuing a PIPE to the performance of a benchmark portfolio. We assign companies to a benchmark portfolio using a similar method to that described in Brav and Gompers (1997) and Chalmers, Dann, and Harford (2002). Companies are assigned to one of twenty-five benchmark portfolios in the year prior to the PIPE offering using the market value of equity and the ratio of book value to market value. The benchmark portfolios are constructed on an annual basis by first taking the companies appearing in both the *CRSP* and *COMPUSTAT* databases and separating them into quintiles according to the market value of assets as of June of the previous year. Then, each of these quintiles is separated into quintiles based upon the ratio of the book value to the market value of assets in June of the previous year. The returns from the benchmark portfolio returns as well as

¹⁸ In untabulated results, we find that the probability that a company's stock will go on special in the year of the PIPE issue is positively correlated with the discount of the conversion price to the stock price. However, it is difficult to determine whether investors demand greater discounts for stocks that they anticipate will be harder to borrow or whether there is a greater demand to short stocks that have larger discounts.

the breakpoints needed to assign a sample firm to the benchmark portfolio are obtained from Ken French's data library. We calculate cumulative abnormal returns using the following approach:

$$CAR_i = \left[\prod_{t_0}^{t_0+t_1} \left(\frac{1 + R_{i,t}}{1 + R_{m,t}} \right) - 1 \right]$$

R_i is the monthly return for the sample firm. R_m is the return on the size and book to market matched benchmark portfolio. t_0 is the month of the PIPE issue. t_1 is the number of months during which the returns are calculated. The results from our analysis are similar when we estimate the abnormal return as the difference between the cumulative returns for sample firms from t_0 to t_1 . The results are also similar when we exclude companies with share prices below \$3 at the time of the offering.

The cumulative abnormal returns for price protected and unprotected PIPEs for up to a year following the issue are shown in Table 8 and Figure 3. These results indicate that the large majority of companies issuing PIPEs underperform the market benchmark in the year following issue. The cumulative abnormal return through 12 months post-issue is negative for 75 percent of protected PIPE issuers and 64 percent of unprotected PIPE issuers. Almost 25 percent of price protected PIPE issuers and 16 percent of unprotected PIPE issuers are delisted by the end of the calendar year following the offering.¹⁹ The median abnormal return through 12 months is -40.7 percent for protected PIPE issuers and -26.7 percent for unprotected PIPE issuers. The average abnormal return through 12 months is -22.3 percent for the protected PIPE issuers is -1.9 percent for unprotected PIPE issuers, although this value is not statistically different from zero.

¹⁹ If a company is delisted within the 12 month window following the PIPE issue, the delisting return (if available) is used as the return for the month of the delisting. The returns for the remaining months are set equal to 0 percent. These returns are then adjusted by the returns on the benchmark portfolio to calculate abnormal returns.

Regardless of the window used, returns are greater for unprotected PIPEs issuers than protected PIPEs issuers.

Figure 4 depicts the distribution of unprotected and protected PIPE returns to public shareholders of PIPE issuers. The figure shows that while both PIPEs are likely to be “losers,” a substantial fraction of PIPEs result in “big wins.” For example, 12 percent of unprotected PIPEs increase by more than 100 percent in the year following issue, and eight percent increase by more than 150 percent. Similarly, seven percent of the companies issuing protected PIPEs are up by at least 100 percent in the year following issue and four percent of the companies increase by more than 150 percent. However, it is worth recalling that investors in price protected PIPEs are substantially less exposed to declines in the issuer’s post-issue stock price. These investors are also able to fully participate in the case of large gains and often have warrants that allow them to capitalize on favorable outcomes. Although unprotected PIPEs do not provide investors with downside protection, the warrants received in a few investments can potentially result in such large payoffs that the losses incurred on other investments are more than offset. Finally, in addition to these payoffs, private investors returns are enhanced by their ability to purchase shares at a discount to market prices. Therefore, although most companies issuing PIPEs underperform the market, PIPE investors do not necessarily do so.

4.2.3 Calculating Abnormal Returns to PIPE Investors

To examine to what extent PIPE investors’ returns diverge from public shareholders’ returns, we repeat the estimation of long-run returns above but in this instance include several of the earlier mentioned features that can differentiate their returns. This analysis takes into account the size of the discount or premium on the purchase of shares, any price protective

features, any interest paid on the security, and whether any warrants included in the deal would have been “in-the-money” in the twelve months post-issue. In computing these estimated returns we assume that investors do not convert any shares or sell any of their equity stake during the 12 months following the PIPE issue. We also assume that investors in protected PIPEs earn the same return as unprotected PIPE investors if the company’s stock gets delisted.

The average estimated returns for investors in price protected and protected PIPEs are shown in Table 8. These estimates do not incorporate any gains or losses from offsetting positions, e.g., shorting the stock. They also do not take into consideration the costs PIPE investors might incur unwinding their positions, i.e., liquidity costs. The average return through 12 months after a PIPE issue is 21.5 percent for protected PIPE investors (versus -22.3 percent for public shareholders) and 17.6 percent for unprotected PIPE investors (versus -1.9 percent for public shareholders). Both of these values are statistically significant at the 1 percent level. Therefore, the results indicate a significant ability on the part of PIPE investors to positively differentiate their returns relative to public shareholders.

4.3 Regressions on Post-Issue Stock Performance

In Table 9, we estimate regressions of the entire sample of PIPEs. We consider two dependent variables. In the first regression we use the cumulative abnormal return from month 0 to +12. In the second regression, we take a similar approach to Hillion and Vermaelen (2003) and use dummy variable that is equal to one if the company’s stock was delisted by the end of the calendar year following the PIPE issue and is zero otherwise. As shown in Table 8, almost 25 percent of protected PIPE issuers and approximately 16 percent of unprotected PIPE issuers are delisted during this window. The independent variables in the regression are the same

variables as those used in the regression of announcement date returns. These include variables pertaining to the characteristics of the PIPE contract, the issuer's prior stock performance and operating characteristics, and the number of years since the issuer's IPO. The results presented on Table 9 are similar when we restrict the regressions to companies whose shares trade above \$3 per share at the time of the PIPE issue, to the first PIPE issued by a firm, and when we winsorize the data at various levels.

The coefficient on the dummy variable UNPROTECT in the first regression is 0.265 and is significantly different from zero. This indicates that after we control for the other characteristics of the PIPE offering, the returns through 12 months following the PIPE issue are more than 26 percentage points greater for unprotected PIPEs than protected PIPEs issuers. As shown in Table 8, this difference in returns largely reflects the abnormally poor performance of protected PIPE issuers rather than positive performance of unprotected PIPE issues. The abnormal returns for the 12 months leading up to the PIPE issue (month -12 to month -1) is also significant. The negative coefficient of this variable indicates that there is mean reversion in returns. The coefficient of Log of Market Value is also marginally significant indicating that larger firms issuing PIPEs underperform smaller issuers.

The coefficient on the dummy variable UNPROTECT in the second regression is -0.053 and is significantly different from zero. This is not surprising given the results presented in Table 8. The negative coefficient on the prior abnormal performance variable shows that companies that perform better in the 12 months preceding a PIPE issue are less likely to be delisted. Finally, unlike the regression on post issue stock returns, the cash depletion rate variable is significantly correlated with the likelihood of a company being delisted. The positive coefficient of this variable indicates that companies burning through cash at a faster rate prior to

the PIPE issue are more likely to be delisted following the issue. We interpret this as evidence that the cash depletion rate is a useful indicator of a company's operating risks.

5. Conclusion

This study provides the first comprehensive look at PIPE (private investments in public equity) securities, their features, and effects on the firms and investors using this new form of financing. Since the beginning of the market in 1995, the amount of capital raised through PIPE transactions has increased steadily from \$899 million in 1995 to more than \$12.6 billion in 2000, and now represents about 8 percent of the capital raised by seasoned equity offerings.

Between the years 1995 and 2000, a total of 1,062 firms issued 2,158 PIPEs, in the form of Floating Rate Convertible Preferred Stock, Convertible Resets, Common Stock Resets, Structured Equity Lines, and Common Stock. The large majority of PIPEs are issued by companies experiencing poor operating and stock performance. About 75 percent of PIPE issuers have negative operating income and more than 50 percent underperform the market in the year prior to issue. Therefore, PIPEs are usually issued by companies for which other more traditional forms of financing are not likely available.

We compare PIPEs with limited downside risk or "price protected" PIPEs (floating rate convertible preferred stock and resets) to "unprotected" PIPEs (common stock and structured equity lines). We find that operating characteristics are similar for "protected" and "unprotected" PIPEs. However, stock returns around the announcement of a "price protected" PIPEs are significantly negative, while the stock returns around unprotected PIPEs are significantly positive. Moreover, "unprotected" PIPEs outperform "protected" PIPEs in the year following PIPE issuance.

The negative abnormal returns following the issue of a protected PIPEs are consistent with a recent study by Hertz, Lemmon, Linck, and Rees (2002) that documents underperformance in companies following traditional private equity investments. Hertz et. al (2002) attribute this underperformance to shareholders' having an overly optimistic views of the future prospects for the issuer. However, given the significantly negative reaction of investors upon learning of a price protected PIPE issue, it is difficult to characterize public investors' reaction to these companies as overly optimistic. If anything, their reaction might be better described as being "under pessimistic."

Although companies that issue PIPEs tend to perform poorly, we find that PIPE investors on average earn positive returns from their investments. Therefore, PIPE contracts appear to be successful in providing a structure that allows for companies that are facing substantial uncertainties to raise capital without fully exposing capital providers to these risks.

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Appendix

Example of Press Release Describing the Issue of a PIPE

Good Guys Completes \$9.36 Million Private Placement

SAN FRANCISCO, Aug. 22 /PRNewswire/ -- Good Guys (NASDAQ: [GGUY](#)), a leading specialty retailer of consumer entertainment electronics, today announced the completion of a private placement of \$9.36 million of its common stock. Participants in the offering include every member of Good Guys' board of directors and key management personnel, including Chairman and CEO Ronald A. Unkefer and newly appointed President Kenneth R. Weller.

The proceeds of the offering will be used to strengthen Good Guys' balance sheet and enhance the availability of exclusive, limited distribution consumer entertainment electronics products in advance of the holiday shopping season.

"Good Guys is poised to enter the holiday shopping season stronger and healthier than we have been in years, and we want to ensure that we capitalize on every opportunity to make November and December as profitable as possible," said Unkefer. "This infusion of cash will augment our balance sheet while allowing us to quickly stockpile a unique selection of fully featured digital and high-tech products that is above and beyond the generous allocation already being offered by our major suppliers."

Investors purchased 2,017,647 restricted shares of the company's common stock at \$4.64 a share, the closing price of the company's common stock on the NASDAQ National Market at the time of purchase. The investors also received warrants exercisable for three years to purchase 1,008,822 additional common shares at the same price.

"I firmly believe that Good Guys has the right strategy, right product mix and right senior management to emerge as one of the most profitable and well-respected consumer electronics retailers in the world," said Weller, who recently rejoined Good Guys as president after seven years as senior vice president of sales at Best Buy. "The confidence and commitment of the officers and directors demonstrated by this investment underscore my enthusiasm for returning to Good Guys to fortify the recent sales resurgence and maximize growth opportunities." With the completion of the offering, Good Guys has a total of 22,671,434 shares of common stock outstanding.

Good Guys is a leading specialty retailer of consumer entertainment electronics, offering a distinctive selection of fully featured digital and high-tech products from more than 100 of the world's most respected manufacturers. Founded in 1973, Good Guys currently operates 79 stores in California, Nevada, Oregon and Washington. For more information, visit <http://www.goodguys.com>.
<http://www.prnewswire.com/comp/108403.html>

Table 1

Private Placement of Public Equity and Seasoned Equity Offerings 1995 – 2000

<u>Type of Issue</u>		<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>
Floating Rate Convertibles	No. of issues	30	149	233	194	116	90
	Amount Raised	\$232.4	\$1,307.0	\$1,822.5	\$1,059.3	\$869.4	\$794.7
Common Stock Resets	No. of issues	5	2	6	13	21	34
	Amount Raised	\$28.3	\$7.4	\$24.2	\$75.0	\$145.1	\$338.1
Convertible Resets	No. of issues	3	10	9	10	17	41
	Amount Raised	\$14.2	\$186.2	\$145.8	\$107.0	\$175.1	\$1,125.8
Structured Equity Lines	No. of issues	0	1	10	12	10	69
	Amount Raised	\$0.0	\$7.5	\$41.3	\$28.2	\$46.1	\$368.6
Common Stock PIPEs	No. of issues	58	99	119	127	284	386
	Amount Raised	\$624.3	\$1,425.9	\$1,545.3	\$1,007.5	\$3,238.1	\$10,040.2
Total Amount Raised		\$899.2	\$2,934.0	\$3,579.1	\$2,277.0	\$4,473.8	\$12,667.4
Seasoned Equity Offerings	No. of issues	516	612	537	382	397	357
	Amount Raised	\$71,548.9	\$88,201.8	\$73,028.5	\$58,774.1	\$55,879.2	\$50,165.9

Table 2

Characteristics of Companies issuing PIPEs by Contract Type

The sample includes all security offerings that are identified by *Placementtracker* as a private placement of public equity (PIPE) and that have *CRSP* data available. Unless otherwise noted, the reported value is the median of the variable in year -1. *Pre-Issue Stock Returns* are the returns from month -6 to month -1 adjusted by a market benchmark based on size and book to market. *% with Pre-Issue Stock Returns Greater than 25%* is the fraction of firms with adjusted returns from month -6 to month -1 greater than 25%. *Book Value of Assets* is the book value of assets in year -1. *Return on Assets* is the return on assets in year-1. *% with Negative Operating Income* is the fraction of firms with operating income less than \$0. *Cash ÷ Assets* is the ratio of Cash and Equivalents to Assets. *Cash Burn Rate* is calculated as the absolute value of the inverse of Cash and Cash Equivalents ÷ absolute value of Operating Income before Depreciation. This ratio is set equal to zero for companies with positive operating income. Therefore larger values of this ratio indicate a shorter time until cash holdings will be exhausted. *Debt to Assets* is the ratio of total debt to assets. *% Paying Dividends* is the fraction of companies paying dividends. A higher value (lower value) indicates more constrained for the Kaplan & Zingales (1997) Index (Altman Z-score).

	Floating Rate Convertible	Convertible Reset	Common Stock Reset	Structured Equity Line	Common Stock PIPE
Pre-Issue Stock Returns (%)	-9.8	-25.1	11.3	-11.5	-3.2
% with Pre-Issue Stock Returns Greater than 25%	23.5	23.4	38.5	26.5	32.4
Book Value of Assets (\$ MM)	16.7	29.2	20.1	19.1	19.7
Return on Assets (%)	-28.5	-21.2	-27.7	-36.8	-25.1
% with Negative Operating Income	83.6	80.0	80.8	93.4	74.9
Cash ÷ Assets (%)	20.1	26.5	28.9	39.1	29.2
Cash Burn Rate (Years of Cash Remaining)	0.9	1.0	1.2	0.6	1.4
Debt to Assets (%)	17.5	13.7	8.3	6.3	7.8
% Paying Dividends	1.9	3.2	2.0	3.3	2.2
Kaplan & Zingales (1997) Index	0.26	0.27	0.37	0.09	0.05
Altman's Z-Score	3.5	7.6	4.0	4.7	4.7

Table 3
Pre-Issue Operating and Financial Characteristics of PIPE and SEO Issuers

The PIPE data are from *Placementtracker* and the data on seasoned equity offerings (SEO) are from *Security Data Corporation (SDC)*. Unless otherwise noted, items are reported in \$ millions. Year 0 is the year the security is issued. *Years until Cash is Depleted* is calculated as the ratio of cash and marketable securities to operating income before depreciation. *Percent with Publicly Traded Debt* is estimated from the companies that have a debt rating assigned by *Standard and Poors*'. Financial data are from *COMPUSTAT*. Data on the years since IPO are from *SDC*. ***, **, * indicates values are significantly different from zero at the 1%, 5%, and 10% level, respectively.

Medians of Variables:	PIPES	SEOs
Sales		
Year -1	8.16	90.36***
Year 0	11.08	147.06***
Operating Income before Deprec.		
Year -1	-4.28	13.41***
Year 0	-5.18	23.02***
Total Assets		
Year -1	18.93	128.13***
Year 0	24.02	247.76***
Return on Assets		
Year -1	-30.01%	12.71%***
Year 0	-29.83%	12.90%***
Market Value of Equity		
Year -1	54.17	252.34***
Year 0	58.84	435.21***
Market to Book Ratio		
Year -1	3.37	2.24***
Year 0	2.93	2.17***
Total Debt to Assets		
Year -1	10.25%	18.75%***
Year 0	11.86%	11.42%
Percent with Neg. Operating Income		
Year -1	78.7%	21.8%***
Year 0	78.6%	20.77%
Years until Cash Depleted ^a		
Year -1	0.83	1.85***
Year 0	0.78	3.21***
Years since IPO	4	3
Percent with Public Debt	2.80%	25.1%***

^a This ratio is only calculated for companies with negative operating income for the year.

Table 4

Abnormal Returns around PIPE Offerings

Average cumulative abnormal stock returns for company i the window between day t_0 and day t_1 are calculated using daily returns as:

$$CAR_i = \left[\prod_{t=t_0}^{t_0+t_1} \left(\frac{1 + R_{i,t}}{1 + R_{m,t}} \right) - 1 \right]$$

R_m is the return on a benchmark portfolio. The results presented here are calculated using *CRSP's* value-weighted

portfolio. Results are similar when we use equally weighted portfolio or alternative measures of abnormal returns. The sample includes 1,989 PIPEs issued between 1995 and 2000 by companies that are in the *CRSP* database and not missing daily returns during the sample 21 day period. PIPEs are classified as protected if they include a reset provision in which a conversion price or number of shares issued is reset if the stock price decreases following the offering. PIPEs in this category include Floating Rate Convertibles, Convertible Resets, and Common Stock resets. Unprotected PIPEs include Common Stock PIPEs and Structured Equity Lines. These securities are sold at a discount to the market price of the stock and often contain warrants, but do not have reset provisions. ***, **, * indicates values are significantly different from zero at the 1%, 5%, and 10% level, respectively.

	Protected		Unprotected		P-Value of Differences	
	Mean	Median	Mean	Median	Mean	Median
Relative Trading Day to PIPE issue						
Day -10 to -2	1.71%**	-2.32%***	3.43%***	-0.24%	0.117	0.002
Day -1 to +1.	0.92%**	-0.66%*	3.49%***	0.95%***	0.001	0.001
Day +2 to +10	-3.89%***	-5.81%***	2.80%*	-1.44%**	0.001	0.001
Day -10 to +10	-1.95%	-6.44%***	10.94%***	2.01%***	0.001	0.001
Fraction with negative CAR -10 to +10	63.3%		45.8%		0.001	
Number of Observations	889		1050			

Table 5
Regression Analysis of Announcement Returns around PIPE Issues

The dependent variable is the cumulative abnormal return for a 21 trading day window around a PIPE issue (day -10 to day +10). Results for regressions on all sample firms are presented in Column 1. Regression results for sample companies that have a market price per share greater than \$3 at the time of the PIPE issue are in Column 2. Regression results on the returns only for the first PIPE a firm issues are included in Column 3. *UNPROTECT* is a dummy variable that equals 1 if the PIPE is price unprotected and 0 if the PIPE is protected. *Proceeds/Market Value* is the ratio of the proceeds from the PIPE offering to the market value of equity at the time of the offering. *Conversion / Purchase Discount* is the ratio between the price at which shares can be converted or purchased to the market price minus one. This variable is set equal to 0 if this conversion or purchase price is equal to or greater than the market price. *Abnormal Prior Performance* is the sample firm's cumulative abnormal stock performance from month -12 to month -1 relative to a size and book to market matched benchmark portfolio. *Change in Sales* is a dummy variable that is set equal to one if sales increased between year -2 and year -1. *Cash Depletion Rate* is the ratio of $1 \div \text{Years until Cash is Depleted}$ (the ratio of cash and marketable securities to operating income before depreciation). For companies that have positive operating cash flow this variable is set equal to 0. *Years since IPO* year of PIPE offering minus the year of the IPO. Financial data are from *COMPUSTAT*. P-values are in parentheses and in bold if less than 0.10.

	All 1	Price > \$3 2	1 st issue 3
Intercept	-0.018 (0.703)	-0.068 (0.266)	-0.002 (0.975)
UNPROTECT	0.116 (0.001)	0.116 (0.001)	0.107 (0.001)
Proceeds/Market Value	-0.008 (0.778)	0.068 (0.128)	-0.014 (0.657)
Conversion / Purchase Discount	-0.053 (0.446)	-0.053 (0.528)	0.035 (0.687)
Abnormal Prior Performance (Month -12 to Month -1)	-0.001 (0.814)	-0.003 (0.569)	0.001 (0.883)
Change in Sales	0.001 (0.959)	0.024 (0.339)	0.024 (0.369)
Cash Depletion Rate	-0.004 (0.451)	0.006 (0.436)	-0.002 (0.808)
Log of Market Value of Equity	-0.004 (0.675)	0.002 (0.857)	-0.006 (0.540)
Years since IPO	0.001 (0.358)	0.001 (0.567)	0.001 (0.855)
Number of Observations	940	635	547
Adjusted R ²	0.028	0.029	0.018
P-Value of F-test	<0.001	<0.001	0.021

Table 6

Operating Characteristics of Protected and Unprotected PIPEs

Price protected PIPEs (Floating Rate Convertibles and Resets) limit an investor's downside risk to declines in the issuer's stock price. Unprotected PIPEs (Common Stock and Structured Equity Lines) are *not* protected against declines in the issuer's stock price. Financial data are from *COMPUSTAT*. Unless otherwise noted, items are reported in \$ millions. Year 0 is the year the security is issued. ***, **, * indicates values are significantly different from zero at the 1%, 5%, and 10% level, respectively.

	Protected		Unprotected		P Value of Differences	
	Mean	Median	Mean	Median	Mean	Median
Sales						
Year -1	52.90	8.42	51.01	8.03	0.92	0.90
Year +1	60.90	11.62	119.07	12.99	0.13	0.28
Pre Tax Operating Income						
Year -1	-1.89	-4.35	-4.39	-4.17	0.51	0.65
Year +1	-5.31	-4.97	-0.64	-5.44	0.29	0.71
Total Assets						
Year -1	74.79	17.85	115.19	19.65	0.30	0.05
Year +1	100.57	20.94	236.67	30.19	0.01***	0.01***
Return on Assets						
Year -1	-0.43	-0.30	-0.39	-0.29	0.35	0.10*
Year +1	-0.45	-0.29	-0.37	-0.23	0.04**	0.02**
Market Value of Equity						
Year -1	135.36	53.85	218.65	54.56	0.02**	0.55
Year +1	153.35	44.72	293.78	63.67	0.01***	0.01***
Years until Cash Depleted						
Year -1	1.93	0.69	9.75	0.95	0.21	0.01***
Year +1	1.31	0.44	11.38	0.94	0.17	0.01***
Pct w/Neg. Operating Income						
Year -1	0.80	-	0.77	-	0.22	-
Year +1	0.78		0.76		0.32	
Percent with No Revenues						
Year -1	0.07	-	0.06	-	0.77	-
Year +1	0.07		0.06		0.79	
No. Observations Year -1	598		728			
No. Observations Year +1	506		643			

Table 7

Features of PIPE Contracts

The sample includes all security offerings that are identified by *Placementtracker* as a private placement of public equity (PIPE) and that have *CRSP* data available. *Issue Size* is the proceeds received from the issue. For structured equity lines this value is the expected proceeds. *Issue Size as Percent of Outstanding Shares* is the ratio of the number of shares issued or shares converted via the PIPE issue to the number of shares outstanding prior to the PIPE issue. For PIPEs with floating conversion prices shares issued is based on current market prices. *Conversion or Purchase Discount* is the ratio between the price at which shares can be converted or purchased to the market price minus one. This variable is set equal to 0 if this conversion or purchase price is equal to or greater than the market price. The *Shares Issued / Volume* is the ratio of the number of shares issued through the PIPE contract to the average daily trading volume. *% with Warrants* is the fraction of issues that include warrants. *% with Floors* is the fraction of issues that include floor provision. A floor provision sets a minimum conversion price. Unprotected PIPEs have a fixed purchase price and no floor. *Daily Trading Volume* is the average for the three months preceding the PIPE issue. *Shares Issued / Volume* is the ratio number of shares issued or shares convertible through the PIPE issue to the average daily trading volume. *% On Special, year 0* is based on whether the PIPE issuer's stock had a reduced rebate in the equity lending market during the year of the PIPE issue. *% On Special, year 1* is based on whether the issuer's stock had a reduced rebate during the calendar year subsequent to the PIPE issue. Median values are presented below average values.

	Price Protected	Price Unprotected	P-value of Differences
<i>Contract Features</i>			
Issue Size (\$MM)	9.00	19.26	0.001
	5.00	6.00	0.001
Issue Size as Percent of Outstanding Shares	12.79	15.07	<0.001
	10.87	12.53	<0.001
Conversion or Purchase Discount (%)	12.92	15.44	0.005
	14.74	12.00	0.045
Fraction with Warrants	47.04	34.91	<0.001
Fraction with Floors	29.20	---	---
<i>Trading Characteristics</i>			
Daily Trading Volume (000s)	219.50	206.75	0.571
	100.70	74.96	0.001
Shares Issued / Volume	22.17	24.41	<0.001
	13.89	19.64	<0.001
Fraction on Special, Year 0	57.66	51.86	0.051
Fraction on Special, Year 1	65.72	56.98	0.003

Table 8

Abnormal Long Term Returns around PIPE Issues

Average cumulative abnormal stock returns for company i in the window between month t_0 and month t_1 are calculated using monthly returns as:

$$CAR_i = \left[\prod_{t_0}^{t_0+t_1} \left(\frac{1 + R_{i,t}}{1 + R_{m,t}} \right) - 1 \right]$$

R_m is the return on a benchmark portfolio. The results presented here are calculated using the returns on a size and

book to market matched portfolio. Results are similar if we use differences in the buy and hold returns between the sample firm and the benchmark portfolio. The sample includes 1,361 PIPEs issued between 1995 and 2000 by companies that are in the *CRSP* and *COMPUSTAT* databases. Companies that are delisted during the sample period are assigned *CRSP*'s delisting return in the month of the delisting and a 0% return in the remaining months of the sample period. PIPEs are classified as protected if a reset provision allows the conversion price or the number of shares issued to be adjusted if the stock price decreases following the offering. PIPEs in this category include Floating Rate Convertibles, Convertible Resets, and Common Stock resets. Unprotected PIPEs include Common Stock PIPEs and Structured Equity Lines. These securities are sold at a discount to the market price of the stock and often contain warrants, but do not have reset provisions. ***, **, * indicates values are significantly different from zero at the 1%, 5%, and 10% level, respectively.

Relative Trading Day to PIPE issue	Protected		Unprotected		p-value of Differences	
	Mean	Median	Mean	Median	Mean	Median
Month 0 to 3	-0.076**	-0.215***	0.079***	-0.029**	0.001	0.001
Month 0 to 6	-0.131***	-0.299***	0.092***	-0.104*	0.001	0.001
Month 0 to 9	-0.165***	-0.362***	0.063	-0.186***	0.001	0.001
Month 0 to 12, Public Shareholders	-0.223***	-0.407***	-0.019	-0.267***	0.001	0.001
Month 0 to 12, PIPE Investors	0.215***	0.132***	0.176***	-0.109	0.542	0.001
Fraction with Negative CAR 0 to +12	0.750		0.642		0.001	
Fraction Delisted	0.249		0.159		0.001	
Number of Observations	649		785			

Table 9

Regression Analysis of Long Term Returns around PIPE Issues

The dependent variables are the cumulative abnormal return for a 13 month window around a PIPE issue (month 0 to month 12) and a dummy indicating whether the company was delisted within one calendar year after the PIPE issue (1) or not (0). The calculations of the abnormal returns are described in Table 8. The regressions are estimated on the entire sample firms. Results are similar when we winsorize the data a various level, only include companies that have a market price per share greater than \$3 at the time of the PIPE issue are or only include the first PIPE a firm issues. *UNPROTECT* is a dummy variable that equals 1 if the PIPE is price unprotected and 0 if the PIPE is price protected. *Proceeds/Market Value* is the ratio of the proceeds from the PIPE offering to the market value of equity at the time of the offering. *Discount* is the difference between the price at which shares can be converted or purchased to the market price. This variable is set equal to 0 if this conversion or purchase price is equal to or greater than the market price. *Abnormal Prior Performance* is the sample firm's cumulative abnormal stock performance from month -12 to month -1 relative to a size and book to market matched benchmark portfolio. *Change in Sales* is a dummy variable that is set equal to one if sales increased between year -2 and year -1. *Cash Depletion Rate* is the ratio of $1 \div \text{Years until Cash is Depleted}$ (the ratio of cash and marketable securities to operating income before depreciation). For companies that have positive operating cash flow this variable is set equal to 0. *Years since IPO* is the year of PIPE offering minus the year of the IPO. Financial data are from *COMPUSTAT*. P-values are in parentheses and in bold if less than 0.10.

Dependent Variable :	Abnormal +12 month Returns	Delisted
Intercept	-0.060 (0.684)	-0.884 (0.001)
UNPROTECT	0.265 (0.001)	-0.053 (0.022)
Proceeds / Market Value	-0.069 (0.663)	0.060 (0.299)
Conversion or Purchase Discount	0.358 (0.158)	0.005 (0.954)
Prior Abnormal Performance (Month -12 to Month -1)	-0.032 (0.025)	-0.011 (0.039)
Change in Sales	-0.076 (0.249)	0.009 (0.691)
Cash Depletion Rate	-0.001 (0.949)	0.031 (0.001)
Log of Market Value of Equity	-0.044 (0.093)	0.003 (0.754)
Years since IPO	0.001 (0.745)	-0.002 (0.394)
Number of Observations	912	919
Adjusted R ²	0.020	0.032
P-Value of F-test	0.001	0.001

Figure 1

Distribution of Cumulative Abnormal Stock Returns 12 months prior to a PIPE or Seasoned Equity Offering

Cumulative abnormal stock returns are calculated using a wealth relative of monthly returns for the sample firm and a benchmark portfolio for 12 months prior to the month of the PIPE offering or Seasoned Equity Offering. The sample of PIPEs and Seasoned Equity Offerings include all offerings from 1995 to 2000 by companies that are in the *CRSP* database. Sample firms are assigned to the benchmark portfolio using the market values and breakpoints provided by Ken French:

<http://mba.tuck.dartmouth.edu/pages/faculty/ken.french>

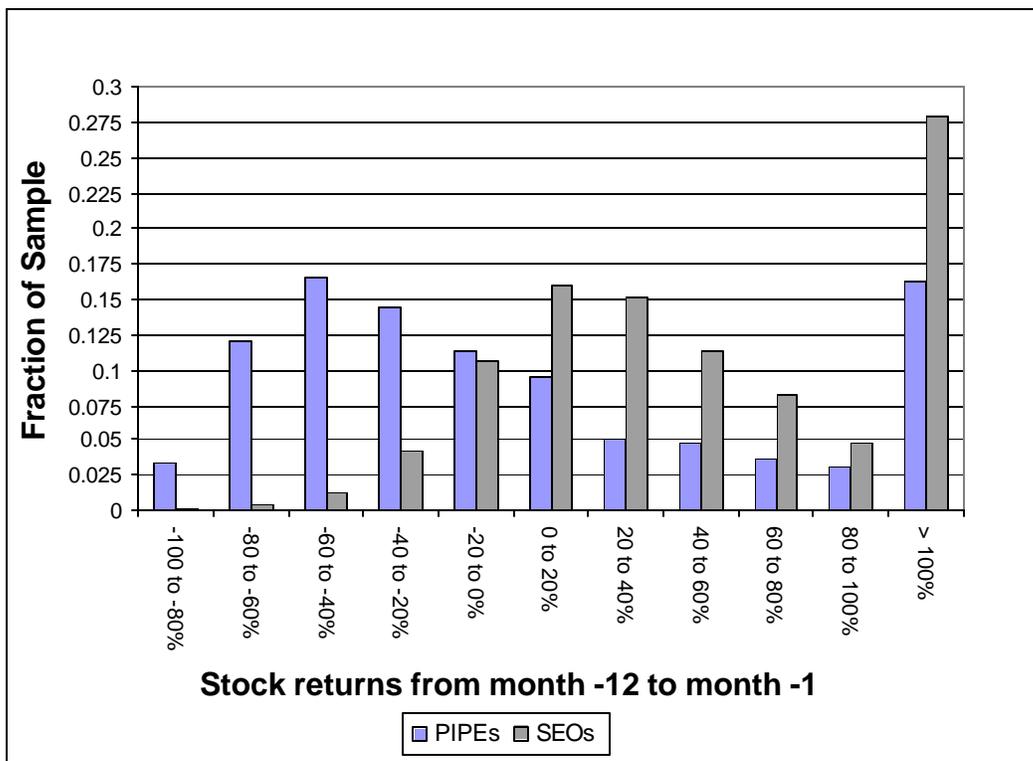


Figure 2

Market Adjusted Returns around the Announcement of PIPE Offerings

Average cumulative abnormal stock returns are calculated using a wealth relative of daily returns for the sample firm and *CRSP*'s value-weighted market portfolio. The sample includes 1,989 PIPEs issued between 1995 and 2000 by companies that are in the *CRSP* database and not missing daily returns during the sample 21 day period. PIPEs are classified as protected if they include a reset provision in which a conversion price or number of shares issued is reset if the stock price decreases following the offering. PIPEs in this category include Floating Rate Convertibles, Convertible Resets, and Common Stock resets. Unprotected PIPEs include Common Stock PIPEs and Structured Equity Lines.

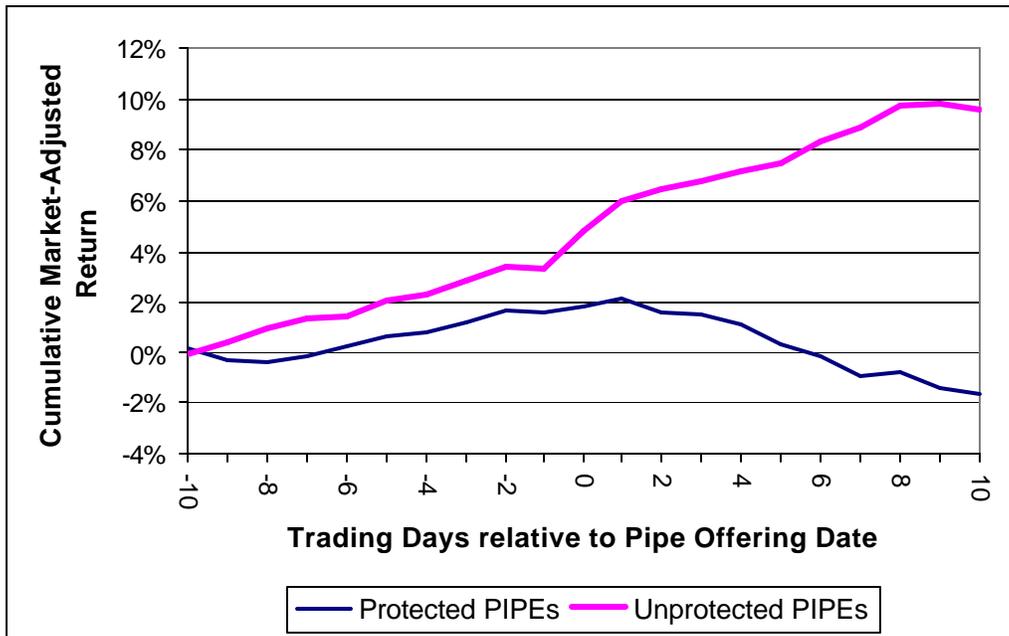


Figure 3

Market Adjusted Long Term Returns following a PIPE Offering

Average cumulative abnormal stock returns are calculated using a wealth relative of monthly returns for the sample firm and a size and book-to-market matched benchmark portfolio described in Figure 2. The sample includes 1,428 PIPEs issued between 1995 and 2000 by companies that are in the *CRSP* database and have book to market data in *COMPUSTAT*. Companies that are delisted during the sample period are assigned *CRSP*'s delisting return in the month of the delisting and 0% return in the remaining months of the sample period. PIPEs are classified as protected if they include a reset provision in which a conversion price is reset if the stock price decreases following the offering. These include Floating Rate Convertibles, Convertible Resets, and Common Stock resets. Unprotected PIPEs include Common Stock PIPEs and Structured Equity Lines.

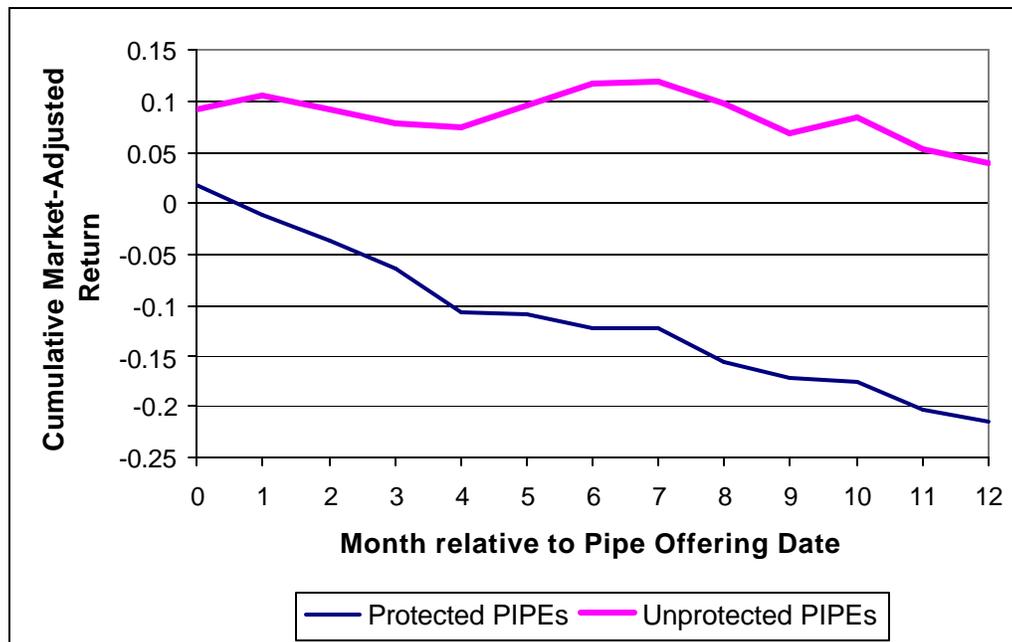


Figure 4

Distribution of Cumulative Abnormal Stock Returns 12 months after a PIPE Offering

Average cumulative abnormal stock returns are calculated using a wealth relative of monthly returns for the sample firm and a size and book-to-market matched benchmark portfolio described in Figure 2. The sample includes 1,428 PIPEs issued between 1995 and 2000 by companies that are in the *CRSP* database and have book to market data in *COMPUSTAT*. Companies that are delisted during the sample period are assigned *CRSP*'s delisting return in the month of the delisting and 0% return in the remaining months of the sample period. PIPEs are classified as protected if they include a reset provision in which a conversion price is reset if the stock price decreases following the offering. These include Floating Rate Convertibles, Convertible Resets, and Common Stock resets. Unprotected PIPEs include Common Stock PIPEs and Structured Equity Lines.

