

Capital Market Conditions and the Pricing of Private Equity Sales by Public Firms*

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Abstract

We investigate the impact of capital market conditions on the pricing of private investment in public equity (PIPE) issues. The evidence is consistent with the theory that pricing of PIPE issues reflects the relative bargaining power of issuing firms and investors and that relative bargaining power is affected by conditions in other areas of the capital markets. Capital market conditions affect private placement discounts, returns to original stockholders, and the increase in equity associated with PIPE issues. Measures of capital market conditions markedly increase the explanatory power of models that predict discounts, returns to original stockholders, and equity value-added.

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1. Introduction

Private placements are an important and growing source of equity capital for public firms. While there has been demand for private placements among public firms for decades, this demand increased substantially in recent years. For example, during the seven years ending in December 2001, private investments in public equity (PIPE) issues totaled approximately \$62.7 billion, or \$9.0 billion per year.¹ In contrast, during the seven years ending December 2008, PIPE issues totaled roughly \$295.7 billion, or \$42.2 billion per year. During the first six months of 2009 alone, equity-related private placements by public firms totaled over \$43.0 billion. The PIPE market has become a viable alternative to the seasoned equity offering (SEO) market for a wide range of public firms in recent years.

This study examines how public market conditions affect PIPE issue pricing. It is important that we understand the pricing of PIPE issues, not only because the aggregate value of such issues has become quite large, but also because the characteristics of the firms accessing the PIPE market have changed over time. While the PIPE market has historically served as source of equity capital for distressed firms (Brophy, Ouimet, and Sialm, 2009), in recent years it has become common for non-distressed firms to raise equity through PIPE issues (Huson, Malatesta, and Parrino, 2009). The PIPE market has developed into a legitimate alternative source of equity capital for a wide range of public firms.

The existing literature assumes that shares sold in PIPE issues are priced so that private placement investors (PPI) are compensated for the costs of monitoring services they provide or for information acquisition. A complementary view, which we develop in this paper, is that discounts result from negotiations between issuing firms and PPI and that the relative bargaining power of firms and PPI changes with capital market conditions. We call this the *Related Markets Hypothesis*.

The idea that capital market conditions influence financing decisions has been studied extensively, with detailed evidence of such influence being reported at least as far back as 1953 (Hickman, 1953). Bayless and Chaplinsky (1996) suggest that lower levels of asymmetric

¹ The figures on the aggregate dollar value of PIPE issues are from Sagient Research Systems, Inc.

information during certain periods reduce the cost of public equity sales and thereby increase the volume of such financings. Lerner, Shane, and Tsai (2003) find that equity financing cycles affect the likelihood that small biotechnology firms use alliances to fund research and development expenditures. When public market financing volume is low, small firms are more likely to use alliances and tend to cede more control rights to larger corporate partners. This latter evidence is consistent with the notion that public market conditions influence the choice between public and private sources of capital and the bargaining power of issuing firms.

With regard to direct private investment, Gompers, Kovner, Lerner, and Scharfstein (2008) report evidence that venture capitalists increase the level of their investments most when public market signals are positive. These authors find that market signals reflecting industry attractiveness, such as the industry Tobin's Q and the frequency of initial public offerings (IPOs) by firms in the industry, are related to venture capital investment activity, especially among the most experienced venture capital firms. Gompers et al. (2008) conclude that the volatility of market fundamentals has an important effect on the volatility of the level of venture capital investment activity.

The *Related Markets Hypothesis* predicts that PIPE price discounts received by PPI are larger when the bargaining power of the PPI is higher relative to that of the issuing firms. The evidence is consistent with this hypothesis. Specifically, we find that discounts are related to conditions in the public equity markets and in the credit markets. Discounts are positively related to IPO underpricing and negatively related to IPO volume. Tightness in the credit markets is positively related to private placement discounts.

The bargaining theory also provides a different perspective on some of the more well known cross-sectional patterns in discounts. For example, poorly performing and more opaque (e.g., financially distressed) firms, which are likely to have relatively low bargaining power, tend to incur higher PIPE price discounts.

We observe a positive relation between PIPE price discounts and the return on the market over the 30 days prior to private placements. This relation, which is similar to that reported in Lowry and Schwert (2004) for IPOs, suggests that the pricing of private placements does not fully reflect public information and that public market conditions affect the issuing firms' costs of funds. It is consistent with firms and PPI setting prices prior to the transaction and not adjusting for subsequent market movements. Specifically, our evidence is consistent with PIPE

prices generally being set 10 or more days in advance of the issue closing date.

In addition to price discounts, we examine the relation between market conditions and both the gains realized by the original stockholders at the issuing firms (OS) and the increase in total equity value associated with PIPE issues. We do this for two reasons. First, public market conditions are likely to affect the total value created by PIPE financings as well as the relative bargaining power of the firms and PPIs. Second, the increase in equity value arising from PIPE issues appears to be substantial and yet we know little about what causes this increase. Wruck (1989) observes an average abnormal return around PIPE issue announcements of 4.4 percent when she measures this return over days -3 through 0 relative to the announcement days. She also reports that a significant run up in stock prices occurs before the announcement period. The cumulative average abnormal return (CAR) over days -59 through -4 equals just less than 6 percent and differs significantly from zero. Hertz and Smith (1993) report similar findings, with the four day announcement period CAR of 1.7 percent and the CAR for days -59 through -4 equaling approximately 7.8 percent.²

The paper is organized as follows. Section 2 summarizes previous research on PIPE price discounts and presents a framework for analyzing the magnitude of gains from PIPE issues and the gains received by the PPI and OS. Section 3 describes the data and Section 4 the empirical evidence. Section 5 concludes.

2. Determinants of PIPE Issue Pricing

2.1 Previous Research

The prices of shares sold in PIPE issues are influenced by many of the same factors that influence the pricing of shares in IPOs and SEOs. Consequently, the literatures on the pricing of IPOs, SEOs, and PIPE issues have tended to focus on the same microeconomic explanations for why primary equity sales typically involve discounts. This focus dates back to the early literature in all three areas, including Rock (1986) and Beatty and Ritter (1986) on IPOs, Mikkelsen and Partch (1985) and Loderer, Sheehan, and Kadlec (1991) on SEOs, and Wruck (1989) and Hertz and Smith (1993) on PIPE issues, and continues today. Microeconomic explanations examined in the literatures include agency considerations, uncertainty and asymmetric information, price

² This CAR for days -59 through -4 is not given directly by Hertz and Smith (1993) but may be deduced from the figures that they report in Table III on page 472 of their paper.

pressure, pre-offer price moves and manipulative trading, and transaction costs savings, among others (Wruck, 1989 and Corwin, 2003).

SEOs and PIPE issues are similar in that they both tend to be sold at a discount. However, the magnitudes of the discounts at which they sell differ considerably. Smith (1977) was the first to show that SEOs are priced on average at a statistically significant discount to contemporaneous secondary market prices. His findings have been confirmed in numerous subsequent studies.³ Wruck (1989), Hertznel and Smith (1993), and Hertznel, Lemmon, Linck, and Rees (2002) report that PIPE issues are also discounted relative to market prices, but that the size of the discounts tend to be much larger for PIPE issues than for SEOs. For example, Corwin (2003) finds that the average discount for his sample of SEOs equals 2.2 percent. Liu and Malatesta (2007) report an average discount of 3.4 percent. For the sample of PIPE issues analyzed by Hertznel and Smith (1993), though, the average discount is 20.1 percent and Hertznel et al. (2002) report an average discount equal to 16.5 percent. Hence, discounts for PIPE issues tend to be about five to nine times as large as those for SEOs. It is also of interest that discounts in PIPE issues display much larger large cross-sectional variation than discounts in SEOs. For this reason PIPE issue data presents an opportunity to conduct relatively powerful tests of hypotheses about offer price discounts.

The extant literature on the impact of microeconomic factors on the pricing of PIPE issues has focused on two general theoretical hypotheses. One of these stresses agency conflicts between firm managers and stockholders. Wruck (1989) points out that PIPE issues tend to concentrate stock ownership and to create blockholders. She argues that a transaction will increase firm value if the blockholder uses his or her influence to improve the allocation of corporate resources, or to promote a value-increasing takeover. Conversely, a transaction that serves to entrench incumbent management will result in greater shirking and perquisite consumption by managers and therefore will decrease firm value.

Hertznel and Smith (1993) acknowledge that PIPE issues might affect managerial monitoring. They emphasize, however, the role that PIPE issues can play in resolving informational asymmetries. Their model extends the analysis of Myers and Majluf (1984). They assume that, at some cost, a private investor can observe the intrinsic value of an informationally

³ See, for example, Smith (1986), Loderer, Sheehan, and Kadlec (1991), and Altinkiliç and Hansen (2003) for discussions of this evidence.

problematic firm. Private placement price discounts compensate the investor for the cost of becoming informed and the PIPE transaction itself signals to public investors that the selling firm is undervalued. Hence, the firm's stock price increases when news about the PIPE becomes public.

The agency and asymmetric information hypotheses are complementary and both might be useful in explaining aspects of PIPE issue pricing. Wruck (1989) finds a significant, nonlinear relation between PIPE announcement period CARs and changes in stock ownership concentration. This result tends to support the agency hypothesis. Hertz and Smith (1993) report that placement discounts and abnormal returns are both significantly related to proxies for informational opacity and to the costs of assessing firm value. Wu (2004) also provides evidence consistent with the asymmetric information hypothesis. In her study of PIPE issues and SEOs by high-technology firms, Wu finds that several proxies for informational asymmetry are significantly higher for PIPE issuers.

The extensive literatures on the pricing of IPOs, SEOs, and PIPE issues, reflects the economic importance of these transactions. The prices at which firms sell their shares directly affect their costs of capital and thereby the value of their investments. While the evidence suggests that microeconomic factors help to explain equity prices, much remains unexplained. It is plausible that prices in the market for private equity placements also depend upon public equity market conditions and debt market conditions.

2.2. Public Capital Market Conditions and PIPE Issue Pricing

In this section we develop a model of the gains to PPI from PIPE issues and discuss the implications of this model for the impact of capital market conditions on PIPE issue pricing.

2.2.1. A Model of Stockholder Gains

We begin by assuming that PIPE issues are associated with net gains in equity values. These gains may be attributable to a variety of underlying sources. For example, the firm may use the placement proceeds to undertake a positive net present value investment project. An alternative possibility is that the equity placement facilitates a capital restructuring that mitigates current or expected future financial distress and bankruptcy costs. Moreover, the gain might arise from improved monitoring, as in Wruck (1989), or from the resolution of informational asymmetry, as in Hertz and Smith (1993). We denote the equity value added associated with a

PIPE by V . The gross value of the PIPE issue includes the placement proceeds in addition to V .

We assume also that there is a date, before the transaction is announced, when public market investors believe that the probability of an impending PIPE issue is negligible. Conversely, there is a date, after the announcement date, when stock prices have fully impounded information about the PIPE and incorporated its value V . These dates are denoted b and a , respectively. We measure time relative to the announcement date, which we assume is also the closing date. Hence, the announcement occurs at time 0 and $b < 0 < a$. It is possible that V is almost completely reflected in firm market value prior to the announcement date. Also, the time interval $[0, a]$ is negligible if the market is efficient with respect to the placement announcement.

Let the number of shares outstanding and the stock price at date t be denoted by N_t and P_t . We assume that b and a are close in time and that the firm undertakes no stock transactions other than its private placement during the interval $[b, a]$. Hence, $\Delta N = N_a - N_b$ is the number of shares sold in the private placement. Let P^s be the sales price for these newly outstanding shares. Then the total placement proceeds are given by $(\Delta N)P^s$.

Let S_b and S_a denote total equity values on dates b and a , before and after the announcement date, and define $\Delta S = S_a - S_b$. ΔS is the change in equity value occurring during the period surrounding the PIPE transaction. It can be decomposed into three parts. These are the gross increase in equity value associated with the PIPE ($V + (\Delta N)P^s$), the expected change in equity value over the period, given the risk of the equity and conditional on aggregate market returns, and the residual value change that is not associated with the PIPE nor attributable to systematic factors. We denote the latter two components by ΔS^m and ΔS^f , respectively, and their sum by ΔS^u . Hence, we may write

$$\Delta S = (V + (\Delta N)P^s) + \Delta S^m + \Delta S^f = (V + (\Delta N)P^s) + \Delta S^u. \quad (1)$$

The immediate gains to the PPI, which we denote by G , depend on the transaction price P^s , the post-money stock value P_a , and the number of shares placed.

$$G = (P_a - P^s)\Delta N \quad (2)$$

G may also be written as

$$\begin{aligned}
G &= \alpha(S_b + \Delta S^m + \Delta S^f + V) - (1 - \alpha)(\Delta N)P^s \\
&= \alpha(S_b + \Delta S^u + V) - (1 - \alpha)(\Delta N)P^s
\end{aligned} \tag{3}$$

where $\alpha = \Delta N / (\Delta N + N_b)$ is the size of the placement relative to total shares outstanding after the transaction. Note that the gains to the PPI reflect the risk-adjusted normal change in equity value over the period conditional on market returns, and the residual value change that is neither associated with the PIPE nor attributable to systematic factors, as well as the value added from the PIPE.

The dollar gain to the placement investors is related to the discount that they receive in the transaction relative to the post-money value of the shares. Define the discount, d , as follows.

$$d = 1 - (P^s/P_a). \tag{4}$$

It is easy to show that

$$d = 1 - [(\Delta N)P^s / ((\Delta N)P^s + G)] \tag{5}$$

Hence, the discount is positively related to the dollar gain, holding the transaction proceeds constant. The relationship is nonlinear.

2.2.2. PIPE Issue Pricing

We hypothesize that the gain to the PPI and the PIPE price discount arise from negotiations that occur between dates b and 0 among the PPI and the issuing firm. The resulting bargain sets the terms of the transaction and influences the amount of the value added by the transaction that the PPI are able to capture. One model of the process has the parties negotiating over the gain directly. In this case G is fixed and α must be adjusted at closing to reflect changes in equity value that are not related to the PIPE transaction.

If we assume that the interval $[0, a]$ is short, then the unrelated firm value change prior to closing narrowly approximates ΔS^u . Solving (3) for α we have

$$\alpha = (G + (\Delta N)P^s) / (S_b + \Delta S^u + V + (\Delta N)P^s). \tag{6}$$

By inspection, α must vary inversely with ΔS^u if the other terms in (3), including the gain, G , and the total proceeds, $(\Delta N)P^s$, are held constant. It follows from (5) that the discount is invariant

with respect to ΔS^u as well under these assumptions. Under these conditions the placement price and quantity efficiently reflect public information regarding firm equity value that arrives before the closing.

An alternative model supposes that the negotiating parties set ΔN and P^s at date b and do not adjust them subsequently. Thus, α is fixed. It is obvious from (6) that in this case G must vary directly with ΔS^u . Thus, the PPI will share in equity value gains or losses occurring prior to closing that are unrelated to the transaction value added. Public information that arrives between the bargaining date b and closing is not efficiently impounded in the closing price and quantity.

The models of the bargaining process discussed above represent extreme cases. A continuum of intermediate cases exists, as well. It is easy to imagine that PIPE issue prices and quantities partially reflect public information regarding firm equity values that arrives before the closing, but are not completely efficient with respect to that information. In this case, α would vary inversely with ΔS^u , but the PPI would share in equity value gains or losses occurring prior to closing that are unrelated to the transaction value added. Hence, gains and discounts would be positively related to ΔS^u . The nature of this relation would depend on the relative bargaining power of the firm and the PPI.

The possibility that the gains to PPI are positively related to ΔS^u because prices are not fully adjusted at closing is one mechanism through which conditions in other capital markets can affect pricing of a PIPE issue. If ΔS^m is not equal to zero, public equity market conditions would affect gains and, potentially, PIPE price discounts. The impact of ΔS^u on a discount is a mechanical artifact of the initial terms of the bargain which reflect the relative bargaining power of the PPI and the firm. This is one aspect of the *Related Markets Hypothesis*.

The *Related Markets Hypothesis* also suggests that the initial level of the discount is affected by relative bargaining power. If capital is available to the firm at low cost from alternative, public equity market or debt sources, then the firm's bargaining position might be relatively favorable and its original stockholders might be able to retain more of the value added in the transaction than otherwise. Conversely, if conditions for raising capital in public equity markets and debt markets are unfavorable, PPI might be able to capture a greater share of the value added. Hence, the fraction of value added captured by PPI, G/V , would depend on capital market factors that affect the availability and costs of alternative sources of capital and,

therefore, the relative bargaining positions of the parties. The value added captured by the PPI will depend on both the initial value of the negotiated discount and the magnitude of any adjustments for market movements prior to closing.

The effect of observed market conditions on the relative bargaining power of PPI and firms will depend on the determinants of those conditions. For example, low financing activity could result from a scarcity of capital or from a scarcity of attractive projects in which to invest capital. The former would increase the bargaining power of the PPI and thereby increase discounts. The latter, on the other hand, would put the bargaining power on the side of the issuer and reduce discounts.

Independent of relative bargaining power, public equity market conditions can affect PIPE price discounts through their impact on the value of the transaction (V). For any sharing rule (G/V), changes in V will change the discount. The nature of the relations between conditions in other capital markets and transaction value added by PIPE issues is not obvious. There are two opposing hypotheses. The *Risk Aversion Hypothesis* holds that periods of relatively high capital costs occur when investors believe that future investment returns are relatively risky. Future payoffs arising from PIPE issues are discounted at high rates in such periods and their present value is consequently small. Hence, transaction value added is negatively related to the level of required returns in the public securities markets.

Alternatively, the *Investment Opportunity Set Hypothesis* says that high capital costs are demand driven and occur during periods when the aggregate investment opportunity set is relatively rich in projects with high expected future payoffs. Future expected payoffs from PIPE issues are higher than usual under these conditions and their value added is large, despite the high cost of capital. This hypothesis implies that transaction value added is positively related to the level of required returns in the public markets.

Since capital market conditions are likely to affect both the bargaining power of PPI and the value associated with PIPE transactions, their overall impact on discounts is ultimately an empirical question. If conditions that enhance bargaining power are associated with relatively poor projects, larger slices of smaller pies will not necessarily increase observed discounts.

3. Data

We begin with a sample of 2,341 PIPE transactions that closed between January 1, 1995 and June 11, 2004. This initial sample includes all PIPE issues involving common equity sales that are included in the Sagient Research Systems database during this period. Following Hertz, Lemmon, Linck, and Rees (2002), we exclude transactions where the stock price is less than \$2 (694 issues). We also exclude 533 observations where the transaction is not the issuer's first transaction in the database. We do this because the typical second placement occurs only eight months after the first placement. Hence, the extent of information asymmetries associated with first and subsequent placements are likely to differ and so, too, would their effects on transaction characteristics. This leaves a sample of 1,114 initial PIPE transactions involving shares trading at a price of \$2 or more. Two hundred and nine of these 1,114 observations are lost because the issuing firms are not included in the Standard and Poor's Compustat or Center for Research in Security Prices (CRSP) databases (194 observations) or because the gross proceeds reported in the Sagient Database differ from the product of the reported offer price and the number of shares issued by more than 2 percent of that product (15 observations). This leaves us with a final sample of 905 initial PIPEs at 905 distinct firms.

We obtain data on firm financial and governance characteristics around the time of each private placement from the Compustat, CRSP, and Thompson Financial Disclosure databases. Data from Compustat are used to compute the ratio of property, plant and equipment to book assets (PPE/Assets), the ratio of the market value of assets to the book value of assets (Market-to-Book) as of the end of the fiscal year ending immediately preceding the placement, and the ratio of operating income in the year of the transaction to assets at the beginning of the year (OROA). We create an indicator variable that equals one if the unadjusted OROA is negative during both of the two fiscal years immediately preceding the private placement and zero otherwise. This indicator, which we use to identify firms that are likely to be financially distressed, is designated "Distress".⁴

Data from CRSP are used to compute abnormal returns around each private placement announcement, the discount at which shares are sold, the market capitalization of each firm prior

⁴ This definition is consistent with those used in Hertz and Smith (1993) and Wu (2004). In both of these papers firms with negative earnings in the two years prior to placement are considered to be financially distressed.

to the placement, and the aggregate change in each firm's market capitalization around the private placement. The Disclosure database, which contains information from proxy statements and 10K reports filed by each firm with the Securities Exchange Commission (SEC), is used to obtain information on officer and director ownership, ownership of blockholders, ownership by institutional investors, and the fraction of directors who are not officers of the firm in the year of the private placement.

Transaction characteristics are largely provided by Sagient, but are supplemented with additional information that we are able to obtain from reviews of the financial press and the SEC Edgar database. Sagient reports a number of characteristics for each PIPE, including the selling company name and industry, identities of the investors, number of shares sold, transaction price, closing date, filing date if the issue was subsequently registered with the SEC, whether a placement agent was used by the firm, and the exchange on which the shares trade.

We also obtain information on whether insiders participate in each of the 905 placements by searching the SEC *Records on Trading of Securities by Corporate Insiders, 7/11/1978 - 3/12/2001*, which is available on the National Archives web site at <http://aad.archives.gov/aad/>, and by directly searching the SEC's Edgar database for Form 4 (Statement of Changes in Beneficial Ownership) filings. We consider an insider to have participated in the placement if the transaction date involving the insider is within two trading days of the closing date of the PIPE transaction listed in the Sagient database and if the transaction price equals the per share purchase price reported by Sagient.

We obtain monthly data on the number of IPOs and average IPO underpricing from the web site maintained by Jay Ritter at the University of Florida.⁵ Similar to Gompers, Kovner, Lerner, and Scharfstein (2008), we use these data as measures of perceived investment opportunities.

Monthly credit and term spread data are acquired from the Federal Reserve web site.⁶ These data are used as proxies for the cost of capital and the general availability of credit. The yield on 10-year treasury bonds reflects the availability of capital to the extent that Treasury rates are higher in tight credit markets. We use the difference between the yields on Baa and Aaa rated corporate debt as a proxy for the cost of credit risk.

⁵ See <http://bear.cba.ufl.edu/ritter/ipodata.htm>.

⁶ See <http://research.stlouisfed.org/fred2/>.

4. Results

4.1. Descriptive Statistics

Table 1 presents descriptive statistics for firm (Panel A) and issue characteristics (Panel B) in our sample. Our sample consists of relatively small firms that have a mean (median) market capitalization of \$430.4 (\$120.8) million. These firms also have relatively few fixed assets, with PPE representing only 36.7 percent (26.8 percent) of total book assets. By comparison, the corresponding mean ratio of PPE to Assets is 51 percent for all Compustat firms over the sample period. The Market-to-Book ratios for issuers are large, with a mean (median) value of 3.37 (1.92). These firms also tend to have exhibited poor operating performance immediately prior to the placement. The mean (median) value of OROA in the year preceding the placement is -38.5 percent (-13.3 percent). Furthermore, over half of the issuers have had two years of negative operating performance immediately prior to the placement. The large proportion of distressed firms is consistent with evidence reported by Chaplinsky and Haushalter (2006).

Ownership of the sample firms is highly concentrated. On average, officers and directors own close to 20 percent of the firm's equity, while their median ownership exceeds 12 percent. Five-percent blockholders (including officers and directors) hold, on average, 40.1 percent of the outstanding shares and the median aggregate blockholdings, of 37.6 percent, is similar to the average. The mean (median) holding of the top five institutional owners is 13.4 percent (11.1 percent). We also note that the typical sample firm has an outsider-dominated board of directors. These ownership and governance characteristics suggest that the marginal value of incremental monitoring is likely to be low in our sample.

Panel B of Table 1 reports statistics for characteristics of the private placements. The mean (median) amount raised is \$27.3 million (\$10.6 million) and the mean (median) issue represents 11.7 percent (9.8 percent) of the post-issuance market capitalization of the firm.

As noted by Wruck (1989), PIPE issues also tend to concentrate ownership. On average, the largest investor acquires a block of shares representing 8.1 percent of the post-issuance market capitalization of the firm. The corresponding median value is 4.6 percent. In 12.2 percent of the placements a corporation acquires a block representing least 5 percent of post-issue equity. As these figures suggest, participation in the placements tends to be concentrated. The mean (median) number of investors that participate in one of the PIPE issues in our sample is 7.49

(2.00). To further characterize investor concentration we construct a Herfindahl-type index for each private placement equal to the sum of the squared fractions of the placement purchased by each of the participating investors. This index is logically bounded between zero and one. In our sample it has a mean (median) value of 0.61 (0.58).

The other statistics in Panel B indicate that management participated as a buyer in only 7.0 percent of the issues. Placement agents are used in 51.8 percent of the placements and the issuing firm manages the remaining 48.2 percent. Trading of privately placed shares tends to be initially restricted in most cases. We examine form S-3 registration statements obtained from the SEC's EDGAR database for each firm for a period of six months following the placement date. Within one week of the placement 12.8 percent of our sample issues are registered and 87.2 percent remain unregistered. However, though we do not report this in Table 2, we find that within three months of the placement, approximately 41.8 percent of all issues have been registered. The high frequency of registrations within the first three months suggests that PIPES are more liquid than is commonly assumed. Registration rights are a common feature in private placement agreements, especially in recent years. We also note that 6.7 percent of the issues are placements of shelf-registered securities. This 6.7 percent is included in the 12.8 percent and 41.8 percent figures above.

Table 2 reports measures of the impact of private placements on the wealth of the PPI and the OS. We present statistics for measures of the discount received by the PPI in Panel A. As in equation (4), we measure the discount relative to the value of the shares observed after the placement, on date a . Two measures of the discount are calculated. For one we set date a equal to 1 day after the placement date. For the other we match the procedure in Hertz and Smith (1993) and set date a equal to 10 days after the placement date. The two measures are denoted by $d(1)$ and $d(10)$, respectively. As the table shows, the mean discount $d(1)$ equals 13.52 percent and the median is 12.79 percent. The mean and median values of $d(10)$ are similar—13.49 percent and 13.27 percent, respectively. These values are similar to those reported elsewhere in the literature.

Panel A of Table 2 also reports statistics for the dollar gains received by the PPI. The dollar gain, G , is measured by multiplying the number of shares placed by the difference between the post-placement share price at date a and the placement transaction price, as in equation (2). Again, we calculate two measures, one with a set equal to day 1, $G(1)$, and the other with a set equal to day 10, $G(10)$. The mean (median) value of $G(1)$ amounts to \$2.86

(\$1.35) million and represents a mean (median) return of 21.03 percent (14.67 percent) to the PPI. The mean and median dollar gains and returns to PPI are similar when measured relative to the stock price on day 10.

Panel B of Table 2 presents the abnormal stock returns around the announcement of the placement. We measure abnormal returns using a Dimson (1979) type of market model that includes the contemporaneous market return as well as one lead and one lag of the market return. Our proxy for the market is the equally-weighted CRSP index. We use the equally-weighted index because our sample firms tend to be small. The equally-weighted index explains the stock returns of small firms better than the value-weighted index. We include the lagged and leading market returns in the model to mitigate the effects of nonsynchronous trading on measured abnormal returns. For the three-day event window from day -3 to day 0, [-3, 0], we observe a statistically significant (p -value < 0.01) 2.70 percent mean cumulative abnormal return (CAR). This CAR is larger than the 1.7 percent four-day return reported by Hertzler, Lemmon, Linck, and Rees (2002), but smaller than the 4.4 percent three-day value reported by Wruck (1989). For the [-10, 0] window, the mean CAR is 4.70 percent. This ten-day return is consistent with results reported in Wruck (1989). Her analysis reveals an average CAR over the [-10, 0] window of 5.48 percent. There appears to be significant information leakage prior to the announcement. Because of this, we measure wealth changes relative to day -10 in the remainder of our analysis.

Panel C presents statistics on the total and market-adjusted returns to the OS, Return to OS[-10, a]. The mean (median) raw returns to OS are 8.80 percent (3.52 percent) and 11.36 percent (3.82 percent) over the windows ending on days 1 and 10, respectively. The corresponding mean (median) market-adjusted returns are 6.20 percent (2.45 percent) and 7.40 percent (2.81 percent).

Throughout the rest of Section 4 we report evidence for $d(10)$, $RVA[-10, 10]$, and Return to OS[-10, 10] because day 10 has generally been used in previous private placement studies as the terminal valuation date. The evidence relative to day 10 is generally similar to that relative to day 1. However, we focus our discussion on the evidence relative to day 1 because we find that, for our sample, the gains around private placements are typically reflected in prices by day 1. This can be seen in Panel B of Table 2.

Finally, Panel D of Table 2 presents evidence on the equity value-added around PIPE issues. We compute two measures of value-added, one raw and one market-adjusted measure. If

we assume that the systematic component of the equity value change around the placement, ΔS^m , equals zero and note that $E(\Delta S^r) = 0$, it follows from equation (1) that $E(\Delta S - (\Delta N)P^s) = E(V + \Delta S^m + \Delta S^r) = E(V)$. Therefore, if we ignore the market driven component of stock price changes, the change in total equity capitalization around the placement less the placement proceeds is unbiased for V , the transaction value-added. It also follows that $E(\Delta S - (\Delta N)P^s) = (P_a - P_b)N_b + (P_a - P^s)\Delta N$. Hence, the change in total capitalization, net of the placement proceeds, equals the sum of the dollar gains to the OS and the PPI. We set b equal to day -10 and set a either to day 1 or day 10 to compute this sum, the estimate of value-added. We then divide this estimate by the sum of the day -10 market capitalization plus the gross proceeds from the issue to obtain a measure of relative value-added. We denote this measure by $RVA[b, a]$.

We also compute market-adjusted versions of these measures. In these versions we adjust for market movements by removing the market component of return over the period $[b, a]$. To do this we compute an adjusted terminal stock price that removes the systematic component of the stock price change over the interval. The adjusted terminal price, which we denote by, P_a^{adj} , equals the price before the placement multiplied by $(1 + CAR[b, a])$. The market-adjusted relative value-added is computed substituting P_a^{adj} for P_a in the procedures described above. This market-adjusted variable captures the net change in firm value arising from the capital infusion.

Over the $[-10, 1]$ window, the mean (median) for the unadjusted estimator of relative equity value-added is 10.37 percent (8.07 percent) and the mean (median) for the market-adjusted estimator is 8.07 percent (3.86 percent). For the period $[-10, 10]$, the corresponding mean (median) numbers are 12.86 percent (5.43 percent) and 8.88 percent (3.93 percent), respectively. These numbers are larger than the CARs reported in Panel B because they include the returns to the PPI. The magnitudes of the differences between the unadjusted and the corresponding market-adjusted values suggest that private placements tend to take place during periods when aggregate stock market returns are positive.

The increase in the overall level of PIPE activity from the late 1990s to the early 2000s was accompanied by changes in some PIPE issue characteristics. Figure 1 provides insights on these changes over the 1995 to 2004 period. Figure 1a shows that the increase in aggregate PIPE activity around 2000 is evident in our sample. Despite this increase, Figures 1b and 1c show no perceptible trends in 3-day stock price reactions to PIPE announcements or average gross proceeds per issue. The stock market appeared to find PIPE announcements no more or less

surprising in the latter part of the sample period. Noteworthy changes in Figure 1 are the declines in the magnitude of the discount received by the PPI in Figure 1c and in the relative value added, $RVA[-10,1]$, and returns to the original stockholders, $Return\ to\ OS[-10, 1]$, in Figure 1d. Overall, equity values of issuing firms increase less over the $[-10, 1]$ period in the latter part of the sample period and this is reflected in returns to the OS.

4.2. Capital Market Conditions and PIPE Activity

Figure 1a shows considerable time series variation in the level of PIPE activity over our sample period. A question raised by the theory we examine in this paper is whether some of this variation is attributable to changes in conditions in other parts of the capital markets. The *Related Markets Hypothesis* does not explicitly predict that the overall level of PIPE activity should be related to capital market conditions elsewhere as it is only a statement on the relations between these conditions and the relative bargaining power of issuing firms and PPI. Nevertheless, if capital market conditions do affect relative bargaining power, we might also expect to observe that the overall level of PIPE activity is related to these conditions. In this section we provide evidence of such a relation.

Table 3 presents descriptive statistics for indicators of capital market conditions around the time of the PIPE issues in our sample. All of the reported unadjusted measures are significantly different from zero with p-values of less than 0.01. P-values for the adjusted measures are reported in the last column.

Panel A reports measures of the return on the equally-weighted CRSP index over the 30 trading-day period preceding the PIPE announcements. The unadjusted value in the first column is the average return on the equally-weighted index over the indicated measurement window relative to the announcement date. The adjusted market return is estimated as follows. We first randomly select 9,050 days during the sample period (10 days for each observation) and calculate the equally-weighted return for all firms on CRSP over each of the indicated measurement windows (e.g., day -30 to -21, day -20 to 11 and so on) relative to the selected days. The average, across the 9,050 observations, for each of the indicated measurement windows, is then calculated to obtain a measure of the typical returns that might be expected over the indicated measurement window during the sample period. The adjusted values reported in Panel A equal the differences between the unadjusted values and the typical returns calculated this way.

The evidence in Panel A is consistent with the evidence in Table 2. PIPE issues tend to occur when the stock market is performing well. The mean (median) unadjusted return over the 30 days prior to private placement announcements is 5.02 percent (5.47 percent). This number is 1.11 percent (1.57 percent) larger than the expected 30-day return. Similar differences are observed over each of the 10-day periods in this window. These differences between the unadjusted and adjusted values are both economically and statistically significant and suggest that either firms time private placements or general stock market conditions have a significant impact on the ability of firms to sell equity privately.

Panel B of Table 3 presents statistics for other capital market conditions. Here the adjusted values are calculated by subtracting the mean value over the entire sample period of the indicated variable from the unadjusted number. Panel B reveals that the mean (median) underpricing across all IPOs in the month prior to a PIPE issue is 33.74 percent (19.20 percent). This is 8.43 percent (-6.11 percent) higher than mean underpricing over the entire sample period. The median adjusted value is not significantly different from zero.

The statistics for the No. of IPO Issues show that PIPE issues tend to take place when the overall level of IPO activity is low. On average, the month preceding a private placement has 4.5 fewer IPOs than an average month during the sample period and 14 fewer IPOs at the median. The rate on 10-year Treasury bonds is, on average, 13 basis points lower in the month immediately preceding private placement announcements than during other periods. On the other hand, the difference between Baa and Aaa yields in the month prior to private placements is, on average, 7 basis points higher than in other months.

Table 4 reports coefficient estimates from ordinary least squares (OLS) and Poisson regressions that provide evidence on the relations between capital market conditions and the overall level of PIPE activity.⁷ These models are estimated using monthly data over the period from January 1995 through December 2003. The dependent variable in Models 1 through 4 is the total capital raised by the firms in our sample in a given month. The dependent variable in Models 5 through 8 is the number of private placements in our sample in a given month. We exclude observations from 2004 from this analysis because our sample period ends on June 11, 2004 and observations are most likely to be missing during the last few months of the sample period. Nevertheless, the evidence is similar if we estimate the regressions using data through

⁷ See Maddala (1983, p. 51 – 54) for a discussion of Poisson regression models.

May 2004.

The evidence in Table 4 is consistent with the theory that capital market conditions are related to overall activity in the PIPE market. Comparison of the adjusted R^2 values in Models 1 through 4 reveals that over 15 percent of the variation in the dollar value of capital raised through PIPE issues is explained by capital market conditions. In fact, the adjusted R^2 in Model 4, of 0.447, is 17.6 percent higher than the corresponding value of 0.271 when the model is estimated with only the year dummy variables (not reported in the table). Furthermore, examination of the coefficient estimates in Model 8 reveals that the number of private placements is greater when the stock market has recently been performing well, when both the number of IPO issues and IPO underpricing have recently been relatively high, and when the 10 Year Treasury Rate is high. The implications of the evidence for the number of IPO issues and the Treasury rate from the regressions are different from those in Table 3, reflecting the importance of controlling for time trends. Overall, the evidence in Table 4 suggests that PIPE issues occur more frequently when market valuations have been increasing, when equity capital in the public market is scarce relative to demand, and when alternative sources of capital are more costly.

4.3. Capital Market Conditions and Discounts, Gains to OS, and Transaction Value-Added

The *Related Markets Hypothesis* holds that public capital market conditions affect the relative bargaining power of firms and PPI and, therefore, observed PIPE price discounts. To test this hypothesis we examine the determinants of PIPE price discounts using multivariate regression analysis. This analysis provides evidence on the incremental impact of market conditions on measures of gains to PPI while controlling for firm and issue characteristics that other studies have found to be related to discounts. Since capital market conditions can affect price discounts through their affects on the total value of transactions, we also examine the determinants of the returns to the OS and total gains to investors around PIPE announcements for evidence on the *Investment Opportunity Set* and *Risk Aversion* hypotheses.

4.3.1 Price Discounts

Table 5 presents coefficient estimates from regression models that predict the private placement discount, $d(a)$. In the first two columns, the discount is measured relative to the stock

price on day 1. In the third and fourth columns, the discount is measured relative to the stock price on day 10.

The model in the first column of Table 5 includes variables representing firm and issue characteristics that have been examined in previous studies of PIPE price discounts. The coefficient estimates in this column indicate that $d(1)$ is negatively related to firm size (Natural Log of Market Capitalization), an indicator that a corporation acquires at least five percent or more of the firm's equity in the placement (Corporate Blockholder), investor concentration as proxied by the Herfindahl index (Investor Concentration), and an indicator of whether an officer or director participates in the placement (Insider Participation). The evidence that discounts tend to be larger at smaller firms is consistent with evidence reported elsewhere, such as in Hertz and Smith (1993). The negative relation with the Corporate Blockholder variable is consistent with evidence reported by Wruck and Wu (2009) that the discounts required by corporate investors tend to be smaller than discounts required by other investors. The relation with Investor Concentration is consistent with that reported by Hertz and Smith (1993). Discounts tend to be greater when there is less concentration among the investors.

The negative relation with Insider Participation suggests that insiders are more likely to participate when discounts are smaller. This evidence differs from that reported by Hertz and Smith (1993), who found no relation between the discount, measured relative to day 10, and Insider Participation. It also differs from the findings in Wu (2004). Wu reports that managerial participation is associated with significantly higher discounts. The evidence in Table 5 is inconsistent with managerial self-dealing. In our sample, managers do not appear to participate only when they can deal themselves large discounts. The negative relation between $d(1)$ and Insider Participation might indicate that managers invest in higher quality issues or that investors require a smaller discount when managers invest alongside of them.

The negative relations with firm and issue characteristics in the first column of Table 5 provide insights concerning the relative bargaining power of the PPI and the issuing firms. For instance, the negative relation between $d(1)$ and firm size suggests that smaller firms tend to hold weaker bargaining positions when they seek to place private equity. This is not surprising. Small firms have more limited access to public capital markets than do large firms.

The evidence for the Corporate Blockholder variable is consistent with the conclusion drawn by Wruck and Wu (2009) that relational investors tend to invest in higher quality firms. If

high quality firms are in a better bargaining position than low quality firms, we would expect to observe smaller discounts associated with private placements by the high quality firms.

The evidence for the Investor Concentration variable also can be interpreted as telling us something about relative bargaining power. Discounts are greater where a PIPE issue is sold to a large number of investors than to a small number. This supports the hypothesis that firms with weaker bargaining positions not only discount more heavily, but that they also have more difficulty placing the issue with a small number of investors. In other words, individual PPI are unwilling to take up large fractions of these risky issues.

The coefficient estimates in the first column of Table 5 also indicate that $d(1)$ is positively related to our distress indicator variable (Distress). This suggests that distressed firms find it necessary to discount more heavily in order to attract investors. One possible explanation for this is that financially distressed firms are in a poor bargaining position.

The model in the second column in Table 5 contains the same variables for firm and issue characteristics that are included in the first column, along with variables related to capital market conditions. Adding the capital market condition variables does not qualitatively change the observed relations for the firm and issue characteristic variables. The evidence indicates, however, that market conditions influence discounts in private placements. The coefficient estimates on the three variables for stock market returns immediately preceding the placement (EW Mkt. Return[-10, -1], EW Mkt. Return[-20, -11], EW Mkt. Return[-30, -21]) are all positive and significant at the 1 percent level. It follows that the prices set for private placement issues are sticky in the sense that they do not change as much as stock market prices in general leading up to the private placement dates. This is consistent with the idea that the placement price is set at some point in advance of closing and is not changed to reflect recent changes in the stock market. It is also consistent with evidence reported in Lowry and Schwert (2004) that IPO prices do not fully reflect public information that becomes available between the date that the offer price range is set and the offering date.

We also observe in the second column of Table 5 that credit market conditions are related to the magnitudes of discounts. In particular, the positive relation between the 10 year Treasury rate and the discount indicates that issuing firms must discount more heavily when interest rates are high. If Treasury bond rates reflect, at least in part, tightness in the credit markets, this evidence supports the view that private placement discounts are larger when debt capital is

relatively scarce.

Overall, adding the variables for capital market conditions in the second column increases the explanatory power of the $d(1)$ model substantially. The adjusted R^2 increases from 0.126 in the first column to 0.200 in the second. The hypothesis that the coefficient estimates for all of the capital market condition variables are jointly zero is rejected at the 1 percent level by an F-test.

The models in the third and fourth columns are similar to those in the first two columns, except that the dependent variable is the discount measured relative to the market price on day 10. We observe several differences in the coefficient estimates for the firm and issue characteristics when we change the terminal valuation date. When the discount is measured relative to day 10, the coefficient estimates on firm size remain negative, but are less significant. In addition, the impact of insider participation is no longer significant. This result is consistent with that reported in Hertz and Smith (1993), who also estimate the discount relative to day 10. Finally, the measure of financial distress is not significantly related to $d(10)$.

The changes we observe in the coefficient estimates in the third and fourth columns in Table 5 are interesting in light of the similar average values that are reported in Panel A of Table 2 for $d(1)$ and $d(10)$, 13.52 percent and 13.49 percent, respectively. The evidence in Table 5 indicates that even though the mean values are similar, there are cross-sectional differences in discounts when they are measured relative to different dates. These changes are driven by changes in the placement firms' stock prices over the interval $[1, 10]$. One possible explanation for these changes is that the volatility of small firm prices increases more than that of large firm prices following private placements, that insider participation is greater among small firms, and that small firms are more likely to be distressed. Consistent with this explanation, examination of the correlations between the independent variables in Table 5 reveals significant negative correlations between Insider Participation and Natural Log of Market Capitalization and between Distress and Natural Log of Market Capitalization.

The evidence for the capital market condition variables in the fourth column is consistent with that in the second column. The coefficient estimates on the equally-weighted market return variables are all positive and two are significant at the 5 percent level. It is interesting that the coefficient estimates on the two IPO variables that have the same signs as the estimates in the second column, are both significant at the 10 percent level. These coefficient estimates suggest

that IPO market conditions are related to the magnitude of private placement discounts relative to day 10 stock prices. Discounts are larger when IPO underpricing is greater. This supports the hypothesis that discounts are an increasing function of the costs of alternative sources of funds in the public equity markets. Discounts are small when the IPO market is hot in the sense that there are more issues.⁸ This relation and the positive relation between discounts and aggregate underpricing are consistent with the notion that reduced public market activity reflects a scarcity of capital.

The coefficient estimate on the 10-year Treasury rate has the same sign in the fourth column of Table 5 as in the second, but it is not statistically significant. Similar to the IPO market coefficient estimates, the estimates for the credit spread have the same signs in both columns two and four and are significantly different from zero in column four. These negative coefficient estimates reflect an unusual relation between the Baa rate and the Aaa rate during our sample period. During this period, the Baa rate remained relatively constant while the Aaa rate moved up and down according to credit market conditions. The negative coefficient estimates for the credit spread variables are therefore consistent with the notion that discounts are larger when credit market conditions are tighter. In other words, during our sample period, the Baa – Aaa spread variable is highly negatively correlated with the 10 year Treasury yield variable (correlation coefficient of -0.672).⁹

4.3.2 Return to the Original Stockholders

In Table 6 we examine returns to the OS using the same firm, issue, and capital market condition variables that we use as explanatory variables in Table 5. In the first two columns of Table 6 the return to the OS is measured over the period from day -10 to day 1 (Return to OS[-10, 1]). The coefficient estimates for the firm and issue characteristic variables in the first and second columns indicate that returns to OS of small firms are greater than returns to OS of large firms. This evidence, in conjunction with evidence in Table 7 that we will discuss shortly, indicates that private placements tend to be relatively more important events at smaller firms.

⁸ The No. IPO Issues variable in the regression models in Tables 5 through 8 is the standardized number of IPO issues in the month before the month in which the private placement takes place. For example, it has a value of 1 if the number of IPOs is one standard deviation above the monthly average number of IPOs over the sample period. Similarly, it has a value of 2 if the number of IPOs is two standard deviations above the monthly mean, and so on.

⁹ We also estimated the regression models using the lagged monthly total return on long-term corporate bonds as a measure of changes in corporate bond yields. This variable is negatively and significantly related to both $d(1)$ and $d(10)$. The implied relations in all other analyses were also similar to those for the credit-spread variable.

In the first column of Table 6, the Return to OS[-10, 1] is positively related to the market-to-book ratio, the size of the issue (Natural Log of Proceeds), Corporate Blockholder, and an indicator variable that equals one if the issue is not registered within one week of the issue (Not Immediately Registered). The positive coefficient estimate for Market-to-Book is consistent with the idea that firms with more growth options have better investment opportunities and that competition between investors for these firms' projects enhances the issuing firms' bargaining position. It is also consistent with the theory that high growth option firms simply have more valuable projects and that private placements allow them to take advantage of these more valuable projects.

The positive relation between Return to OS [-10, 1] and Natural Log of Proceeds is consistent with the theory that raising a large amount of capital sends a positive signal to the market about a firm's prospects. On the other hand, it might simply indicate that large positive NPV projects require more money. The evidence in Table 6 also suggests a positive relation between Corporate Blockholder and Returns to OS. Recall that the evidence in Table 5 shows a negative relation between Corporate Blockholder and discounts received by PPI. Taken together, these results are consistent with the hypothesis that the participation of a corporate investor serves to reduce information asymmetry and to certify firm value. This evidence also supports the notion that corporations tend to invest in firms that have relatively strong bargaining positions. Finally, the positive coefficient estimate for the registration indicator variable tells us that the returns to OS are greater in placements where liquidity is not of immediate concern to the PPI.

The negative coefficient estimate on the Placement Agent variable indicates that Return to OS [-10, 1] tends to be more than three percent less when a placement agent is used than when the firm manages the offering itself. This result is not surprising. The presence of a placement agent is indicative of relative bargaining power. Placement agents are more likely to be employed by firms that are in weak bargaining positions and, therefore, value assistance in raising capital.

The second column of Table 6 reports coefficient estimates for the capital market conditions variables. There is a positive and significant relation between the equally-weighted market return over days [-10, -1] and Return to OS[-10, 1]. Since the returns to the OS are not market-adjusted, this relation is mechanical and serves to partially market-adjust Return to OS[-

10, 1]. The market returns over the windows [-20, -11] and [-30, -21] are not significantly related to Return to OS[-10, 1]. This is in contrast to the evidence in Table 5 for the discount, $d(1)$, which is positively and significantly related to the market returns over both of these windows. This difference is due to the difference in the base prices used to calculate the Return to OS[-10, 1] and $d(1)$. Return to OS[-10, 1] is based on the price on day -10, which appears to reflect public information up to that day. The basis for $d(1)$ is the offering price set at some unknown point prior to the issue. The results in Table 5 imply that this offering price does not reflect all of the information that is publicly available during the period immediately prior to the placement.

The figures in the second column of Table 6 also show that returns to OS are significantly related to conditions in the IPO market. Return to OS is increasing in IPO underpricing and decreasing in the number of IPOs. In discussing Table 5 we interpreted high levels IPO underpricing and low numbers of new issues as indicating a scarcity of capital. The evidence in Table 6 also supports this interpretation. As capital becomes scarce, the quality of the marginal project must be higher to attract investment. This would result in high average returns to original stockholders when funds are expensive and IPO activity is low. We also note that, for a given level of underpricing, an increase in the number of new issues increases competition for funds. This, in turn, should reduce the bargaining power of firms raising capital.

The coefficient estimate on the 10-year Treasury rate is positive in the second column of Table 6. High Treasury rates imply tight capital markets and high costs of capital. We should observe high returns to OS when credit market conditions tighter if only projects with large NPVs attract financing in tight credit markets.

The coefficient estimates in the third and fourth columns of Table 6 are qualitatively similar to those in the first and second columns, although, as is the case in Table 5, some significance levels have changed. Note again how the adjusted R-squared changes when the capital market condition variables are included in these models. This measure of the explanatory power of the model increases from 0.074 in the first column to 0.199 in the second and from 0.036 in the third column to 0.135 in the fourth.

4.3.3 Equity Value-added around Private Placements

Table 7 presents coefficient estimates from regression models where the dependent variable equals the relative equity value-added from day -10 to day 1 (RVA[-10, 1]) or to day 10 (RVA[-10, 10]). These variables represent relative measures of the change in equity value, ΔS ,

less the placement proceeds, $(\Delta N)P^s$, that appear in equation (1). By inspection of the equation, it is clear that, $(\Delta S - (\Delta N)P^s)$ reflects the sum of the valued added associated with the PIPE, the expected change in equity value over the period, given the risk of the equity and conditional on aggregate market returns, and the residual value change that is neither associated with the PIPE nor attributable to systematic factors. Hence, this measure does include the expected change in equity value. We do not use the market-adjusted versions of these measures in these regressions because the independent variables in columns two and four include market returns.

The coefficient estimates in the first column of Table 7 indicate that $RVA[-10, 1]$ is negatively related to the Natural Log of Market Capitalization and the Placement Agent indicator. The negative relation with the Natural Log of Market Capitalization simply indicates that, holding the dollar value of the issue constant (Natural Log of Proceeds), smaller returns are associated with private placements at larger firms. The coefficient estimate for the Placement Agent indicator suggests that the announcement of a private placement by a firm which finds it necessary to use a placement agent conveys negative information to the market.

The relative equity value-added is positively related to Market-to-Book, the residual standard deviation from a market model regression that is estimated over the period -300 to -51, relative to the issue date, using the CRSP equally-weighted index, the Natural Log of the Proceeds, the presence of a Corporate Blockholder, and the Not Immediately Registered indicator. The relation with Market-to-Book is consistent with the idea that proceeds from private placements by high growth option firms are expected to be used more productively than proceeds received by low growth option firms. We interpret the positive relation between the Natural Log of Proceeds and total gains as we did the positive relation between proceeds and returns to original stockholders. Raising large amounts of capital sends a strongly positive signal or projects with large positive NPVs require large investments. The relations with Corporate Blockholder and the Not Immediately Registered variables indicate that corporate and long-term investors are associated with more productive uses for the proceeds from the issue. Finally, the coefficient for the Residual Standard Deviation variable is positive and marginally significant. This suggests that the value-added by private placements is an increasing function of firm idiosyncratic risk.

The model in the second column of Table 7 reveals that, controlling for firm and issue characteristics and for prior stock market returns, equity value-added is significantly related to

the measures of capital market conditions. In particular, $RVA[10, 1]$ is greater in periods when IPO issues tend to exhibit larger first day returns, when there are relatively few IPO issues, and when credit market conditions are relatively tight. The first of those three relations indicates that the market reception of private placements is positively correlated with the reception of IPO issues. The latter two relations are consistent with the idea that the firms that are able to place equity privately in periods with tight equity and credit markets are those with more profitable investment opportunities. Overall, the evidence tends to support the *Investment Opportunity Set Hypothesis* and to reject the *Risk Aversion Hypothesis*.

The evidence in columns three and four of Table 7 is qualitatively similar to that in columns one and two, although the significance levels change in several cases. As in Tables 6 and 7, these changes in the significance levels illustrate the sensitivity of the results in private placement studies to the selection of the measurement period. Also, similar to the evidence in Tables 6 and 7, we find that the addition of the capital market condition variables to the regression models markedly increases their explanatory power.

5. Conclusions

In this study we develop a theory and provide new evidence on how capital market conditions influence the pricing of PIPE issues. We show that public market conditions influence PIPE price discounts, returns to original stockholders, and relative equity value-added. Discounts are significantly positively related to prior stock market returns and returns to original stockholders are significantly positively related to the average underpricing of recent IPOs and significantly negatively related to recent IPO volume. These results generally support the *Related Markets Hypothesis*. The evidence for equity value-added supports the *Investment Opportunity Set Hypothesis* and are inconsistent with the *Risk Aversion Hypothesis*. Moreover, we find that the explanatory power associated with the measures of public market conditions that we consider is comparable to the combined explanatory power of the firm and issue characteristics that have traditionally been the focus of studies of the determinants of private placement discounts.

We also provide evidence consistent with the theory that the gains to original stockholders and private placement investors reflect the relative bargaining power of the two parties as well as agency considerations and informational asymmetry. An issuing firm's bargaining power is low when it is small, has few tangible assets, is raising a large amount of

capital, or when insiders are not participating in the deal. We find that private placement investor gains are positively related to these firm and deal characteristics.

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Table 1: Firm and Issue Characteristics

Firm and issue characteristics for 905 private equity issues by public firms over the period from January 1, 1995 through June 11, 2004. In Panel A, *Market Capitalization* is the number of shares outstanding times the price per share ten days before the issue. *PPE/Assets* is the ratio of property, plant and equipment to the book value of total assets at the end of the year before the issue. *Market-to-Book* is the ratio of the market value of equity plus the book value of debt less book equity divided by the book value of assets at the end of the year before the issue. *OROA* is the ratio of operating income to beginning of period book assets in the year before the issue. *Distress* is an indicator that equals one if OROA is negative in each of the two years before the issue. *Residual Standard Deviation* is the residual standard deviation from a market model regression that is estimated over trading days -300 to -51, relative to the issue date, using the CRSP equally-weighted index. *O&D Holdings*, *Blockholdings*, and *Largest Institutional Holdings* measure the respective fractional shareholdings of these groups as reported in the proxy statement immediately preceding June in the year of the issue. *Outside Directors* is the fraction of directors who are not officers at the time of the issue. In Panel B, *Proceeds* is the number of shares issued times the offer price. *Relative Issue Value* is the value of the issued shares as a fraction of firm market capitalization as of 10 days after the issue. *Corporate Blockholder* is an indicator that equals one if a corporation purchases shares and owns five percent or more of the equity after the issue. *Investor Concentration* is a Herfindal index (sum of the squared fractions) computed from the fractions of the total issue purchased by each of the investors.

	N	Mean	Median
Panel A: Firm Characteristics			
Market Capitalization (millions)	905	\$430.4	\$120.8
PPE/Assets	715	36.7%	26.8%
Market-to-Book	777	3.37	1.92
OROA	744	-38.5%	-13.3%
Distress	729	53.4%	
O & D Holdings: Stockholdings of officers and directors	669	19.9%	12.7%
Blockholdings: Stockholdings of 5% blockholders	669	40.1%	37.6%
Largest Institutional Holdings: Stockholdings of five largest institutions	708	13.4%	11.1%
Outside Directors	852	66.1%	66.7%
Panel B: Issue Characteristics			
Proceeds (millions)	905	\$27.3	\$10.6
Relative Issue Value	905	11.7%	9.8%
Biggest Buyer: Maximum fraction of equity acquired by one investor	905	8.1%	4.6%
Corporate Blockholder: A corporate buyer holds least 5% of equity after issue	905	12.2%	
Number of Investors	905	7.49	2.00
Investor Concentration: Issue Hefindahl index based on investors' shares issue	905	0.61	0.58
Insider Participation: Indicator for whether management purchases shares	905	7.0%	
Placement Agent: Indicator for whether a placement agent is used by issuer	905	51.8%	
Not Immediately Registered: Issue not registered within one week of issue	905	87.2%	
Shelf Registration: Indicator for whether issue involved shelf-registered shares	905	6.7%	

Table 2: Discounts to Investors, Market Reactions to Issues, and Distributions of Relative Value-Added

Discounts and dollar gains to investors, market reactions to issues, and distributions of relative value-added for 905 private equity issues by public firms over the period from January 1, 1995 through June 11, 2004. Discounts, d , are calculated as one minus the ratio of the per share price paid by the private placement investors (PPI) divided by the per share market price as of day 1 or 10, relative to the issue date. Dollar gains, G , are calculated as the stock price as of day 1 or 10 minus the per share price paid by the PPI times the number of shares sold in the issue. $Return(a)$ is the dollar gain, $G(a)$, divided by the gross proceeds from the issue, where a is day 1 or 10. $CAR[X, Y]$ is the abnormal return on the stock measured from day X through Y relative to the announcement date of the placement. $Return\ to\ OS[-10, a]$ is the rate of return to shares between day -10 and day a . The *Mkt. Adj. Return to OS[-10, a]* adjusts for market movements over the indicated period. $RVA[-10, a]$ is calculated as the sum of the dollar gains of the original stockholders (OS) and the PPI from day -10 to day a divided by the sum of the day -10 market capitalization plus the gross proceeds from the issue. *Mkt. Adj. RVA[-10, a]* is calculated the same way except that the dollar gains are adjusted for market movements from day -10 to the indicated day using a market model that is estimated over days -300 to -51 with the CRSP equally-weighted index.

	N	Mean	Median
Panel A: Discounts, Gains, and Returns to PPI			
d(1): Discount relative to share price 1 day after issue	811	13.52%	12.79%
G(1): Dollar gain relative to share price 1 day after issue	811	\$2,862,281	\$1,347,670
Return (1)	811	21.03%	14.67%
d(10): Discount relative to share price 10 days after issue	811	13.49%	13.27%
G(10): Dollar gain relative to share price 10 days after issue	811	\$2,930,421	\$1,195,137
Return (10)	811	23.56%	15.30%
Panel B: Market Reactions			
CAR [-3, 0]	835	2.70%	0.22%
CAR [-10, 0]	835	4.70%	0.56%
CAR [1, 10]	835	1.84%	-0.47%
Panel C: Return to original stockholders(OS)			
Return to OS[-10, 1]	748	8.80%	3.52%
Mkt. Adj. Return to OS[-10, 1]	744	6.20%	2.45%
Return to OS[-10, 10]	748	11.36%	3.82%
Mkt. Adj. Return to OS[-10, 10]	744	7.40%	2.81%
Panel D: Changes in equity value			
RVA[-10, 1]	748	10.37%	8.07%
Mkt. Adj. RVA[-10, 1]	744	8.07%	3.86%
RVA[-10, 10]	748	12.86%	5.43%
Mkt. Adj. RVA[-10, 10]	744	8.88%	3.93%

Figure 1: PIPE Issue Characteristics by Year

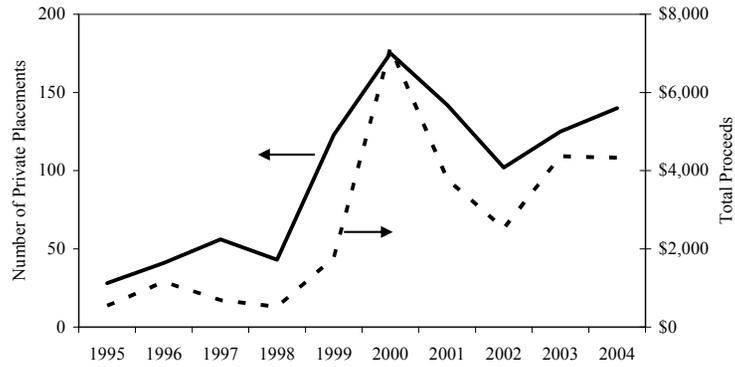


Fig. 1a: Number of private placements and total proceeds from private placements by year. 2004 values are annualized based on private placement activity through June 11, 2004.

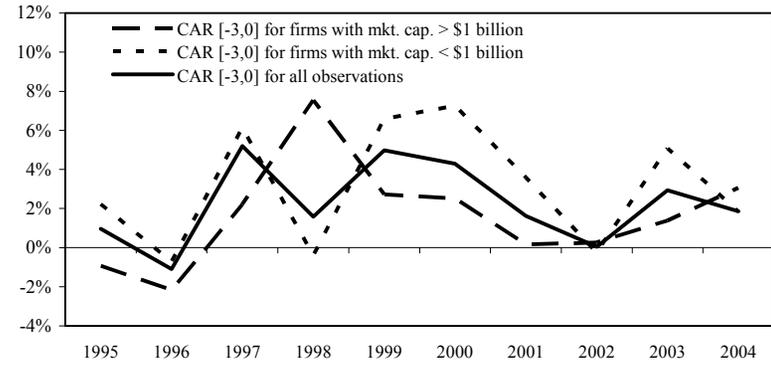


Fig. 1b: Average cumulative abnormal stock returns from day -3 through day 0, relative private placement announcements, by year and by market capitalization.

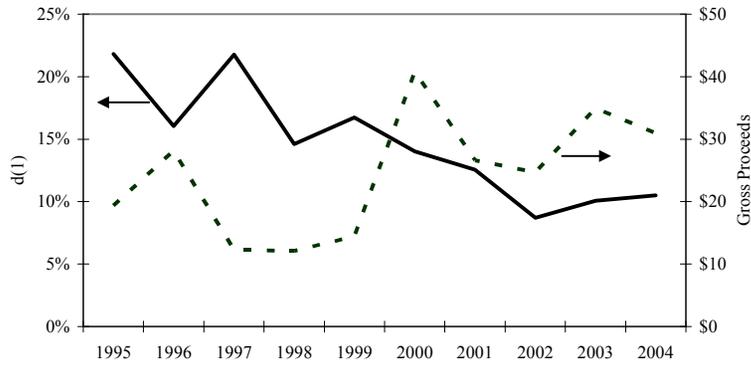


Fig. 1c: Average percent discount received by private placement investors, relative to the stock price at day 1, and average gross proceeds per private placement by year.

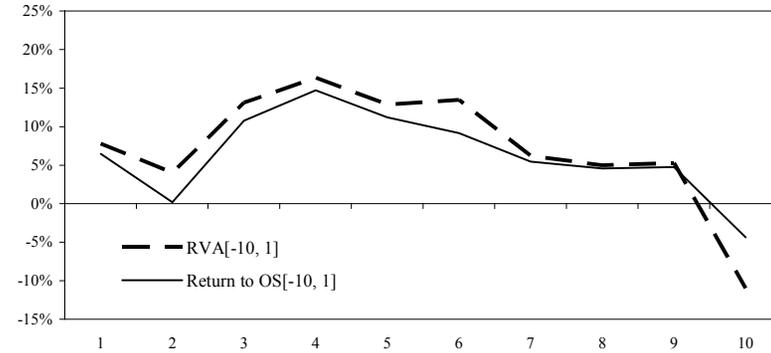


Fig. 1d: Relative value added by private placement (RVA[-10, 1]), return to original stockholders (OS) from day -10 to day 1, relative to private placement announcement (PPI), measured relative to day 1.

Table 3: Stock Market Returns and Capital Market Conditions

Stock market returns and capital market conditions around 905 private equity issues by public firms over the period from January 1, 1995 through June 11, 2004. *EW Mkt. Return [X,Y]* is the return on the equally-weighted CRSP index from day X through day Y relative to the private placement issue date. The Adjusted EW Mkt. Returns are obtained by first randomly selecting 9,050 days during the sample period (10 days for each observation) and calculating the equally-weighted return on the CRSP over each of the indicated periods relative to the selected days. The averages, across the 9,050 observations, for each indicated measurement window, is then calculated to obtain a measure of the typical returns that might be expected over the measurement window during the sample period. The reported *Adjusted* values are the differences between the *Unadjusted* values and the values calculated this way. In Panel B, *IPO Underpricing* is the average underpricing among initial public offerings (IPOs) in the month immediately preceding the private equity issue. *No. of IPO Issues* is the number of IPO issues in the month immediately preceding the private equity issue. *10 Year Treasury Rate* is the yield on 10 year Treasury bonds in the month preceding the private equity issue. *Baa – Aaa Yield Spread* is the difference between the yield on Baa corporate bonds and the yield on Aaa bonds in the month preceding the equity issue. The *Adjusted* values in Panel B are the differences between the *Unadjusted* values and the monthly average over the entire sample period of the indicated variable. All of the reported unadjusted measures are significantly different from zero with p-values less than 0.01.

		Unadjusted	Adjusted	P-value for test that the Adjusted Value Equals Zero
Panel A: Stock Market Returns				
EW Mkt. Return [-30, -1]	Mean	5.02%	1.11%	0.000
	Median	5.47%	1.57%	0.000
EW Mkt. Return [-10, -1]	Mean	1.50%	0.30%	0.021
	Median	1.77%	0.57%	0.007
EW Mkt. Return [-20,-11]	Mean	1.84%	0.65%	0.000
	Median	2.07%	0.88%	0.000
EW Mkt. Return [-30,-21]	Mean	1.56%	0.37%	0.008
	Median	1.75%	0.56%	0.000
Panel B: Capital Market Conditions				
IPO Underpricing	Mean	33.74%	8.43%	0.000
	Median	19.20%	-6.11%	0.978
No. of IPO Issues	Mean	26.13	-4.48	0.000
	Median	16.00	-14.61	0.000
10 Year Treasury Rate	Mean	5.32%	-0.13%	0.000
	Median	5.28%	-0.17%	0.000
Baa – Aaa Yield Spread	Mean	0.87%	0.07%	0.000
	Median	0.81%	0.01%	0.000

Table 4: Overall Activity in the PIPE Market and Capital Market Conditions

Ordinary least squares (OLS) and Poisson regressions estimated over the 108 months from January 1995 through December 2003. The dependent variable in the OLS regressions is the total dollar value of the capital raised through private placements in a particular month. The dependent variable in the Poisson regressions is the number of private placements in a particular month. The private placement statistics are for a sample of 835 private placements that were announced between January 1995 and December 2003. The independent variables are measures of capital market conditions and year dummy variables. *EW Mkt. Return [X,Y]* is the return on the equally-weighted CRSP index from day X through day Y relative to the private placement issue date. *IPO Underpricing* is the average underpricing among initial public offerings (IPOs) in the month immediately preceding the private equity issue. *No. of IPO Issues* is the number of IPO issues in the month immediately preceding the private equity issue. *10 Year Treasury Rate* is the yield on 10 year Treasury bonds in the month preceding the private equity issue. *Baa – Aaa Yield Spread* is the difference between the yield on Baa corporate bonds and the yield on Aaa bonds in the month preceding the equity issue. t-statistics are reported for the OLS regression coefficient estimates and Chi-Square statistics for are reported for the Poisson regressions coefficient estimates in parentheses. Superscripts a, b, and c denote significance at the 10%, 5%, and 1% level, respectively.

	Model							
	1	2	3	4	5	6	7	8
	OLS Regressions: Dependent Variable is Total Capital Raised Through Private Placements During Month				Poisson Regressions: Dependent Variable is Number of Private Placements During Month			
Intercept	328.90 ^c (2.57)	300.73 ^b (2.41)	298.06 (0.68)	-344.02 (-0.79)	2.212 ^c (566.67)	2.233 ^c (564.97)	1.555 ^a (3.12)	-0.216 ^a (0.05)
EW Mkt. Return [-30, -1]	859.57 ^a (1.90)			188.64 (0.51)	2.984 ^c (31.68)			2.434 ^c (17.13)
No. of IPO Issues		2.88 ^b (2.39)		2.87 ^b (2.31)		0.008 ^c (7.01)		0.006 ^b (3.80)
IPO Underpricing		748.78 ^c (5.39)		702.28 ^c (4.80)		0.777 ^c (19.86)		0.458 ^b (5.12)
Baa – Aaa Yield Spread			-364.67 (-1.10)	156.54 (0.52)			-0.496 (0.84)	0.924 (2.25)
10 Year Treasury Rate			118.79 ^b (2.33)	116.11 ^b (2.28)			0.335 ^c (10.36)	0.334 ^c (9.96)
Year Dummy Variables:								
1995	-301.47 ^b (-2.31)	-552.99 ^c (-3.88)	-833.46 ^c (-3.47)	-781.16 ^c (-3.59)	-1.465 ^c (47.48)	-1.947 ^c (66.32)	-2.728 ^c (54.89)	-2.235 ^c (36.52)
1996	-246.09 ^a (-1.79)	-541.14 ^c (-3.34)	-711.92 ^c (-3.20)	-740.23 ^c (-3.33)	-1.036 ^c (32.94)	-1.703 ^c (42.04)	-2.136 ^c (47.06)	-1.916 ^c (31.17)
1997	-287.35 ^b (-2.24)	-497.26 ^c (-3.37)	-777.27 ^c (-3.44)	-687.95 ^c (-3.32)	-0.734 ^c (20.73)	-1.211 ^c (33.82)	-1.855 ^c (34.30)	-1.391 ^c (17.83)
1998	-282.63 ^b (-2.19)	-508.84 ^c (-3.58)	-653.79 ^c (-3.35)	-578.27 ^c (-3.32)	-0.946 ^c (28.26)	-1.379 ^c (51.46)	-1.764 ^c (36.51)	-1.221 ^c (17.26)
1999	-198.32 (-1.50)	-750.29 ^c (-4.30)	-490.10 ^c (-2.79)	-853.28 ^c (-4.11)	0.048 (0.14)	-0.740 ^c (15.19)	-0.664 ^c (10.29)	-0.724 ^c (10.06)
2000	265.45 (1.41)	-240.78 (-1.48)	-164.67 (-0.75)	-393.08 ^a (-1.94)	0.443 ^c (14.03)	-0.321 ^a (3.28)	-0.570 ^b (4.94)	-0.371 (1.94)
2001	-27.40 (-0.20)	-118.29 (-0.83)	-279.67 ^a (-1.65)	-183.37 (-1.21)	0.174 (2.01)	0.049 (0.16)	-0.363 ^a (3.64)	0.050 (0.06)
2002	-119.39 (-0.86)	-169.06 (-1.24)	-167.38 (-0.91)	-273.38 (-1.49)	-0.092 (0.46)	-0.242 ^a (3.26)	-0.350 ^a (2.87)	-0.573 ^c (6.71)
N	108	108	108	108	108	108	108	108
Adjusted R ²	0.293	0.439	0.304	0.447				
Model X ²					31.41	28.61	17.91	53.46
p-value					0.000	0.000	0.000	0.000

Table 5: Stock Market Returns, Capital Market Conditions, and Private Placement Discounts

Ordinary least squares (OLS) regressions estimated with a sample of 905 private equity issues by public firms over the period from January 1, 1995 through June 11, 2004. The dependent variable, $d(a)$, is the discount received by the private placement investors (PPI) relative to the stock price a days, after the issue date. The independent variables are defined in Tables 1 and 3. t-statistics are reported in parentheses. Superscripts a, b, and c denote significance at the 10%, 5%, and 1% level, respectively.

	d(1)	d(1)	d(10)	d(10)
Constant	0.623 ^c (5.00)	0.489 ^c (3.41)	0.820 ^c (5.46)	0.913 ^c (5.22)
Natural Log of Market Capitalization	-0.019 ^b (-2.08)	-0.021 ^b (-2.31)	-0.014 (-1.38)	-0.018 ^a (-1.72)
PPE/Assets	-0.003 (-0.14)	-0.011 (-0.62)	-0.014 (-0.61)	-0.016 (-0.69)
Market-to-Book	0.003 (1.49)	0.001 (0.40)	0.004 (1.61)	0.002 (0.76)
Distress	0.034 ^b (2.37)	0.029 ^b (1.99)	0.001 (0.04)	-0.006 (-0.34)
Residual Standard Deviation	0.484 (1.52)	0.429 (1.39)	0.357 (0.93)	0.219 (0.59)
Natural Log of Proceeds	-0.009 (-1.01)	-0.009 (-1.01)	-0.023 ^b (-2.26)	-0.024 ^b (-2.31)
Corporate Blockholder	-0.043 ^a (-1.71)	-0.039 (-1.51)	-0.072 ^b (-2.29)	-0.073 ^b (-2.29)
Investor Concentration	-0.086 ^c (-4.55)	-0.069 ^c (-3.72)	-0.095 ^c (-3.87)	-0.083 ^c (-3.28)
Insider Participation	-0.069 ^c (-2.69)	-0.054 ^b (-2.26)	-0.031 (-1.04)	-0.019 (-0.62)
Not Immediately Registered	0.023 (1.46)	0.009 (0.52)	0.000 (0.00)	-0.016 (-0.80)
Placement Agent	-0.005 (-0.36)	0.005 (0.33)	-0.011 (-0.63)	-0.003 (-0.15)
EW Mkt. Return [-10, -1]		0.854 ^c (4.11)		0.667 ^c (2.73)
EW Mkt. Return [-20, -11]		0.478 ^c (2.58)		0.450 ^b (1.96)
EW Mkt. Return [-30, -21]		0.463 ^c (2.70)		0.250 (1.04)
IPO Underpricing		0.014 (0.55)		0.067 ^a (1.78)
No. IPO Issues		-0.010 (-0.95)		-0.027 ^a (-1.93)
10 Year Treasury Rate		3.234 ^c (2.98)		1.018 (0.74)
Baa - Aaa Yield Spread		-2.345 (-0.62)		-8.562 ^a (-1.76)
Adjusted R ²	0.126	0.200	0.096	0.135
N	617	590	617	590
P-Values from F-Tests				
Coefficients on EW Mkt. Return variables equal zero		0.001		0.002
Coefficients on IPO variables equal zero		0.514		0.016
Coefficients on bond market variables equal zero		0.004		0.076
Coefficients on all market variables equal zero		0.001		0.001

Table 6: Stock Market Returns, Capital Market Conditions, and Returns to Original Stockholders

Ordinary least squares (OLS) regressions estimated with a sample of 905 private equity issues by public firms over the period from January 1, 1995 through June 11, 2004. The dependent variable, *Return to OS[-10, a]*, is the rate of return to shares between day -10 and day a. The independent variables are defined in Tables 1 and 3. t-statistics are reported in parentheses. Superscripts a, b, and c denote significance at the 10%, 5%, and 1% level, respectively.

	Return to OS [-10, 1]	Return to OS [-10, 1]	Return to OS [-10, 10]	Return to OS [-10, 10]
Constant	0.249 (1.51)	0.134 (0.68)	0.456 ^b (2.18)	0.578 ^b (2.29)
Natural Log of Market Capitalization	-0.062 ^c (-4.91)	-0.068 ^c (-5.65)	-0.071 ^c (-4.34)	-0.077 ^c (-4.74)
PPE/Assets	0.025 (0.74)	0.015 (0.50)	0.022 (0.46)	0.023 (0.49)
Market-to-Book	0.007 ^b (2.22)	0.005 (1.64)	0.012 ^b (2.21)	0.008 (1.58)
Distress	0.015 (0.69)	0.005 (0.25)	-0.020 (-0.64)	-0.033 (-1.08)
Residual Standard Deviation	0.336 (0.86)	0.157 (0.46)	0.661 (1.03)	0.301 (0.53)
Natural Log of Proceeds	0.053 ^c (4.08)	0.053 ^c (4.26)	0.053 ^c (3.36)	0.047 ^c (3.03)
Corporate Blockholder	0.089 ^b (2.21)	0.082 ^b (2.16)	0.059 (1.23)	0.054 (1.18)
Investor Concentration	0.027 (0.99)	0.021 (0.83)	0.011 (0.30)	0.005 (0.13)
Insider Participation	-0.052 (-1.30)	-0.024 (-0.68)	-0.028 (-0.58)	0.000 (-0.01)
Not Immediately Registered	0.092 ^c (3.93)	0.068 ^c (3.03)	0.086 ^c (2.81)	0.051 ^a (1.75)
Placement Agent	-0.039 ^a (-1.78)	-0.033 (-1.58)	-0.039 (-1.20)	-0.027 (-0.82)
EW Mkt. Return [-10, -1]		2.187 ^c (6.38)		2.412 ^c (5.99)
EW Mkt. Return [-20, -11]		-0.220 (-0.72)		-0.297 (-0.75)
EW Mkt. Return [-30, -21]		-0.074 (-0.33)		-0.211 (-0.69)
IPO Underpricing		0.082 ^b (2.17)		0.201 ^c (3.12)
No. IPO Issues		-0.034 ^b (-2.27)		-0.058 ^b (-2.49)
10 Year Treasury Rate		4.314 ^c (2.59)		2.551 (1.13)
Baa - Aaa Yield Spread		-2.194 (-0.32)		-11.050 (-1.27)
Adjusted R ²	0.074	0.199	0.036	0.135
N	618	592	618	593
P-Values from F-Tests				
Coefficients on EW Mkt. Return variables equal zero		0.001		0.001
Coefficients on IPO variables equal zero		0.008		0.001
Coefficients on Bond market variables equal zero		0.016		0.109
Coefficients on all market variables equal zero		0.001		0.001

Table 7: Stock Market Returns, Capital Market Conditions, and Change in Equity Value around Private Placements

Ordinary least squares (OLS) regressions estimated with a sample of 905 private equity issues by public firms over the period from January 1, 1995 through June 11, 2004. The dependent variable, relative value-added, $RVA[-10, a]$, is calculated as the sum of the dollar gains of the original stockholders (OS) and the PPI from day -10 to day a divided by the sum of the day -10 market capitalization plus the gross proceeds from the issue. The independent variables are defined in Tables 1 and 3. t-statistics are reported in parentheses. Superscripts a, b, and c denote significance at the 10%, 5%, and 1% level, respectively.

	RVA[-10, 1]	RVA[-10, 1]	RVA[-10, 10]	RVA[-10, 10]
Constant	0.427 ^c (2.66)	0.306 (1.63)	0.627 ^c (3.05)	0.733 ^c (3.01)
Natural Log of Market Capitalization	-0.086 ^c (-3.68)	-0.094 ^c (-3.76)	-0.092 ^c (-4.36)	-0.098 ^c (-4.47)
PPE/Assets	0.025 (0.82)	0.018 (0.62)	0.020 (0.44)	0.024 (0.52)
Market-to-Book	0.008 ^b (2.29)	0.005 ^a (1.68)	0.012 ^b (2.22)	0.008 (1.58)
Distress	-0.003 (-0.12)	-0.013 (-0.49)	-0.035 (-1.05)	-0.047 (-1.46)
Residual Standard Deviation	0.832 ^a (1.83)	0.621 (1.57)	1.140 ^a (1.69)	0.749 (1.26)
Natural Log of Proceeds	0.071 ^c (3.00)	0.073 ^c (2.93)	0.067 ^c (3.24)	0.062 ^c (2.91)
Corporate Blockholder	0.071 ^a (1.84)	0.062 ^a (1.69)	0.042 (0.90)	0.036 (0.81)
Investor Concentration	0.009 (0.34)	0.009 (0.34)	-0.009 (-0.24)	-0.011 (-0.29)
Insider Participation	-0.065 (-1.57)	-0.047 (-1.16)	-0.041 (-0.88)	-0.022 (-0.47)
Not Immediately Registered	0.090 ^c (3.91)	0.065 ^c (3.01)	0.081 ^c (2.69)	0.046 (1.61)
Placement Agent	-0.059 ^b (-2.20)	-0.055 ^a (-1.95)	-0.057 ^a (-1.67)	-0.046 (-1.32)
EW Mkt. Return [-10, -1]		1.776 ^c (4.30)		2.035 ^c (4.76)
EW Mkt. Return [-20, -11]		-0.081 (-0.27)		-0.189 (-0.50)
EW Mkt. Return [-30, -21]		-0.045 (-0.19)		-0.172 (-0.57)
IPO Underpricing		0.095 ^b (2.27)		0.212 ^c (3.26)
No. IPO Issues		-0.032 ^b (-2.20)		-0.058 ^b (-2.53)
10 Year Treasury Rate		4.450 ^c (2.86)		2.865 (1.31)
Baa - Aaa Yield Spread		-1.541 (-0.24)		-10.446 (-1.24)
Adjusted R ²	0.100	0.185	0.060	0.142
N	618	592	618	593
P-Values from F-Tests				
Coefficients on EW Mkt. Return variables equal zero		0.001		0.001
Coefficients on IPO variables equal zero		0.011		0.001
Coefficients on Bond market variables equal zero		0.028		0.101
Coefficients on all market variables equal zero		0.001		0.001