FIRM TRANSPARENCY AND THE COSTS OF GOING PUBLIC

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**Abstract**

We demonstrate that firms that are more transparent pay less, in all components of issuance costs, to go public. We employ a sample of 334 previous leveraged buyouts and a characteristic-matched control sample to test the hypothesis that greater firm transparency before the issue decreases the flotation costs of the initial public offering. These flotation costs are divided into initial underpricing, underwriter discount, administrative expenses, and the overallotment option required to take the firm public. Our results provide further evidence of the asymmetric information hypothesis as it applies to initial public offerings.

*JEL Classifications:* G24, G32

I. Introduction

The costs of going public are of interest in the finance literature. Both the explicit costs charged by the underwriters and the implicit costs of mispricing are studied (e.g., Ritter 1987; Lee et al. 1996). We extend this line of literature by testing whether publicly available information before the initial public offering (IPO) reduces initial pricing uncertainty and thus the costs of going public.

Muscarella and Vetsuypens (1989) test the asymmetric information hypothesis as it pertains to the underpricing of IPOs by comparing a sample of IPOs that previously underwent a leveraged buyout (LBO) with a control sample of non-LBO IPOs. They argue that the uncertainty about the value of the previous LBOs (PLBOs) is likely to be substantially reduced because of the availability of public information before the IPO. Using a sample of 74 PLBOs and a control sample of 1,114 non-LBO IPOs, they find average underpricing for PLBOs of 2.04% and for the control sample of 7.97%. Although their study lends evidence to the asymmetric information hypothesis, it does not answer the question of whether greater...
transparency reduces the total costs of going public and is thus beneficial to issuing firms.\(^1\) It is possible the various cost components of going public are substitutes, and the decreased underpricing of PLBOs may be countered by an increase in one or several of the other components of total flotation costs.

In this article we attempt to determine the effect of firm transparency on each component and on the total costs of going public. Specifically, we extend the existing PLBO transparency literature on five fronts. First, we use a much larger sample of PLBOs than in previous PLBO studies. Second, to remove potential biases we pair-match the PLBOs with a control sample based on issue size and date. Third, in addition to analyzing PLBOs that were publicly traded before the LBO and those that were subsidiaries of publicly traded firms before the LBO, we include a new PLBO sample: those that were privately held before the LBO. Fourth, we test the asymmetric information hypothesis in a multivariate PLBO setting. Fifth, and perhaps most important, we expand the asymmetric information hypothesis as it applies to PLBOs to add three other elements of going-public costs and total costs: underwriter spread, administrative expenses, and the overallotment option.\(^2\)

We hypothesize that transparent firms, or firms with less information asymmetry, experience lower costs of going public. Specifically, we argue that increasing the extent of firm transparency decreases the amount of ex-ante uncertainty about the issue. This decreased uncertainty affects the issuer’s cost function in several ways. First, we predict an inverse relation between the degree of firm transparency and the cost the issuing firm must bear because of the underpricing of the new issue (Beatty and Ritter 1986). Second, we argue that the more information about the issuing firm the public possesses, the smaller the risk is that the underwriter will have to offer an undersubscribed issue. It follows that underwriters who can more accurately price the offering through dealing with more informed investors bear less risk. Thus, when firm transparency is greater, the gross spread of the issue is predicted to be smaller, partly a function of the compensation to bear selling risks.

Third, administrative fees (especially auditing and legal fees) may be smaller as a result of greater firm transparency. Firms lesser known to the public may have to pay more to hire prestigious auditors for their certification role (Titman and Trueman 1986). The greater transparency may also reduce legal fees as more

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\(^1\)We define firm transparency as the amount and validity of information pertaining to the firm that insiders make available to outside investors. Thus, a high- (low-) transparent firm has much (little) publicly available information, and outside investors are less (more) likely to be surprised or to make large valuation errors.

\(^2\)A fifth element of underwriter compensation documented in the literature is the use of warrants (e.g., Barry, Muscarella, and Vetsuypens 1991). For our sample, the Securities Data Company indicates that none of the PLBOs and only six of the control firms offered warrants as underwriter compensation. For this reason, we do not include warrants in our study.
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informed investors, less likely to be disappointed by holding high expectations, are thus less likely to sue (Tinic 1988).

Fourth, we predict that firms with greater transparency may reduce or avoid the overallotment option, another source of issuance costs. Hansen, Fuller, and Janjigian (1987) argue that IPOs with greater price variability are more likely to need an overallotment option because of the increased probability of losses from overallotting. The option acts as insurance against investors who renege by allowing underwriters to oversell the offering without the fear of running out of shares if the reneging activity is less than expected. If firms with greater transparency have lower price variability, it follows that these firms will have decreased overallotment costs.

Our empirical results indicate that firm transparency does affect the costs of taking a firm public via an IPO. These savings are manifest in the aggregate flotation costs, as well as in the four areas of going-public costs.

II. A Test of the Asymmetric Information Hypothesis

Muscarella and Vetsuypens (1989) introduce a way to test the asymmetric information hypothesis: they compare underpricing of a sample of PLBOs with a control sample. We extend this test and rely on the same rationale for our study. Specifically, Muscarella and Vetsuypens argue:

The IPOs studied are equity offerings of reverse LBOs: firms that were previously publicly traded corporations or divisions of corporations before their (temporary) conversion to private ownership. Because such firms had at one time publicly traded securities and were subject to SEC disclosure requirements, there is likely to be substantially more information available to investors to assess the expected market value of these firms upon their subsequent return to public ownership. Furthermore, investors attempting to value reverse LBOs can rely on a long track record of information from various sources (e.g., security analysts or rating agencies) with regard to the performance of the public predecessor, such as the quality of the firm’s products and services, the quality of the company’s management, etc. If IPO underpricing is a result of uncertainty about the market value of the issue, the information asymmetry should be substantially mitigated for reverse LBOs. The asymmetric information hypothesis therefore predicts that, compared with the general population of IPOs, firms undergoing SIPOs [secondary initial public offers] should exhibit a significantly smaller degree of underpricing (p. 185).

Muscarella and Vetsuypens argue that a track record of continuous information verification is valuable in mitigating potential information asymmetries. This is important in light of the IPO window-dressing literature documenting that many inferior firms intentionally exaggerate performance measures in the IPO prospectus to mimic superior firms (Teoh, Welch, and Wong 1998). The validation process of
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using prior information disclosure could contribute to solving the classical lemons
problem of asymmetric information in an IPO.

Extending the asymmetric information rationale to types of PLBOs, we
divide our sample into former private PLBOs, former public PLBOs, and subsidiary
PLBOs of public companies. We compare the four elements of going-public costs,
and total costs, across the PLBO groups.

III. The Costs of Going Public

Before empirical testing, it is useful to define and document the costs in-
volved in bringing an IPO to the public market. For this article, we employ the same
categories of going-public costs as Ritter (1987) as well as the overallotment op-
tion. Ritter documents the costs of going public for a sample of firm-commitment
offerings and compares them with a sample of best efforts offerings. He divides the
total costs of going public into: (a) the initial underpricing; (b) the gross underwriter
spread; and (c) the “other expenses” that include items such as legal, printing, and
auditing fees. Hansen, Fuller, and Janjigian (1987) document the fourth expense as
being the overallotment option. In this section we argue that each of these compo-
nents of total cost may be affected by the level of firm transparency before the IPO.

The first of Ritter’s (1987) flotation cost components, initial underpric-
ing, is well documented (e.g., Ibbotson, Sindelar, and Ritter 1994). The second
component, the gross spread of the issue, consists of the sum of the management,
underwriting, and selling fees. The management fee is paid to the lead manager(s);
the underwriting fee is paid to the lead and comanagers who are part of the purchas-
ing group; and the selling fee is paid to the selling group (lead, comanagers, and
syndicate members), which equals the discount at which securities are allocated
to the selling group for resale to the investing public minus the offer price. Barry,
Muscarella, and Vetsuypens (1991) document a gross spread range from 6.96%
to 10% (mean of 7.39%) for IPOs issued between 1983 and 1987. Ritter (1987)
documents an average spread of 8.67% for firm-commitment offers from 1977 to
1982. In a more recent study, Chen and Ritter (2000) document a time trend in the
pricing of the gross spread to exactly 7%.

The third component, “other expenses” (which we term “administrative
expenses”), ranges from 2.1% to 14.13% from 1977 to 1987 (Ritter 1987; Barry,
Muscarella, and Vetsuypens 1991). These studies attribute the large variation in
observed fees mainly to economies of scale in the offering process. As the amount
of gross proceeds increases, the proportion of administrative expenses decreases
monotonically. However, the need for greater certification for nontransparent firms
and the potential for an increase in legal liabilities may also affect the admini-
strative fee.

Hansen, Fuller, and Janjigian (1987) find that regardless of size, the fourth
costs about 1% of gross proceeds to the
issuing firm. They argue that underwriters require the overallotment from IPOs with greater uncertainty. In their model, they find a direct relation between price variability and the overallotment cost. We extend their work from seasoned equity offers to IPOs and base our hypothesis on their theoretical argument. Thus, we predict that firms with greater transparency will incur lower overallotment costs.

IV. Research Design

We design a financial experiment to differentiate samples with significant differences in transparency. To facilitate this, we employ a unique data sample permitting further refinements of information sets before the IPO into distinct subsamples. Measuring and comparing the amount of transparency for all IPOs may be intractable; nevertheless, more or less homogeneous subsets of firms with similar prior information sets can be collected. We employ a sample that comprises IPO firms that successfully completed the LBO process. We do not view all PLBO firms as a homogeneous group. Instead, we classify these firms based on ownership structure before the LBO; we argue that a valid basis for differentiating LBO firms is by the extent of publicly available pre-IPO information.

PLBOs that were publicly traded before undergoing the LBO provide more information to the market at the IPO than do PLBOs that were previously subsidiaries of publicly traded firms. Additionally, both prior public firms and prior subsidiary firms provide more information to the public than do formerly private PLBOs. This rank ordering follows from the Securities and Exchange Commission (SEC) requirements for publicly traded firms. Before the LBO, public firms must disclose information required by the SEC. Prior subsidiaries of public firms are generally included in the segmented financial reporting of the parent firm. Thus, information available for prior subsidiaries is less detailed and must be inferred from the parents' reports. Finally, private firms are under no obligation to report to the public (assuming no publicly traded debt). Therefore, we argue that prior public PLBOs are most transparent, prior private PLBOs are least transparent, and prior subsidiaries of public firms fall in the middle.

Along with general organizational structure, we determine other factors of transparency. Although it is generally difficult to obtain financial information about private firms, some are forced to disclose information because they issue public debt or junk bonds. In fact, using public junk bond financing for LBOs is common. Thus, these PLBO firms, while in the private stage of the LBO process, divulge more information to the public via SEC debt reporting than do firms without public debt.

A final transparency factor, the time a PLBO stays in the private phase of the LBO process, is also available using the data sample we employ. On the surface, it appears the shorter a firm is privately held in the LBO structure, the
greater is its transparency. That is, fresher disclosed SEC-mandated information reduces uncertainty about the firm. On closer inspection, however, we provide a finer explanation. The preceding logic, valid for publicly traded firms and divisions of publicly traded firms, is not valid for private firms. The longer a private PLBO firm stays in the LBO ownership arrangement, the more information is conveyed to the market. Before the LBO, the market has extremely limited information about private firms. That a private PLBO is able to exist for a substantial period in the LBO structure and service high levels of debt is valuable information to investors. Increasing the time between the LBO date and the IPO date should decrease the transparency of public and subsidiary PLBOs and increase the transparency of private PLBOs.3

Along with measures of transparency, we include factors that control for other influences that may affect the flotation costs of PLBOs. In univariate tests, we standardize by issue size to allow for economies of scale in flotation costs. In multivariate tests, we control for the size and risk of the offer (Ritter 1987), planned capital expenditures of the issuing firm (Trueman 1986), underwriter reputation (Carter, Dark, and Singh 1998), and percentage of equity retained by pre-listing shareholders (Leland and Pyle 1977).

V. Data and Measuring the Costs of Going Public

We begin by constructing a sample of PLBOs. Next, we document the costs of going public for the sample firms.

Data

To construct the sample of PLBOs, we employ the Securities Data Company’s (SDC) Merger and Acquisition database, the SDC New Issues database, and various issues of Mergers and Acquisitions. We take the intersection of these three sources to form the base sample. Our search results in a sample size of 352 PLBO firms, consisting of 126 public, 155 subsidiary, and 71 private firms, with IPO dates from 1981 to 1996. Next, we require the firms to list on either the Center for Research in Security Prices (CRSP) or SDC no later than one week after the offer date. We obtain a final sample of 334 firms, all firm-commitment offers (i.e., 124 public, 144 subsidiary, and 66 private). The lowest frequency of PLBO offer dates

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3These same attributes of surviving the LBO process may provide additional information for subsidiary and public PLBOs, as well. However, we predict the increase in information through the LBO process to be countered and surpassed by the loss of freshness in the prior public SEC reports. Thus, the net effect for subsidiary and public PLBOs is a decreasing transparency position the longer the firm stays in the LBO private structure.
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is zero in 1982, the highest frequency is seventy issues in 1992, and the average number of offers per year is twenty-one.

We then obtain the form of ownership, LBO date, lead underwriter, offer price, number of shares offered, total number of shares outstanding after the offer, number of overallotment shares, planned use of proceeds, and corporate bond data from the SDC files. We calculate the market value of equity and the degree of mispricing using CRSP data.

We originally draw a control sample of firm-commitment IPOs not undergoing an LBO from the SDC New Issues database. We match the PLBO firms with this control sample based on size and date of issue. The procedure ensures that both the PLBO and the matched control firm were under similar SEC disclosure requirements at the time of issue. The matched control firm for each PLBO is the firm closest in issue size that went public within three months of the PLBO. The average length of time between the offer dates of the matched firms is sixteen days. Previous literature documents size effects in the costs of going public. Chen and Ritter (2000) also document a timing effect in the costs of going public. Our control sample removes potential biases that may be induced through the size or timing of the issue.

We calculate the value of the overallotment option by following Hansen, Fuller, and Janjigian (1987), who employ the Black and Scholes (1973) option pricing model. We obtain the historical T-bill rate from the Federal Reserve Bank of St. Louis. We calculate the standard deviation of returns using CRSP data.

Initial Mispricing

To measure the initial mispricing, we employ the following ratio:

\[ \frac{1}{n} \sum_{i=1}^{n} \frac{\log(P_t/P_{oi})}{n} \]  

(1)

where \( P_t \) is the closing price (or the mean of the bid and ask price for Nasdaq stocks) for firm \( i \) on the first day of trading, \( P_{oi} \) is the offering price of firm \( i \), and \( n \) is the number of firms in the sample.

We expect firms with greater transparency to be more accurately priced by investment banks. Thus, we hypothesize the rank order of initial mispricing from smallest to greatest to be: (a) previously public, (b) subsidiary, (c) private PLBOs, and (d) non-PLBOs. Additionally, we predict the variances of the initial mispricing measures for each of the four groups to follow a rank ordering. Specifically, we predict non-PLBOs will have the largest variance of pricing errors and public PLBOs will have the smallest variance, with subsidiary PLBOs and private PLBOs in between. Figure I plots the mispricing variances for each pre-LBO ownership group. The hypothesized pattern holds when non-PLBOs are compared with PLBOs. In fact, we find a large difference (a factor of two) between the non-PLBO sample variance and the PLBO sample variance (i.e., 0.019 vs. 0.0085). The
Note: This figure reports the variance of the initial mispricing for various groups of firmly underwritten initial public offerings (IPOs). Control refers to nonleveraged buyout IPOs. PLBO refers to firms that underwent a leveraged buyout (LBO) before going public via an IPO. Private refers to LBO firms that were privately held before the LBO. Subsidiary refers to LBO firms that were subsidiaries of publicly traded firms before the LBO. Public refers to LBO firms that were publicly traded before the LBO. Sample sizes are as follows: control = 334, PLBO = 334, private = 66, subsidiary = 144, public = 124.

Figure I. Variance of Previous Leveraged Buyout Firm Initial Mispricing.

Gross Underwriting Spread

We take the components of gross underwriting spread from the SDC New Issues database. The three elements of gross spread include management fee, underwriting fee, and selling concession. We calculate the standardized average underwriting spread by dividing gross spread by issue size (Ritter 1987). We expect that firms with greater transparency pose less mispricing risk to the underwriter and enjoy a smaller gross spread. Thus, we hypothesize the rank order of spread from smallest to greatest to be: (a) previously public, (b) subsidiary, (c) private PLBOs, and (d) non-PLBOs.

Administrative Fees

Components of administrative fees include accounting fees and expenses, legal fees and expenses, underwriter’s nonaccountable expenses, and all other administrative expenses associated with going public. We measure administrative
fees as the sum of all of these groups. To standardize the measure, we divide this sum by the dollar size of the issue.

More transparent firms may have less need for certification by prestigious auditors. Additionally, transparent firms, providing more information to investors, may have less fear of subsequent litigation.\(^4\) Thus, we predict that firms with greater transparency have smaller standardized administrative fees. Specifically, we hypothesize the order of fees from small to large to be: (a) prior public, (b) subsidiary, (c) private PLBOs, and (d) non-PLBOs.

### VI. Empirical Results

#### Correlations Between the Flotation Cost Components

Table 1 reports the correlation coefficients for the four flotation cost components. Panel A, measuring flotation costs in dollars, reports that each cost component is positively and significantly related to the other cost components with one exception: the pair of initial mispricing and administrative expenses. The results in Panel B, measuring flotation costs as the ratio of the flotation costs in dollars to the offer size, confirm the results of Panel A. We conclude that with only one exception, firms pay higher costs in all areas of going public if they must pay a higher cost in any one component. The result is consistent with a model in which all components of going-public costs share common determinant(s), such as the transparency factor we investigate. A negative correlation would lend support to an alternative model that these cost components are trade-offs for each other.

#### Differences in Means Between PLBO and Non-PLBO Firms

As a first check for the pricing of transparency, we compare initial mispricing, administrative expense, underwriter spread, overallotment value, and total flotation costs of the entire PLBO sample with a size- and date-matched control sample consisting of non-PLBO firm-commitment IPOs. Recall the size- and date-matched control ensures similar SEC-mandated disclosures for both samples, allowing us to measure the incremental information value of prior-date disclosures. We hypothesize that the average PLBO firm bears lower flotation costs than does the average control group IPO. We base this assertion on the idea that the control sample of non-PLBOs has the least degree of transparency because these non-PLBOs are by construction all previously private firms.

\(^4\)We formally test these conjectures. When we use the underwriter reputation variable, we do not find significant results. Our argument applies to accounting and legal firm effects that may not be captured in the underwriter reputation variable.
### TABLE 1. Correlation Analysis of Cost Components of Going Public.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Initial Mispricing</th>
<th>Administrative Expense</th>
<th>Overallotment Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Panel A. Correlation Analysis of Flotation Costs in Dollars</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underwriter Spread</td>
<td>0.252***</td>
<td>0.373***</td>
<td>0.565***</td>
</tr>
<tr>
<td></td>
<td>6.3</td>
<td>10.3</td>
<td>16.7</td>
</tr>
<tr>
<td>Initial Mispricing</td>
<td>0.01849</td>
<td>0.575***</td>
<td>0.4</td>
</tr>
<tr>
<td>Administrative Expense</td>
<td>0.103**</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td><strong>Panel B. Correlation Analysis of Flotation Costs Scaled by Offer Size</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underwriter Spread</td>
<td>0.082**</td>
<td>0.576***</td>
<td>0.246***</td>
</tr>
<tr>
<td></td>
<td>2.1</td>
<td>18.1</td>
<td>6.1</td>
</tr>
<tr>
<td>Initial Mispricing</td>
<td>−0.01495</td>
<td>0.722***</td>
<td>−0.4</td>
</tr>
<tr>
<td></td>
<td>25.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administrative Expense</td>
<td>0.098***</td>
<td>2.4</td>
<td></td>
</tr>
</tbody>
</table>

Note: This table reports the correlation coefficients for a sample of firmly underwritten initial public offerings from 1981 through 1996. In Panel A, Initial Mispricing is calculated as:

$$\sum_{i=1}^{n} \left[ \log \left( \frac{P_i}{P_{oi}} \right) \right] / n,$$

where $P_i$ is the closing price (or the mean of the bid and ask price for Nasdaq stocks) for firm $i$ on the first day of trading, $P_{oi}$ is the offering price of firm $i$, and $n$ is the number of firms in the sample. For the dollar cost, this number is then multiplied by the offer size. Administrative Expense is the sum of all administrative expenses required to float the issue. Underwriter Spread is the total commission paid to the underwriting syndicate and selling group, including the management fee, the underwriter fee, and the selling concession. Overallotment Value is the value of the overallotment option based on the Black and Scholes (1973) option pricing model. In Panel B, these costs are standardized by the issue size. Correlations are followed by $t$-statistics beneath. The $t$-statistic is for the null hypothesis that the correlation coefficient is equal to 0. Specifically, the $t$ with $n - 2$ degrees of freedom equals $r / \left( 1 - r^2 \right) / (n - 2)^{0.5}$, where $r$ is the estimated correlation coefficient and $n$ is the sample size.

***Significant at the 1% level.
**Significant at the 5% level.

Table 2 reports the difference-in-means tests for the control sample and the PLBO sample as a whole. The control sample displays greater mispricing than does the PLBO sample (8.04% vs. 5.47%, significantly different at the 1% level). Note that the two samples, similar in mean size ($81,206,174$ for the control sample vs. $80,272,633$ for the PLBO sample), are not significantly different. Thus, it is unlikely that the significant difference in mispricing between the two groups is driven by size effects. In fact, the control sample is economically $1$ million greater on average than the PLBO sample, although Ibbotson, Sindelar, and Ritter (1994) find that smaller IPOs tend to underprice to a greater extent than larger IPOs.
TABLE 2. Difference-in-Means Tests Between Previous Leveraged Buyouts and a Pair-Matched Control Sample.

<table>
<thead>
<tr>
<th></th>
<th>Control Sample</th>
<th>PLBO Sample</th>
<th>t-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Mispricing</td>
<td>8.04%</td>
<td>5.47%</td>
<td>2.57***</td>
</tr>
<tr>
<td>Administrative Expense</td>
<td>2.79%</td>
<td>2.27%</td>
<td>0.18</td>
</tr>
<tr>
<td>Underwriter Spread</td>
<td>6.44%</td>
<td>6.34%</td>
<td>0.59</td>
</tr>
<tr>
<td>Overallotment Value</td>
<td>3.67%</td>
<td>3.01%</td>
<td>1.84*</td>
</tr>
<tr>
<td>Total Flotation Costs</td>
<td>18.63%</td>
<td>14.94%</td>
<td>2.56**</td>
</tr>
<tr>
<td>Shares Offered</td>
<td>5,650,822</td>
<td>5,485,366</td>
<td>0.70</td>
</tr>
<tr>
<td>Offer Price</td>
<td>$13.80</td>
<td>$13.58</td>
<td>0.02</td>
</tr>
<tr>
<td>Offer Size</td>
<td>$81,206,174</td>
<td>$80,272,633</td>
<td>1.30</td>
</tr>
</tbody>
</table>

Note: This table reports the results of difference-in-means tests for a sample of initial public offerings (IPOs) from 1981 through 1996. Initial Mispricing is calculated as:

$$\sum_{i=1}^{n} \left[ \log(P_i / P_o) \right]/n,$$

where $P_i$ is the closing price (or the mean of the bid and ask price for Nasdaq stocks) for firm $i$ on the first day of trading, $P_o$ is the offering price of firm $i$, and $n$ is the number of firms in the sample. Administrative Expense is the sum of all administrative expenses required to float the issue divided by the size of the issue. Underwriter Spread is the total commission paid to the underwriting syndicate and selling group—the sum of the management fee, the underwriter fee, and the selling concession all divided by the issue size. Overallotment Value is the value of the overallotment option based on the Black and Scholes (1973) option pricing model and is standardized by the issue size. Total Flotation Costs equals the sum of Initial Mispricing, Administrative Expense, Underwriter Spread, and Overallotment Value and is standardized by issue size. (It does not equal the sum of the first four rows because of differing sample sizes across rows.) Shares Offered is the number of shares offered in the issue. Offer Price is the dollar amount each share costs in the issue. Offer Size is the product of Shares Offered and Offer Price. Control Sample consists of IPOs that have never conducted a leveraged buyout (LBO) pair-matched with previous LBO firms based on offer size and offer date. PLBO Sample consists of all previous LBO IPOs that occurred over the same years for which data are available. All IPOs are firmly underwritten. The second and third rows report the means for the respective groups. The $t$-statistic is for the null hypothesis that the difference in means for each row is 0.

***Significant at the 1% level.
**Significant at the 5% level.
*Significant at the 10% level.

As predicted, administrative expense and underwriter spread are greater for non-PLBO firms. Consistent with our transparency prediction, the overallotment value is 66 basis points higher for the control sample, and the difference in means is significant at the 0.0665 level. More important to shareholders are total flotation costs rather than the individual components. The mean total flotation cost of the control sample is 369 basis points greater than that of the PLBO sample. The difference in means is significant at the 0.0108 level. Based on an average issue size of $80$ million, this equals approximately $3$ million dollars in extra flotation costs per firm. Thus, the Table 2 results confirm and add to the findings in Table 1:
significant differences in flotation costs can be attributed to significant differences in initial mispricing and overallotment value.  

Costs of Going Public for PLBO Subsamples

The tests in the preceding section provide empirical evidence that PLBOs pay lower flotation costs than a pair-matched control sample. We further analyze the effect of firm transparency on the costs of going public by dividing the sample into three subsamples based on pre-LBO firm ownership structure. We compute the costs of going public for the three pre-LBO ownership groups: prior public, subsidiary, and private PLBOs. We hypothesize that issuing firms pay flotation costs in the following order, from greatest to least: (a) private, (b) subsidiary, (c) public PLBO. The logic for this argument is that the degree of transparency increases from previous private firms to previous subsidiaries to previous public PLBOs.

Table 3 presents the costs of going public for each subsample. The order of the mispricing percentages confirms the prediction of the transparency hypothesis. Specifically, the mispricing of previous public PLBOs (4.35%) is less than that of previous subsidiaries (5.53%), which is less than that of previous private PLBOs (7.43%). This is consistent with our assertion that public PLBOs are the most transparent, private PLBOs are the least, and subsidiaries are in the middle.

Administrative expenses follow the predicted pattern: public PLBOs have lower expenses than do subsidiaries and private PLBOs. Private PLBOs, however, do not follow a monotonic pattern, because their administrative expenses are slightly less than subsidiary PLBOs. Underwriter spread follows a monotonic pattern as predicted, supporting the hypothesis that greater transparency reduces the costs of going public. The difference in underwriter spread between private PLBOs and public PLBOs, and the difference between private PLBOs and subsidiary PLBOs, are both significant at the 5% level. The overallotment value follows the predicted pattern: private PLBOs have higher costs than both public and subsidiary PLBOs; however, subsidiary PLBOs are lower than public PLBOs. Finally, when testing for total flotation costs, we observe the pattern predicted by the transparency hypothesis. Total costs range from 13.80% for public PLBOs to 15.64% for subsidiary PLBOs to 17.75% for private PLBOs. The difference between the public and private PLBOs of 395 basis points is significant at the 5% level.  

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5As another test of transparency, we compare total flotation costs of the control IPOs and the private PLBOs (the two groups we hypothesize to have the least transparency). The matched control sample IPOs have a cost of 19.06%, whereas the private PLBOs have a cost of 17.75%, a difference of 131 basis points. As predicted, flotation costs are lower for private PLBOs.

6If we use analysis of variance testing to determine simultaneous differences, the $F$-statistic for underwriter spread is 2.04 ($p = 0.1310$) and the $F$-statistic for total costs is 1.91 ($p = 0.1496$).
TABLE 3. Average Costs of Going Public for Three Samples of Previous Leveraged Buyouts.

<table>
<thead>
<tr>
<th>Cost</th>
<th>Public PLBO</th>
<th>N</th>
<th>Subsidiary PLBO</th>
<th>N</th>
<th>Private PLBO</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Mispricing</td>
<td>4.35%</td>
<td>124</td>
<td>5.53%</td>
<td>144</td>
<td>7.43%</td>
<td>66</td>
</tr>
<tr>
<td>Administrative Expense</td>
<td>2.03%</td>
<td>123</td>
<td>2.44%</td>
<td>141</td>
<td>2.38%</td>
<td>66</td>
</tr>
<tr>
<td>Underwriter Spread</td>
<td>6.21%</td>
<td>124</td>
<td>6.29%</td>
<td>144</td>
<td>6.68%</td>
<td>66</td>
</tr>
<tr>
<td>Overallotment Value</td>
<td>3.26%</td>
<td>120</td>
<td>3.09%</td>
<td>133</td>
<td>3.53%</td>
<td>58</td>
</tr>
<tr>
<td>Total Flotation Costs</td>
<td>13.80%</td>
<td>119</td>
<td>15.64%</td>
<td>132</td>
<td>17.75%</td>
<td>58</td>
</tr>
</tbody>
</table>

Note: This table reports the descriptive statistics for subsamples of firmly underwritten initial public offerings from 1981 through 1996. Initial Mispricing is calculated as:

$$\sum_{i=1}^{n} \frac{\log(P_i / P_o)}{n},$$

where $P_i$ is the closing price (or the mean of the bid and ask price for Nasdaq stocks) for firm $i$ on the first day of trading, $P_o$ is the offering price of firm $i$, and $n$ is the number of firms in the sample. Administrative Expense is the sum of all administrative expenses required to float the issue divided by the size of the issue. Underwriter Spread is the total commission paid to the underwriting syndicate and selling group—the sum of the management fee, the underwriter fee, and the selling concession all divided by the issue size. Overallotment Value is the value of the overallotment option based on the Black and Scholes (1973) option pricing model standardized by issue size. Total Flotation Costs equals the sum of Initial Mispricing, Administrative Expense, Underwriter Spread, and Overallotment Value standardized by issue size. (It does not equal the sum of the first four rows because of differing sample sizes across rows.) Public PLBO is the sample of previous leveraged buyouts (LBO) that were publicly traded firms before the LBO. Subsidiary PLBO is the sample of previous LBOs that were subsidiaries of publicly traded firms before the LBO. Private PLBO is the sample of previous LBOs that were privately held before the LBO. The means and sample size for each group are reported.

$^a$ The pairwise difference in means between the private PLBO underwriter spread and that of both the public and the subsidiary PLBOs are significant at the .05 level. The simultaneous difference between the three groups using analysis of variance is significant at the 0.1310 level.

$^b$ The pairwise difference in means between the private PLBO and public PLBO total flotation costs is significant at the .05 level. The simultaneous difference between the three groups using analysis of variance is significant at the 0.1496 level.

**A Model of Total Flotation Costs**

We estimate a model of total flotation costs to determine whether the costs of going public are explained in part by the degree of firm transparency. We test this notion by using proxies designed to capture the measures of transparency discussed previously. The model is:

$$\text{TOTAL FLotation Costs}_i = \alpha + \beta_1 \text{PUBLIC}_i + \beta_2 \text{DURATION}_i + \beta_3 \text{BOND}_i + \beta_4 \text{SIZE}_i + \beta_5 \text{SD}_i + \beta_6 \text{REPUTATION}_i + \beta_7 \text{OWNERSHIP}_i + \beta_8 \text{CAPEX}_i + \varepsilon_i, \quad (2)$$
where

\[ \text{TOTAL FLOTATION COSTS}_i = \text{the natural logarithm of total flotation costs of firm } i; \]
\[ \text{PUBLIC}_i = \text{a dummy variable equal to 1 if firm } i \text{ was publicly traded before the LBO}; \]
\[ \text{DURATION}_i = \text{an interaction term that equals the product of an indicator variable equaling 1 when the firm was privately held before the LBO and the number of days the firm stayed private in the LBO structure}; \]
\[ \text{BOND}_i = \text{a dummy variable equal to 1 if firm } i \text{ had public debt while in the LBO ownership arrangement}; \]
\[ \text{SIZE}_i = \text{the natural logarithm of the offer size of firm } i\text{'s issue}; \]
\[ \text{SD}_i = \text{the average twenty-day standard deviation of firm } i\text{'s returns after the IPO}; \]
\[ \text{REPUTATION}_i = \text{the Carter-Manaster (1990) measure of firm } i\text{'s lead underwriter}; \]
\[ \text{OWNERSHIP}_i = \text{the percentage of equity retained by firm } i\text{'s pre-listing shareholders}; \text{ and} \]
\[ \text{CAPEX}_i = \text{an indicator variable equal to 1 if the primary use of funds of firm } i\text{'s issue is to pay off existing debt and 0 otherwise.} \]

The first three regressors in the model are the transparency variables. We predict PUBLIC, DURATION, and BOND will have inverse relations with the dependent variable. (All these predictions follow from the discussion in section II.) We concentrate on public PLBOs because these firms have the greatest degree of transparency because of the amount and verification of previously reported information (e.g., required SEC reports, an observable market price, analyst following). The next five regressors control for issue size, issue risk, underwriter prestige, ownership amount, ownership amount retained in the firm, and planned proceed use. Following the previous literature (Ritter 1987), SD is a proxy for the ex-ante uncertainty of the issue. It follows that firms with high volatility in the aftermarket had uncertain market values before the IPO. We measure SD as the daily standard deviation of returns for the first twenty days in the aftermarket. We predict SD will be directly related to the dependent variable.

REPUTATION represents the prestige of the lead underwriter. Titman and Trueman (1986) argue that entrepreneurs with favorable information about the
TABLE 4. An Ordinary Least Squares Model with Total Flotation Cost as the Dependant Variable.

\[
\text{TOTAL FLOTATION COSTS}_i = \alpha + \beta_1 \text{PUBLIC}_i + \beta_2 \text{DURATION}_i + \beta_3 \text{BOND}_i + \beta_4 \text{SIZE}_i + \beta_5 \text{SD}_i + \beta_6 \text{REPUTATION}_i + \beta_7 \text{OWNERSHIP}_i + \beta_8 \text{CAPEX}_i + \epsilon_i.
\]

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimated Coefficient</th>
<th>Unadjusted (t)-statistic</th>
<th>White’s (t)-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>−53.79</td>
<td>−8.14***</td>
<td>−6.78***</td>
</tr>
<tr>
<td>PUBLIC</td>
<td>−1.33</td>
<td>−1.92*</td>
<td>−1.79*</td>
</tr>
<tr>
<td>DURATION</td>
<td>−1E-04</td>
<td>−0.22</td>
<td>−0.21</td>
</tr>
<tr>
<td>BOND</td>
<td>−0.02</td>
<td>−0.03</td>
<td>−0.02</td>
</tr>
<tr>
<td>SIZE</td>
<td>3.87</td>
<td>9.68***</td>
<td>7.77***</td>
</tr>
<tr>
<td>SD</td>
<td>41.41</td>
<td>2.01**</td>
<td>1.67*</td>
</tr>
<tr>
<td>REPUTATION</td>
<td>0.16</td>
<td>0.39</td>
<td>0.54</td>
</tr>
<tr>
<td>OWNERSHIP</td>
<td>−0.72</td>
<td>−0.66</td>
<td>−0.83</td>
</tr>
<tr>
<td>CAPEX</td>
<td>0.37</td>
<td>0.47</td>
<td>0.46</td>
</tr>
<tr>
<td>Adjusted (R^2)</td>
<td>0.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(F)-statistic</td>
<td>17.24***</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: This table reports the results of a model of total flotation costs estimated to determine whether the costs of going public are explained in part by the degree of firm transparency. The sample consists of previous leveraged buyout (LBO) firmly underwritten initial public offerings that occurred from 1981 to 1996. The dependant variable is the natural logarithm of the total flotation costs of going public. PUBLIC equals 1 when the firm was publicly traded before the LBO and 0 otherwise. DURATION is an interaction term that equals the product of an indicator variable equaling 1 when the firm was privately held before the LBO and the number of days the firm was private in the LBO process. BOND is an indicator variable that equals 1 if the firm had publicly traded debt while the firm was in the private stage of the LBO period and 0 otherwise. SIZE is the natural logarithm of the offer size of the issue. SD is the standard deviation of the series of twenty daily returns beginning the day after the offer date. REPUTATION is the Carter-Manaster (1990) underwriter prestige metric. OWNERSHIP is the percentage of equity retained by the pre-listing shareholders. CAPEX equals 1 if the primary use of proceeds is to pay off existing debt and 0 otherwise. Subscript \(i\) denotes the \(i\)th firm in the sample. Estimated coefficients are first, unadjusted \(t\)-statistics are next, and White’s (1980) heteroskedastic-consistent \(t\)-statistics are last.

\*Significant at the 10% level.
\**Significant at the 5% level.
\***Significant at the 1% level.

firm’s value will choose a higher quality underwriter than will an entrepreneur with less favorable information. REPUTATION is measured using the Carter-Manaster rating of each lead underwriter. This metric is estimated by examining tombstone advertisements and comparing the relative placement of investment banks in the advertisements. We use the updated list from Carter, Dark, and Singh (1998) for this study.

OWNERSHIP equals the percentage of equity retained in the firm by pre-listing shareholders. Leland and Pyle (1977) argue that the amount of ownership retained in the firm signals the quality of firm assets. Following their logic, we predict an inverse relation between OWNERSHIP and the dependant variable.
Finally, CAPEX equals 1 when the primary use of funds of the issue is to pay off existing debt and 0 otherwise. The description of “otherwise” from SDC is “general corporate purposes.” Of the 334 PLBOs, 209 list retiring debt as the primary use of funds. Because these firms have conducted an LBO, this high percentage seems reasonable. Trueman (1986) develops a theoretical model in which greater capital expenditures signal higher firm value. Using our indicator variable, we assume that firms with “general corporate purposes” listed as their primary use of funds make a greater capital expenditure with the IPO dollars than do firms whose primary use of funds is to “pay off existing debt.” With this assumption, we predict CAPEX will be directly related to the dependent variable.

Table 4 reports the results of the regression, the estimated coefficients, followed by the unadjusted $t$-statistic and the White (1980) heteroskedastic-corrected $t$-statistic. The three transparency variables have the predicted negative sign; however, only PUBLIC is statistically significant. The control variables are also consistent with results reported in the prior literature. In particular, SIZE and SD have their predicted signs and are statistically significant. OWNERSHIP and CAPEX have their predicted signs. These results indicate that after controlling for size, risk, underwriter reputation, amount of ownership retained, and capital expenditures, whether a PLBO is publicly traded before the LBO adds explanatory power to the total costs of going public.

VII. Implications and Conclusions

The underlying basis for our study is a test of the asymmetric information hypothesis. Using a sample of 334 PLBOs, a control sample based on size and date of issue, and a finer partition of the PLBO sample, we document that PLBOs pay less to enter the public markets. We argue that these results are produced by greater transparency of the PLBOs relative to the control sample. As an additional test of the asymmetric information hypothesis, we show that private PLBOs pay significantly more to enter the public markets than do public PLBOs.

Our research design relies on the existence of information before the IPO that firms have been required to disclose (mostly by the SEC). Our empirical results suggest that firms that previously disclose greater amounts of verifiable information (i.e., firms that are more transparent) pay lower costs to go public. The implication is that, although this information is less fresh than the information reported in the IPO filing prospectus, it has incremental value. The reason, we believe, is that these two sources of information are different in the minds of investors. Previously mandated disclosure of company information has the advantage of verification; the same cannot be said of information in the IPO prospectus. Information in the IPO prospectus is possibly contaminated by optimistic bias, window dressing, or even earnings manipulation. Our results also support the notion that superior private
firms intending to go public can help themselves by using sources that provide verification or certification, or both.

**References**


