THE MOTIVATIONS FOR PIPEs
A Study of 1995 - 2000 Performance

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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 capital. This issue is of importance to financial economists due to the central role access to capital plays in the growth of firms and the overall economy.

Recently, we presented some preliminary findings on the role that private investments in public equities (PIPEs) play in providing funds to firms that would otherwise be unable to raise funds through more traditional forms of financing. The goal of our research is to understand the motivations of firms to use this form of financing and of investors to provide it.

To date, the academic literature on PIPEs has focused primarily on floating rate convertible preferred stock (FRC) or, so called “toxic converts” and “death spirals.” This research has generally concluded that FRC represent a “faulty contract” design due to the short-selling pressure around PIPEs and to the poor performance of issuers’ post-issuance. Several points are worth noting in response to these conclusions. First, floating rate convertibles are not the most common

THE DEATH OF THE DEATH SPIRAL
Variable Priced Issuance Negligible in 2003

by Brett Goetschius

Beset by legal controversy, regulatory scrutiny, and public notoriety, variable-priced convertible PIPE investment activity has plummeted to almost negligible amounts this year. Issuers and investors are shunning the once popular structure, seeking instead placement agreements that seem to offer a greater alignment of interests of both public and private stockholders.

Deal flow in variable-priced convertible offerings this year excepting December is down 76% from 2002, according to PrivateRaise. Issuance amounts have declined even more precipitously—down 95% from a year ago, when more than $366 million of variable-priced converts were sold to private investors. Only a

continued on page 18
type of PIPE. Second, the terms “toxic convert” and “death spiral” themselves connote some type of pejorative behavior on the part of investors and issuers and there is no reason a priori to believe that the parties entering into PIPE contracts are not making the best decision among those available to them at the time. Third, the companies issuing PIPEs, particularly floating rate convertibles, are highly distressed and have a high probability of failure regardless of the actions taken by management. Therefore, it is difficult to judge the success of these contracts based solely on an issuer’s post-issue performance.

The innovation of PIPEs is the flexibility afforded to investors to structure contracts with varying degrees of asymmetric exposure to an issuer’s equity. Because investors can either expand or curb their risks through the customized terms a PIPE offers, we find that PIPEs provide financing to firms for which funding through traditional vehicles would be nearly impossible. Generally speaking, financial economists take a favorable view of market innovations that fill gaps left by traditional forms of financing and that help make markets more “complete.” We believe as further understanding of the PIPE market is gained, the same should be true of this form of financing.

The Study

Our study examines 2,158 PIPEs issued by 1,062 firms over 1995 - 2000. The data on PIPEs are obtained from Placementtracker and include floating rate convertible preferred stock, floating rate convertible debt, convertible resets, common stock resets, structured equity lines, and common stock. We use Placementtracker data to identify the type of PIPE issued, the terms of the contract, and the closing date of the agreement. The two most commonly issued PIPEs in our sample are common stock PIPEs and floating rate convertibles. Common stock PIPEs account for almost 50% of the total number of PIPEs and roughly 66.6% of the capital raised from these transactions. Floating rate convertibles account for 37.5% of the PIPE transactions and approximately 22.7% of the capital raised.

With few exceptions, studies confirm that favorable firm financial performance occurs prior to external capital raising events. The favorable performance is generally believed to be an integral part of convincing investors that the firm has a “good story” and that there is a compelling reason for investors to invest further in the firm. For example, firms making follow-on equity offerings experience an average stock price increase of 30% or more in the months leading up to the issue and earnings are positive and growing ahead of the offer. Similarly, public debt issuers and bank loan recipients are profitable firms on average over the two years prior to issue.

By comparison, the financial performance of PIPE issuers presents a very different picture relative to firms using traditional forms of financing. In the two years prior to issue, PIPE issuers have an average return on assets of -30.0%, nearly 80% of the issuers have negative operating income and less than a year on average before cash is exhausted, and over 60% experience falling stock prices. By any standard, PIPE issuers during this period were often poorly performing firms. This raises the question of what alternative forms of financing might be available to them. 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

![Figure 1: Market Adjusted Long Term Returns Following a PIPE Offering](image-url)
forms of debt (e.g., bank debt) ill advised. Therefore the most likely available alternative funding source would appear to be common stock, or a seasoned or follow-on equity offering.

To appreciate the range of uncertainty associated with the financial prospects of PIPE issuers, we compare the abnormal stock returns of PIPE and seasoned equity offering (SEO) issuers in the 12 months prior to issue. Although the results confirm the earlier finding of prior poor stock performance, there is a high degree of variability in the performance of the group. In terms of extreme performance, 25% of PIPE issuers experience returns greater than 50% and 32% less than -50%. By comparison, 46% of SEO issuers experience returns greater than 50% and only 2% less than -50%. 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. Moreover, without further funding, these firms will soon run out of cash.

Many companies need additional financing yet all in need are not able to raise funds. Why then are PIPE issuers able to raise funds when normally their pre-issue financial characteristics would seem to preclude it? The answer appears to be in part the PIPE contract itself. PIPEs differ from traditional forms of financing because they can be structured to provide the necessary protection or potential rewards to investors that allow companies to raise capital, albeit at high costs. The variety of terms and features, such as caps, floors, warrants, and discounts that can be negotiated with PIPEs allow investors to asymmetrically alter their exposure.

**Figure 2: 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. 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. The estimated returns to PIPE investors incorporate the value of certain features of the PIPE contract (e.g., discounts, warrants, coupon payments), but exclude any transaction costs that would be realized to liquidate a position. The estimated returns to PIPE investors are presented in Panel A. The returns to the PIPE issuer's shareholders are presented in Panel B.
to the firm’s equity.

For example, certain PIPE contracts such as common stock PIPEs offer investors significantly enhanced returns in circumstances of positive post-issue stock price performance, but offer no downside protection. We classify this type of PIPE as “price unprotected.” Alternatively, floating rate convertibles and convertible resets allow investors upside potential but substantially reduce their exposure to downside risk. We classify these PIPEs as “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. Because PIPE investors can differentiate their returns from those of public shareholders, they are willing to provide financing when others will not.

Studies suggest that the extended discussions and negotiations between a firm and private investors during a private placement allow private investors to resolve some of the uncertainty about a firm’s value and outlook (e.g., Hertzel and Smith (1993)). Therefore, a private investor’s decision to invest and the type of PIPE selected could be particularly informative to the market. Consistent with this, we examine whether the market reacts more favorably to the announcement of the placement of unprotected PIPEs than protected PIPEs.

As shown below, the evidence suggests a significantly more favorable reaction to the announcement (Trading Day 0) of a price unprotected PIPE versus a price protected PIPE. These results suggest that the market does infer different signals about the firm’s performance from private investors’ choice of contract.

<table>
<thead>
<tr>
<th>Announcement Date Abnormal Returns to PIPE Issues</th>
<th>Protected</th>
<th>Unprotected</th>
<th>P-Value of Differences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative Trading Day to PIPE Issue</td>
<td>Median</td>
<td>Median</td>
<td>Median</td>
</tr>
<tr>
<td>Day -10 to -2</td>
<td>-2.32%***</td>
<td>-0.24%</td>
<td>0.002</td>
</tr>
<tr>
<td>Day -1 to +1.</td>
<td>-0.66%*</td>
<td>0.95%***</td>
<td>0.001</td>
</tr>
<tr>
<td>Day +2 to +10</td>
<td>-5.81%***</td>
<td>-1.44%**</td>
<td>0.001</td>
</tr>
</tbody>
</table>

***, **, * denotes significant at the 1, 5, and 10%, respectively.

**Post-Offering Performance**

So far our findings indicate some ability of the market to discern different signals at the outset of a PIPE financing. However, the larger issue from both the firm’s and investors’ point of view is what happens over the longer term. We find little evidence that the operating performance of the issuer improves measurably in the two years following issuance. As for stock performance, in Figure 1 we present evidence on the cumulative abnormal returns earned by price protected and unprotected PIPE investors over the twelve months following issuance. These returns incorporate the value of any discount or premium, coupon payments, and “in-the-money” warrants—several contract features that differentiate PIPE investors’ returns from public shareholders. For brevity’s sake, the details of how these features are incorporated and the construction of the abnormal and benchmark returns are omitted (see Chaplinsky and Haushalter (2003)).

The cumulative abnormal returns for price protected and unprotected PIPEs indicate that the large majority of companies issuing PIPEs under perform the market benchmark in the year following issue. The cumulative abnormal return through 12 months post-issue is negative for 75% of protected PIPE issuers and 64% of unprotected PIPE issuers. The average (median) abnormal return through 12 months is -22.3% (-40.7%) for protected PIPE issuers and -1.9% (-26.7%) for unprotected PIPE issuers. Regardless of the window used, the returns are greater for unprotected PIPE issuers than protected PIPE issuers.

**The Big Win**

While it is clear that PIPE issuers and investors typically fared poorly, to fully understand the motivation of investors to invest in PIPEs, one must also examine the distribution of post-issue returns. Panel A of Figure 2 depicts the returns to unprotected and protected PIPE investors and Panel B depicts the distribution of returns to the issuer’s public shareholders. Panel A shows that while both PIPEs are likely to be “losers,” a substantial fraction of PIPEs result in “big wins.” For example, 12% of unprotected PIPEs increase by more than 100% in the year following issue, and 8% increase by more than 150%. Similarly, 7% of the companies issuing protected PIPEs are up by at least 100% in the year following issue and 4% of the companies increase by more than 150%.
Note that PIPE investors’ returns are substantially better than those of public shareholders in Panel B, which demonstrates that the PIPE contract terms help mitigate risk. One often hears that success in private equity results from investors being able to hit two or three “home-runs” out of ten investments. On the surface, it appears that PIPE returns exhibit a similar profile. Also apparent is that the long term returns 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 firm.

There is one important caveat about the long run returns to PIPE investors. These returns may not be achievable due to the high liquidity costs of trading these securities. The amount of shares issued in a PIPE is a median 13.9 and 19.6 times the average daily trading volume of the shares for price protected and unprotected PIPEs, respectively. Were an investor to attempt to liquidate its 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.

It is worth noting that many features of PIPE contracts—warrants, convertibility, and downside price protection—increase in value with the uncertainty surrounding the future value of the underlying asset. Our findings to date suggest these features appear to enable companies likely deemed too risky to obtain traditional sources of financing to raise capital under difficult circumstances.

**Notes**

1 See Hillion and Vermaelen (forthcoming *Journal of Financial Economics*). No doubt there were reasons to be concerned about the original terms of FRCs and as a result, steps have been taken to curb some of the abuses. Their study examines FRC through 1998 before the latest regulatory changes took effect. See for example NASD Rule 4350, *Federal Register*, Vol. 67, Number 45, March 7, 2002.

2 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. For further details, see Chaplinsky and Haushalter (2003).

3 The formal classification criteria are that price protected PIPEs allow investors to adjust the terms of conversion after the initial contract is closed, whereas unprotected PIPEs do not permit such adjustments.

**References**
