Evidence on Equity Private Placements and Going-Out-of-Business Information Release

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In our study, shareholder wealth gains around announcements of equity private placements primarily came from firms which subsequently went out of business. Investors’ positive response was consistent with an expected greater survival likelihood for more troubled firms, but with no such revisions for stronger companies. Inconsistent with their apparent beliefs, going-out-of-business companies had statistically significant and material negative abnormal returns that averaged 17.5% from prior to and until 150 days after the announcement period. Still-in-business companies had insignificant abnormal returns over either the announcement or post announcement period. The evidence on failing businesses is consistent with a semi-strong form of efficient markets hypothesis violation. © 1999 Elsevier Science Inc.

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JEL classification: G32, G34

I. Introduction

This study examines the share price reaction to announcements of equity private placements from two groups of companies which, together, comprise the set of all private placements. The still-in-business sub-sample or group includes companies with stock which was still trading as of the study’s December 31, 1995 closing date. The other group, defined as the going-out-of-business firms, comprises companies which discontinued their operations prior to the December 31, 1995 closing date.

Asquith and Mullins (1986), Masulis and Korwar (1986), and Mikkelson and Partch (1986), among others, found results consistent with the argument that public equity offer announcements decrease the information asymmetry between managers and market par-
The authors concluded that the commonly negative market reaction to general cash public placements is consistent with the Myers and Majluf (1984) under-investment assumption.

Few explanations support the empirical finding of a positive announcement effect from equity private placements. Potentially, sales of private equity could be signaling a still greater prospect for positive NPV investments than general cash public offerings. The Myers and Majluf (1984) under-investment phenomenon would then be mitigated. Additionally, potential positive reactions to private placements relative to public equity offerings could come from corporate control benefits. With a greater concentration of non-management block-holdings, monitoring and enforcement of managers’ fiduciary responsibility to act in shareholder interest may be enhanced. Both explanations are consistent with Wruck (1989).

The information asymmetry hypothesis, recognized by Myers and Majluf (1984), supports the view that stock price changes from announcements of new security transactions are the result of managers having more information than the marginal buyer of securities. In essence, a corporate manager’s choice to issue securities depends on how the firm’s common stock is priced in the market. According to the information asymmetry hypothesis, an announcement of a security transaction which conveys information that the firm’s shares are under-priced (or over-priced) should lead to an increase (reduction) in its share’s price. Hertzel and Smith (1993) extended the Myers and Majluf (1984) model to include the option to firms to issue equity privately. The Appendix provides examples demonstrating the Hertzel and Smith (1993) explanation supporting use of equity private placements.

Corporate control benefits can come from a change in the distribution of the control rights which are initiated with a private placement. Studies have shown that announcements of transactions which increase ownership concentration, such as the decision to place equity privately, raise share prices [see Wruck (1989); Hertzel and Smith (1993)]. Alternatively, announcements of transactions reducing ownership concentration, such as targeted share repurchase, decrease share prices [see Dann and DeAngelo (1983); Bradley and Wakeman (1983)].

Empirical studies also have confirmed that, although the information asymmetry hypothesis is applicable to all firms, its impact on managers’ decisions and share prices may vary. The stock price reaction to announcements of equity public offerings is usually negative, in the range of $-2.22\%$ to $-4.54\%$ [Masulis and Korwar (1986)]. Alternatively, announcements of equity private placements are usually followed by stock price increases. Wruck (1989) found abnormal price changes of $4.41\%$ between the third day before the announcement, $t = -3$, and the announcement day, $t = 0$. Hertzel and Smith (1993) also documented a positive market response to the announcements of private sales of equity. Whereas Wruck (1989) concluded that the market response is the direct effect of changes in ownership concentration, Hertzel and Smith (1993) suggested that private placement information effects appear to be more important than monitoring effects. Further, they indicated that the promise of greater non-management block ownership implied by the announcements of equity private placements, may also be used by managers of overvalued firms to falsely signal that the firm is undervalued. Additional insight may be provided about the price reaction to announcements of equity private placements by combining the information asymmetry and the ownership change hypotheses together with the possibility of false signaling.
Managers of overvalued firms could use an equity private placement intentionally to signal undervaluation when undervaluation does not exist. For example, if a manager knows that public investors react positively to an equity private placement, a manager could announce a private placement to induce a share price run-up even though the firm is overvalued. The expected information content of equity private placements creates a potentially profitable opportunity for private investors to earn abnormal returns by providing a false signal of company undervaluation. Private placement investors could buy the stock and thereby signal undervaluation. They could buy the stock at a discount and would be able to resell their shares at an overvalued price prior to the true value of the company being revealed. Unless the public investors can distinguish the false signalers of undervaluation from the true private placement signalers of undervaluation, a pooling would exist. Investors would then only price-up the average private placement announcing company securities if the expected information release over all placements were positive. Alternatively, if public investors could separate false from true signalers, false signaling would cease to be profitable.

The false signaling phenomenon, if successful, would be counter to a strong form of the Efficient Markets Hypothesis (EMH). Public investors reacting to false announcements would also be demonstrating a violation of a semi-strong form of EMH if they could differentiate the false signalers from the true signalers at the private placement announcement date.

The focus of this study is to reexamine attributes determining share price reaction to announcements of common stock private placements. This study’s objective is to offer additional insight on the offer announcement effects of equity private placements. Attention is also directed toward the ex-post performance of private placement announcements. This examination may provide direct evidence of an over- or undervaluation phenomenon. Wruck (1989) and Hertzel and Smith (1993) provided conflicting preliminary evidence when they examined pre-announcement price run-ups or decreases, and asserted over- or undervaluation, respectively, based on the pre-announcement price changes.

With a semi-strong form of EMH holding, the private placement announcement would provide an unbiased release of asymmetric information. The expected post performance of common stocks of private placement companies would be a fair game, represented by no expected future abnormal returns. As a first alternative, if the announcement provided a biased over-estimate of future company performance and/or public investors overreacted to the announcement, negative abnormal returns would be expected in the future. As a second alternative, if the announcement provided a biased underestimate of future company performance and/or public investors underreacted to the announcement, positive abnormal returns would be expected in the future. The first objective of this study is to determine if the fair game rule or one of the two alternative rules, on average, applies.

If the fair game rule does not apply, the next objective of the paper is to determine if expected relevant determining characteristics of the companies and the environment are related to, or possible predictors of, observed over- or under-post-performance. Either condition would likely represent a semi-strong EMH violation. If specific predictors are not observed, then there is either an omitted variables problem or a pooling is occurring where investors cannot separate firms with systematic biased announcement prices (either over- or underpriced) from firms with unbiased prices. If specific company and/or market characteristics are related to the observed over- or underpricing, the cause of the phenomenon may be observed, deduced or inferred. The primary objective of this investiga-
tion is to further understand the valuation effects and information releases of an equity private placement.

Explicit examination for the possible occurrence of false signaling, suggested by Hertzel and Smith (1993), will be performed. The likelihood would be for weaker companies to false signal and stronger companies to correctly signal. To this end, the sample was divided into two sub-samples including still-in-business (stronger) companies and out-of-business (weaker) companies. The closing date of the study is two years after the last private placement announcement, December 31, 1995. Firms delisted by this date were included in the out-of-business sub-sample, while companies still trading at this time were included in the still-in-business sub-sample.

We recognize that the partitioning of the sample on company failure is based on information provided after the private placement announcement event. Altman (1968) and numerous others have confirmed the ability to separate financially weak from strong companies. One objective is to see if investors did or did not recognize differences in the two sub-samples at the time of the announcement. Could the investors separate the stronger companies from the weaker companies or was there a pooling where they did not recognize the differences between the two sub-samples at the time of the private placement announcement? Reported results later in the paper will support the presumption that investors had the ability to separate the two types of companies at the time of the private placement announcement. The empirical examination can then determine if pooling or separation existed at the announcement of private placements. The examination can also determine if the post-announcement performance of each sub-sample represents a fair game or a biased over- or underreaction to the announcement. The following outcomes are considered:¹

1. With pooling, a fair game occurs if both sub-samples of weak and strong companies’ post performance are neutral. Investors need not separate the two types of companies and post-performance would be neutral over all private placements. This result would be consistent with a strong-form EMH and a semi-strong form of EMH holding after the announcement. False signaling would not be evident. The average announcement effect over the sample of all private placement announcements would represent resolution of a strong form of EMH violation, resulting from managers’ announcements of private placements.

2. With pooling, a fair game occurs if the weak companies’ possible post under-performance is offset by the strong companies’ post over-performance. Managers of good firms are unable to signal investors so that the investors are unable to separate the two types of companies. On average, post-performance would be neutral. False signaling could occur where wealth transfers from strong to weak companies exist. This result would be consistent with a strong-form EMH violation and a semi-strong form of EMH holding. Alternatively or simultaneously, private and public investors both might be unable to separate strong and weak companies at the private placement announcement date. This result would represent a post-event selection bias induced by our separating known weak and strong firms based on post-event information, i.e., the delisting event. With this scenario, strong and semi-strong

¹ All of the possible outcomes of pooling versus separating and post under-performance, neutral performance and over-performance are not considered in this list. Those enabling possible substantive inferences on possible conditions of false signaling, hubris and the fair-game rule are considered.
forms of EMH would still hold. Note, for this scenario to hold, any post under-
performance by weak firms would be matched by post over-performance by strong
firms.

3. If public investors are able to separate weak versus strong companies at announce-
ment of private placements, separation holds and the fair-game rule would provide
an expected neutral post performance for each of the two sub-samples. The average
announcement event abnormal return on each sub-sample would reflect any sub-
sample specific event-related asymmetric information release.

4. With separation, violation of neutral post performance for either sub-sample would
represent a semi-strong EMH violation. If weak companies under-perform after the
announcement, then: 1) companies are false signaling and public investors are
duped; 2) false signaling is not occurring and public investors demonstrate hubris,
or 3) a combination of false signaling and hubris exists. If either weak or strong
companies have post-announcement over-performance, investors have systemati-
cally underestimated the positive impact from the funds infusion and corporate
control benefits generated by the private placement for the affected sub-sample.
Hubris is evident if strong companies have ex-post underperformance.

With a partial separation, the results predicted in both items (2) and (4) could simulta-
neously occur. The study will present empirical evidence on which of the above conditions
are supported.

This study, consistent with the results of Wruck (1989), found significant positive
abnormal returns over a prolonged period prior to announcements of equity private
placements. The current study found mixed results for the market reaction to announce-
ments of equity private placements from the two different groups of firms. An insignif-
icant market reaction to announcements of the earlier defined still-in-business firms was
found both at the announcement of the equity private placement and for the 150 days after
the announcement. The positive abnormal returns on the entire sample seemed to be
mainly coming from the significant and material positive market response to the private
placement announcements of only the going-out-of-business firms. Although these results
alone do not necessarily warrant a conclusion that the going-out-of-business firms were
either undervalued prior to the announcement or overvalued after the announcement, the
results at least provided the impetus to examine the post performance of this sub-sample
of firms. This examination revealed a significant and material average 17.5% wealth loss
on the sample of going-out-of-business firms from just prior to the equity private
placement announcement until 150 days after the announcement. In retrospect, the
positive abnormal returns of this sub-sample at announcement of the equity private
placement do not appear to have been justified. The unsound positive market response to
the announcement for this sub-sample may be due to: 1) a positive response bias from
public investors; 2) false signals from private placement investors; 3) the time period
being examined, where financially troubled firms may have under-performed the average
long-term post equity private placement performance of troubled companies, or 4) some
combination of the three explanations.

Additionally, the demographics of the two samples of firms used in this study are
distinctly different. Private placements of the still-in-business firms, relative to the
going-out-of-business firms, are associated with larger size firms, more shares sold, a
lower proportion of shares offered, smaller prior announcement annual net income, and
lower book-to-market values.
The remainder of this paper is organized as follows. Section II contains the data and methodology. Section III includes the results. Section IV concludes the paper.

II. Data and Methodology

Data

The sample covers the period 1988–1993, and contains announcements of equity private placements. An announcement was included in the sample if it met the following requirements:

1. There were no secondary offerings or dual offerings with other securities.
2. The offering announcement was referenced in The Wall Street Journal Index.
3. The company had sufficient data available on the Center for Research in Security Prices (CRSP) daily stock return files. This includes data: 1) for the event day zero relative to The Wall Street Journal announcement day; 2) for the prior announcement estimation period, days −1 through −300; 3) for beta estimation, days −320 through −500; and 4) for the post announcement estimation period, days 1 through 150. For going-out-of-business companies, returns data were also required until the last available trading day to delisting.
4. Sufficient data were available on the COMPUSTAT files to define the proxy variables equity book-to-market value and annual net income.

After screening the announcements of private equity placements according to these criteria, a final sample containing 86 firms’ announcements was determined. Delisting codes and a description of the trading conditions from CRSP files occurring after the private placement announcement are summarized in Table 1. Of the 86 companies in the sample, 45 had shares still trading as of the 1995 closing date, and 41 were delisted. Prior to the closing date, six were acquired, and 35 had shares delisted with no further observed resumption to trading. Most of the delistings resulted in a firm’s final asset sell-off and cessation of business operations.

Results on failure rates led us to perform separate analysis of announcement effects for the sub-sample of still-in-business and the sub-sample of going-out-of-business firms. For
the going-out-of-business sub-sample, the average company delisted in day 651, relative to the private placement announcement day.\footnote{Based on the sample period and methodology with a closing date of December 31, 1995, the maximum possible delisting period ranges from two years (1993 observations) to seven years (1988 observations).} A positive skewness value of 0.65 indicates that values above the mean were slightly more spread out than the values located below the mean. A relative small value for kurtosis, though, indicates that the data contained no values that were very distant from the mean. This result was likely impacted from our maximum time-horizon post announcement, ranging from a minimum of two years to a maximum of seven years. The median was 596 days, while the 75th and 25th percentile were, respectively, 953 and 302 days. The five shortest delisting horizons were 24, 30, 36, 56, and 95 days, while the five longest were 1358, 1457, 1511, 1664, and 1706 days.

Summary statistics for the equity private placement offerings are presented in Panel 1, Table 2. The equity average market value for the firms in the sample ranged from about $37 million for the going-out-of-business firms to about $177 million for the still-in-business companies. The last row in Panel 1 indicates an equity average market value of $357 million for the firms on the CRSP files during the period 1988–1993. So, most of the announcements in this study sample are from small firms. There was a smaller average equity market value for the going-out-of-business firms, which was 21% of the size of the average still-in-business firms. The major difference in size between the two sub-samples provides initial evidence that characteristics of the two groups are materially different.

Sales proceeds ranged from about $10.1 million for the going-out-of-business firms to about $6.8 million for the still-in-business firms. Although smaller, the going-out-of-business firms’ average sales proceeds were about 43% higher than those of the still-in-business firms. The proportion of shares sold by the going-out-of-business firms was also slightly higher at 16.56%, relative to the 12.86% for the still-in-business firms.

The number of registered issues was 73 and the number of unregistered issues was 13. Most equity shares sold privately were registered.

In the year prior to the announcement, the average net income ranged from $3.7 million for the still-in-business firms to $2.7 million for the going-out-of-business firms. Thus, past earnings performance for both samples was poor, although a strong share price performance prior to the announcement periods was found.

Lastly, given the small market equity value of these firms, most of the companies’ stocks were traded in the NASDAQ market system. Shares of 15 companies, out of 86, were traded in the NYSE/AMEX. Not surprising, the still-in-business group which had, on average, larger equity value companies, had twice as many NYSE/AMEX-traded company shares as the going-out-of-business group.

**Methodology**

**Abnormal Returns.** Daily expected residual returns were calculated for each firm associated with the announcement date. A four-day abnormal return window \{-3, 0\}, relative to *The Wall Street Journal* (WSJ) announcement date, and the abnormal return on the WSJ announcement day, \( t = 0 \), was used to measure the announcement’s potential price change. Daily expected returns were estimated using the market model:

\[
R_{jt} = \alpha_j + \beta_j R_{mt} + \mu_{jt},
\]

(1)
Table 2. Sample Characteristics of Equity Private Placement Announcements During 1988–1993, Including Those of Firms Remaining In Business and Firms Going-Out-of-Business at a Certain Point After the Announcement

<table>
<thead>
<tr>
<th>Panel 1: Statistics</th>
<th>Entire Sample</th>
<th>Still-In-Business Firms</th>
<th>Out-of-Business Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity market value (thousands of dollars)*</td>
<td>109,308</td>
<td>176,603</td>
<td>36,967</td>
</tr>
<tr>
<td>Shares sold*</td>
<td>2,262,793</td>
<td>2,673,215</td>
<td>1,811,329</td>
</tr>
<tr>
<td>Sales proceeds ($)*</td>
<td>8,431,190</td>
<td>6,757,642</td>
<td>10,104,738</td>
</tr>
<tr>
<td>Shares issued/Total shares outstanding after issue (%)*</td>
<td>14.64</td>
<td>12.86</td>
<td>16.56</td>
</tr>
<tr>
<td>Registered issues</td>
<td>73</td>
<td>39</td>
<td>34</td>
</tr>
<tr>
<td>Unregistered issues</td>
<td>13</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Annual net income one-year prior announcement year (thousands of dollars)*</td>
<td>-4,890</td>
<td>-3,761</td>
<td>-2,735</td>
</tr>
<tr>
<td>Annual net income two-years prior announcement year (thousands of dollars)*</td>
<td>-1,516</td>
<td>-2,005</td>
<td>-1,207</td>
</tr>
<tr>
<td>Book-to-market value</td>
<td>0.31</td>
<td>0.29</td>
<td>0.35</td>
</tr>
<tr>
<td>Exchange listing:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NYSE</td>
<td>6</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>AMEX</td>
<td>9</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>NASDAQ</td>
<td>71</td>
<td>35</td>
<td>36</td>
</tr>
<tr>
<td>Total</td>
<td>86</td>
<td>45</td>
<td>41</td>
</tr>
</tbody>
</table>

1988–1993 CRSP tape firm equity market value (thousands of dollars)* | 356,787 |

Panel 2: (AR is the average abnormal returns at day t, relative to The Wall Street Journal announcement day, i.e., day 0.)

<table>
<thead>
<tr>
<th></th>
<th>Entire Sample</th>
<th>Still-In-Business Firms</th>
<th>Out-of-Business Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abnormal Returns</td>
<td>Abnormal Returns</td>
<td>Abnormal Returns</td>
<td></td>
</tr>
<tr>
<td>T statistic</td>
<td>T statistic</td>
<td>T statistic</td>
<td></td>
</tr>
<tr>
<td>AR_{-4}</td>
<td>-0.16</td>
<td>-0.48</td>
<td>0.05</td>
</tr>
<tr>
<td>AR_{-3}</td>
<td>0.35</td>
<td>0.20</td>
<td>0.34</td>
</tr>
<tr>
<td>AR_{-2}</td>
<td>-0.16</td>
<td>-0.14</td>
<td>-0.30</td>
</tr>
<tr>
<td>AR_{-1}</td>
<td>1.50</td>
<td>1.98^a</td>
<td>1.43</td>
</tr>
<tr>
<td>AR_0</td>
<td>1.33</td>
<td>2.67^a</td>
<td>0.27</td>
</tr>
<tr>
<td>AR_1</td>
<td>0.36</td>
<td>0.93</td>
<td>-0.05</td>
</tr>
<tr>
<td>AR_2</td>
<td>2.03</td>
<td>4.04^a</td>
<td>1.29</td>
</tr>
<tr>
<td>AR_3</td>
<td>-0.36</td>
<td>-1.29</td>
<td>-0.22</td>
</tr>
<tr>
<td>AR_4</td>
<td>-0.87</td>
<td>-1.54</td>
<td>-1.18</td>
</tr>
<tr>
<td>Sample size</td>
<td>86</td>
<td>45</td>
<td>41</td>
</tr>
</tbody>
</table>

* Significant at the 1.00% level with a two-tailed test.
^a Significant at the 5.00% level with a two-tailed test.
^c Significant at the 10.00% level with a two-tailed test.
* Average values.
for a 301-day period \((t = 0, -1, \ldots, -300)\) and a 100-day post event estimation period \((t = 1, 2, \ldots, 100)\), where \(R_{mt}\) is the market return proxy, defined as the equally-weighted CRSP returns including dividends. Parameter estimates of equation (1) are based on days \(-320\) and \(-250\) and were determined by using the Scholes and Williams (1977) procedure, as the majority of the firms in the sample are small. The error term, \(\mu_{jt}\), is for the day \(t\) and the security \(j\).

Prediction errors and average prediction errors were determined according to standard event study methodology [Brown and Warner (1985)]. The test statistic, \(Z_t\), for the average prediction error \((AR_t)\) is based on the average standardized prediction error \((ASPE_t)\):

\[
Z_t = (N)^{1/2}(ASPE_t),
\]

where \(N\) is the number of announcements in a specific sample.

The test statistic, \(Z_{t1, t2}\), for the average interval prediction errors \((CAR_{t1, t2})\) comes from Mikkelson and Partch (1988) and was calculated as:

\[
Z_{t1, t2} = \frac{1}{\sqrt{n}} \left( \sum_{j=1}^{n} \sum_{t=t1}^{t2} \frac{AR_{j, t}}{S_{j, T}} \right),
\]

where \(n\) is the number of securities in the sample; the interval is from \(t1\) to \(t2\); \(AR_{j, t}\) is the abnormal return for security \(j\) for day \(t\); and \(S_{j, T}\) is the standard deviation of the sum of the \(AR_{j, t}\) series over the interval \(t1\) to \(t2\), derived as in Mikkelson and Partch (1988). Under the assumptions that the abnormal returns are distributed multivariate normal and that the abnormal returns on security \(j\) are independent of those on security \(k\) for \(k\) not equal to \(j\), the \(Z\) statistic will be asymptotically normal under the null hypothesis that the mean abnormal return is zero.

**Discount-Adjusted Abnormal Stock Returns.** To examine the association between the market response to announcements of equity private placements and potentially affecting variables, the discount-adjusted abnormal stock return \((AR_{adj})\) was used. As indicated in Wruck (1989) and Hertzel and Smith (1993), any measure of observed announcement effects is to be net of placement costs. \(AR_{adj}\) is defined as:

\[
AR_{adj} = \left[1/(1 - \alpha)\right][AR] + \left[\alpha/(1 - \alpha)\right]\left[P_b - P_0\right]/P_b],
\]

where \(\alpha\) is the ratio of shares placed to shares outstanding after the placement; \(AR\) is the abnormal stock return; \(P_b\) is the share price at the end of the day prior to the \((-3, 0)\) event window; and \(P_0\) is the placement price. Both Wruck (1989), and Hertzel and Smith (1993) used a similar four-day window.

**Potentially Effecting Variables.** The following variables were employed to proxy for the level of information asymmetry, for a change in corporate control, or as control variables. Each is presented with an explanation of its intended purpose and the sign of the variable that reflects a specific hypothesis or subset of hypotheses.

1. **Size of offering.** Outside investors should value larger relative to smaller equity private placements more positively. Greater valuation occurs if larger private placements represent higher ownership concentration and, hence, a more credible signal of a corporate control benefit. This study used two variables to proxy for
placement size. The *fraction of shares placed* is defined as the number of shares issued as a percent of the total shares outstanding after the private issue. The second variable, \( \text{Insale} \), is defined as the natural logarithm of the placement proceeds in dollars. According to the ownership change hypothesis, these two independent variables are expected to be associated with positive price effects.

2. **Proxy for growth option differences.** There is greater information asymmetry between managers and outside investors the more numerous are a firm’s growth opportunities. New information is expected to have a greater impact for firms with greater growth opportunities. In this study, the proxy used for the company’s growth opportunities is the variable *equity book-to-market*. This is the ratio of the company’s equity book value to its equity market value. This ratio will be higher for firms with a smaller number of growth options and lower for firms with greater growth opportunities. Greater information asymmetry resolution exists with a lower equity book-to-market ratio, i.e., companies with greater growth options. Thus, the equity book-to-market ratio would be negatively related to the price change for good news and positively related for bad news.

A positive relationship between the equity book-to-market ratio and share price change with positive news could represent an alternative information effect. Occurrence of this condition would indicate that greater asset-in-place (high ratio) companies received a more positive response, while greater growth opportunity companies received a less favorable market response. A negative news event would lead to a negative relationship between the ratio and price change if greater asset-in-place companies had a greater negative response. Thus, the sign of the effect is indeterminant but, if significant, an information effect of one of the four types just covered would exist. An information effect is not indicated if a significant relationship was not found.

3. **Company size.** More severe information asymmetry is associated with smaller firms relative to larger firms. Linked with this view, the information content of equity private placement announcements from small firms is more difficult to evaluate than those from large firms. Thus, outside security buyers’ adjustments of share value should be negatively related to firm size for positive information releases.

4. **Registered vs. non-registered offerings.** Placement of unregistered stocks, where the resale is restricted until registration, can increase the credibility of the under-valuation signal to outside investors. Credibility is increased because resale constraints restrict the private placement investor’s ability to obtain gains from false signaling. In this case, information would be released on the true value of the firm prior to private placement investors gaining the ability to cash out their position, thereby increasing the likelihood of a true signal by the private placement investors. As a result, an inverse relationship is expected to exist between the announcement effect and the variable \( \text{regist} \), which equals 1 if the private placement was of registered shares and 0 for unregistered shares.

5. **Past performance.** In assessing the credibility of the private placement signal, rational investors may also include the firm’s past performance into their evaluation process. The prior annual net income to the year of the announcement was used as a proxy for the firm’s past profitability performance. The private placement announcement should have greater positive information if prior performance was lower. Hence, the prior year’s net income is predicted to be inversely related to the announcement price effect. Alternatively, a significant positive relationship would
be expected if prior performance served jointly with the private placement announcement as a proxy for survivability and, thereby, the level of expected future cash flows of the company.

### III. Results

#### Share Price Reaction

Consistent with prior studies, the average effect of private equity placement announcements on share value of firms over the entire sample was significant and equal to 3.02% over days $-3$ to 0. These and other abnormal returns are presented in Table 2, Panel 2, and Table 3.³

Examining the two sub-samples, the sample of going-out-of-business firms had a significant positive 4.40% cumulative abnormal return over days $-3$ to 0 (4.25% excluding merged companies). In contrast, the result (1.75%) around the announcements of equity private placements for the still-in-business firms was not significant. The significant positive private placement abnormal returns in our study for the entire sample appear to have been driven by companies in the going-out-of-business group.

For the entire sample and sub-samples in this study, the significant positive abnormal returns that preceded the private placement announcements are consistent with the results of Wruck (1989), and opposite those reported by Hertz and Smith (1993). Between days $-300$ and $-30$, Hertzel and Smith (1993) found abnormal returns of $-14.8\%$. Wruck (1989) found significant positive cumulative average abnormal returns of 2.48% over the interval, starting 59 days prior and ending 22 days prior to the announcement date. For the period $-300$ to $-40$, this study found abnormal positive returns of $13.70\%$ for the

³ Wruck (1989) found positive and significant abnormal returns of 4.41% between day $-3$ and day 0, and Hertzel and Smith (1993) found 1.72%.
companies’ stocks in the entire sample. A positive 13.52% and 14.17% (16.87% excluding merged companies), respectively, were found for the stocks of the still-in-business and going-out-of-business firms. Hence, in the context of the Lucas and McDonald (1990) study, the conclusion that only managers of undervalued firms issue private equity is questionable if the prior-to-announcement positive price changes correctly signal overvaluation. Their position would not be supported if, in addition to the prior period price run-up, the ex-post announcement abnormal returns were negative, adding still further evidence of overvaluation.

The share price performance after the equity private placement announcements offers interesting results, as well. Whereas the post announcement stock price changes were not significant for the still-in-business firms, these changes were significant for the going-out-of-business firms. For these latter firms, significant positive abnormal returns of 2.28% were found on day zero, and 2.93% were found on day 1. In addition, the going-out-of-business firms had significant positive cumulative returns of 7.03% (7.21% excluding merged companies) over the −3 to 15-day period. More surprising, significant negative cumulative average abnormal returns of −17.52% occurred during the −3 day pre-period to the 150-day post-period (−20.37% excluding merged companies). This result is consistent with the false signaling motive for equity private placement investors, suggested as a possible outcome earlier in the paper. The result is inconsistent with the Lucas and McDonald (1990) position that only undervalued firms issue equity privately.

Our evidence is consistent with the position that outside public buyers bid prices up around the announcement date and over a 15-day post announcement period. These gains are short-term. Private investors could benefit from liquidating stock during this period, and would gain both their issue discount and the short-term price run-up. They would be reselling shares at higher prices prior to the revelation of the firm’s true state of nature. It remains to be seen if they are liquidating during this period, although the potential is there to achieve gains from this behavior which would be ultimately lost if the shares were held long-term. The private placement investors are more likely to be able to capture these short-term gains given the likelihood of greater knowledge of their company’s long-term prognoses relative to the less knowledgeable public investors.

An alternative explanation of hubris by both private placement and public investors would also be consistent with the findings. This condition holds if both types of investors overestimate the benefits from infusion of additional funds from the private placement and/or gains in corporate control benefits for going-out-of-business firms. An overly optimistic expectation of survival rates of weak companies at the time of the private placement announcement would be consistent with the initial overpricing and later price decrease.

Cross-Sectional Regression Results

Total Sample. Panel 1 of Table 4 presents the least square regressions of the four-day (−3, 0) discount-adjusted abnormal returns for the entire sample, using the previously-discussed explanatory variables. Significant positive relationships were found between these abnormal returns and the variables going-out-of-business (IN) and fraction of shares

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4 A significant and positive abnormal return on day 1 for the total sample was also determined, but this finding was the result of combining the significant abnormal returns determined for the going-out-of-business firms with the insignificant (though still positive) returns for the still-in-business firms.
A negative relationship with announcement abnormal returns was found with the variables equity book-to-market ratio and prior net income ($NI$). The $F$ statistic was significant at the .001 level, and about 35% of the variation in abnormal returns is due to variation in the independent variables. An insignificant relation was found between the abnormal returns and the independent variables log size of offering placed ($lnsale$), equity size, and the registration status of the offering ($regist$).

### Table 4. Cross-Sectional Least Squares Regression of Discount-Adjusted Abnormal Returns
Where the Dependent Variable is the Discount-Adjusted Return Over the Interval from Day $-3$ to Day $0$

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Predicted Sign</th>
<th>Coefficient</th>
<th>$p$ Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel 1: Entire Sample</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>(+)</td>
<td>0.105</td>
<td>0.4863</td>
</tr>
<tr>
<td>$IN$</td>
<td>(+)</td>
<td>0.031</td>
<td>0.0107</td>
</tr>
<tr>
<td>Fraction of shares placed</td>
<td>(+)</td>
<td>0.611</td>
<td>0.0001</td>
</tr>
<tr>
<td>$LNSALE$</td>
<td>(+)</td>
<td>$-0.008$</td>
<td>0.3979</td>
</tr>
<tr>
<td>Equity size</td>
<td>(−)</td>
<td>$-1.68 \times 10^{-9}$</td>
<td>−0.2353</td>
</tr>
<tr>
<td>Equity book-to-market</td>
<td>(?)</td>
<td>$-0.050$</td>
<td>0.0034</td>
</tr>
<tr>
<td>$NI$</td>
<td>(−)</td>
<td>$-0.019$</td>
<td>0.1997</td>
</tr>
<tr>
<td>$F$ value</td>
<td></td>
<td>20.86</td>
<td></td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td></td>
<td>35.79%</td>
<td></td>
</tr>
</tbody>
</table>

| Panel 2: Still in Business Firms     |                |             |           |
| Intercept                            |                | $-1.673$    | 0.0001    |
| Fraction of shares placed            | (+)            | 2.007       | 0.0001    |
| $LNSALE$                             | (−)            | 0.086       | 0.0001    |
| Equity size                          | (−)            | $-5.10 \times 10^{-8}$ | 0.0001 |
| Equity book-to-market                 | (?)            | 0.272       | 0.0001    |
| $NI$                                 | (−)            | $-0.009$    | 0.0001    |
| $F$ value                            |                | 175.11      |           |
| Adjusted $R^2$                       |                | 89.56%      |           |

| Panel 3: Going-Out-Of-Business Firms |                |             |           |
| Intercept                            |                | 1.422       | 0.0001    |
| Fraction of shares placed            | (+)            | 0.735       | 0.0001    |
| $LNSALE$                             | (−)            | $-0.096$    | 0.0001    |
| Equity size                          | (−)            | $9.85 \times 10^{-7}$ | 0.0003 |
| Equity book-to-market                 | (?)            | $-0.181$    | 0.0001    |
| $NI$                                 | (−)            | $-0.016$    | 0.4454    |
| $F$ value                            |                | 17.98       |           |
| Adjusted $R^2$                       |                | 45.56%      |           |

$IN$ is equal to 1 if the announcement was made by a firm going-out-of-business after the announcement, otherwise zero; Fraction of shares placed is the number of shares issued as a percent of the total shares outstanding after the issue; $lnsale$ is the natural logarithm of the proceeds of the placement in dollars; Equity size is the market value of the firm’s equity 30 days prior to the private placement announcement; Equity size is the market value of the firm’s equity 30 days prior to the private placement announcement; Equity book-to-market is the ratio of the equity book value to its market value; regist is equal to 1 if the privately placed shares were registered, otherwise zero; $NI$ is the firm’s annual net income prior to announcement.
The result of a significant, positive coefficient for the dummy variable, \( IN \), indicates that there was a stronger market response to announcements from the going-out-of-business firms than to those from the still-in-business firms. This result, combined with the overall findings presented in Table 3, lead to the conclusion that outside investors thought the going-out-of-business firms were potentially undervalued at the announcement of a private placement relative to the still-in-business firms, which were neither over- or undervalued. As a result, the stock price responses from the announcements of these two groups differ. Given the plethora of studies allowing quite accurate estimates of financial distress, investors appear to have provided a premium for the more financially troubled firms. This response would be consistent with the equity private placement bail-outs stimulating public investors to revise upward their expectations of a trouble firms likelihood of survival, while not materially revising upwards the survival likelihood of a more financially sound company.

The fraction of shares placed was positively related to the announcement abnormal returns for the entire sample and both sub-samples. This finding supports the conclusion that larger private placements increase the monitoring and corporate control structure of a company. This finding is consistent with the Wruck (1989) position that private placements provide corporate control benefits.

The negative relationship between the equity book-to-market ratio and abnormal returns indicates that public investors provided a greater positive announcement effect for companies with either greater growth options or troubled firms with very low or negative book values, possibly originating from sustained prior losses. Examining the two sub-samples regression tests reveals more insight on the negative relationship between returns and the equity book-to-market ratio.

Consistent with positive asymmetric information release from insiders, the announcement effect was negatively related to the prior reported level of net income. This phenomenon also held for the two sub-samples of in- and out-of-business companies. This finding is consistent with the Herzel and Smith (1993) position that the positive news from private placements results from release of asymmetric information.

**Still-in-Business Group.** To better examine differences between the two types of companies, separate regressions were derived for each group of firms. Regression results for the still-in-business firms are presented in Panel 2 of Table 4. Compared with the results in Panel 1, the importance of the explanatory variables increases. A significant relationship between the abnormal returns and all the explanatory variables, but regist, is now indicated. The \( F \) statistic is significant at the .001 level, and approximately 89% of variation on the abnormal returns is due to variation in the independent variables with significant coefficients. Consistent with our predictions, the positive coefficients of 2.007 and 0.086, respectively, for fraction of shares placed and for the log size of the offering placed (\( \text{lnsale} \)) were significant. Results are consistent with private placements providing corporate control benefits.

Our predictions were that the stock price effect of private equity placement announcements would be negatively related to firm size, due to expected greater information asymmetry for smaller companies, enabling a greater expected positive information effect from the private placement announcement. Results in Panel 2, Table 4, confirm this position with a significant negative coefficient for equity size, consistent with private placements releasing greater positive (or less negative) asymmetric information for smaller relative to larger firms.
A significant, positive coefficient was found for equity book-to-market for still-in-business firms. This is consistent with a greater relative market response to more established firms which have a greater proportion of assets in place and less relative growth options. This result is opposite the result for the full sample, indicating that the out-of-business sub-sample results dominated the total sample response to the book-to-market ratio. Results are consistent with private placements releasing asymmetric information that benefits (or hurts less) asset-in-place firms relative to growth-option firms.

The insignificant regression coefficient presented for regist in Table 4, implies that outside investors did not significantly distinguish between private placement announcements of registered and unregistered securities. The relative small number of unregistered shares in the sample may have affected these results. This result is inconsistent with the results of Hertzel and Smith (1993) who found a significant coefficient for restricted shares at the 10% level. This result is also inconsistent with the false signaling argument provided earlier. The SEC, in Rule 144-A released in 1990, eased the rules to allow trading unregistered offerings to informed investors. This could have also led to, or contributed to, our results differing from those of Hertzel and Smith (1993). That is, holders of unregistered shares may not have certified their alignment with public investors any more than holders of registered shares.

In Panel 2, for the still-in-business firms, a significant negative relation was found between the annual net income prior to the announcement year \((NI)\) and stock price effects. This results is consistent with outside buyers of securities viewing private placement announcements as revealing a greater amount of positive asymmetric information for the firms having poorer relative prior performance.

Panel 3 (Table 4) presents the regression results for the sample of going-out-of-business firms. The importance of the explanatory variables expressed by the adjusted \(R^2\) value decreased. Compared with the 89% variation reported in Panel 2, for the still-in-business firms, approximately 45% of the abnormal returns variation, here, was due to variation in the independent variables with significant coefficients. Thus, the information released by a private placement announcement for still-in-business companies appears to have been more reliable and less noisy than the information released by the going-out-of-business group. This is not surprising, as a greater level of uncertainty would probably exist for a set of companies more likely to be under greater financial distress.

**Going-Out-of-Business Group.** Consistent with predictions, the coefficient of 0.735 for fraction of shares placed was significant and positive. Larger fractions of shares placed demonstrated a greater positive signal enhancement of corporate control. The log size of the issue \((lnsale)\) had an unexpected negative and significant coefficient. Results in Panel 3, Table 4, show a significant and unexpected positive coefficient for equity size. There could be, possibly, a multicollinearity problem with the variables \(lnsale\) and equity size, as both represent absolute dollar amounts. Further testing would be required to resolve this issue. The positive coefficient on equity size might be coming from investor expectations that the larger financially-distressed companies would have a greater probability of future success than the smaller companies in this sub-sample.

A significant negative coefficient for the equity book-to-market ratio is consistent with the prediction that announcements of equity private placements made by firms with greater expected growth options provide greater positive news. The coefficient for regist presented in Panel 3, Table 4, although negative, is insignificant, implying that outside
investors did not distinguish between private placement announcements of registered and unregistered securities.

Once more, a significant negative relation was found between the firm’s annual net income prior to the announcement year (NI) and the stock-price effects. The absolute value of the NI coefficient estimate was greater for going-out-of-business firms than for those still-in-business, suggesting that outside investors considered the past earnings performance for going-out-of-business companies to be more important than for still-in-business companies.

IV. Summary and Conclusions

The sample of announcements used in this study covers the period 1988–1993, and includes 86 firms’ announcements. Positive abnormal returns observed around announcement of private common equity placements occurred for the sub-sample of companies which subsequently ceased operation, most commonly through an asset sell-off. This group of firms was defined as the going-out-of-business firms. Of particular interest, private placement announcement abnormal returns were not materially or significantly different from zero for companies which remained in business subsequent to the private placement announcement. This group of firms was defined as the still-in-business firms.

Although post-announcement abnormal returns were significant and negative for the going-out-of-business firms, they were insignificant for the still-in-business firms. For the going-out-of-business firms, positive cumulative abnormal returns were observed for the first fifteen days in the post announcement period. Yet, significant negative cumulative abnormal returns were found for the post announcement period, defined by day 16 through day 150, and for the pre to post period from day $-3$ through 150.

Our results for the going-out-of-business firms’ share price performance are consistent with the prediction that going-out-of-business firms’ managers and private investors were maximizing their wealth while the outside buyers of securities were potentially failing to properly interpret the information released by the private placement. Alternatively, both insiders and outsiders of more troubled companies had a biased overreaction to the announcement of a private placement. This evidence of possible hubris may have come from inflated probabilities that weak companies would survive.

The evidence on neutral abnormal returns for still-in-business companies, and negative significant positive returns for out-of-business companies at the announcement of a private placement, is consistent with investors being able to separate the two types of companies. Yet, a violation of neutral post performance was found for the out-of-business sub-sample which experienced long-term significantly negative cumulative abnormal returns. This combination of results is consistent with: 1) companies falsely signaling and duping public investors; or 2) public and private investors demonstrating hubris; or 3) some combination of false signaling and hubris. Irrespective of the cause, evidence of either or both a strong-form and semi-strong form of Efficient Markets Hypothesis is supported.

In general, the cross-sectional regression analysis results also revealed that changes in firm value at announcement were affected by the number of shares issued, the proceeds of the placement in dollars, firm size, growth opportunities, and previous year earnings performance. The importance of some of these factors reverse between the in- and out-of-business samples, indicating that the sample of private placement announcers is heterogeneous.
Appendix

Information Asymmetry Hypothesis Examples

For a better understanding of the firm’s role in placing shares privately, using the information asymmetry framework, the following examples are provided. In the first case, a firm faces a new $10,000 investment opportunity with a net present value (NPV) of $500. Because the firm lacks financial slack, managers can only issue equity to finance the new investment. Currently, the firm has 1000 shares outstanding with a share price of $19.00. Managers, however, believe that the true share price is $21.00. Thus, the security is undervalued and, given the existence of asymmetric information, the following is assumed. If the firm decides to issue equity publicly, it will need to issue about 526 ($10,000/$19.00) shares. After the issue, the project being accepted and the information asymmetry being removed, a new stock price of $20.64 ([1000 shares × $21.00 + $10,000 + $500]/[1,000 shares + 526 shares]) will result. As Myers and Majluf (1984) recognized, managers of undervalued firms with profitable investment projects, but lacking financial slack, would choose not to invest if their choices were between issuing shares publicly with a final share value of $20.64, or not issuing shares with a final share value of $21.00.

Maintaining the same initial firm, information asymmetry, and investment opportunity in the example above, and based on the Hertzel and Smith (1993) model, an equity private placement is a better alternative than a public offering for managers of undervalued firms. Assume that managers opt for placing equity privately, selling shares to private investors at a 4% discount of the firm’s true share value. For this discount, about 496 ($10,000/[$21.00 × 0.96]) new shares would be sold and, after removal of the information asymmetry, a new stock price of about $21.06 ([1000 shares × $21.00 + $10,000 + $500]/[1,000 shares + 496 shares]) could be expected. Both current and new shareholders will be better off, as $21.06 > $21.00 > $20.64. The best choice for undervalued firms’ managers is to place shares privately rather than either forego the investment opportunity or issue publicly.5

In a further example, with the same investment and financial slack conditions, assume that the true share value is now $17.00 rather than $21.00, where its current price is still $19.00. The firm is overvalued. Considering that $10,000 is required for the new investment, managers may consider the following options. First, if an equity public offering is used to finance this project, about 526 new shares would have to be sold and, after the information asymmetry is removed, a new stock price of $18.02 ([1000 shares × $17.00 + $10,000 + $500]/[1,000 shares + 526 shares]) would be expected.6 Second, private equity could be issued by selling about 613 ($10,000/[$17.00 × 0.96]) shares to private investors, which would result in a new stock price of about $17.05 ([1000 shares × $217 + $10,000 + $500]/[1,000 shares + 613 shares]). Third, managers could still not take the project, in which case equity offerings would not be necessary, and the stock price could be expected to go down from $19.00 to $17.00, once the true state of nature is revealed. So, placing these three new potential stock prices into an inequality, non-

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5 Note that private investors earn $0.90 [($21.06 - $21.00 × 0.96)] over the price paid, while current shareholders earn $0.06 over the true share value.

6 If the announcement of an issue removes the information asymmetry prior to the public offering, the new stock price would be $17.31 ([1,000 × 17.00 + 10,500]/[1,000 + 588], because 588 (10,000/17.00) shares would be issued. This is still greater than the value of $17.00 that would exist with no investment, but less than the $18.02 that would exist with no market reaction from the equity offer announcement.
investment ($17.00) is the worst option, and the public offering final value of $18.02 dominates the private placement final value of $17.05. Thus, managers of undervalued firms should invest and finance profitable investment opportunities with funds from equity private placements when asymmetric information exists. In contrast, managers of overvalued firms should invest in opportunities with funds from equity public offerings.

References

Although our hypothetical examples were prepared with these conclusions in mind, examples could be constructed for undervalued, overvalued and fairly-valued firms, where a positive NPV project would not be financed due to information effects and issuance costs.