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## Does investor identity matter in equity issues? Evidence from private placements

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Received 26 February 2001

### Abstract

We examine the relation between stock price performance and the identity of the investors buying the shares in private placements of equity. We find that although the shareholders not participating in the placement experience post-issue negative long-term abnormal returns, the participating investors purchase the shares at a discount and earn normal returns. For the non-participating investors, both announcement and long-term abnormal returns are significantly higher when the shares are placed with affiliated than only with unaffiliated investors. Additionally, when we exclude financially-distressed firms, we find insignificant announcement returns followed by negative long-term abnormal returns in placements to unaffiliated investors. On the other hand, consistent with affiliated investors having a certification effect, we find positive announcement returns and normal long-term returns following placements to affiliated investors. Thus, the disparity found in private placements between the positive announcement period and the negative post-issue long-term abnormal returns disappears when we control for financial distress and participating investor identity.

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*JEL classification:* G14; G24; G32

*Keywords:* Private placements; Informed investors; Long-term returns; Financial distress

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## 1. Introduction

Extant studies in the securities issuance literature (e.g., Myers and Majluf, 1984; Jung et al., 1996) argue that when raising capital in the presence of information asymmetry, overvalued firms may choose to raise equity capital. Ritter (1991) and Loughran and Ritter (1995) also argue that in choosing when to issue equity, shareholders attempt to take advantage of “windows of opportunity,” when the market is overly optimistic about the firm’s future prospects. However, issuing equity to coincide with periods of over-optimism may depend on the type of investors participating in the issue. Publicly-traded firms may raise equity capital through either a public offering or a private placement of their shares. In private placements, firms issue concentrated blocks of equity to sophisticated investors. Kang et al. (1999) argue that firms are unlikely to be able to exploit market over-optimism in private placements because the investors that participate in these placements are well informed. In a related vein, Field (1995) finds that IPOs with higher institutional participation do not underperform their benchmarks, suggesting that these investors are better able to avoid overvalued issues. Similar findings are in D’Mello et al. (2002) regarding seasoned public equity offerings.

In addition, previous studies on private placements of equity suggest that participation by well-informed investors may be associated with certification and monitoring-related benefits. For example, Hertzal and Smith (1993) and Wruck (1989) find that, in contrast to the negative announcement returns associated with offerings to the general public, private placements are associated with positive announcement returns.<sup>1</sup> On the other hand, in their recent work, Barclay et al. (2001) contrast the discounts associated with private placements to the premiums in other block equity trades and argue that the discount is consistent with private placement investors being passive investors who enable managers to become entrenched, unlike the active investors in other block trades who pay a premium for private benefits of control.

Hertzal et al. (2002) analyze the long-term stock price performance of firms that place equity privately. In particular, they examine the implications of the underreaction hypothesis, one of the behavioral theories that have been advanced to explain long-term abnormal returns following corporate events.<sup>2</sup> The authors report positive announcement period returns, but negative long-term abnormal returns in the three-year period following private placements of equity. The opposing directions of the announcement period and the long-term abnormal returns is not consistent with the underreaction hypothesis which predicts that long-term returns will be in the same direction as the announcement returns. They conclude that behavioral explanations do not adequately explain this “puzzling announcement effect.”

The literature has thus raised numerous interesting questions, some of which are:

<sup>1</sup> Billet et al. (1995) find similar results in the context of debt placements. They find the announcement reaction to bank loans in their sample depends on the identity of the bank, or lender identity.

<sup>2</sup> The underreaction hypothesis posits that at the announcement of an event, information is not fully incorporated in prices because investors are overconfident and overweight their private information. Thus, the new public information is only slowly reflected in prices leading to long-term returns that are in the same direction as the announcement returns.

- (i) Is there really an inconsistency between the announcement effect of an equity issue and the associated long-run abnormal returns?
- (ii) Does investor identity matter in reconciling the announcement effect with long-run abnormal returns?
- (iii) Do participating private investors buying shares in the placement earn non-negative abnormal returns?
- (iv) Are the post-issue performance and announcement period returns for private-placement firms different according to whether the participating investors are affiliated with the firm?<sup>3</sup>

In addressing these questions, we analyze the argument in Leland and Pyle (1977) that adverse selection problems in equity issues are mitigated when insiders and other investors who are likely to be especially better informed about firm value participate in the offering. Since private placements are often the only viable financing choice for firms in financial distress, these firms are likely to rely on private placements even if they have no information asymmetry and associated adverse selection problems. Therefore, we expect the certification effect of investor identity to be more relevant, and the contrast between affiliated and unaffiliated investors to be more pronounced for non-distressed firms, i.e., firms that actually have a choice between private and public issues.

We investigate the questions raised in the literature using a sample of private placements and public issues that were announced between 1983 and 1992 by firms listed on the NYSE, Amex, and Nasdaq. We find that:

- (i) the inconsistency between the announcement effect and the associated long-run abnormal returns for private placements is robust to several different benchmarks when private placements are treated homogeneously;
- (ii) simply identifying an investor as a “sophisticated, private placement” investor does not help reconcile the announcement effect with long-run abnormal returns;
- (iii) investors participating in private placements are able to earn non-negative abnormal returns due to the discount they generally receive when purchasing shares; and
- (iv) the post-issue performance and announcement period returns for private-placement firms differ according to whether the participating investors are affiliated or unaffiliated with the firm, and these differences help reconcile the announcement effect with long-run abnormal returns.

<sup>3</sup> Affiliated investors are defined as investors who belong to one or more of the following groups: (i) officers or directors of the firm, (ii) relatives of officers or directors, (iii) consultants or attorneys of the firm, (iv) current large block shareholders of the firm, (v) institutions affiliated with the firm, and (vi) companies with product market agreements with the firm. The intuition behind the classification into affiliated and unaffiliated groups stems from the fact that affiliated investors are likely to be investors who are better informed about the true value and future cash flows of the firm.

We measure post-issue stock price performance using several different benchmarks (described in the next section).<sup>4</sup> Similar to Hertz et al. (2002), the private-placement firms in our sample experience positive announcement period returns, but negative long-term abnormal returns when matched to non-issuing firms. We additionally compare the post-issue performance of firms that place equity privately with the post-issue performance of matched firms that issue *public* equity to examine whether the apparent inconsistency between announcement period and long-term returns for private placements is sensitive to benchmarking.<sup>5</sup> When measured against matched public equity issuers, firms placing equity privately do no better than similar firms issuing public equity. Similar results obtain when we compare private-placement firms to size and book-to-market ratio matched firms conducting IPOs. Thus, the inconsistency between the *average* announcement effect of private placements of equity and the associated long-run returns is robust to several benchmarks when private-placement firms are treated homogeneously. Moreover, the finding that the post-issue performance for firms placing equity privately to “sophisticated” investors is no better than for similar firms placing equity to the general public even though private placements are associated with higher announcement returns, suggests that simply identifying an investor as a “private placement” investor does not help reconcile the inconsistency. However, we find a positive announcement period reaction and no long-term underperformance, or no inconsistency, in placements made by firms in financial distress (i.e., firms for whom public equity is potentially not a viable alternative).

Even though private placements are associated with negative post-issue firm performance, we find the participating private placement investors earn non-negative abnormal returns due to the discount they receive on the shares. On average, private placement investors purchase shares at a nearly 20% discount; and they earn returns that are comparable to those for size and book-to-market ratio matched firms and that are greater than those for similar but public equity-issuing firms. Taken together, these findings are consistent with the view that private placement investors are better informed than other investors and incorporate the post-issue revisions in the market about the firms’ prospects when they buy shares in private placements.

Finally, we distinguish the identity of the private placement investor according to whether the investor is affiliated with the firm (e.g., officers, directors, affiliated institutions). Affiliated investors presumably have lower information acquisition costs and a better idea of future cash flows and true firm value. Thus, investment by an affiliated investor could serve as a certification of firm value (Leland and Pyle, 1977) as well as an indication of reduced agency problems. Alternatively, an increase in affiliated ownership may increase agency problems by allowing insiders to become more entrenched while the

<sup>4</sup> We measure long-term abnormal returns beginning from 3-days prior to the announcement of the equity issue. So, even if the market fully incorporates the positive information effect or any other benefits of placing shares with private investors (such as monitoring benefits) on the announcement day, it would be included in our stock price performance measure.

<sup>5</sup> This approach also controls for the problem pointed out by Eckbo et al. (2000) who argue that long-term abnormal returns results are biased because they do not take into account the decrease in risk associated with the decrease in leverage in equity issuing firms. This is not a problem in our study since both sample and control firms are equity issuing firms and so are associated with similar decreases in risk.

discount in the purchase price compensates them for any negative valuation effects (Barclay et al., 2001). We expect the role of information problems and the certification benefits of affiliated investors to be more pronounced for non-distressed firms with access to both private and public equity markets.

The results indicate that unaffiliated investors purchase shares at significantly deeper discounts than affiliated investors, but we find no significant difference between the long-term abnormal returns to unaffiliated and affiliated investors. Both affiliated and unaffiliated investors earn returns comparable to size and book-to-market ratio matched firms, and positive returns compared to similar but public equity-issuing firms. Taken together, these results are consistent with affiliated investors having lower information acquisition costs (i.e., their discounts are less steep) but no informational advantage over unaffiliated investors once these costs are incurred (i.e., they earn similar returns to unaffiliated investors). However, we find that both announcement period returns and long-term abnormal returns for existing shareholders not participating in the placements are significantly higher for firms placing shares with affiliated investors than for firms placing shares only with unaffiliated investors. In fact, the negative long-term abnormal returns appear to be driven by non-distressed firms privately placing equity with unaffiliated investors. Thus, the remaining disparity in the directions of announcement and long-term abnormal returns for non-distressed firms disappears when we control for investor affiliation.

Placements to affiliated investors are met with a positive reaction followed by no long-term underperformance. The negative long-term abnormal returns are found only in the subsample of placements to unaffiliated investors by firms not in financial distress—the subsample in which there is no positive announcement reaction. Thus, the inconsistency between the announcement effect and long-term performance disappears when we control for both financial distress and investor affiliation. The poor post-issue performance for non-distressed firms privately placing equity with unaffiliated investors suggests that some firms with potential access to public equity markets choose to place shares privately in the hands of passive outside investors, and the market underreacts to this announcement.<sup>6</sup> Overall, the evidence supports the view that investor identity, or more precisely investor affiliation, does matter in equity issues when firms have a choice in placement.

The remainder of the paper is organized as follows. Section 2 discusses differences between private placements and public issues of equity. Section 3 describes the sample selection procedure and empirical methodology. Section 4 describes the results, and Section 5 concludes.

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<sup>6</sup> The negative long-term returns in this subsample are consistent with the entrenchment hypothesis by Barclay et al. (2001). It is then somewhat surprising that it is the unaffiliated investors and not the affiliated investors who help entrench the management. However, it must be noted that since the participating investors receive the shares at a discount that compensates them for the future decline in share price, the affiliated investors may be particularly susceptible to shareholder lawsuits if the non-participating investors lose while the “insiders” gain via the placement.

## 2. Comparison of private placements and public issues of equity

Private placements of equity differ fundamentally from public offerings along three main dimensions—the issue process, the type of investors that participate in the offering, and post-issue resale restrictions. The issue process in private placements is substantially simpler than in public offerings. For instance, publicly-traded firms issuing equity privately under Regulation D do not have to file a registration statement with the SEC. The shares sold are placed with “sophisticated” investors, accredited investors as defined in Regulation D. There are eight classes of accredited investors including officers and directors of the issuing firms, high-net-worth individuals, and institutions such as pension funds, banks, and insurance companies. If the private placement shares are unregistered, they are considered to be restricted by Rule 144, which imposes a two-year resale restriction. There are also restrictions on the number of shares that may be resold.<sup>7</sup> Investors who are unaffiliated to the firm are exempt from these latter restrictions, but only if they have held the securities for at least three years.

Private placements of unregistered shares of equity are offerings where the SEC does not review and certify that the issuing firm meets the information disclosure requirements of the Securities Act of 1933. The logic behind allowing unregistered offerings in private placements is based on the view that sophisticated investors have the knowledge and the resources to independently evaluate issuing firms’ investment opportunities. If the sophisticated investors in the private placement market are indeed better informed about the true prospects and value of a firm, then we expect that they would avoid investing in overvalued firms.

In contrast, firms that issue equity publicly are required to file a registration statement with the SEC. Furthermore, public issues are usually underwritten sales to the general public. Although institutional investors may participate in a public issue, their participation is not orchestrated by firm’s management and allotments are not generally concentrated as they are in private placements. Finally, seasoned public issues do not carry any resale restrictions.

## 3. Data and methodology

Our sample includes all firms on NYSE, Amex, and Nasdaq that issue public equity or place equity privately during the period January 1983 to December 1992. We obtain the data on public equity issues by US companies from the Securities Data Corporation’s Global Financing database. This database provides information on issuer profiles, issue price, issue size, issue date, and after-market pricing. It also lists the number of primary and secondary shares sold in each issue. We focus only on issues of primary shares since we wish to avoid any confounding effects due to the information contained in insider sales of shares in secondary offerings.

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<sup>7</sup> For instance, the number of shares sold in any three-month period must not exceed 1% of the number of shares outstanding or the average weekly volume of trading over the month before the sale. A further discussion of the regulation of private placements is in Sheehan and Swisher (1998).

We identify announcements of private equity issues during the sample period from Lexis–Nexis. Lexis–Nexis provides information on issuer profiles, placement type, issue price and size among other details. We confirm the announcement date and other issue details using the Wall Street Journal Index and collect insider ownership information for a firm both prior to and after the private placement announcement from its annual statements. We exclude from our sample those equity issues that are known at the time of the announcement to be takeover related, since in this paper we wish to abstract from any merger related gains that may confound the value implications of the equity placement decision. We also exclude issues that combine warrants and other securities with common stock issues. Finally, we require that the issuing firms have at least some financial data on CRSP and Compustat. This results in a total of 2351 public equity issues and 397 private placements.

In measuring long-term abnormal stock price performance, we use different benchmarks and different tests to control for the various statistical problems recently documented in the long-term abnormal returns literature. Barber and Lyon (1997) and Lyon et al. (1999) report that long horizon abnormal returns are skewed, and the test statistics are negatively biased when long-term buy-and-hold abnormal returns are calculated using reference portfolios instead of using individual control firms. Thus, following their recommendations that using control firms instead of portfolios yields well-specified tests, for each firm in our sample, we identify several individual control firms whose long-term stock price performance both prior to the issue and after the issue act as benchmarks for the sample firm. Fama (1998) and Mitchell and Stafford (2000) argue that using the buy-and-hold abnormal returns methodology overstates test statistics since it ignores cross-sectional dependence of event firm abnormal returns that are overlapping in calendar-time. Following their suggestions, we also use the monthly calendar-time portfolio approach (the Fama–French calendar time regressions) for measuring long-term abnormal performance. As Mitchell and Stafford argue, with the monthly calendar-time portfolio approach, the cross-correlations of event-firm abnormal returns are fully accounted for in the portfolio variance.

We also compute long-term abnormal returns after controlling for the problem identified in Eckbo et al. (2000). They argue that the abnormal underperformance of equity-issuing firms is systematically overstated in prior studies because control firms and reference portfolios of non-issuing firms do not control for the decreasing leverage, and hence, the decreasing riskiness of equity-issuing firms. To control for this bias, we compare the post-issue performance of firms that engage in private placements with the post-issue performance of similar firms that *issue public equity* around the same time. By directly comparing a private-placement firm with an otherwise similar, but, public equity-issuing firm, risk is implicitly lowered in both the sample and the control firms. Furthermore, these control firms proxy for the performance of the sample firms if they had relied on public equity instead of private placements. As an additional robustness check, we compare the sample of private-placement firms with a sample of similar firms that conduct IPOs. Because private-placement firms are typically younger, smaller, and have low book-to-market ratios, performance following IPOs (firms with very similar characteristics) is a particularly relevant benchmark for comparison.

We focus our long-term analysis on one-, two-, and three-year holding periods. The measurement period of three years for long-term returns in our study is motivated by the

resale restrictions on unregistered shares in private placements. In private placements of unregistered shares, the investors have an “effective” holding period of three years before they are able to freely divest their holdings. That is, the three-year stock price performance that we analyze is an especially appropriate metric of the actual returns earned by the investors in private placements.

We also include one- and two-year holding period returns in our analysis. Although there are resale restrictions on *unregistered* shares, we find that many firms in our sample of private placements either register the shares with the SEC prior to the placement or state that they will register the shares soon after the placement, thus eliminating the resale restrictions (SEC Rule 502(d)(2)). In fact, only about 19% of the firms in our sample state that there is a two-year resale restriction on their shares. This is important because, in some cases, the private placement investors may be able to lock-in positive abnormal returns by selling their shares within a year of the placement.

### 3.1. Selection of control firms

Control firms are chosen from the pool of all NYSE, Amex, and Nasdaq firms (excluding the sample firms) to match sample firms on four aspects,

- (i) firm size,
- (ii) book-to-market ratio,
- (iii) firm size and book-to-market ratio, and
- (iv) firm size, book-to-market ratio, and placement choice.

Our methodology for selecting control firms is as follows. To select size-matched controls for each sample firm, we select four firms that are closest in firm size to the sample firm. Firm size is the market value of equity computed at the end of June prior to the placement announcement. On each day of the study period, of these four firms, only firms that did not issue equity in the three years prior to that date are considered as feasible controls. From the feasible controls, the firm that is closest in firm size to the sample firm is designated as the primary control firm. If the sample firm is delisted during the study period we substitute the returns on the primary control firm for the remaining time period. If a control firm is delisted, we substitute the return on the next best size-matched control firm from the remaining candidates.

To select book-to-market ratio matched controls, we select four firms that are closest in book-to-market ratio to the sample firm. Following Barber and Lyon (1997), for event dates between July of year  $t$  and June of year  $t + 1$ , book value of equity is measured in the fiscal year-end of the calendar year  $t - 1$ , and the market value of equity is calculated in December of year  $t - 1$ . On each day of the study period, of these four control firms, only firms that did not issue equity in the three years prior to that date are considered as feasible controls. From the feasible controls, the firm that is closest in book-to-market ratio to the sample firm is designated as the primary control firm. Firm delistings are treated as described for the size-matched analysis. To select size and book-to-market ratio matched controls, we select four firms that are in the same size decile as the sample firm and are

closest in book-to-market ratio to the sample firm. Again, feasible controls include only firms that did not issue equity in the prior three years.

Finally, we compare the post-issue performance of firms that engage in private placements with the post-issue performance of similar firms that *issue public equity*. Here, we separately analyze comparisons with firms that engage in seasoned public equity issues (SEO) and firms that conduct IPOs. For each firm in the private placement sample, we identify two sets of firms, ones that engaged in SEOs and ones that conducted an IPO, within the 6-month period prior to the private placement.<sup>8</sup> From each set we eliminate all firms that engaged in a private placement within the 3 years prior to the sample firm's placement, in order to avoid cross-contamination between the sample and control pools. We then identify all control firms that are within 30 percent of the size of the sample firm, where size is the market value of equity from CRSP at the end of June immediately prior to the private placement announcement. If this value is missing for the IPO controls, we use the very first market value of equity that is available prior to this date. From each set of feasible control firms we select four control firms that are closest in book-to-market ratio to the sample firm. The control firm that is closest in book-to-market ratio is the primary control firm. If this control firm is delisted, we substitute the return on the next best size and book-to-market ratio matched control firm from the remaining candidates.

In the matching procedure, book value of equity is as of the first fiscal year-end that is at least 6 months prior to the private placement. If book value is missing for the IPO firms, then for the corresponding sample firm there is no matching IPO control. Although we do lose observations because of missing book value data for IPO firms, our results and inferences remain unchanged even when we just match based on size. We then compare the holding period returns of the sample and the control firms in the three years following the announcement of the private placement of equity.

### 3.2. Offer price discounts and abnormal returns

As in Wruck (1989) and Hertz and Smith (1993), we measure the discount at which shares are sold in a private placement as

$$\text{Discount} = \frac{P_{10} - P_{\text{offer}}}{P_{10}}, \quad (1)$$

where  $P_{10}$  is the price per share ten days after the announcement, and  $P_{\text{offer}}$  is the price at which the shares are sold in the private placement.<sup>9</sup> Premiums are viewed as negative discounts.

<sup>8</sup> Since it is well-documented that firms issuing public equity exhibit share price run-up in the period prior to the equity issue and since we measure contemporaneous performance beginning from the private placement announcement date for both sample and control, we do not select control firms from among firms that issue public equity in the period *following* the private placement. Selecting control firms that announce a public equity in the period following the private placement would include the "run-up" period for the public equity issuing firm, and hence would bias the measure of abnormal performance of the sample firms.

<sup>9</sup> We select  $P_{10}$ , the price ten days after the announcement, instead of the price immediately *prior* to the announcement since our aim is to obtain the discount relative to the market price that reflects any benefits from the private placement.

We compute abnormal returns around the announcements of private placements using the event-study methodology of Brown and Warner (1985). We estimate a market model using the CRSP equal-weighted index over a 190-day period starting 250 days prior to the announcement of the private placement. We then cumulate the average abnormal returns over different time intervals around the announcement.

We compute long-term abnormal buy-and-hold returns using the different types of control firms mentioned in the previous section. We define the buy-and-hold return to the existing shareholders not participating in the private placement for firm  $i$  from 3 days prior to the announcement to  $n$  days subsequent to the announcement as

$$BHR_{i,n} = \left[ \prod_{t=-3}^{t=n} (1 + R_{it}) \right] - 1, \quad (2)$$

where  $R_{it}$  is the raw return for firm  $i$  on day  $t$ . The buy-and-hold *abnormal* return (*BHAR*) for firm  $i$  from day  $(-3)$  through day  $n$  is defined as

$$BHAR = BHR_{i,n} - BHR_{\text{control}_i,n}, \quad (3)$$

where  $BHR_{\text{control}_i,n}$  is the contemporaneous buy-and-hold return on firm  $i$ 's control firm, matched on the various criteria. The average abnormal buy-and-hold return for a sample of firms is the arithmetic mean of the individual abnormal buy-and-hold returns.

Following Fama and French (1993), Brav and Gompers (1997), and Kang et al. (1999), we also examine the post-issue long-term stock price performance of equity-issuing firms on a risk-adjusted basis using calendar-time regressions. Fama and French show that a three-factor model that includes the market risk premium, the return on a size factor, and the return on a book-to-market factor may be appropriate for explaining the cross section of returns. More recently, Carhart (1997) shows that including the return on a momentum factor (recent returns) improves the explanation of cross-sectional returns. We use these four factors in a time series regression on portfolios of equity-issuing firms to compute the abnormal returns for these firms.

For each month, we form equal- and value-weighted portfolios of all firms that issue equity in the previous 36 months. The dependent variable in the Fama–French regressions is the return in each month on these portfolios in excess of the monthly risk-free rate. We analyze the performance of firms that place equity privately and those that issue shares publicly in separate regressions. Thus, in the private placement (public equity) regressions, the dependent variable is the monthly excess return on the portfolio of all firms that place equity privately (issue shares publicly) in the previous 36 months. We also pool the observations from the private and public issue regressions to examine the statistical significance of the incremental performance of the private placement sample over the public equity sample after controlling for the risk factors.

The independent variables in the Fama–French regressions are *RMRF*, *SMB*, *HML*, and *PRIYR*. For each month, *RMRF* is the value-weighted return on all NYSE, Amex, and Nasdaq firms minus the one-month T-Bill rate. *SMB* is the return on a zero-investment size portfolio, computed as the return on a portfolio of small firms minus the return on a portfolio of large firms. *HML* is the return on a zero-investment book-to-market ratio portfolio, computed as the return on a portfolio of high book-to-market ratio firms minus the return

on a portfolio of low book-to-market ratio firms. *PRIYR* is the return on a zero-investment momentum portfolio, computed as the return on a portfolio of good performers minus the return on a portfolio of poor performers. Good (poor) performers are those in the top (bottom) 30 percent of all NYSE, Amex, and Nasdaq firms based on one-year holding period returns. The intercept in each regression measures the risk-adjusted abnormal performance of the equity-issuing firms. To capture the significance of the incremental performance of private-placement firms over public equity-issuing firms, we use an indicator variable, *PRVDUM*, in the regressions that pool the observations from both the private placement and public equity regressions. *PRVDUM* is 1 if the dependent variable is the return on a portfolio of private placements and 0 otherwise.

#### 4. Sample characteristics and empirical results

The samples of private and public equity-issuing firms exhibit considerable variation in total size and market value of equity. As may be seen from panel A of Table 1, the average book value of assets for all firms that place equity privately is about \$563 million while it is \$3.35 billion for all firms that issue equity publicly. Among both the private and public equity-issuing firms, the median asset sizes are significantly smaller than the respective means. A similar pattern may also be seen in the market value of equity. The mean market value of equity for the firms that engage in private placements is under \$113 million while it is over five times this size for the firms that issue public equity. Further, the average issue size for public issues is about \$49 million, which is about five times larger than the average private issue.

In panel B of Table 1, we compare the size and book-to-market ratio of the sample of private-placement firms with the set of matched control firms that issued public equity. This is intended to examine whether our matching procedure is able to identify public equity-issuing firms that are similar to the private-placement firms based on these characteristics. As expected, there is no significant difference between the means of these variables for the private placement and matched public equity-issuing firms, indicating that our matching procedure was able to indeed identify suitable controls.

##### 4.1. Abnormal returns around private placements

The average abnormal returns are cumulated over different intervals (CAR) around the announcement. The results are presented in Table 2. The four-day CAR in the window  $(-3, 0)$  is 2.21 percent, which is significant at the 1 percent level. The magnitude of the stock price reaction for our sample of private placements lies between the 1.72 percent documented in the Hertz and Smith study, which contains relatively smaller firms, and the 4.4 percent found in the Wruck study, which contains predominantly larger firms. We also document significant positive abnormal returns of 1.83 percent, 1.43 percent, and 1.36 percent over the intervals  $(-2, 0)$ ,  $(-1, 0)$ , and  $(-1, +1)$  around the announcement, respectively.

In our sample, about 80 percent of the private placements are placed at a discount relative to the market price subsequent to the placement. The average discount in the sample

Table 1  
Summary statistics for firms issuing equity

*A. Comparison of all private and public equity issues from 1983 to 1992*

	Private equity issues			Public equity issues		
	Mean	Median	<i>N</i>	Mean	Median	<i>N</i>
Book value of total assets (\$ mil)	562.96	10.72	335	3354.19	180.86	1821
Market value of equity (\$ mil)	112.61	29.82	393	618.18	136.79	2129
Issue size (\$ mil)	10.67	3.03	397	48.78	22.00	2351
Fraction placed (%)	15.43	11.20	394	17.36	14.35	2134

*B. Comparison of private issues and matched public issues (matched based on size and book-to-market ratio)*

	Private equity issues		Public equity issues		Difference (Private – Public)		
	Mean	Median	Mean	Median	Mean	Median	<i>N</i>
Market value of equity (\$ mil)	128.96	36.66	122.72	34.94	6.24	0.73*	248
Book-to-market ratio of equity	0.52	0.36	0.47	0.28	0.05	0.05***	248

*Notes.* The sample contains firms that issue equity during the period 1983 to 1992. Firms placing equity privately are identified from Lexis–Nexis. Firms issuing shares publicly are identified from the Securities Data Corporation database. In panel A, *book value of total assets* is obtained from Compustat and is measured at the fiscal year-end immediately prior to the issue date, and *market value of equity* is calculated from CRSP as the product of share price and the number of shares outstanding twenty-one trading days prior to the issue date. *Issue size* is the total dollar amount of the offering excluding any over allotments. *Fraction placed* is the number of shares offered as a percentage of the number of shares outstanding after the issue. Panel A contains data for the full sample of private placements and public equity issues. In panel B, *market value of equity* and *book-to-market ratio of equity* are calculated as in Barber and Lyon (1997). Panel B contains data for a subset of the private-placement firms where Compustat and CRSP data are available and for their size and book-to-market ratio matched control firms that issue public equity.

\* Significant at the 10% level.

\*\*\* Idem., 1%.

of private placements is 19.44 percent, which is close to the average discount of 20.1 percent reported in Hertzell and Smith (1993) and 19 percent reported in Barclay et al. (2001). Since the positive abnormal returns of 2.21 percent around private placements are despite the discount offered to the investors, the true abnormal returns (i.e., the total information effect of the placements) are actually higher. We measure the discount-adjusted abnormal returns using the definition in Wruck (1989) and Hertzell and Smith (1993).<sup>10</sup> Table 2 documents discount-adjusted abnormal returns of 9.2 percent around the placements. This is similar to the 8.2 percent in Hertzell and Smith (1993).

We find that the sample firms experience a significant price run-up in the period prior to the equity issue. Table 3 presents the abnormal stock price performance of public and private equity-issuing firms in the three years *prior* to the equity issue. We report the abnormal returns measured against the size and book-to-market ratio matched control firms for one

<sup>10</sup> The discount adjusted abnormal returns is:  $AR_{adj} = [1/(1 - \alpha)][AR] + [\alpha/(1 - \alpha)][(P_b - P_o)/P_b]$ , where *AR* is the abnormal stock return,  $\alpha$  is the ratio of the shares placed to the shares outstanding after the placement,  $P_b$  is the market price at the end of the day prior to the event window, and  $P_o$  is the offer price (i.e., placement price).

Table 2  
Announcement period returns and price discounts in private placements of equity

CAR	<i>N</i>	Mean (%)	<i>t</i> -statistic	<i>z</i> -statistic
-3 to 0	397	2.21	3.98***	3.17***
-2 to 0	397	1.83	3.71***	2.96***
-1 to 0	397	1.43	3.56***	3.33***
0	397	0.94	3.31***	2.70***
-1 to 1	397	1.36	2.77***	2.76***
Discount	<i>N</i>	Mean (%)	<i>t</i> -statistic	<i>z</i> -statistic
	391	19.44	12.43***	
Discount-adjusted CAR (-3 to 0)		9.20	6.11***	
Restricted shares	75	34.02	10.25***	
Shares with registration pending	23	23.31	6.94***	
Shares not known to be restricted	293	15.41	8.44***	
Shares with registration pending or not known to be restricted	316	15.99	9.33***	

*Notes.* Firms placing equity privately during the period 1983 to 1992 are identified from Lexis-Nexis. Announcement period returns are computed as the market model adjusted returns. The market model parameters are estimated over a 190-day period beginning 250 days prior to the earliest announcement of the equity issue, using the CRSP equal-weighted index as the proxy for the market. Abnormal returns are cumulated (CARs) over several windows around the announcement date. The discount is computed as the difference between the offer price and the price ten days after the announcement, measured as a percentage of the price 10 days after the announcement. Premiums are reported as negative discounts. The *t*-statistic is for the null hypothesis that the mean cumulative abnormal return is zero. The *z*-statistic is for the generalized sign test, which tests the null hypothesis that the fraction of positive abnormal returns is the same as in the estimation period.

\*\*\* Significant at the 1% level.

year, two years, and three years prior to the equity issue. The results show that both firms placing their equity privately and those issuing equity publicly exhibit significant positive abnormal returns in the years prior to the equity issue. For instance, the mean three-year holding period returns are over 77 percent higher for the private-placement firms compared to their size and book-to-market ratio matched controls, and it is over 52 percent higher for the public equity-issuing firms compared to their controls.

Following Loughran and Ritter (1995) and Brav and Gompers (1997), we also compute wealth relatives, another indicator of abnormal performance. Wealth relatives are computed as the ratio of one plus the return on the portfolio of sample firms to one plus the return on the portfolio of matching control firms over the relevant time periods. Equal-(value-) weighted wealth relatives are calculated using the equal-(value-) weighted portfolios of the sample and matching control firms. A wealth relative less than one indicates that the sample firms have underperformed compared to their control firms. For both the private placement and public issue samples, the wealth relatives in each of the three years prior to the equity issue are greater than one. Among public issues, the equal-weighted wealth relatives are higher than the value-weighted wealth relatives, suggesting that the stock price run-up is

Table 3  
Size and book-to-market ratio adjusted returns prior to private and public issues of equity

Period	Mean sample firm return	Mean matching firm return	Difference (Sample – Match)		Wealth relatives	
			Mean (t)	Median (z)	Equal weighted	Value weighted
<i>A. Pre-issue long-term returns to firms placing equity privately (N = 276)</i>						
-759, -4	124.01 (5.76)***	46.83 (5.40)***	77.19 (3.38)***	22.46 (2.83)***	1.526	1.696
-507, -4	100.22 (4.86)***	45.52 (5.22)***	54.70 (2.59)***	14.88 (2.23)**	1.376	1.540
-255, -4	63.70 (4.63)***	13.45 (2.78)***	50.24 (3.68)***	24.90 (4.27)***	1.443	1.430
<i>B. Pre-issue long-term returns to firms issuing public equity (N = 1477)</i>						
-759, -4	131.65 (25.37)***	78.77 (19.45)***	52.88 (8.74)***	32.65 (9.96)***	1.296	1.084
-507, -4	85.99 (26.97)***	43.23 (16.59)***	42.76 (10.90)***	26.22 (10.64)***	1.299	1.071
-255, -4	69.51 (27.38)***	30.94 (13.14)***	38.56 (12.07)***	23.27 (13.27)***	1.295	1.103

*Notes.* The sample contains firms that issue equity during the period 1983 to 1992. Firms placing equity privately are identified from Lexis–Nexis. Firms issuing shares publicly are identified from the Securities Data Corporation database. Excess returns are computed as returns in excess of the returns on size and book-to-market ratio matched control firms that did not issue equity in the previous three years. Size is the market value of equity at the June-end prior to the placement. For event dates between July of year ( $t$ ) and June of year ( $t + 1$ ), book value is as of the fiscal year ending in the calendar year ( $t - 1$ ) and market value of equity is calculated at the end of December in year ( $t - 1$ ). For each sample firm, we select four matching firms that are in the same size decile and are closest in book-to-market ratio to the sample firm. From the feasible controls, for each sample firm, the firm which is closest in book-to-market ratio is designated as the primary control firm. If the sample firm is delisted, we substitute the return on the primary control firm for the remaining period. If the control firm is delisted, we replace it with the next best control firm. Long-term returns are calculated as the holding period percentage returns for the sample and matching control firms. The table lists the mean returns for the sample and control firms. For each firm, we calculate the difference (sample – match) and report the mean and the median of these differences. A  $t$ -test (sign test) is used to test the null hypothesis that the mean (median) of these differences is zero. There are 276 size and book-to-market ratio matched returns for the private placements and 1477 for the public issues.

\*\* Significant at the 5% level.

\*\*\* Idem., 1%.

higher among smaller firms. The results are consistent with the view that, on average, firms issue equity when they have experienced a positive price run-up in the prior years.

The post-issue long-term underperformance of firms that issue public equity has been reported in Loughran and Ritter (1995), Spiess and Affleck-Graves (1995), and Cai and Loughran (1998). In contrast, if private placement investors avoid overvalued issues, we would expect the post-issue long-term abnormal returns following private placements to be non-negative. The results in panel A of Table 4, however, suggest that even firms that place equity privately exhibit long-term underperformance following the issue. Existing shareholders who do not buy the shares in the private placement (i.e., non-participating shareholders) earn significantly negative abnormal returns in the one, two, and three years following the placement. The abnormal returns are negative compared to all the bench-

Table 4

Size and book-to-market ratio adjusted returns to non-participating and participating investors in private placements of equity

Period	Mean sample firm return	Mean matching firm return	Difference (Sample – Match)		Wealth relatives	
			Mean (t)	Median (z)	Equal weighted	Value weighted
<i>A. Returns to non-participating investors (N = 275)</i>						
–3, 248	3.53 (0.75)	16.82 (3.49)***	–13.29 (–2.21)**	–10.98 (–2.17)**	0.886	0.964
–3, 500	8.45 (1.10)	30.68 (4.49)***	–22.23 (–2.23)**	–22.93 (–3.50)***	0.830	0.916
–3, 752	14.94 (1.64)*	53.33 (4.40)***	–38.39 (–2.53)**	–20.55 (–3.38)***	0.750	0.852
<i>B. Returns to participating investors (N = 273)</i>						
–3, 248	41.26 (4.72)***	17.08 (3.53)***	24.19 (2.50)**	4.17 (0.36)	1.207	1.087
–3, 500	50.58 (2.96)***	30.98 (4.51)***	19.60 (1.05)	–11.04 (–1.45)	1.150	1.030
–3, 752	52.58 (3.00)***	53.82 (4.41)***	–1.24 (–0.06)	–11.53 (–1.69)*	0.992	0.949

Notes. Firms placing equity privately during the period 1983–1992 are identified from Lexis–Nexis. The mean sample firm return in panel A represents the average return to the existing shareholders not participating in the private placement. The mean sample firm return in panel B is the return to the investors buying the shares in the placement. The participating investor returns are calculated by compounding the non-participating investor returns and the returns from the offer price to the closing price four days prior to the announcement. There are 275 size and book-to-market ratio matched returns in panel A and 273 returns in panel B. See also notes in Table 3.

\* Significant at the 10% level.

\*\* Idem., 5%.

\*\*\* Idem., 1%.

marks.<sup>11</sup> Over the three years (one year) following the placement, the shareholders earn a mean return that is 38 percent (13 percent) *below* that of the control.<sup>12</sup> The wealth relatives presented in panel A are consistent with the evidence that the non-participating shareholders earn negative abnormal returns in each of the holding periods following the placement. The equal-weighted wealth relatives for these shareholders are uniformly below 1, ranging from 0.75 in the three-year holding period to 0.89 in the one-year holding period. The value-weighted wealth relatives, though less than one, are higher than the equal-weighted wealth relatives suggesting that the underperformance is worse among smaller firms.

In Table 5 we present the Fama–French four-factor time-series regression results for the portfolio of private and public equity-issuing firms for comparison and as a robust-

<sup>11</sup> Since the results across size matched, book-to-market ratio matched, and size and book-to-market ratio matched controls are similar, we only report the size and book-to-market matched results in our tables. The other results are available upon request.

<sup>12</sup> We also examined separately the long-term stock price performance of two subsamples of firms—one where the shares are known to be restricted and the other where the shares are not known to be restricted or sold with registration pending. We found that both subsamples underperformed their benchmarks significantly, but the underperformance was larger among firms that sold restricted shares.

Table 5  
Fama–French regressions on portfolios of firms issuing equity

	Private placements		Public issues		All issues	
	Equal weighted	Value weighted	Equal weighted	Value weighted	Equal weighted	Value weighted
Intercept	-0.0077 (-2.78)***	-0.0060 (-2.33)**	-0.0036 (-3.28)***	-0.0037 (-3.41)***	-0.0036 (-1.69)*	-0.0037 (-1.87)*
<i>RMRF</i>	1.0569 (15.90)***	1.0904 (17.67)***	1.0112 (38.73)***	1.0237 (39.45)***	1.0112 (20.02)***	1.0237 (21.63)***
<i>SMB</i>	1.2250 (9.86)***	0.8954 (7.77)***	0.7059 (14.48)***	0.0946 (1.95)*	0.7059 (7.48)***	0.0946 (1.07)
<i>HML</i>	-0.0288 (-0.23)	0.0548 (0.48)	0.0768 (1.58)	0.2698 (5.59)***	0.0768 (0.82)	0.2698 (3.06)***
<i>PRIYR</i>	-0.3669 (-3.59)***	0.0130 (0.14)	-0.1246 (-3.10)***	0.0561 (1.41)	-0.1246 (-1.60)	0.0561 (0.77)
<i>PRIVDUM</i>					-0.0041 (-1.39)	-0.0023 (-0.83)
<i>RMRF*</i>					0.0458 (0.64)	0.0667 (1.00)
<i>PRIVDUM</i>					0.5191 (3.89)***	0.8007 (6.40)***
<i>SMB*</i>						
<i>PRIVDUM</i>					-0.1056 (-0.79)	-0.2150 (-1.73)*
<i>HML*</i>						
<i>PRIVDUM</i>					-0.2423 (-2.20)**	-0.0431 (-0.42)
<i>PRIYR*</i>						
<i>PRIVDUM</i>						
Adj. $R^2$ (%)	80.9	80.0	94.8	93.3	85.9	84.6

Notes. The sample contains firms that issue equity during the period 1983 to 1992. Firms placing equity privately are identified from Lexis–Nexis. Firms issuing shares publicly are identified from the Securities Data Corporation database. For each month, the dependent variable is the return on the equal- or value-weighted portfolio of all firms that issue equity in the previous 36 months. The results in the first two columns (next two columns) are for portfolios of private placements (public issues) of equity. The regressions in the last two columns pool the observations from both the private placement and public issue regressions. *RMRF* is the value-weighted market return on all NYSE, Amex, and Nasdaq firms minus the one-month T-Bill rate. *SMB* is the return on a portfolio of small firms minus the return on a portfolio of large firms. *HML* is the return on a portfolio of high book-to-market ratio firms minus the return on a portfolio of low book-to-market ratio firms. *PRIYR* is the return on a portfolio of good performers minus the return on a portfolio of poor performers. Good (poor) performers are those in the top (bottom) 30 percent of all NYSE, Amex, and Nasdaq firms based on one-year holding period returns. *PRIVDUM* is an indicator variable that is 1 if the dependent variable is the return on a portfolio of private placements and 0 otherwise. The regressions are for the period January 1984 through December 1994. The first four regressions have 132 observations, and the last two regressions have 264 observations. *t*-statistics are in parentheses.

\* Significant at the 10% level.

\*\* Idem., 5%.

\*\*\* Idem., 1%.

ness check. The intercept in these regressions represents the average monthly risk-adjusted abnormal performance in the portfolio of equity-issuing firms. For the equal-(value-) weighted private placement portfolios, the intercept is -0.0077 (-0.0060), which is significant at the one percent level. This represents an average monthly underperformance

of 77 basis points by firms that place equity privately. The next two regressions indicate that firms that issue public equity also underperform on a risk-adjusted basis. The equal-(value-) weighted portfolios of public equity-issuing firms underperform by 36 (37) basis points per month.

A comparison of the intercepts across the regressions for private placement portfolios and public equity portfolios indicates that equal-(value-) weighted private placement portfolios underperform by 41 (23) basis points *more* per month than corresponding public equity portfolios. To test whether this difference is statistically significant, we re-estimate the regressions by pooling the observations from both the private placement and public issue regressions. We include a dummy variable *PRIVDUM* that is 1 if the dependent variable is the return on a private placement portfolio and 0 otherwise. The coefficient of *PRIVDUM* is  $-0.0041$  ( $-0.0023$ ) in the equal-(value-) weighted regressions, but it is not statistically significant at the conventional levels. The evidence suggests that, on average, firms issuing equity (privately or publicly) issue when the market is overly optimistic about their future prospects.

In Table 6, we directly compare the performance of firms that place equity privately with both the performance of firms of similar size and book-to-market ratio that

- (i) issue seasoned public equity, and
- (ii) conduct IPOs around the same time as the private placements.

These two types of control firms are intended to proxy for the performance of the sample firms if they had relied on public equity instead of private placements. The results in panel A of Table 6 show that private-placement firms do not outperform seasoned public equity-issuing firms or IPO firms after controlling for size and book-to-market ratio. None of the long-term abnormal returns in panel A are statistically significant. Also, the equal-weighted wealth relatives are close to one in each of the three years following the private placement. These results are consistent with private placement investors being passive, given that their participation does not mitigate reversals in valuation relative to public issues. However, the poor long-term performance in private placements is somewhat puzzling given the positive abnormal returns associated with private placement announcements. We will investigate this apparent contradiction further in Section 4.3.

In what follows, we analyze why presumably well-informed investors in the private placement market invest in firms that do not perform any better than public equity-issuing firms. We know from Table 2 that private placements are on average sold to the investors at a nearly 20 percent discount compared to the post-issue market price. This discount suggests that while the market may be overoptimistic about the firms' future prospects, private placement investors are perhaps buying the equity at a price that incorporates the post-issue stock price revisions by the market. Therefore, we analyze the long-term abnormal returns to the participating investors accounting for the placement discount.

#### 4.2. Abnormal returns to the private placement investors

In prior studies, the discount offered in private placements is typically explained as compensation to the investors for information acquisition costs or for future monitoring costs

Table 6

Size, book-to-market ratio, and issue type adjusted returns to non-participating and participating investors in private placements of equity

Period	Private – SEO		Private – IPO		Wealth relatives			
	Mean [Median]	N	Mean [Median]	N	Equal-weighted		Value-weighted	
					SEO	IPO	SEO	IPO
<i>A. Long-term abnormal returns to non-participating investors</i>								
-3, 248	7.35 [1.10]	248	3.27 [-1.35]	212	1.08	1.03	1.05	1.05
-3, 500	4.49 [-5.67]	244	-15.16 [-5.11]	210	1.04	0.87	1.20	1.13
-3, 752	3.85 [-4.42]	241	-8.57 [-3.28]	205	1.04	0.92	1.10	1.17
<i>B. Long-term abnormal returns to participating investors</i>								
-3, 248	36.77*** [14.69]**	246	33.83*** [14.64]**	210	1.38	1.33	1.17	1.29
-3, 500	42.12** [5.50]	242	11.07 [9.63]	208	1.40	1.10	1.28	1.41
-3, 752	36.69* [5.38]	239	15.02 [5.00]	204	1.33	1.13	1.15	1.42

*Notes.* We identify control firms as follows: For each firm in the private placement sample, we identify two sets of firms, ones that engaged in SEOs and ones that conducted an IPO, within the 6-month period prior to the private placement. From each set we eliminate all firms that engaged in a private placement within the 3 years prior to the sample firm's private placement in order to avoid cross-contamination between the sample and control pools. We then identify all control firms that are within 30 percent of the size of the sample firm, where size is the market value of equity from CRSP at the end of June immediately prior to the private placement announcement. If this value is missing for the IPO controls, we use the very first market value of equity that is available prior to this date. From each set of feasible control firms we select four control firms that are closest in book-to-market ratio to the sample firm. The control firm that is closest in book-to-market ratio is the primary control firm. If this control firm is delisted, we substitute the return on the next best size and book-to-market ratio matched control firm from the remaining candidates. In the matching procedure, book value of equity is as of the first fiscal year-end that is at least 6 months prior to the private placement. If book value is missing for the IPO firms, then for the corresponding sample firm there is no matching IPO control. We then compare the holding period returns of the sample and the control firms in the one, two, and three years following the announcement of the private placement of equity. For each observation, we calculate the difference in holding period percentage returns (Sample – Match) and report the mean and the median of these long-term abnormal returns. *N* is the number of observations in the corresponding cell. Panel A contains the mean and median abnormal returns to the existing shareholders not participating in the private placement. Panel B contains the mean and median abnormal returns to the investors participating in the private placement. The participating investor returns are calculated by compounding the non-participating investor returns and the returns from the offer price to the closing price four days prior to the announcement.

\* Significant at the 10% level.

\*\* Idem., 5%.

\*\*\* Idem., 1%.

(Wruck, 1989; Hertzell and Smith, 1993). The discount may also be compensation for the lack of liquidity in private placements due to the two-year resale restriction on unregistered shares. The firms engaging in private placements of unregistered shares are required to explicitly indicate the restricted nature of the shares at the time of the placement. Of the 397

private placements in our sample, we were unable to find offer prices and the discounts for 6 placements. Of the remaining 391 placements, 75 (18.9%) are of restricted shares, 23 (5.8%) are of shares that will be registered soon after the placement according to the firms, and the remaining 293 placements (75.3%) are of shares not known to be restricted.

As may be seen in Table 2, the discount in the overall sample of private placements is 19.44 percent. Consistent with the liquidity argument, in the subsample of private placements of unregistered shares, i.e., restricted shares, the discount is higher at 34 percent. But the evidence also suggests that the lack of liquidity alone does not fully explain the discount in private placements. Even among private placements where the shares are not known to be restricted and in those with an agreement to register the shares soon after the placement, we find a significant mean discount of about 16 percent.

In this section, we analyze whether there is a difference between the long-term returns to the participating and non-participating investors following private placements. Due to the discount offered in the private placement, we expect the participating investors to earn higher returns. We also analyze whether the identity of the private investor affects the gains from a private placement. If the buyers in the private placement are the firm's insiders, or more generally, investors who are affiliated with the firm at the time of the placement, we expect this to be associated with better subsequent performance. Since affiliated investors such as the firm's officers, directors, or current blockholders are likely to have a more accurate estimate of true firm value, they should participate primarily in the private placements of undervalued firms. Also, participation in a private placement by the firm's officers and directors may increase their share ownership in the firm and improve the alignment between manager and shareholder objectives.

The results in panel B of Table 4 show that since the participating investors generally buy the shares at a discount in a private placement, their long-term returns are statistically similar to the size and book-to-market ratio adjusted benchmarks. In fact, in the year immediately following the placement, the participating investors earn significantly positive mean abnormal returns of about 24 percent above the size and book-to-market ratio adjusted control.<sup>13</sup> Panel B also presents the wealth relatives for the private placement investors. A comparison of the wealth relatives in both panels A and B suggests that the participating investors earn higher returns in smaller firms because they receive larger discounts from these firms in the private placement. Not surprisingly, the Spearman correlation between firm size and the discount offered in private placements is  $-0.31$ , which is statistically significant at the one percent level.

In panel B of Table 6, the holding period returns of private placement investors are directly compared to the returns of size and book-to-market matched

- (i) seasoned public equity-issuing firms, and
- (ii) IPO firms.

<sup>13</sup> The participating investors may not be able to realize these gains if there are resale restrictions on the shares. However, as we mentioned earlier, only about 19 percent of our sample of private placements state that there is a two-year resale restriction on their shares. Thus, in most instances, the private placement investors may be able to lock-in their gains.

Even though the private-placement firms perform no better than seasoned public equity-issuing firms, the sophisticated investors participating in the private placement earn significantly positive mean abnormal returns over each of the three holding periods due to the discount they receive on the shares during the placement. The equal- and value-weighted wealth relatives are also greater than one.

Somewhat similar results are also true of abnormal returns when computed against the returns of firms conducting IPOs. The participating private investors earn returns that are nearly 34 percent higher than comparable investments in IPOs over the one-year period following the equity placements. Over the two- and three-year horizons, however, the abnormal returns earned by the participating investors, though nominally positive, are not statistically significant. Overall, the evidence suggests that participating investors earn non-negative abnormal returns following private placements, which is consistent with these investors possessing an informational advantage that allows them to buy the shares at the right price.<sup>14</sup>

#### 4.3. Abnormal returns according to private placement investor identity

We further analyze whether investor identity matters even among private placements. In Table 7 we analyze the announcement period and long-term abnormal returns by separating the private placements into those where shares are bought by investors who are affiliated with the firm and those where shares are bought only by investors who are not affiliated with the firm. Affiliated investors are defined as investors who belong to one or more of the following groups:

- (i) officers or directors of the firm,
- (ii) relatives of officers or directors,
- (iii) consultants or attorneys of the firm,
- (iv) current large block shareholders of the firm,
- (v) institutions affiliated with the firm, and
- (vi) companies with product market agreements with the firm.

The intuition behind the classification into affiliated and unaffiliated groups stems from the fact that affiliated investors are likely to be investors who are better informed about the true value and future cash flows of the firm. As Leland and Pyle (1977) argue, purchases by affiliated investors mitigate adverse selection problems and signal positive information about firm value to the outsiders, and so may be associated with higher announcement pe-

<sup>14</sup> The private placement investors may have nevertheless overpaid for the shares. The extant literature argues that the private placement discount is compensation to the investors for illiquidity, information acquisition costs, and future monitoring costs (Wruck, 1989; Hertz and Smith, 1993). The size, book-to-market ratio, and momentum adjustments in our computation of long-term returns need not necessarily adjust for the information costs incurred by the investors for evaluating private issues of less well-known firms. Nor does it necessarily account for any costs incurred by the investors in the post-issue monitoring of these firms. Thus, earning zero abnormal returns against these benchmarks suggests that the private placement investors may be paying more than the price that would compensate them for their *overall* costs.

Table 7  
Announcement period and long-term abnormal returns following private placements of equity sorted by participating investor type

	Affiliated mean ( <i>t</i> -statistic)			Unaffiliated mean ( <i>t</i> -statistic)			Difference ( <i>t</i> -statistic)		
<i>A. Announcement returns and discounts</i>									
CAR -3 to 0	3.68 (2.90)***			1.39 (1.88)*			2.3 (1.67)*		
Discount	13.15			21.33			-8.18 (-2.24)**		
Discount adjusted CAR (-3 to 0)	9.96 (3.65)***			6.35 (3.77)***			3.61 (1.18)		
Period	Size and book-to-market adjusted mean returns ( <i>t</i> -statistics in parenthesis)			Size and book-to-market, and issue type adjusted returns ( <i>t</i> -statistics in parenthesis)					
	Affiliated	Unaffiliated	Difference	Affiliated	Unaffiliated	Difference			
<i>B. Long-term abnormal returns to non-participating investors</i>									
-3, 248	-2.13 (-0.17) [ <i>N</i> = 88]	-21.31 (-2.97)*** [ <i>N</i> = 169]	19.18 (1.44)	23.86 (1.68)* [ <i>N</i> = 82]	-0.80 (-0.14) [ <i>N</i> = 166]	24.70 (1.89)*			
-3, 500	-19.67 (-1.47) [ <i>N</i> = 88]	-28.73 (-2.02)** [ <i>N</i> = 169]	9.06 (0.41)	6.25 (0.46) [ <i>N</i> = 79]	3.65 (0.30) [ <i>N</i> = 165]	2.60 (0.13)			
-3, 752	-36.94 (-1.28) [ <i>N</i> = 88]	-47.05 (-2.44)** [ <i>N</i> = 169]	10.11 (0.30)	5.73 (0.27) [ <i>N</i> = 78]	2.95 (0.25) [ <i>N</i> = 163]	2.80 (0.12)			
<i>C. Long-term abnormal returns to participating investors</i>									
-3, 248	30.27 (1.58) [ <i>N</i> = 88]	18.28 (1.57) [ <i>N</i> = 167]	11.95 (0.56)	53.99 (2.57)*** [ <i>N</i> = 82]	28.16 (3.13)*** [ <i>N</i> = 164]	25.80 (1.32)			
-3, 500	8.41 (0.49) [ <i>N</i> = 88]	22.21 (0.77) [ <i>N</i> = 167]	-13.80 (-0.33)	34.18 (1.79)* [ <i>N</i> = 79]	45.96 (1.65)* [ <i>N</i> = 163]	-11.79 (-0.28)			
-3, 752	-15.88 (-0.49) [ <i>N</i> = 88]	-0.14 (-0.01) [ <i>N</i> = 167]	-15.74 (-0.32)	24.93 (0.97) [ <i>N</i> = 78]	42.39 (1.59) [ <i>N</i> = 161]	-17.45 (-0.41)			

Notes. Firms placing equity privately during the period 1983-1992 are identified from Lexis-Nexis. Private placements where shares are bought by investors who are affiliated with the firm are classified under *Affiliated*, and the remaining placements are classified under *Unaffiliated*. Panel A contains announcement period daily returns, which are calculated as the market model adjusted excess returns. The parameters of the market model are estimated over a 190-day period beginning 250 days prior to the announcement. Excess returns are cumulated (CARs) over the (-3, 0) window around the announcement date. The *t*-statistic is for the null hypothesis that the mean cumulative abnormal return is zero. The discount is computed as the difference between the offer price and the price ten days after the announcement, measured as a percentage of the price 10 days after the announcement. Premiums are reported as negative discounts. Panel B reports the long-term abnormal returns to the existing shareholders not participating in the placement, while panel C contains the long-term abnormal returns to the private investors participating in the placement. For each sample firm we use two types of control firms (i) the size and book-to-market ratio matched controls, and (ii) the size, book-to-market, and issue type adjusted controls. The size, book-to-market matched controls are identified as follows. For each sample firm, we select four matching firms that are in the same size decile and are closest in the book-to-market ratio that did not issue equity in the previous three years. See notes to Table 3. The size, book-to-market ratio, and issue type matched controls are identified as follows: For each firm in the private placement sample, we identify all firms that engaged in SEOs within the 6-month period prior to the private placement. From this set we eliminate all firms that engaged in a private placement within the 3 years prior to the sample firm's private placement in order to avoid cross-contamination between the sample and control pools. We then identify all control firms that are within 30 percent of the size of the sample firm, where size is the market value of equity from CRSP at the end of June immediately prior to the private placement announcement. From this set of feasible control firms we select four control firms that are closest in book-to-market ratio to the sample firm. The control firm that is closest in book-to-market ratio is the primary control firm. If this control firm is delisted, we substitute the return on the next best size and book-to-market ratio matched control firm from the remaining candidates. In the matching procedure, book value of equity is as of the first fiscal year-end that is at least 6 months prior to the private placement. Abnormal returns are measured as the difference between the buy-and-hold returns of sample firms and the matched control firms. The participating investor returns are calculated by compounding the non-participating investor returns and the returns from the offer price to the closing price four days prior to the announcement. For each observation, we calculate the difference (Sample - Match) and report the mean of these differences. The *t*-test is used to test the null hypothesis that the mean of these differences is zero.

\* Significant at the 10% level.

\*\* Idem., 5%.

\*\*\* Idem., 1%.

riod returns. Further, placing shares with affiliated investors may reduce agency problems (Wruck, 1989).

In 131 of the 397 private placements in our sample, media reports or company annual reports indicate the investors buying shares in the placement include affiliated investors, while the remaining 266 placements consist only of investors who are not identified as being affiliated. We classify the latter group as placements to unaffiliated investors. When investors who are affiliated with the firm purchase shares in private placements, we expect the stock price performance to be at least as high as in firms where only unaffiliated investors buy the shares.

In panel A of Table 7, consistent with the view of Leland and Pyle (1977), we find a significantly higher announcement period reaction of 3.68 percent in placements where affiliated investors participate, compared to 1.39 percent in placements to unaffiliated investors. Moreover, the mean discount in placements to affiliated investors is significantly lower (13.15 percent) than the discount in placements to unaffiliated investors (21.33 percent). Taken together, these results are not consistent with the agency conflict view that there is insider self-dealing in the form of deeper discounts to affiliated investors. They are, however, consistent with the view that affiliated investors have lower information acquisition costs and are associated with certification and/or monitoring related benefits. The long-term abnormal returns also reiterate this evidence.<sup>15</sup>

In panel B, we see that non-participating shareholders in firms where shares are bought by affiliated investors earn normal returns over the one, two, and three years following the placement compared to returns of size and book-to-market ratio matched firms. In contrast, non-participating shareholders in firms where the shares are bought only by unaffiliated investors earn significantly negative long-term abnormal returns. For instance, in the first year following the placement, the non-participating shareholders in the unaffiliated subsample earn a significant mean abnormal return of -21.3 percent. The performance is worse over longer holding periods. Over the three years following the placement, these shareholders earn a return that is 47 percent below the benchmark.

Panel C of Table 7 supports the view that both affiliated and unaffiliated participating investors buy the shares at a discount, which at a minimum, compensates them for the subsequent decline in stock prices. In both the affiliated and the unaffiliated cases, the participating investors earn normal three-year returns when compared to size and book-to-market ratio matched controls. They earn significantly positive abnormal returns over the one- and two-years subsequent to the placement when compared to similar seasoned public equity-issuing firms. Over the first year following the placement, the participating investors in placements to affiliated investors earn a mean positive abnormal return of nearly 54 percent, while in placements made only to unaffiliated investors they earn a mean abnormal return of 28.2 percent.

Evidence of no underperformance among firms that make private placements to affiliated investors is consistent with the view that these investors avoid placements by firms about whom the market is overly optimistic. Affiliated investors may not want to partic-

<sup>15</sup> Although we concentrate on the one-, two-, and three-year holding period returns due to the effective holding periods associated with private placements, long-term studies often analyze five-year holding periods as well. Results using five years are similar to those using three years in our study and are not reported for brevity.

ipate in placements by overvalued firms due to fear of potential lawsuits (e.g., violation of insider trading laws) from shareholders not participating in the placement, especially because the participating investors receive the shares at a discount and earn at least fair returns, while the non-participating investors lose.

When we directly compare the mean and median abnormal returns in the subsample of placements to affiliated investors with those in the subsample of placements to unaffiliated investors, we find that the announcement period reaction is significantly higher in placements to affiliated investors. This suggests that the market views placements to affiliated investors as a signal of higher firm quality. However, most of the univariate differences in the long-term abnormal returns between the affiliated and unaffiliated placements are not statistically significant. In Table 8, we further analyze the difference between the long-term returns in a regression framework that controls for other issue- and firm-specific factors.

The dependent variable in regressions 1 and 2 of Table 8 is the announcement period abnormal return in the  $(-3, 0)$  window, while the dependent variable in regressions 3 and 4 is the three-year post-issue abnormal returns measured using the Fama–French intercepts.

Table 8  
 OLS regressions explaining the announcement period and long-term abnormal returns around private placements of equity

	Dependent variable			
	Announcement period abnormal returns <sup>a</sup>		Post-issue 3-year abnormal returns <sup>b</sup>	
	1	2	3	4
Intercept	0.01 (1.40)	0.01 (0.53)	-1.07 (-2.31)**	-1.51 (-1.89)*
Affiliated dummy	0.03 (1.71)*	0.03 (1.84)*	0.82 (1.88)*	
Non-management but affiliated dummy				0.92 (1.91)*
Discount	0.03 (1.11)	0.04 (1.34)	1.17 (1.15)	1.67 (1.16)
Financial distress dummy 1	0.04 (1.84)*		-0.21 (-0.25)	
Financial distress dummy 2		0.03 (1.72)*		0.00 (0.00)
Issue size				0.30 (1.01)
Fraction placed	-0.05 (-1.72)*	-0.05 (-1.88)**	-0.27 (-0.55)	
<i>N</i>	251	251	251	251
Adjusted <i>R</i> <sup>2</sup> (%)	2.55	2.52	0.70	1.64

Notes. Firms placing equity privately during the period 1983–1992 are identified from Lexis–Nexis. Heteroscedasticity adjusted *t*-statistics are in parenthesis.

\* Significant at the 10% level.

\*\* Idem., 5%.

<sup>a</sup> Market model adjusted CAR.

<sup>b</sup> Market, size, book-to-market ratio, and momentum adjusted return.

For each firm, the FF-intercept is obtained by regressing the firm's excess return (firm's monthly return minus the risk-free rate) on the return on the market, size, book-to-market ratio, and momentum factors in the 36-month period following the private placement. The intercept represents the average monthly abnormal returns for the firm in the three-year period. The independent variables include two variables that capture private placement investor type:

- (i) *affiliated dummy*, which is 1 for placements when shares are sold to investors affiliated with the firm and 0, otherwise, and
- (ii) *non-management affiliated dummy*, which is 1 for placements made to affiliated investors when managerial ownership does not increase around the placement according to company annual reports and 0, otherwise.

The other independent variables include *discount*, which is the offer price discount in the private placement and *financial distress dummy 1*, which is 1 for all placements made to firms when media reports indicate that the firm is in financial distress or when the prior one-year raw returns are in the lowest 5 percent of all private-placement firm returns. We also have another specification, *financial distress dummy 2*, which takes on a value of 1 when media reports indicate that the firm is in financial distress or when the firm's size and book-to-market ratio adjusted returns are negative for the prior one- and two-year periods. Finally, *issue size* is the total dollar amount of the offering excluding any over allotments, and *fraction placed* is the number of shares offered as a percentage of the number of shares outstanding after the issue.<sup>16</sup>

The first two regressions indicate that the affiliated dummy is positively and significantly related to the announcement period reaction, suggesting that even after controlling for other factors, affiliated investor participation is viewed as a positive signal of firm quality. This is consistent with the theory in Leland and Pyle (1977) that insider participation is a way in which firms may mitigate the adverse selection problem in equity issues. The positive coefficients for the financial distress dummies also indicate that when financially distressed firms place equity via private placements, the market views the infusion of capital, and perhaps the new blockholders, as good news for the distressed firms.

The coefficients of the affiliated and the non-management affiliated dummies are also positive and statistically significant in both the long-term abnormal returns regressions. This suggests that the long-term abnormal returns are higher for placements to affiliated investors once we control for other factors.<sup>17</sup> This supports the view that investor identity does matter and that affiliated investors do not invest in overvalued firms, even though they would have a reduced risk of losing in private placements since they buy the shares at a discount. Looking at it another way, the evidence is also consistent with the view that the market overestimates the gains from placements to unaffiliated investors. Consistent with

<sup>16</sup> We also include other issue and firm characteristics, such as whether a placement is to foreign investors or the firm is in a particularly information sensitive or R&D intensive industry, that might be related to abnormal returns. However, these variables are not significant in any of the regressions and are therefore not presented.

<sup>17</sup> We repeated the analysis using the abnormal returns in the one-year period following private placements as the dependent variable and obtained similar results.

the view in Barclay et al. (2001), these results suggest that some private placements may serve to just entrench the managers and not all external blockholders are effective monitors.

The evidence in our paper suggests that firms that engage in private placements are unable to exploit the over-optimism in the market since the private investors buy the shares only at a discounted price. This motivates an interesting question. Why do not these firms rely on public issues instead? There are at least three potential explanations. First, the higher fixed costs in public issues may offset the benefits from issuing overvalued public equity, especially since the firms that engage in private placements are smaller, younger firms with small offer sizes. Second, private placements provide funds to the firms far more quickly than do public issues. We find that about half the firms in our sample of private placements have negative operating cash flows in the two years before the private placement, and nearly two-thirds have negative operating cash flow less interest expense. This suggests that most private-placement firms have little internally generated cash flow to finance their investment opportunities. Thus, a private placement would be more attractive than a public issue when a firm's external equity needs are time sensitive.

Finally, it is possible that public issues are not a viable alternative for firms that engage in private placements. This would be true for firms that are financially distressed where financing through a private placement is their only recourse. Through private placements, firms are able to offer a significant fraction of equity to a small set of sophisticated investors. In fact, firms may even be able to offer a controlling interest to investors who specialize in turning around financially troubled companies. Therefore, these firms are forced to rely on private placements even if there were no information asymmetry and associated adverse selection problems. This suggests that information problems are likely to be an important driver of the placement choice mainly for firms that have access to both private and public equity markets. Therefore, we expect the certification effect of investor identity to be more relevant, and the contrast between affiliated and unaffiliated investors to be more pronounced for non-distressed firms, i.e., firms that actually have a choice between private and public issues.

In Table 9 we sort the firms into two groups based on their financial condition. In panel A, we classify a firm as financially distressed if media reports around the placements state that the firm is financially distressed or if the firm's raw returns in the year prior to the placement are in the lowest 5 percent of returns of all private-placement firms. In panel B, a firm is said to be financially distressed if media reports around the placements state that the firm is financially distressed or if the firm's abnormal returns are negative for the prior one- and two-year periods. These are stricter definitions of financial distress (resulting in fewer distressed firms) than classifying based only on operating earnings. Within each category, we also classify placements based on the identity of the private investor. Also, because we use prior stock returns in our financial distress classification, we measure long-term abnormal returns using the intercepts from the Fama–French regressions since that measure also controls for momentum in addition to controlling for the market, size, and book-to-market ratio factors. The results indicate a sharp contrast across the groups. We find that placements by distressed firms are met with a higher positive announcement period reaction than placements by non-distressed firms. Also, among the non-distressed firms, the announcement reaction is more positive when the placement is made to affiliated

Table 9

Announcement period and long-term abnormal returns around private placements of equity sorted based on firm's financial health and participating investor type

Period	Non-distressed firms					Financially distressed firms				
	Affiliated	N	Unaffiliated	N	p-value of difference	Affiliated	N	Unaffiliated	N	p-value of difference
<i>A. Abnormal returns for the different subgroups sorted based on financial distress definition 1</i>										
Announcement period abnormal returns										
-3, 0	3.03 (2.25)**	72	1.06 (1.35)	154	0.04	6.79 (1.92)*	15	4.96 (3.25)***	14	0.49
Market, size, book-to-market ratio, and momentum adjusted average monthly abnormal return in the 1- and 3-year post-issue periods										
-3, 248	2.00 (0.31)	77	-22.17 (-2.68)***	164	0.02	-6.41 (-0.15)	16	-21.50 (-0.57)	14	0.79
-3, 752	-1.02 (-0.75)	77	-6.78 (-2.92)***	164	0.03	-0.04 (-0.43)	16	-5.52 (-0.71)	14	0.88
<i>B. Abnormal returns for the different subgroups sorted based on financial distress definition 2</i>										
Announcement period abnormal returns										
-3, 0	3.69 (2.64)***	51	0.28 (0.32)	113	0.04	3.67 (1.55)	36	3.66 (2.77)***	55	1.00
Market, size, book-to-market ratio, and momentum adjusted average monthly abnormal return in the 1- and 3-year post-issue periods										
-3, 248	2.83 (0.39)	57	-21.17 (-2.35)**	124	0.04	-3.08 (-0.15)	36	-24.41 (-1.42)	54	0.42
-3, 752	-1.16 (-0.71)	57	-6.11 (-2.60)***	124	0.09	-1.97 (-0.49)	36	-8.00 (-1.61)	54	0.35

Notes. Firms placing equity privately during the period 1983–1992 are identified from Lexis–Nexis. Panels A and B contain the announcement period and the post-issue *average monthly* abnormal returns adjusted for market, size, book-to-market ratio, and momentum computed using Fama–French regressions for the private-placement firms in the 3-year period following the placement. The firms are sorted based on whether they are in financial distress and whether the placement was made to affiliated investors or to only unaffiliated investors. In panel A, a firm is classified as being in financial distress if media reports indicate that the firm is in financial distress or when the prior one-year raw returns are in the lowest 5 percent of all private-placement firm returns. In panel B, a firm is classified as being in financial distress if media reports indicate that the firm is in financial distress or when the firm's size and book-to-market ratio adjusted returns are negative for the prior one- and two-year periods. *N* is the number of observations in the corresponding cell; *t*-statistics are in parenthesis; *p*-value of difference is the *p*-value for the difference in returns between the affiliated and unaffiliated groups.

\* Significant at the 10% level.

\*\* Idem., 5%.

\*\*\* Idem., 1%.

investors than to unaffiliated investors. The difference is statistically significant at the 5 percent level.

Perhaps more importantly, the negative long-term abnormal returns to non-participating investors are confined to only one sub-group, placements to unaffiliated investors by firms that are not in financial distress. This is also the only group in which the market does not react positively at the announcement of a private placement. There are no significant long-term abnormal returns in placements by financially distressed firms or in placements to affiliated investors. In fact, the difference between affiliated and unaffiliated investors

is significant only in the subsample of firms that are not financially distressed, i.e., the subsample of firms that potentially have access to both private and public equity markets. This result is consistent with the view of Barclay et al. (2001) that some private placements of equity are made to passive investors who only serve to entrench the management. Our results suggest that these are precisely placements made to unaffiliated investors by firms that have a choice of opting for a public equity issue.

The results also indicate that the apparent contradiction in the directions of the announcement period and long-term returns disappears when we control for investor identity and financial distress. We find positive announcement period returns and no long-term underperformance following placements by distressed firms and following placements to affiliated investors. The negative long-term performance is confined to placements to unaffiliated investors by non-distressed firm—the subsample in which there is no significant announcement period reaction.

## 5. Conclusion

We extend both the securities issuance and private placement literature by examining whether investor identity matters in equity issues after controlling for other placement and firm characteristics. Specifically, we examine whether the announcement effect of placing equity privately is really inconsistent with the associated abnormal long-run returns or whether it can be reconciled when we use the long-term returns of firms issuing public equity as the benchmark for long-run performance. We also analyze the difference in returns between the participating and non-participating shareholders and whether the announcement and the long-term abnormal returns differ according to whether the participating investors are affiliated with the firm. We additionally examine the relative importance of private placement investor identity for firms with access to public equity markets compared to those without access.

Extant literature argues that firms attempt to issue public equity during periods of overoptimism about their value (Loughran and Ritter, 1995; Spiess and Affleck-Graves, 1995). Firms placing equity privately, on the other hand, are less likely to be successful in such an attempt since the investors in the private placement market are typically well-informed, sophisticated investors. Our results, however, indicate that similar to firms that issue public equity, firms that place their equity privately exhibit significant abnormal stock price run-up prior to the placement and significant negative long-term abnormal returns following the placement.

To analyze whether private placement investors have an informational advantage over public issue investors, we measure the long-term abnormal returns to the participating investors. We find that while the three-year abnormal returns to the existing shareholders not participating in the placement are significantly negative following the issue, the participating private placement investors earn returns similar to those of the control firms because they buy the shares at a discount. In fact, the participating investors earn significantly positive abnormal returns in the first year following the placement. The discount, coupled with long-term underperformance, suggests that investors in the private placement market are buying the equity at a price that incorporates the post-issue stock price revisions by the mar-

ket. These results hold for placements made to affiliated investors as well as placements to unaffiliated investors. Both types of private placement investors earn normal long-term returns relative to similar non-issuing firms and positive long-term returns relative to similar public equity-issuing firms.

We find little evidence of long-term underperformance for the non-participating shareholders following placements to investors who are affiliated with the firm. The long-term underperformance is confined to the subsample of firms where the shares are bought only by unaffiliated investors. This is consistent with the view that affiliated investors do not participate in placements by overvalued firms, perhaps due to the fear of potential lawsuits from other shareholders not participating in the placement because of the discount participating investors receive.

Additionally, we find that there is no difference between abnormal returns for the affiliated and unaffiliated investor subsamples when firms are in financial distress, i.e., when private placements are likely to be the only viable mode of financing. There is a positive announcement period reaction and no long-term abnormal returns when financially distressed firms place equity privately. The difference between the affiliated and unaffiliated subsamples is confined to the subsample of placements by non-distressed firms. In fact, the negative long-term abnormal returns are restricted to the placements made to unaffiliated investors by non-distressed firms. Also, in contrast to the positive announcement period returns generally associated with private placements, we find this is the only subsample of placements not associated with positive returns. These results are consistent with the view that private placements to unaffiliated investors by firms for whom public equity is a potentially viable choice simply serve to entrench the management through the placement of shares with passive outside blockholders at a discount.

Overall, the results in this paper are consistent with the view that investor identity does matter. Investors participating in private placements avoid overpaying for equity by buying shares at a discounted price that correctly reflects the future decline in share price. Furthermore, affiliated private placement investors avoid buying shares in overvalued firms, even though their risk of losing is reduced because of the discounted offer price.

### Acknowledgments

We thank N.K. Chidambaran, Kent Daniel, Hemang Desai, Laura Field, Ro Gutierrez, Prem Jain, Sudha Krishnaswami, Praveen Kumar, Darius Miller, Tom Noe, Russ Robins, Ajai Singh, Erik Sirri, Laura Starks, and the seminar participants at Baruch College, Binghamton University, Claremont Graduate University, Georgia Tech, Louisiana State University, Tulane, University of Pittsburgh, University of Tennessee, University of Virginia (Darden), the 1999 AFA meetings, and the 1999 Texas Finance Festival meetings for their comments. We also thank Mark Carhart for giving us the data on the Fama–French factor returns. We are especially grateful to Mitchell Petersen, Anjan Thakor, and two anonymous referees for comments and suggestions that have improved the paper substantially. All errors remain our responsibility.

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