Firm Characteristics And Seasoned Equity Issuance Method: Private Placement Versus Public Offering

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Abstract

This study compares characteristics of firms using the private placement method of issuing common stock with those using the public offering method. Results show that private placement firms are smaller in size, have more growth opportunities, and have less financial slack than public offering firms. Their issuance decisions are likely to be driven by their needs for external capital, rather than motivated by overvaluation of their stocks. These findings are consistent with the information hypothesis, which states that undervalued firms with favorable prospects and little financial slack use the private placement method to resolve the information asymmetry problem when seeking external equity capital.

I. Introduction

Stock market reacts differently to announcements of new equity issues, depending on whether the private placement or public offering method is used. While public offering firms experience significant negative stock price reactions to their announcements of common stock issuance (Smith, 1986; Denis, 1994), private placement firms experience significant positive stock price reactions (Wruck, 1989; Hertzel and Smith, 1993). Prior studies provide mixed evidence on the roles of the information and agency hypotheses in explaining the stock price reactions.[1] According to the information hypothesis, investors perceive that the use of the private placement method by better informed managers in seeking external equity capital conveys positive information, while the use of the public offering method conveys negative information. According to the agency hypothesis, the increased monitoring of management associated with private placements leads to the positive stock price reactions. Since public offerings magnify agency problems by increasing cash under management control without increasing monitoring, the agency hypothesis predicts negative market reactions. The debate in the literature regarding the relative importance of the two hypotheses in explaining stock price reactions to private placements and public offerings remains unresolved.

This research examines and compares characteristics of firms issuing equity through private

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placements to characteristics of firms issuing equity through public offerings. Our approach complements the existing literature, which focuses on stock price reactions to announcements of equity issuance. In addition, our approach is the first to directly compare firms using these two issuance methods. Previous studies have focused on either public offerings or private placements. Through analysis and comparison of key firm characteristics, this research offers insight regarding the roles of the information and agency hypotheses in explaining investors' different reactions to the two equity issuance methods.

We find that private placement firms are smaller in size, have more growth opportunities and thus experience a greater degree of information asymmetry than public offering firms. In addition, private placement firms have less financial slack and thus a greater need for external capital than public offering firms. Furthermore, private placements are less likely to be motivated by the overvaluation of issuing firms than public offerings. Overall, our results provide strong support for the information hypothesis that undervalued firms with favorable prospects and little financial slack use the private placement method to resolve the information asymmetry problem associated with raising external equity capital. The private placement method adds value by facilitating communication of the true quality and favorable prospects of the issuing firm to a small group of potential investors.

On the other hand, support for the agency hypothesis is mixed. Consistent with the prediction of the agency hypothesis, firms that pay dividends tend to use the public offering method while firms that do not pay dividends tend to use the private placement method. The monitoring function of private placement appears to substitute for capital market monitoring activities associated with cash dividend distributions. Contrary to the prediction of the agency hypothesis, private placement firms have a lower level of free cash flow than public offering firms. Also, managerial ownership is higher for private placement firms than for public offering firms. These findings do not support the agency hypothesis that the increased monitoring associated with private placement reduces agency problems between managers and stockholders.

In the next section, we discuss the information and agency hypotheses and their proxy variables used in the analyses. Then, we describe our data and methodologies in section III. Section IV presents a discussion of the results, section V presents a summary and conclusion, and section VI offers suggestions for future research..

II. Hypotheses and Variables

Smith (1986) discusses the capital acquisition process and the associated effects of public offerings of securities on stock prices. Announcement period abnormal returns are typically negative and are statistically significant for common stock offerings. Smith presents a framework consisting of five hypotheses to explain the observed stock price reactions. Among them, the information hypothesis and the agency hypothesis may be useful in understanding the choice of the equity issuance methods.

A. The Information Hypothesis

In an information asymmetric context, Myers and Majluf (1984) show that better informed managers issue common stock when they believe their stock is overvalued. Thus, the market reacts negatively to the offering announcement. The negative reactions are stronger for firms with a greater degree of information asymmetry between managers and investors. In order to avoid wealth transfer from existing stockholders to new stockholders, Myers and Majluf show that managers of undervalued firms with profitable investment opportunities, but little financial slack, will choose to forego the growth opportunities in order to avoid issuing common stock. This underinvestment problem

increases with the degree of information asymmetry.

Extending Myers and Majluf's model, Hertzel and Smith (1993) show that private placement can mitigate the information asymmetry problem such that profitable growth opportunities are not foregone. Private placement allows managers to put intensive effort into convincing a single investor or a small group of investors that their firm has favorable prospects. Thus, undervalued firms that have growth opportunities, but face information asymmetry problems, prefer private placements to public offerings when they raise external equity capital.

In the following paragraphs, we discuss proxy variables for the information hypothesis. Firm size and dividend policy are used as proxies for information asymmetry. Measures of financial slack, growth opportunities and recent stock price performance are also included.

Firm Size Variable

The differential information hypothesis (Freeman, 1987) suggests that expected marginal net profit from private information search is an increasing function of firm size.[2] Thus, small firms tend to experience a greater degree of information asymmetry than large firms prior to the announcement of any corporate event. Since the extent of underinvestment increases with the degree of information asymmetry, small firms have stronger incentives than large firms to use private placements to mitigate the underinvestment problem when seeking external equity capital. Thus, we predict that private placement firms will have a lower value for the firm size variable than public offering firms.[3] We define the firm size variable, LNMVE, as the natural logarithm of market value of equity at the fiscal year end preceding the announcement.

Dividend Policy Variable

Since dividends are used as a costly signal of earnings and firm value (Bhattacharya, 1979; John and Williams, 1985), MacKie-Mason (1990) argue that firms that have a reputation for paying dividends should have a lesser degree of information asymmetry. Thus, we propose that non-dividend paying firms, which are more likely to have a greater degree of information asymmetry, tend to use private placements in raising external equity capital. We predict a negative relationship between the dividend dummy variable and the likelihood that a firm will choose the private placement method. The dividend dummy variable, DIVDUM, has a value of one for issuing firms that pay dividends during the fiscal year preceding the announcements, and zero otherwise.

Growth Opportunities Variable

Following Hertzel and Smith (1993), we use the book-to-market-equity ratio to proxy the availability of growth opportunities of issuing firms. This measure is better than the market-to-book-equity ratio because outliers in the samples skew the distribution of the latter variable. Since the degree of information asymmetry increases with the growth potential of the issuing firm, we postulate that firms with substantial growth opportunities tend to use private placements in raising external equity capital. Thus, we predict that private placement firms will have a lower value for the book-to-market-equity ratio variable, BKMKTRAT, than public offering firms. This variable is computed with the book value and market value of equity data for the fiscal year preceding the announcement.

Financial Slack Variable

Hertzel and Smith (1993) suggest that undervalued firms with limited financial slack can use private placements to raise external equity capital to finance, instead of forego, profitable investment opportunities. Therefore, firms with limited financial slack are expected to prefer private placements to public offerings in seeking equity capital. We use Lehn and Poulsen's (1989) free cash flow variable, FCF, to measure

the level of financial slack of the issuing firm. The FCF variable is defined as operating income before depreciation minus interest expenses, taxes and cash dividends paid to common and preferred stockholders, scaled by the total assets. This variable is computed for the fiscal year preceding the announcement. We predict that private placement firms will have a lower level of free cash flow (financial slack) than public offering firms.

Overvaluation Variable

A widely cited explanation for the negative stock price reactions to announcements of public offerings of common stock is the overvaluation hypothesis. Lucas and McDonald (1990) show that firms tend to time their public common stock offerings after stock price run-up to make sure that their stocks are not undervalued, and possibly overvalued, in the market. We use a market-adjusted abnormal stock price run-up variable, ABRET, to control for differences in the stock market environment faced by issuing firms.[4] First, we compute a 12-month holding period return for each issuing firm, HPR_j, and for the corresponding market index, HPR_I, using monthly return data and a buy and hold strategy.[5] The benchmark market indices are the S&P 500 index and the NASDAQ index for NYSE/AMEX firms and NASDAQ firms, respectively, in our samples. For the issuing firm, the 12-month holding period return is defined as

$$HPR_j = \prod_{t=1}^{12} (1 + R_{jt}) - 1$$

where R_{jt} is the monthly rate of return on stock j for month t during the fiscal year preceding the announcement. In a similar manner, we compute the 12-month holding period return for the market index, HPR_I, using the monthly rate of return on the corresponding market index. Then, we compute ABRET by subtracting the holding period return for the index from that of the issuing firm, i.e., $ABRET = HPR_j - HPR_I$. We predict that private placement firms will have a lower market-adjusted abnormal stock price run-up than public offering firms.

B. The Agency Hypothesis

As long as managers do not bear the full cost of their actions, they have incentives to pursue their own interests at the expense of stockholders. This results in agency costs that reduce firm value. Agency problems between stockholders and managers can take various forms such as perquisite consumption (Jensen and Meckling, 1976) and misuse of free cash flow (Jensen, 1986). Private placements can reduce agency problems because this method allows investors to monitor the management of the issuing firm. On the other hand, public offerings will magnify these agency problems because the equity issuance increases cash under management control without increasing monitoring. In the following paragraphs, we discuss proxy variables for the agency hypothesis.

Free Cash Flow Variable

Jensen's (1986) free cash flow hypothesis states that managers have tendencies to misuse free cash flow, thus reducing firm value. Hertzel and Smith (1993) suggest that private placement allows prospective investors to monitor the issuing firm, as long as investors are not part of the management team. Thus, we propose that firms with a large amount of free cash flow tend to use the private placement approach because it may help mitigate the free cash flow problem. In contrast to the information hypothesis, the agency hypothesis predicts that private placement firms will have a higher level of free cash flow, FCF, than public offering firms.

Dividend Policy Variable

Firms that pay out cash dividends to stockholders may need to seek external capital more frequently than non-dividend paying firms, and hence face the monitoring activities of external

Table 1
Predicted Signs for Coefficients of the Variables Included in the Logistic Regression Analysis

Dependent variable equals 1 for private placements and 0 for public offerings.

	Information Hypothesis	Agency Hypothesis
LNMVE	(-)	
DIVDUM	(-)	(-)
BKMKTRAT	(-)	
FCF	(-)	(+)
ABRET	(-)	
OWNFRAC		(-)

LNMVE	Natural logarithm of market value of equity at the fiscal year end preceding the announcement.
DIVDUM	Value equals 1 if the issuing firm pays dividends during the fiscal year preceding the announcement and zero otherwise.
BKMKTRAT	Book value of equity divided by market value of equity at the fiscal year end preceding the announcement.
FCF	Lehn and Poulsen's (1989) free cash flow measure, scaled by total assets.
ABRET	Difference between the run-up in the stock price of the issuing firm and that of the benchmark market index during the fiscal year preceding the announcement. The benchmark market indices are the S&P 500 Index and the NASDAQ Index for NYSE/AMEX and NASDAQ firms, respectively.
OWNFRAC	beneficial ownership of all managers and directors, as reported in the *Spectrum 6,* divided by the total number of shares outstanding (at the fiscal year end preceding the announcement).

agents (Easterbrook, 1984). The free cash flow problem might also be reduced as a result of idle cash being distributed to stockholders. In other words, dividend-paying firms may experience less agency problems than firms that do not pay dividends. Thus, the role of private placement as an alternative monitoring mechanism to reduce agency problems is less important among dividend paying firms. Similar to the information hypothesis, the agency hypothesis also predicts a negative relationship between the dividend dummy variable, DIVDUM, and the likelihood of a private placement.

Ownership Fraction Variable

Jensen and Meckling (1976) describe conflicts between managers and stockholders. Managers who do not own the entire firm have incentives to consume excess perquisites. Monitoring and bonding activities can help reduce this agency problem. According to Jensen and Meckling, the agency problem of equity financing decreases, and thus firm value increases, as managerial ownership increases. Therefore, the role of private placement as an alternative monitoring mechanism in reducing the agency problem is less important for firms with larger managerial ownership. We predict that private placement firms will have a lower level of managerial ownership fraction than public offering firms. The ownership fraction variable, OWNFRAC, is defined as the beneficial ownership of all managers and directors as reported in *Spectrum 6*, divided by the total number of shares outstanding at the fiscal year end preceding the announcement.

Table 1 summarizes the predicted signs for the coefficients of variables included in the logistic analysis, according to the information and the agency hypotheses. In the logit analysis, the di-

chotomous dependent variable has a value of zero for public offering firms and one for private placement firms.

III. Data and Methodologies

A. Sample Construction

The private placement sample and the public offering sample consist of common stock issuance announcements by industrial firms listed on the NYSE/AMEX or traded on the NASDAQ over the period of 1981 to 1990. We identify the announcements from the *Investment Dealers' Digest*. To focus on the information content of seasoned equity offerings, we exclude joint offerings of debt and equity and shelf registrations. We also exclude issues that involve the sale of shares by officers or directors of the issuing firm. Furthermore, we exclude offerings that are preceded by one or more private placements or public offerings within a year preceding the announcement. Finally, we exclude offerings that are contaminated by other firm specific announcements within a calendar week and those whose event date cannot be confirmed with the *Wall Street Journal* to purify the sample. There are 191 public offerings and 73 private placements included in the analyses. All variables, except the ownership fraction variable, are computed using the Standard and Poor's COMPUSTAT PC Plus database. The managerial holding data are collected from *Spectrum 6*.

B. Sample Description

Table 2 presents summary statistics of our private placement and public offering samples and those of the samples used in Hertzel and Smith (1993) and Wruck (1989) for comparison purposes. The average market value of equity is $128.1 million for our private placement sample and $401.6 million for our public offering sample. The average proceeds from private placements and public offerings are, respectively, $11.4 million and $52.8 million. Thus, firms that issue common stock through private placements are smaller in size and obtain smaller amounts of capital than those raising external equity capital through public offerings. Average relative issue sizes for both private placement firms and public offering firms are 12.1%. The insider ownership is higher for private placement firms than for public offering firms. The average insider ownership fractions for private placement and public offering samples are, respectively, 24% and 14%.

Compared to the other two studies, our private placement firms are similar in size to those of Hertzel and Smith, but smaller than those of Wruck. Similar to Hertzel and Smith, NASDAQ firms dominate our sample, accounting for 58% of private placement firms. The average issue size for our private placement sample is smaller than the average issue size for Hertzel and Smith's sample, and is much smaller than that of Wruck's sample. The average insider ownership of our private placement sample is also lower than that in the other two studies.

Table 3 presents the industry distributions of our private placement firms and public offering firms. The two samples appear to have similar industry representations. Out of the eight industry categories, classified according to the SIC code range, the difference between the two samples is less than 5% for five categories. Even for the industry category that shows the biggest discrepancy between the two samples, the Diversified Manufacturing category, the difference is less than 10%.

C. Methodologies

We employ two empirical methods to examine characteristics of common stock issuing firms that choose between the private placement and public offering methods. First, we apply the difference-in-means t-test and the difference-in-medians Z test to the explanatory variables individually. The purpose of this analysis is to provide a preliminary examination concerning any significant differences in the characteristics of firms adopting the two issuance methods. In ad-

Table 2
Summary Statistics of the Private Placement and Public Offering Samples[1]

Private Placement	L&K Mean	L&K Median	H&S Mean	H&S Median	Wruck Mean	Wruck Median
Average Proceeds	$11.4 million	$3.1 million	$11.4 million	$5.4 million	$31.5 million	$11.0 million
MV Equity[2]	$128.1 million	$28.1 million	$94.7 million	$45.9 million	$233.7 million	$48.7 million
Relative Issue Size[3]	12.1%	10.1%	16.0%	13.3%	19.6%	12.3%
Insider Ownership[4]	23.7 %	15.7%	31.2%	n.a.[5]	36.5%	32.2%
Public Offering	**L&K Mean**	**L&K Median**	**H&S Mean**	**H&S Median**	**Wruck Mean**	**Wruck Median**
Average Proceeds	$52.8 million	$28.3 million	$39.0 million	$20.9 million	n.a.	n.a.
MV Equity	$401.6 million	132.7 million	$441.5 million	$116.1 million	n.a.	n.a.
Relative Issue Size	12.1%	8.3%	16.5%	14.6%	n.a.	n.a.
Insider Ownership	14.2%	7.3%	n.a.	n.a.	n.a.	n.a.

Notes:
1 Summary statistics for our (L&K) sample are compared to those of Hertzel and Smith (H&S) (1993), and Wruck (1989).
2 MV equity is defined as the market value of the sample firm's common equity at the fiscal year end preceding the announcement.
3 Relative issue size is defined as the number of common shares issued in the equity issuance divided by the sum of the number of shares of common stock outstanding at the end of the preceding fiscal year plus the number of common shares issued in the equity issuance.
4 Insider ownership is defined as the beneficial ownership of all managers and directors, and non-management holdings greater than 5 percent, as reported in the *Spectrum 6*, divided by the total number of shares outstanding (at the fiscal year end preceding the announcement).
5 n.a. means data not available.

dition, this analysis tests whether the differences, if any, are consistent with the predictions of the information and agency hypotheses discussed in section II. Second, we apply the logistic regression (logit) analysis to further examine the partial impacts of explanatory variables on the choice between the two issuance methods. In the logit analysis, the dichotomous dependent variable has a value of zero for public offerings and one for private placements.

IV. Results

A. Univariate Analysis

Table 4 reports the means and medians of the explanatory variables, as well as test results on the differences between the private placement and public offering samples. The first row for each variable reports the means for the two samples followed by the difference-in-means test statistic (t) and the corresponding p-value. The second row reports the medians followed by the difference-in-medians test statistic (Z) and the corresponding p-value.

The means and medians of all variables, except the ownership fraction variable, OWNFRAC, and the overvaluation variable, ABRET, are significantly different, at the 1% level, across the two samples. The significance levels for the differences in the OWNFRAC and ABRET variables across the private placement and public offering samples are at the 5% level.

Table 3
SIC Code Distributions for Private Placement and Public Offering Firms

		Private Placements			Public Offerings		
SIC Range	*Industry Description*	*n*[1]	*%*[2]	*cum%*[3]	*n*	*%*	*cum %*
1000 - 1999	Natural Resources & Agriculture	9	12.5	12.5	9	4.7	4.7
2000 - 2999	Consumer Products	14	19.4	31.9	32	16.8	21.0
3000 - 3999	Diversified Manufacturing	25	34.8	66.7	85	44.5	66.0
4000 - 4999	Transportation, Media & Utilities	3	4.1	70.8	7	3.6	69.6
5000 - 5999	Wholesale and Retail Sales	6	8.4	79.2	33	17.3	86.9
6000 - 6999	Financial Services	4	5.5	84.7	2	1.1	88.0
7000 - 7999	Diversified Service Industries	7	9.7	94.4	16	8.3	96.3
8000 - 8999	Healthcare	4	5.6	100.0	7	3.7	100

Notes:
1 n represents the number of observations for a specified method (private placement or public offering) in a specified SIC code range.
2 % gives the percentage of total observations for a specified method in the stated SIC code range.
3 Cum % gives the cumulative percentage of total observations for a specified method through the stated SIC code range.

As predicted by the information hypothesis, private placement firms are smaller in size, i.e., lower LNMVE[6], and more of them are non-dividend paying firms, i.e., lower DIVDUM. In other words, private placement firms have a greater degree of information asymmetry than public offering firms. The finding that most private placement firms do not pay out dividends is also consistent with the prediction of the agency hypothesis. The agency hypothesis implies that the role of private placement as a monitoring mechanism in mitigating agency problems is more important among non-dividend paying firms. In addition, private placement firms have more growth opportunities than public offering firms, i.e., lower BKMKTRAT. This finding also suggests a greater degree of information asymmetry for private placement firms.

Unlike firms that publicly offer common stock, firms that use private placements are less likely to be motivated by overvaluation of their stocks. Private placement firms have lower market-adjusted abnormal stock price run-up (ABRET) than public offering firms. Furthermore, the average ABRET for private placement firms is insignificantly different from zero and the median is negative. On the other hand, the mean and median ABRET for public offering firms are significantly greater than zero at the 1% and 5% levels, respectively.

Consistent with the information hypothesis but contradictory to the agency hypothesis, private placement firms have less free cash flow (or financial slack) than public offering firms. The negative mean and median for the free cash flow (FCF) variable indicate that private placement firms have little financial slack, suggesting that their issuance decisions are likely to be motivated by their needs for cash.[7] In addition, the finding that private placement firms have larger managerial ownership fractions, OWNFRAC, than public offering firms is also inconsistent with the prediction of the agency hypothesis. These results call into question the role of private placement as a monitoring mechanism to reduce agency problems.

Table 4
Univariate Analysis

Comparison of mean and median values for explanatory variables: Mean values are shown in the upper boxes with medians being shown below the means. T-statistics for differences in means are shown to the right of the means and Z-statistics for differences in medians are shown to the right of the medians (with p-values in parentheses).

Variables	Private Placements	Public Offerings	Difference Tests
LNMVE	3.4055	5.0626	- 8.57 (.0001)
	3.3339	4.8878	- 5.91 (.0001)
DIVDUM	0.1233	0.6806	-10.84 (.0001)
	0.0000	1.0000	- 8.10 (.0001)
BKMKTRAT	0.3746	0.6668	- 5.42 (.0001)
	0.2524	0.5791	- 3.71 (.0002)
FCF	-0.2630	0.0608	- 5.09 (.0001)
	-0.0302	0.0697	- 4.81 (.0001)
ABRET	0.1085	0.3183	- 2.29 (.0228)
	-0.0971	0.1346	- 2.06 (.0394)
OWNFRAC	0.1723	0.0912	2.39 (.0206)
	0.0958	0.0425	1.66 (.0977)

LNMVE	Natural logarithm of market value of equity at the fiscal year end preceding the announcement.
DIVDUM	Value equals 1 if the issuing firm pays dividends during the fiscal year preceding the announcement and zero otherwise.
BKMKTRAT	Book value of equity divided by market value of equity at the fiscal year end preceding the announcement.
FCF	Lehn and Poulsen's (1989) free cash flow measure, scaled by total assets.
ABRET	Difference between the run-up in the stock price of the issuing firm and that of the benchmark market index during the fiscal year preceding the announcement. The benchmark market indices are the S&P 500 Index and the NASDAQ Index for NYSE/AMEX and NASDAQ firms, respectively.
OWNFRAC	beneficial ownership of all managers and directors, as reported in the *Spectrum 6*, divided by the total number of shares outstanding (at the fiscal year end preceding the announcement).

In summary, the univariate results indicate that, compared to public offering firms, private placement firms are smaller, have better growth potential and have less financial slack. Their issuance decisions are likely to be driven by their needs for external capital, rather than motivated by overvaluation of their stocks. Issuing firms prefer private placements to public offerings in raising external equity capital because this approach mitigates the information asymmetry problem by allowing them to directly and effectively communicate their true quality and favorable prospects to a small group of potential investors. On the other hand, the results are mixed for the role of private placement as a monitoring mechanism for resolving agency problems between managers and stockholders.[8]

Our univariate results are consistent with those documented in recent studies that examine the earnings performance of private placement firms following their equity issuance. Hertzel and Rees (1998) find supportive evidence for the information hypothesis that private placement firms report improved accounting earnings performance following their equity placements. In addition, Goh, Gombola, Lee and Liu (1999) document significant upward revisions for current-year earnings forecasts by analysts following the private placement announcements. Both studies also document a significant positive relationship between improved earnings prospects and stock price reactions to private placement announcements. These researchers conclude that their findings are consistent with the information

hypothesis that private equity placements convey favorable information about future earnings.

B. Multivariate Analysis

In order to examine the partial impacts of the variables on the choice between the private placement and public offering methods, we also apply the logistic regression analysis to the variables. In the logit analysis, the dichotomous dependent variable has a value of one for private placement firms and zero for public offering firms.

The results of the logit analysis are presented in Table 5. We present results of the two logistic models, A and B, because the inclusion of the ownership fraction variable, OWNFRAC, greatly reduces the sizes of both samples, especially the private placement sample. Thus, while model B, which includes OWNFRAC, is more complete, it may be subject to survival bias.

In both models A and B, the signs of the coefficients of explanatory variables in the logistic models are consistent with the results of the univariate analysis. They are also consistent with the predictions derived from the information hypothesis (Table 1). The negative and significant, at the 1% level, coefficients for the firm size variable, LNMVE, suggest that private placements are likely to be used by smaller firms. The negative and significant, at the 5% level, coefficients for the growth opportunities variable, BKMKTRAT, suggest that firms with more growth opportunities, and hence a greater degree of information asymmetry, tend to use private placements in raising external equity capital. The negative and significant, at the 1% level, coefficients for the DIVDUM variable are consistent with the implications of both the information and agency hypotheses. That is, private placements are used by firms facing a greater degree of information asymmetry as well as firms with greater agency problems.[9]

The negative and significant (at the 5% level) coefficients for the market-adjusted abnormal stock price run-up variable, ABRET, suggest that, compared to their public offering counterparts, private placement firms are less likely to time their offering announcements. The coefficients for the financial slack variable are consistent with the prediction of the information hypothesis, but not consistent with the agency hypothesis. The negative and significant (at the 1% level) coefficients for the FCF variable suggest that firms that have little financial slack, and hence a greater need for external capital, tend to use private placements in equity offering. These negative coefficients suggest that firms do not rely on private placement as a monitoring mechanism in solving the agency problem of free cash flow. The insignificant coefficient of the ownership fraction variable, OWNFRAC, also calls into question the importance of the agency hypothesis in explaining the choice of the issuance method.

The two logistic models presented in Table 5 have highly significant, at the 1% level, Chi-Square statistics, implying that the set of explanatory variables are significant in jointly explaining the choice between the private placement and public offering method in raising external equity capital. Firms that use the two issuance methods have distinctively different characteristics. Both logistic models are highly successful in correctly classifying the two types of equity issuing firms. The classification accuracies of models A and B are, respectively, 90.6% and 93.4%.

V. Summary and Conclusion

We examine characteristics of firms using the private placement method versus those of firms using the public offering method in raising external equity capital. We derive a set of explanatory variables from the information and agency hypotheses. The results of the univariate and multivariate analyses show that the characteristics of private placement firms are distinctively different from those of public offering firms. Private placement firms are smaller in size, with substantial growth opportunities and

Table 5
Logistic Regression Analysis

Parameter estimates for logistic regression analysis are presented below (with p-values shown in parentheses). Dependent variable equals 1 for private placements and 0 for public offerings.

Independent Variables	Model A *(N=264)*	Model B *(N=218)*
Intercept	3.2666	2.8653
	(0.0001)	(0.0087)
LNMVE	-0.6618	-0.5595
	(0.0001)	(0.0075)
DIVDUM	-1.2036	-2.6828
	(0.0089)	(0.0008)
BKMKTRAT	-1.5458	-1.3905
	(0.0166)	(0.0659)
FCF	-4.2579	-3.6440
	(0.0021)	(0.0099)
ABRET	-0.7141	-0.9307
	(0.0348)	(0.0304)
OWNFRAC		-0.6338
		(0.7207)
CHI-SQUARE	134.71	112.74
	(0.0001)	(0.0001)
CLASSIFICATION ACCURACY	90.6%	93.4%

N	Sample size; Model A is composed of 73 private placement firms and 191 public offering firms. Model B is composed of 46 private placement firms and 172 public offering firms.
LNMVE	Natural logarithm of market value of equity at the fiscal year end preceding the announcement
DIVDUM	Value equals 1 if the issuing firm pays dividends during the fiscal year preceding the announcement and zero otherwise.
BKMKTRAT	Book value of equity divided by the market value of equity at the fiscal year end preceding the announcement
FCF	Lehn and Poulsen's (1989) free cash flow measure, scaled by total assets.
ABRET	Difference between the run-up in the stock price of the issuing firm and that of the benchmark market index during the fiscal year preceding the announcement. The benchmark market indices are the S&P 500 Index and the NASDAQ Index for NYSE/AMEX and NASDAQ firms, respectively.
OWNFRAC	beneficial ownership of all managers and directors, as reported in the *Spectrum 6*, divided by the total number of shares outstanding (at the fiscal year end preceding the announcement)

limited financial slack. Thus, they appear to face substantial information asymmetry problems in raising external equity capital. While the use of the public offering method appears to be motivated by overvaluation, the use of the private placement method appears to be motivated by a need for additional capital.

Our results provide strong support for the information hypothesis in explaining the differences in firms that use the private placement versus public offering method to issue common stock. However, the results are mixed for the agency hypothesis. Our findings are generally consistent with the empirical findings of Wruck (1989) and Hertzel and Smith (1993) that the private placement method conveys positive information about the firm that issues equity.

Our findings offer managers an explanation for the observed opposite market reactions to private placement versus public offering of eq-

uity. The differences in the market reactions, namely, positive for private placements versus negative for public offerings, are consistent with the distinctive differences in the characteristics of equity issuing firms that use these two methods. In other words, managers can convey the quality of their firm via their choice of the issuance method. The findings of this study also provide insights for managers who must choose among various issuance methods. Managers who believe their firm is undervalued should use the private placement method when raising new equity. The close interaction with a small knowledgeable investor group that characterizes private placement helps managers effectively communicate the true prospects of their firm while limiting public disclosure of proprietary information. This allows the issuing firm to raise equity capital at a price that maximizes firm value. Furthermore, the assessment and decision of this small group of knowledgeable investors can be used to convey the quality of the issuing firm to the general public.

VI. Suggestions for Future Research

Future research focusing on the equity issuance process and investor characteristics may provide additional insights into the managerial choice of equity issuance method. In addition, research which examines the performance of private placement firms subsequent to the issuance of new stock may increase understanding of the information content of the private placement announcement. This direction of research also has potential for providing additional insight into the apparent undervaluation of private placement firms.

Endnotes

1. Researchers of empirical studies summarized in Smith (1986), and Denis (1994), conclude that the negative price reactions to public offering announcements are consistent with the overvaluation (information) hypothesis of Myers and Majluf (1984). On the other hand, Mann and Sicherman (1991) conclude that the negative price reactions are consistent with the free cash flow (agency) hypothesis of Jensen (1986). For the positive price reactions to private placement announcements, Hertzel and Smith (1993) conclude that their findings are consistent with the information hypothesis that a reduction in information asymmetry is the underlying reason. On the other hand, Wruck (1989) conclude that her findings are consistent with the agency hypothesis that improved alignment of incentives between managers and stockholders leads to the favorable reactions.
2. Supporting the differential information hypothesis, Grant (1980) finds that the Wall Street Journal publishes fewer articles for smaller OTC firms than larger NYSE firms. Arbel, Carvell and Strebel (1983) find that security analysts concentrate their research activities on large firms.
3. This prediction is also consistent with an argument that issuance costs associated with public offerings are higher than issuance costs associated with private placements for small firms. Hertzel and Smith (1993) address this issue by comparing private placement discounts to underwriter spreads and other costs of public offerings. Contradictory to this argument, they find that private placements have higher issuance costs than public offerings for small firms. The average issuance costs for private placements and public offerings of similar size are, respectively, 20% and 7.4% of the proceeds. Their results suggest that the use of private placements by small firms when raising external equity capital is unlikely to be motivated by lower issuance costs. Given the similarities in firm size and time period of our private placement sample and theirs, the implications of their findings also apply to our study.
4. The average betas for the private placement and public offering samples are, respectively, 0.9763 and 1.0432. The correspond-

ing medians are 0.9125 and 1.0840, respectively. These means and medians are not significantly different from 1 and are not significantly different across the two samples. This suggests that the ABRET variable also controls for the difference in risk levels between the two samples.

5. Conrad and Kaul (1993), and Canina, Michaely, Thaler and Womack (1998), show that the use of compounded daily returns in the calculation of cumulative returns over an extended horizon may lead to upward biases. To mitigate this potential problem, we use monthly return data in our calculation.
6. We also use the natural logarithm of total assets and sales as proxies for firm size. The results are similar to those presented in the paper.
7. We also borrow the cash deficit variable from MacKie-Mason (1990) to measure the shortfall in cash during the fiscal year preceding the announcement of equity issuance. The univariate result on this variable for the two samples is qualitatively identical to that of the free cash flow variable presented in the paper. In other words, private placement firms have significantly larger shortfall in cash than public offering firms. In addition, 59% of private placement firms, compared to 19% of public offering firms, in our sample experience negative earnings in the fiscal year preceding their announcements.
8. Although our private placement sample is more balanced than Hertzel and Smith's (1993) sample in the mix of NASDAQ and NYSE/AMEX firms, it is still dominated by NASDAQ firms. Thus, consistent with their findings, the lack of support for the agency hypothesis in our study may also be explained by the proposition that the information asymmetry problem prevails among smaller firms while the agency problem prevails among larger firms.
9. We have investigated potential multicollinearity problems among the three information asymmetry proxies, i.e., LNMVE, BKMKTRAT and DIVDUM, by running additional logistic regressions with the exclusion of LNMVE and/or DIVDUM. These additional results, which are available from the authors upon request, are qualitatively identical to those presented in Table 4. These findings suggest that any potential multicollinearity problem does not appear to undermine the individual explanatory power of the three variables.

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