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Abstract

This paper examines the stock price reactions to equity private placements and rights issues on the Stockholm Stock Exchange and analyzes private placement discounts. The combined results reinforce the preliminary support for Wruck's (1989) monitoring hypothesis and the Hertzel and Smith (1993) information hypothesis; the announcement effects are significantly positive for private placements and insignificant for rights issues. Cross-sectional analysis suggests that a substantial part of the variation in private placement discounts and market reactions to private placement announcements can be explained by a combination of increased monitoring and closer alignment of manager and owner interests as implied by agency theory. The paper also presents evidence on significant information effects. These appear not to be generated by sophisticated signaling mechanisms, but rather by responses to the more trivial signals inherent in the announcements of resolutions of acute financial problems.

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1. Introduction

This paper exploits institutional differences between the Swedish and the U.S. stock markets in order to closer examine the stock market's reactions to equity private placements. According to recent studies, announcements of equity private placements generate positive stock price effects.[1] This stock price behavior is noteworthy for at least two reasons. First, because the frequently large private placement discounts would, all else equal, be expected to trigger a negative market response due to the dilution effect. Second, because the results contrast with the empirical evidence from *public* equity issues, which seem thoroughly associated with negative announcement effects.[2] The literature provides two basic explanations for this stock price behavior. The first one is the monitoring hypothesis. Following Jensen and Meckling (1976), Wruck (1989) suggests that the positive announcement effects are motivated by the reductions in agency costs implied by private-placement induced increases in ownership concentration. The second one is the information hypothesis. Hertzel and Smith (1993) extend the Myers and Majluf (1984) model where management has superior knowledge about the firm's true value. In the extended model, private placement announcements help communicating some of the management's private information about firm value to the market. Hypothetically, a well-informed investor announcing his willingness to commit funds to a firm sends a positive signal to the market. Hertzel and Smith rationalize the presence of private placement discounts as compensation for information costs.

It appears that examining private placements in a slightly different market environment may provide useful insights into the mechanisms at work, and not only serve as a "check for robustness" of previous results. An important difference in institutional characteristics between American and Swedish stock markets pertains to

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[1] For example, Wruck (1989) observes an average four-day abnormal return of 4.41% for 99 private placements in the period 1979-1985, and Hertzel and Smith (1993) report an average four-day excess return of 1.72% in a sample of 106 private placements in the period 1980-1987.

[2] For example, Asquith and Mullins (1986) receive an announcement effect of –2.70%, Masulis and Korwar (1986), Schipper and Smith (1986) report negative two-day average abnormal returns of about three percent. See e.g. Smith (1986), or Kalay and Shimrat (1985) for a review of results.

the general level of ownership concentration. In relation to the Amex and NYSE, the Stockholm Stock Exchange is characterized by a very high average level of ownership concentration.[3] The monitoring hypothesis is based on the premise that shareholder concentration *increases* as a result of a private placement. Because the ownership concentration is high to begin with, a private placement tends to *decrease* the ownership concentration of the firm rather than increase it.[4] Provided that the general results of positive private placement announcement effects hold, this observation appears to lessen the support for the monitoring hypothesis. This observation suggests further examination of the monitoring hypothesis.

Offers to participate in issues of new equity are typically aimed at either (i) the firm's existing shareholders (rights offers), (ii) the general public (public offers), or (iii) a specific investor or group of investors (private placements). Unlike the case of American stock exchanges, public offerings are extremely rare in seasoned equity issues on the Stockholm Stock Exchange; seasoned issues are typically floated either as rights offers or as private placement offers.[5,6] Moreover, the rights issues in firms on the Stockholm Stock Exchange are typically uninsured.[7] In rights issues, existing shareholders are given the option to subscribe to the new shares on a pro rata basis. With usually high levels of shareholder takeup, rights issues will typically neither affect the level of ownership concentration nor will it serve to resolve asymmetric information. Thus both the monitoring hypothesis and the information hypothesis predict *insignificant* average market reactions to rights issues. Thus combining results from an event study of private placements with one of rights issues, possibly provides stronger evidence as to the validity of the hypotheses put forward by Wruck (1989)

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[3] In the sample of firms presented in the paper, the average pre-issue size of the largest shareholder's fraction of the equity is roughly 30%, and the single largest shareholder's fraction of the votes is on average 45%. Approximately 35% of the firms are majority controlled in the sense that one owner holds more than 50% of the votes.

[4] In the private placement sample presented, the ownership concentration measured as the fraction of voting rights held by firm's largest shareholder decrease in 64% of the cases.

[5] Eckbo and Masulis (1992) report that in 1981, 97% of the seasoned equity issues in all U.S. listed companies were floated as firm commitment underwritten offers, 2% were standby underwritten offers, and 1% were uninsured rights offers.

[6] In 1993, the volume of rights issues on the Stockholm Stock Exchange was roughly $ 2.4 billion and the volume of cash payment equity private placements amounted to approximately $ 200 million. The trading volume on the Stockholm Stock Exchange (officially listed and OTC stocks) was approximately $ 46.5 billion in 1993. (Source: Stockholm Stock Exchange Fact Book 1994).

and Hertzel and Smith (1993). The fairly rich data material on rights issues and private placements on the Stockholm Stock Exchange makes this market environment a suitable laboratory for a comparative study. The literature contains a vast variety of theories with bearing on the market reactions to seasoned equity issues. Separating between the empirical implications for rights issues and private placements would seem important. Combining event studies of rights issues and private placements thus also adds to the evidence on a larger set of hypotheses.

There is an essential difference between information effects that are induced by intentional and possibly systematic signaling by management (as is the rationale behind many signaling models), and such that are due to the mere resolution of a general uncertainty about dichotomous outcomes (such as the rescue of a firm in acute financial troubles). In the former case, equity issues may constitute sophisticated signaling devices. In the latter, additional funding would represent a more primitive type of "signal". By distinguishing between stock issues aimed at capital restructuring of financially distressed firms and such that are destined to finance new projects, the paper captures some of the relative (empirical) relevance of these two mechanisms.

The Hertzel and Smith (1993) study suggests that private placement discounts can be explained by proxies for information costs. However, they may also reflect compensation for monitoring costs or incentive schemes for managers. Alternatively, discounts may reflect self-dealings by opportunistic managers or influential blockholders. Although insider self-dealings in private placement offerings have become more difficult following a new legislative act in 1987, the boards of directors in Swedish firms still possess a substantial amount of freedom as to the choice of flotation method, timing, and pricing in issues of new stocks.[8] The 1987 legislation strengthens the position of shareholders in widely held firms, however it does not in itself constitute an effective protection of minority shareholders from oppression by

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[7] This institutional fact contrasts with the development on, e.g., the Oslo Stock Exchange where standby underwritten have become increasingly popular on the during the last few years [see B¢hren, Eckbo and Michalsen (1993)].

[8] Swedish corporate law gives the company board of directors the right to decide on a new equity issue *and* the right to decide to forgo the preemptive rights principle. This is provided that, either (i) the board's decision gets ex post approval by the stockholders' meeting, or (ii) the board is formally given ex ante authorization by the stockholders to decide on equity issuance matters [ABL (1975, 4 Kap., 5-15 §§)].

majority shareholders.[9] This may be an important factor in a closely held stock market, like the Stockholm Stock Exchange. The paper examines alternative explanations for private placement discounts.

The paper is organized as follows. Section 2 contains a survey of theories on seasoned equity issues and a summary of their empirical implications for public issues, rights issues, and private placements, respectively. Section 3 describes the data and the event study methodology. The event study results are portrayed in section 4. Section 5 addresses the adjustments for discounts in private placement offers. Cross-sectional analysis of both abnormal returns and discount is performed in section 7. Section 8 contains a summary of results and concluding remarks.

2. Theory

Several possible mechanisms, with direct or indirect implications for the stock market's reaction to issues of new equity, have been suggested throughout the literature. The foci of these theories differ between price-pressure effects from increased share supply, agency-cost effects, and information-revelation effects. This section contains a survey of theoretical work and empirical predictions for different types of stock issues.[10] The empirical implications for private placements and rights issues, respectively, are summarized in the back of the section.

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[9] In 1983, a private placement in the medical corporation AB Leo attracted media attention. Key position holders of Leo were accused of awarding themselves private placement offers at favorable terms. The controversy over the private placements in AB Leo resulted in the formation of an official investigation [DsFi 1986:2, "Leokommissionen"] of the use of equity private placements in Swedish corporations. The report resulted in a new legislative act enacted as of June 1, 1987 [Lag (1987:464)]. The new regulation explicitly regulates private placement offers aimed at managers and directors in public companies. As a consequence of the new law, decisions on private placement offers specifically involving insiders as purchasers can no longer generally be delegated to the board of directors. The terms of the issue must be approved directly by simple-majority vote on the stockholders' meeting. Along with the novel legislation, a professional board for supervising stock market participants, Aktiemarknadsnämnden, was founded as part the self-regulatory framework.

[10] This section is an extension of surveys presented in Kalay and Shimrat (1987) and in Liljeblom (1989).

Basic financial theory implies an infinitely elastic demand for equity.[11] However, Scholes (1972) suggests that, because each stock is unique and lacks a perfect substitute, the demand curve will be downward-sloping rather than horizontal. A new issue increases the equity supply. Under the price pressure hypothesis we should therefore expect, all else equal, a negative stock market reaction to all issues of new stock, whether public issues, rights issues, or private placements.

Jensen and Meckling (1976) suggest that increases in percentage ownership held by management serve to closer align the interests of managers and shareholders. According to this convergence-of-interests hypothesis, a private sale that increases the ownership fraction of insiders is expected to result in a positive market reaction, while a stock issue that reduces managerial holdings predict a negative stock price effect.

Following Fama and Jensen (1983), Morck, Shleifer, and Vishny (1988) point out that a manager with a sufficient ownership stake to guarantee his employment at an attractive salary, may in fact indulge in non-value-maximizing behavior. A manager with a stake in the firm faces a tradeoff between perk consumption and a capital loss on his/her holding. The management-entrenchment hypothesis suggests that private sales to managers may generate a negative market reaction for some levels of insider ownership.

Jensen and Meckling (1976) also point to the outside owners' increasing incentives for monitoring management with increasing stakes. Shleifer and Vishny (1988) model monitoring activities as control-oriented. According to Shleifer and Vishny, an increase in the ownership fraction held by a potential acquirer of the firm will increase the probability of a value increasing takeover since this would provide him/her with a larger capital gain on a potential value improvement. Insofar as private placements increase ownership concentration, they should thus induce a positive market reaction. Wruck (1989) suggests that monitoring effects may be instrumental in private placements as they, hypothetically, increase outside ownership concentration.

According to Galai and Masulis (1976), an equity issue implies a redistribution of wealth from equityholders to debtholders. An issue of equity lowers the leverage in the firm. Decreased leverage means a reduction of the debtholders' risk. Because loan

[11] For example, the CAPM implies that the price of a stock is function exclusively of risk and expected

agreements are fixed, a decrease in the default risk cannot be compensated in interest expenses. In accordance with this, a negative stock market reaction to announcements of equity issues is predicted.

Equity issues may also induce wealth redistribution among the existing equityholders. If a few shareholders are able to participate in a new issue while others are not, the nonparticipating shareholders may receive less than a fair deal. In a private sale to a specific owner, the nonparticipating shareholders may be disadvantaged by the pricing of the issue. Private placements sometimes permit self-serving deals by management or by large existing shareholders. Such insider opportunism may affect the market reaction to a private placement announcement negatively.

Changes in ownership structure induced by equity issues, may reveal asymmetric information about the firm's intrinsic value. Myers and Majluf (1984) view an attempt by corporate insiders to maximize the wealth of current shareholders at the expense of new investors. The management has private information about the true value of the firm. An announcement of a new issue of stock directed to new investors at current market price may therefore indicate an overvaluation. Eckbo and Masulis (1992) draw on the adverse selection mechanism present in Myers-Majluf to study more varied methods of flotation by allowing for shareholder participation and involving underwriter certification. Specifically, they model the firm's choice between uninsured rights offerings, standby underwritten offerings and firm commitment offerings. Their model predicts insignificant market reactions to announcements of uninsured rights due to lack of adverse selection bias. They also predict that standby offers and firm commitments will exhibit negative market reactions (standby offers somewhat less negative than firm commitments). Hertzel and Smith (1993) extend the Myers and Majluf model to involve private placement issues. They suggest that the willingness of private placement investors to commit funds to a firm conveys the management's belief that the firm is undervalued.

Leland and Pyle (1977) argue that management is presumably better informed about expected future cash flows than outside investors. From a diversification standpoint, it is costly for insiders to hold a large ownership fraction of the firm. Rational investors recognize that management will have reason to own a large part of

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return.

the corporation only if it expects higher profits. Hence, equity issues that reduce the stake of insiders will provide a negative signal of firm value, while increasing insider stakes imply a positive market reaction.

Miller and Rock (1985) consider a situation where external financing is used for financing shortfalls in operating cash flows. Additional outside funding will affect firm value negatively, because it is seen as a signal of managements' reduced cash flow expectations. Ross (1977) suggests that a firm's choice of capital structure may convey management's expectations of future cash flows. To protect their employment, managers have incentives to avoid bankruptcy. Increasing the debt-equity ratio increases the risk of bankruptcy if the intrinsic firm value is low, while it has little impact on the bankruptcy risk if the expected cash flows are high. Hence, management will increase leverage (as implied by an issue of new stock) only if the true firm value is high. Accordingly, an equity issue will serve as a positive signal of the value of the shares. Masulis (1983) assumes that managers choose the level of financial leverage so as to maximize shareholder wealth ex ante. Given that there exist information asymmetries between managers and investors regarding the firm's future cash flows, a decision to change the debt/equity ratio indicates a change in the managers' expectations. Specifically, a leverage-decreasing equity issue indicates that managers expect a lower level of earnings than previously anticipated. Healy and Palepu (1990) suggest that a stock issue may convey managers' private information about the expected volatility of future earnings rather than the expected level of future cash flows. Managers decide to issue equity and reduce financial leverage when they foresee an increase in their firms' business risk. Their prediction is that the reduction in leverage induces a down-ward adjustment of the market's assessment of firm value.

Table 1 summarizes the empirical predictions for the stock market reactions to announcements of public equity issues, rights issues, and private placements under the various mechanisms/theories reported above.

A first step to determine the relevance of the hypotheses summarized in Table 1, would be to examine the effects on average excess stock returns associated with announcements of the various types of equity issues. The event studies will provide a preliminary indication of the relative importance of the respective mechanisms; they will exclude some mechanisms as primary determinants of issues, but are unlikely to

separate perfectly between hypotheses as some have identical implications for the sign of the market reaction.

Table 1: Empirical implications

The table assigns the ceteris paribus predicted market reactions to announcements of rights issues and private placements implied by different mechanisms/hypotheses.

Mechanism/Hypothesis	Rights Issue	Private Placement
Price pressure hypothesis (Scholes, 1972)	(–)	(–)
Agency cost effects		
(i) Converging interests (Jensen & Meckling, 1976)	(0)	(+)[a]
(ii) Management entrenchment (Fama and Jensen, 1983; Morck, Shleifer & Vishny, 1988)	(0)	(–)[b]
(iii) Monitoring and control effects (Wruck, 1989)	(0)	(+)[c]
(iv) Insider opportunism	N.A.	(–)[a]
(v) Wealth redistribution between shareholders and bondholders (Galai & Masulis, 1976)	(–)	(–)
Information effects		
a) Changes in capital expenditure		
Value of current earnings (Miller & Rock, 1985)	(–)	(–)
b) Changes in capital structure		
Decreasing financial leverage (Ross, 1977; Healy & Palepu, 1990; Masulis, 1983)	(–)	(–)
c) Changes in ownership structure		
(i) Ownership fraction signal (Leland & Pyle, 1977)	(0)	(+)[a]
(ii) Adverse selection (Myers & Majluf, 1984; Eckbo & Masulis, 1992)	(0)	N.A.
(iii) Informed investor signal (Hertzel & Smith, 1993)	(0)	(+)

The table displays six hypotheses that predict negative market reactions to both rights issues and private placements. These are Scholes (1972), Galai and Masulis (1976), Ross (1977), Masulis (1983), Miller and Rock (1985), and Healy and Palepu (1990). Two of the hypotheses predict negative announcement effects for private placements

[a] Sign is predicated on increased insider ownership fraction.
[b] Morck, Shleifer, and Vishny (1988) suggest that management entrenchment may be present for certain levels of (insider) ownership.

and insignificant reactions to rights issues. One of these is the Morck, Shleifer, and Vishny (1988) management entrenchment hypothesis. The other one is the Leland and Pyle (1977) ownership structure hypothesis, conditional on decreasing insider ownership. While it appears less relevant for rights issues, the hypothesis of opportunistic insiders predicts negative announcement effects for private placements taken up by insiders. Five hypotheses predict positive market reactions to private placements and insignificant announcement effects for rights issues. These are Wruck's (1989) monitoring hypothesis, Shleifer and Vishny (1988), the Hertzel and Smith (1993) information hypothesis, the Jensen and Meckling convergence-of-interests story, and the Leland and Pyle (1977) signaling model. The empirical predictions of the two latter hypotheses are predicated on increased insider ownership. The adverse selection models of Myers and Majluf (1984) and Eckbo and Masulis (1992) are both consistent with insignificant market reactions to rights issues, while they appear to have limited bearing on private placements. The data and event study methodology are presented in the following section.

3. Data and methodology

3.1 Data

The data consists of two samples: one of private placement announcements, and one of rights issue announcements. The crude private placement data was obtained from the *DEXTEL Findata* database which reports changes in equity capital in all firms traded on the Stockholm Stock Exchange. This data material contains private placements occurring in the period January 1987 through October 1994. The search process produced 97 instances of seasoned equity private placements with cash payment. The announcement dates were then collected through research of the company press-release archives of the Stockholm Stock Exchange except for some 20 observations that were obtained directly from the concerned companies.[12] Of the 97

[c] Sign predicated on increased outsider ownership concentration.

[12] Using press release data for obtaining announcement dates seems to have some comparative advantages over searching in newspapers. An equity issue announcement may have its primary market impact a day, or possibly more, before it becomes an item in the morning newspaper, creating some

private placements, 17 are eliminated (17.5%) because the announcements coincide with announcements of other types of security issues or other offers, and 4 (4.1%) are removed because either not enough trading occurred in the period preceding the announcement to compute reliable market model estimates, or errors in the trading data were suspected. The first public announcement occurs in November 1986, and the last one in August 1994. The final sample of private placement announcements contains a total of 76 observations.

For the period 1987-1994, the rights issue sample was assembled in a fashion similar to that of the private placement sample. However, I was provided with an additional 27 observations pertaining to the period 1980-1986. The additional observations were accumulated by Liljeblom (1989) for a different study. The search processes, including Liljeblom's observations, resulted in 98 observations of rights issue announcements. Of these announcements, 31 (31.6%) are eliminated because they coincide with announcements of other security issues, and 5 (5.1%) are eliminated due to insufficient trading data. The final rights issue sample consists of 62 announcements.

Table 2 presents summary statistics on the two samples. The table shows an average private placement size of SEK 319 million, which is about half the average rights issue size (SEK 595 million).[13] However, the median rights issue amounts to SEK 318 million, which is more than six times the median private placement of SEK 50 million.

The combined sample exhibits a mean issue size, measured as the gross proceeds, of SEK 443 million and a median of SEK 133 million. The average firm size is about 40% larger in the rights issue sample (SEK 3.7 billion) than in the private placement sample (SEK 2.6 billion). The average relative issue size, measured as gross proceeds to post-issue market value of equity, is roughly 30% bigger in the rights issue sample (41.2%) as in the private placement sample (32.5%).

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uncertainty about the actual "event day". In contrast, press-releases to the Stockholm Stock Exchange often have the exact time of the day for the information revelation documented in form of a time stamp on the facsimile sheet. Moreover, original press-releases are primary sources of information while newspapers are secondary sources. In particular, press-releases are not subject to distortions by news editors. Furthermore, all listed firms are committed by contract to extend all vital company information to the Stockholm Stock Exchange. However, probably because the archives are not perfectly maintained, there are some gaps in the material of stored press-leases. Some announcement dates are therefore obtained directly from the companies.

The number of stock issues varies between periods. 21 private placements are carried out in the 1993-94 period, while only 14 were announced in the preceding two-year period. Correspondingly, 21 rights issues were announced in 1993-94, and only 4 in 1991-1992.[14] The fraction of OTC firms is slightly higher in the private placement sample (27.6%) than in the rights issue sample (21.2%).

Table 2: Summary sample description

The table displays summary statistics for the samples of private placement announcements during the period November 1986 - August 1994, and rights issue announcement during the period February 1980 - April 1994 on the Stockholm Stock Exchange. Issue size is measured as the SEK gross proceeds from the issue. Firm size is the SEK post-issue market value of equity. Relative issue size is the percentage ratio of Issue size to Firm size.

Panel A: Size variables			
	Private Placements	Rights Issues	All
Issue size, *million SEK*[15]			
Mean (Median)	319 (50)	595 (318)	443 (132.6)
Firm size, *billion SEK*			
Mean (Median)	2.6 (0.7)	3.7 (1.0)	3.1 (0.8)
Relative issue size, *%*			
Mean (Median)	32.5 (10.4)	41.2 (25.2)	36.4 (19.1)
Panel B: Time of announcement			
	Private Placements	Rights Issues	All
1980-1985 (*No. of announcements*)	–	13	13
1986- 1988 (– ″ –)	25	11	36
1989-1990 (– ″ –)	16	13	29
1991-1992 (– ″ –)	14	4	18
1993-1994 (– ″ –)	21	21	42
Panel C: Listing on the Stockholm Stock Exchange			
	Private Placements	Rights Issues	All
No. of officially listed firms (A-list)	55	47	99
No. of unofficially listed (OTC) firms	21	15	39
N	76	62	138

[13] The measurements of firm and issue sizes are not adjusted for inflation.

[14] The drop in the number of new issues in 1991-1992 coincides with a deep recession in the Swedish economy in that period.

[15] Over the sample period, 1 U.S. dollar approximately equals 7 Swedish Kronor (SEK).

3.2 Method

I use standard event study methodology in the fashion prescribed by Dodd and Warner (1983) to capture the stock price reactions to announcements of equity issues. The abnormal return, AR_{it}, for each security is estimated by calculating the residuals from the OLS estimation of the market model $AR_{it} = R_{it} - \hat{\alpha}_i - \hat{\beta}_i R_{mt}$, where R_{it} denotes the observed arithmetic daily return for security *i* at day *t*, where R_{mt} is the return on the market portfolio at day *t*. To estimate the market portfolio returns, I employ the Affärsvärldens Generalindex (AFGX). This value-weighted index is the oldest and most well-known index of the Stockholm Stock Exchange. The market model coefficients, $\hat{\alpha}_i$ and $\hat{\beta}_i$, are calculated by OLS regressions of R_{it} on R_{mt} using *180* observations of daily returns for each security, ranging from *day –200* through *day –20* (defining *day 0* as the event day). The cumulated abnormal returns over the period day *x* through day *y*, are denoted CAR(*x*, *y*). Test-statistics are calculated assuming normally distributed daily abnormal returns. As a check for robustness, I use the market-index adjusted abnormal returns, $AR_{it}^{'} = R_{it} - R_{mt}$ as an alternative measurement of the stock market's reaction.

4. Event study results

The results from the event study are summarized in Table 3, where the second and the third columns report the abnormal returns obtained from the private placement sample, and the fourth and the fifth columns report the findings from the sample of rights offer announcements. (Abnormal returns using market model estimates and the market portfolio as benchmarks are displayed in parallel.) Results are also depicted in Figures 1 and 2.

The results indicate a statistically significant and positive average abnormal return following announcements of private placements, while the stock market's reaction to rights issues appears to be insignificant. As far as market reactions to private placements are concerned, the results of Wruck (1989) and Hertzel and Smith (1993) are confirmed. For the private placement sample, reported in the table, the

obtained event day average abnormal return is 2.74% measured in relation to the market-model implied benchmark, and 2.82% relative to the market portfolio. These excess returns are statistically significant (*p*-values are 0.00011 and 0.00007, respectively).

Table 3: Average abnormal returns

The table exhibits average (cumulative) abnormal returns around announcements of equity private placements) and rights issues for various windows. The abnormal returns are calculated using the market-model implied returns and the AFGX market index as benchmarks. The data set for private placements contains 76 announcements during the period 1986 to 1994. The data set for rights issues contains 62 announcements during the period 1980 to 1994.

	Private placements (N = 76)		Rights issues (N = 62)	
Statistics	Market Model Adjusted	Market Index Adjusted	Market Model Adjusted	Market Index Adjusted
Average event day abnormal return	0.0274	0.0282	–0.0042	–0.0038
z-Statistic	3.7	3.8	–0.8	–0.8
p-Value	0.00011	0.00007	0.2119	0.2119
% positive	65.8	67.1	32.3	35.5
Average CAR(–1,1)	0.0321	0.0387	–0.0089	–0.0083
z-Statistic	2.5	3.0	–0.8	–1.2
p-Value	0.0062	0.0014	0.2119	0.1151
% positive	56.6	61.8	38.7	40.3
Average CAR(–3,1)	0.02	0.0336	–0.0019	0.0027
z-Statistic	1.2	2.0	–0.2	0.2
p-Value	0.1151	0.0228	0.4207	0.4207
% positive	61.8	61.8	48.4	46.8

Apart from the distinct peak in average abnormal returns on the event day, Figure 1 exposes a few minor spikes on *day* –8 (average AR = 1.0%), *day* –3 (average AR = –1.1%), and *day* +3 (average AR = –1.6%), of which only the latter is significant on a 5% level. These observations do not appear to have straightforward economic interpretations. The noticeable concentration of announcement effects on the event day is consistent with instantaneous market reactions to releases of economically important information. Nevertheless, such concentration is rarely seen in event studies due to information leakage and uncertainty about actual event dates. The lack of significant leakage around event dates could possibly be explained by the method of collecting announcement dates using press-release data rather than newspaper searches, which possibly generates a better assessment of the true event date.

Figure 1: Average abnormal returns for private placement announcements

The graph depicts the average percentage AR(t) for dates *–30* through *+20*, where *date 0* is the announcement day of an equity private placement. The data set includes 76 observations of private placement announcements in the period 1986-1994.

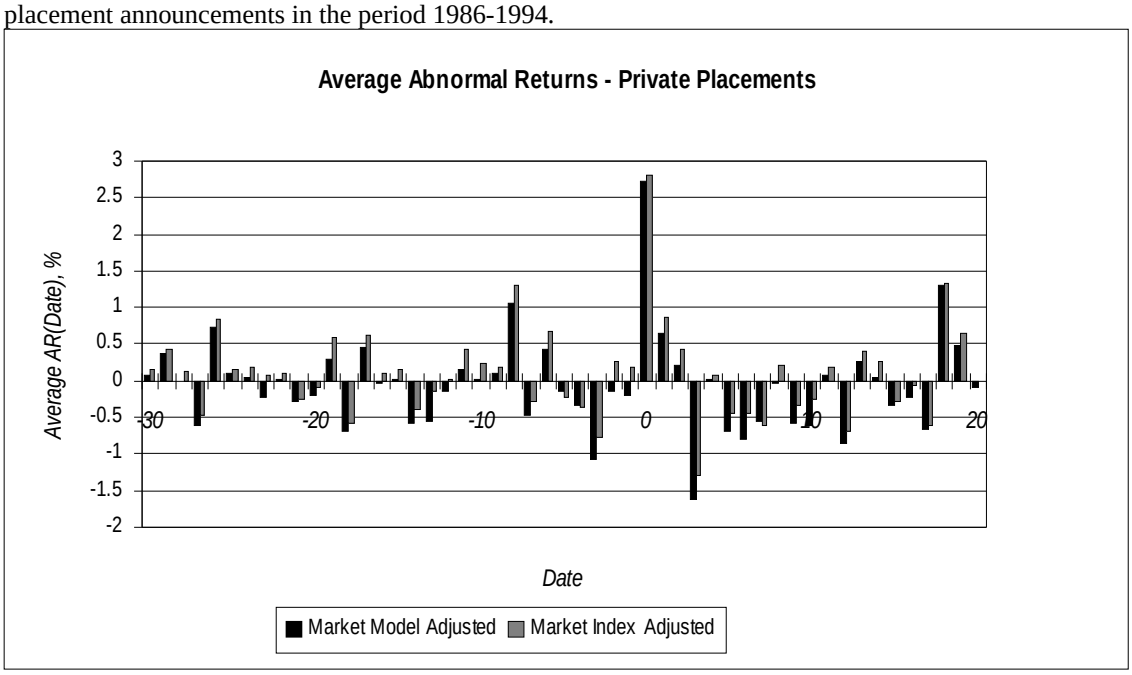
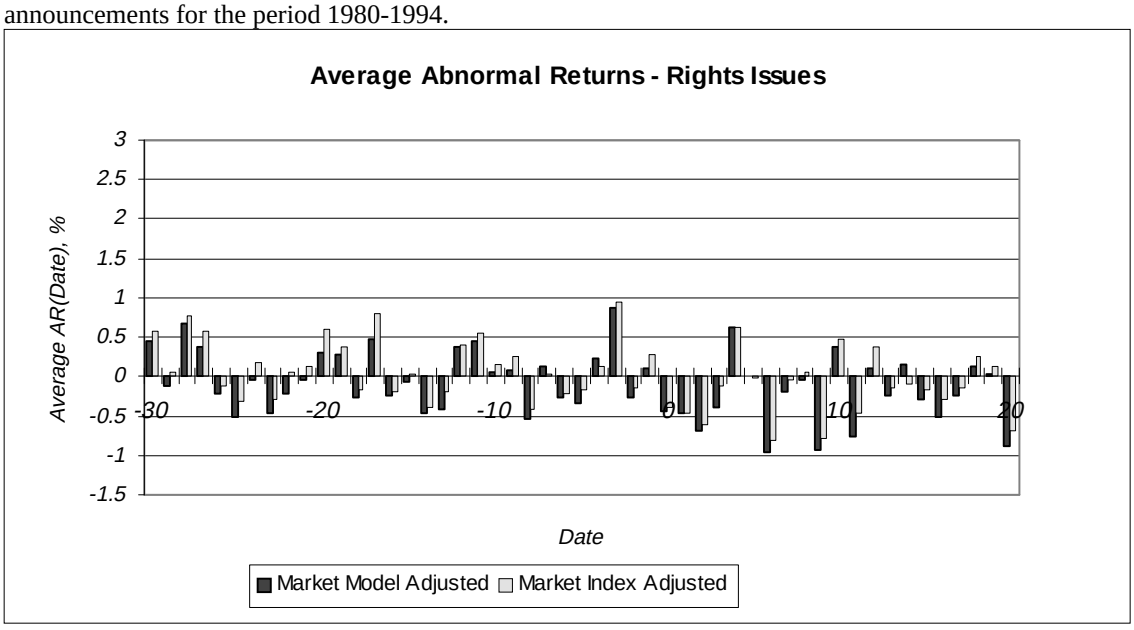


Figure 2: Average abnormal returns for rights issue announcements

The graph depicts the average percentage AR(t) for dates *–30* through *+20*, where *date 0* is the announcement day of a rights issue. The data set includes 62 observations of rights issue announcements for the period 1980-1994.



The average three-day market-model adjusted cumulative abnormal return from *day –1* to *day +1* is 3.21% (3.87% for the market-index adjusted cumulative abnormal return). No notable patterns in abnormal returns are detected by extending event windows further.

The event study of the rights issue sample exhibits no significant abnormal returns on the event day. The graphical representation in Figure 2 displays very little variation in abnormal stock returns over the *day* –30 through *day* +20 interval. There appears to be four minor negative abnormal returns for *day* 0 through *day* +3. Of these, only the *day* +2 abnormal return is significant on the 10% level. Cumulated, they add up to a CAR of –1.95, which is significantly different from zero at the 5% level. However, this particular four-day average has no straightforward interpretation as any small portions of leaks should typically be captured before the event day rather than after it.[16]

To further examine the robustness of the results, some additional measures of dispersion of the observed event day abnormal returns are calculated. The *median* event day abnormal return is 0.98%, which is somewhat lower than the mean of 2.74%. The standard deviation is 7.6%, which indicates a wide range of excess returns. The number of observed positive abnormal returns is 50 (65.8%). Hence the positive average abnormal return is accounted for by a majority of individual positive observations, not by only a few outliers.[17]

The rights issue sample exhibits less dispersion in abnormal returns than the private placement sample. The median event day excess return is –0.26%, as compared to the observed (insignificant) mean of –0.43%. The maximum observed abnormal return is 9.87%, while the minimum is –11.87%. The standard deviation is 3.37%. Of the 62 observations of event day abnormal returns only 20 (32.26%) are

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[16] Notably, the market-index adjustment method seems to generate larger abnormal returns when abnormal returns are positive and smaller absolute abnormal returns when abnormal returns are negative than the market-model adjustment method. This is explained by the fact that the firms associated with negative market reactions to private placement announcements are firms with higher market-model betas than firms that create positive market reactions in the samples. Specifically, the average beta estimate of firms exhibiting negative (positive) abnormal returns is 0.75 (0.66) in the private placement sample and 0.81 (0.73) in the rights offer sample.

[17] There are three observations that exhibit abnormal returns in excess of three times the sample standard deviation. If these observations are withdrawn from the sample, the average (market-model adjusted) eventday abnormal return is 1.51% with a p-value of 0.0227.

positive. Hence the observed negative average abnormal return is produced by a majority of individual negative observations. However, since the average effect is insignificant, it is difficult to assess an economic interpretation of this particular observation.

The combined results —significantly positive average abnormal returns to private placement announcements and insignificant average abnormal market reactions to rights issue announcements— appear to provide the strongest support for the Wruck (1989) monitoring hypothesis and the Hertzel and Smith (1993) information hypothesis. To the extent that private placement are taken up by insiders, the combined results are also consistent with the Leland and Pyle (1977) signaling model and with the Jensen and Meckling (1976) convergence-of-interest hypothesis. The insignificant market reactions to rights issues are consistent with the adverse selection models of Myers and Majluf (1984) and with Eckbo and Masulis (1992).

To examine the extent to which any of these hypotheses can explain individual abnormal returns, I follow the example of Wruck (1989) and Hertzel and Smith (1993) to perform a cross-sectional analysis of the private placement sample. However, the private placement announcement effects are, at this point, not adjusted for potential abnormalities caused by discounts and premia in the private placement offerings. Before the cross-sectional analysis, it is desirable to isolate stock market reactions caused by the pricing effects from the impacts of new information. Section 5 addresses the adjustment for such pricing effects.

5. Adjustments for discounts

5.1. Discount-adjusted abnormal returns

The stock market's reaction will typically be affected by the fact that private placement offer prices deviate from the market price of the stock on the announcement day. If the private placement investor is given a discount, the nonparticipating shareholders' wealth will suffer a dilution effect. One part of the stock market's reaction may therefore include a revision of the stock price reflecting

such a dilution effect from a private placement discount. We will expect the opposite effect if the private placement investor pays a premium relative to the market price. In this case, a certain part of the abnormal return can be explained by a revision upward of the price due to this wealth transfer from new investors to nonparticipating shareholders. The pricing effect is essential for the interpretation of the event study results.

In 68.4% of the private placement observations, the new stock is offered at a *discount* relative to the event day market price. There is a *premium* in 25.0% of the cases. Only 6.6% of the private placements are offered at the current market price. The sample average discount in relation to the price on the announcement day is 15.9%, and the median discount is 7.3%.[18]

In order to isolate abnormal market reactions driven by the information content of the private placement announcement from those driven by the pricing effect, I use formula derived after Wruck (1989). The discount-adjusted abnormal return, AR_0^{adj}, is written as

$$AR_0^{adj} = AR_0 + \frac{\Delta S}{S_0} \cdot \frac{(p_0 - p_{offer})}{p_{-1}},$$

where ΔS is the number of shares sold in the private placement, and S_0 is the number of shares in the firm before the sale, p_0 is the observed event day market price, p_{-1} is the price on the day before the announcement, and p_{offer} is the private placement offer price. AR_0^{adj} is interpreted as the potential abnormal return that would result if the private placement is priced without premium or discount. This discount-adjusted abnormal return is thus the part of the event day abnormal return that is driven by the *information content* of the announcement; it can be viewed as the *net present value of new information* expressed in return form.[19] In this context, "new information" refers

[18] The Swedish sample exhibits smaller discounts on average than the Hertzel and Smith (1993) sample. Hertzel and Smith report an average private placement discount of 20.1% and median of 13.2% in relation to the price ten days after the announcement in their sample of 106 observations.

[19] The difference between observed and the potential abnormal returns reflects the part of the market's reaction that is driven by the discount/premium in the pricing of the private placement. The numerator, $\Delta S(p_0 - p_{offer})$, is simply the dollar value of the discount/premium transferred from the nonparticipating shareholders to the private placement investor(s). The denominator ($S_0 \cdot p_{-1}$) is the value of old shareholders' total holdings on the day before the announcement. The negative of the dollar discount normalized by the *day –1* wealth captures the total pricing effect on the nonparticipating shareholders' event day return, given the new information.

to any kind of information that affects the shareholders' assessment of the firm's value, whether it is a reaction to anticipated improvement in company monitoring, or a response to a signal of asymmetric information about the value of new and/or old projects, etc.

When the results from the event study of private placement announcements are adjusted for discounts and premia, the previously obtained positive average market reaction seems thoroughly consolidated. The average discount-adjusted abnormal return in the private placement sample is 7.24% (median is 1.90%).

In the following section I will attempt to separate between hypotheses through cross-sectional analysis of discount-adjusted abnormal returns and discounts. Because the empirical predictions seem more pertinent for private placements than for rights issues, the cross-sectional analysis in this paper is confined to the former flotation method.

6. Cross-sectional analysis

6.1 Determinants of discount-adjusted abnormal returns

6.1.1. The monitoring hypothesis

According to Wruck's monitoring hypothesis, we should expect stock price effects to be positively related to increases in the level of ownership concentration. However, the preliminary evidence shows that most private placements are followed by *decreases* in ownership concentration. Table 4 exhibits descriptive statistics on the change in the ownership concentration in association with private placements. In Panel A, it is shown that ownership concentration decreases in 64% of the cases. In 22.4% of the cases, the private placement resulted in a control change. Panel B, shows that the largest shareholder's fraction of the firm's outstanding equity decreases by 1.7 percentage units on average. The median change was –1.1 percentage units. The largest shareholder's fraction of voting rights decreased by 2.5 percentage units on

average. The corresponding median change was –1.3 percentage units. Approximately 80% of the private placement investments are made by outside investors.

Table 4: Changes in ownership concentration: Preliminary evidence

Panel A of the table displays the frequencies and percentages of increases and decreases in ownership concentration, respectively, as well as the number of instances of control changes following equity private placements. A control change is regarded to be present if the identity of the largest shareholder is changed subsequent to the private placement. The largest shareholding is regarded to be increased if the ownership fraction of the largest shareholder's voting rights is larger after the private placement than before it. Panel B exhibits the change in the size of the largest individual percentage holding of equity/voting rights subsequent to an equity private placement. The statistics are based on 67 observations, where the largest shareholder's ownership fractions before and after the new issue are identified.

Panel A: Number of increases and decreases in ownership concentration and number of control changes

	Frequency	% of identified
Increases in largest shareholding	21	29.0
Decreases in largest shareholding	44	63.8
New controlling owner	15	22.4

Panel B: Changes in ownership concentration

	Average	Median	Standard Deviation
Change in the fraction of equity held by the largest shareholder (percentage units)	–1.70	–1.10	11.06
Change in the fraction of voting rights held by the largest shareholder (percentage units)	–2.50	–1.30	10.14

N = 67

The preliminary evidence seems to suggest that the monitoring hypothesis is not a principal explanation for the observed stock price behavior. This appears to be confirmed by running a regression of discount-adjusted abnormal returns solely on the change in ownership concentration, which yields an insignificant coefficient. However, a more multifaceted picture appears if we split up the change in ownership concentration variable with respect to the initial level of ownership concentration. Similarly to Morck, Shleifer, and Vishny (1988) and Wruck (1989), I divide the

sample according to the initial level of ownership concentration. Specifically, I define Δ*OwnershipConc*(i), *i* = 1,2,3, as the change in the largest shareholder's percentage ownership fraction of the firm's voting rights, multiplied with a dummy variable equaling one if the initial ownership concentration is in level *i*, and zero otherwise. Let *ownership level* 1 contain firms in the 0-25% range, let *ownership level* 2 denote the 25-50% range, and let *ownership level* 3 capture the >50% range.[20]

A private placement that increases an investor's ownership fraction from a noncontrolling position to a controlling one hypothetically indicates increased monitoring. Let Δ*Control* denote a dummy variable that equals one if the post-placement largest shareholder is different from the initial controlling shareholder, and zero otherwise. In order to test the monitoring hypothesis, I specify the following regression model (Model I):

$$AR^{adj} = \gamma_0 + \gamma_1 \times \Delta\text{OwnershipConc}(1) + \gamma_2 \times \Delta\text{OwnershipConc}(2) + \gamma_3 \times \Delta\text{OwnershipConc}(3) + \gamma_4 \times \Delta\text{CONTROL} + \varepsilon.$$

The results from the OLS regression of discount-adjusted abnormal returns are presented in Table 5. The table shows that the coefficient on ΔOwnershipConc(2) is positive and statistically significant (*p*-value is 0.0007). The subsample consists of 30 observations, of which there are 21 instances of *decreasing* ownership concentration with an average change of –6.9% of voting rights (–10.9% of equity rights). The positive coefficient is accounted for by a relatively large number of negative abnormal returns in this subsample. The result is consistent with the monitoring hypothesis. To the extent that potential initial manager ownership is diluted, the results are also consistent with the convergence-of-interests hypothesis of Jensen and Meckling, which suggests a lower firm value when the percentage insider ownership decreases.

[20] The division of the sample into subsamples is somewhat arbitrary in my study. However, searching for precise turning points through a more rigorous piecewise analysis is not likely to produce qualitatively different results or interpretations. Specifically, the division differs from that reported by Wruck (1989) and Morck, Shleifer, and Vishny (1988) in that they ultimately split the material in 0-5%, 5-25%, and >25% ranges. The highly concentrated ownership structure on the Stockholm Stock Exchange, resulting in very few observations in the 0-5% range and many majority-controlled firms motivates my specific choice. My data does not include assessment of insider ownership.

Table 5: Cross-sectional regression of discount-adjusted abnormal returns: MODEL I

The table shows the results from the OLS regression of discount-adjusted event day abnormal returns in a sample of 67 private placement announcements taking place in the period November 1986 - August 1994. ΔOwnershipConc(1), ΔOwnershipConc(2), and ΔOwnershipConc(3) denote the change in ownership concentration in subsamples where the initial ownership concentration is 0-25%, 25-50%, and >50%, respectively. Ownership concentration is measured as the fraction of voting rights held by the largest shareholder. The ΔControl variable equals one if the private placement results in change in the controlling owner. The regression is based on 67 observations, for which change-in-ownership-concentration variables could be found.

Independent variables	Coefficients (t-statistics) {p-values}	Predicted sign under the monitoring hypothesis
Intercept	0.0585 (2.40) {0.0193}	
ΔOwnershipConc(1)	–0.0047 (–1.73) {0.0893}	(+)
ΔOwnershipConc(2)	0.0142 (3.57) {0.0007}	(+)
ΔOwnershipConc(3)	0.0015 (0.26) {0.7939}	(+)
ΔControl	0.0600 (1.13) {0.2624}	(+)
R^2	0.221	
Adjusted R^2	0.171	
F-statistic	4.394	
p-value, joint hypothesis	0.0034	
Number of observations	67	

In contrast, the coefficient on ΔOwnershipConc(1) is negative, however less significant (*p*-value = 0.0893). This subsample consists of 14 observations. To the extent that changes in ownership concentration also reflect changes in insider ownership, the result is consistent with Morck, Shleifer, and Vishny (1988). However, this evidence is weak as I do not have detailed data on the specific ownership stakes held by insiders.

The coefficient on ΔOwnershipConc(3), reflecting the change in ownership concentration in the subgroup of initially majority controlled firms, and the coefficient on the Δ*Control* dummy are insignificant.

Taking into account the general differences in ownership concentration between Swedish and American listed firms, the results are remarkably similar to those obtained by Wruck (1989). In particular, Wruck finds a significant negative relationship between discount-adjusted abnormal returns and changes in ownership

concentration in the 5-25% range. Because the Swedish sample exhibits only very few observations in 0-5% range, there is little practical difference between these two results. Wruck also finds a positive and significant coefficient on changes in ownership concentration in the >25% range. It seems likely that Wruck's sample contains very few (if any) majority-controlled firms, whereas the Swedish sample contains a substantial number of firms where the largest shareholder owns more than 50% of the voting rights. The results can also be interpreted as being roughly consistent with the predictions of Morck, Shleifer, and Vishny (1988), by capturing a negative relationship between stock price effects and ownership concentration in a range where management entrenchment is not unlikely to occur.

The preliminary conclusion from the descriptive evidence suggested that increased ownership concentration is not a general explanation for the market's reaction to private placement announcements. The regression analysis obviously refines this result. It seems that the change in ownership concentration is indeed positively related to abnormal returns provided that the initial ownership level is in the 25-50% range. However, in the 0-25% range, the opposite relationship obtains.

The regression captures monitoring effects only in the limited sense that the change in the level of ownership concentration is expected to be positively related to monitoring efforts. However, it seems plausible that a purchaser of a large block may contribute with monitoring services and professional advice despite not becoming the largest owner. In effect, the private placement investor may serve as a "monitor of the monitor". In the following subsection, I proceed to investigate the evidence on the information hypothesis.

6.1.2 The information hypothesis

Information asymmetries are hypothetically larger in small firms, which should result in larger information effects in smaller firms. Hence, I include *firm size*, defined as the market value of equity 30 days prior to the announcement, as an independent variable in the explanatory model. As an alternative proxy for size effects, I add the natural

logarithm of the gross proceeds from the placement, *ln*(*issue size*), as an explanatory variable. [21]

As realized by Hertzel and Smith (1993), we should expect the information effects to be larger where the likely degree of undervaluation is high. Accordingly, one would expect larger information effects in firms where the firm's investment opportunities are large relative to the assets in place. This is hypothetically captured by a positive relationship between the *relative issue size* and discount-adjusted abnormal returns. Analogously, the *book-to-market equity* ratio may serve as a measurement of the relative importance of the new project by approximating the ratio of tangible assets to intangibles.[22] Under the information hypothesis, we should expect a negative relationship between the book-to-market equity ratio and discount-adjusted abnormal returns. Moreover, the information effects are presumably higher when resolution of state-of-the-world risk is essentially dichotomous. A particular example of this is when the private placement proceeds are used for capital restructurings. Before the announcement, the firm may either survive or not. The announcement of a private placement for the restructuring of the firm presumably serves as a strong signal as to the firm's capacity for survival. To capture this, I incorporate a dummy variable that indicates the case when the private placement proceeds are used for a *financial restructuring*.

Hertzel and Smith hypothesize that sales to informed outsiders convey more positive information than sales to insiders, because of the insiders' conflicting incentives. Alternatively, insiders may convey more credible information simply by the fact that they are better informed, as suggested by the Leland and Pyle signaling model. It may also be the case that the incentive effects of closer alignment of manager and shareholder interests may generate positive stock market effects. Furthermore, it does not seem unreasonable to include existing owners in the insider

[21] As is indicated, some of the quantitative variables suggested as explanatory variables are theoretically related. This suggests a risk of multicollinearity in the regression analysis. However, diagnostics show that the correlation coefficients between firm size, ln(issue size), issue size/firms size, and book-to-market are modest. Moreover, running regressions on different reduced models do not generate any marked differences in results; financial restructuring and insider investor are the only variables that generate significant coefficients. I choose to report insignificance results for a larger set of variables mainly to facilitate a comparison with the Hertzel and Smith study. In remaining regressions, the t-statistics are typically very high on these variables, which indicates that multicollinearity is not a problem.

category. Owners participating in private placements are likely to be large, influential, and well-informed. By specifying an insider investor dummy that equals one if the new equity is purchased by a manager, director, or existing shareholder, we may also capture potential monitoring effects, or, alternatively minority oppression effects.[23]

Moreover, sales in which prices may reflect a control premium possibly provide more credible signals as to the firm's true value than do other sales because of the reduced likelihood of speculative resale. The alternative interpretation under the monitoring hypothesis is that a change in control may reflect increased monitoring. Hence, I also include an indicator variable for Δ*Control* as explanatory variable. For a test of the information hypothesis, the following regression model (Model II) is specified.

$$\begin{aligned} AR^{adj} = {} & \gamma_0 + \gamma_1 \times \text{FIRM SIZE} + \gamma_2 \times \ln(\text{ISSUE SIZE}) + \gamma_3 \times (\text{ISSUE SIZE/FIRM SIZE}) + \\ & + \gamma_4 \times \text{BOOK-TO-MARKET-EQUITY RATIO} + \gamma_5 \times \text{FINANCIAL} \\ & \text{RESTRUCTURING} + \gamma_6 \times \text{INSIDER INVESTOR} + \gamma_7 \times \Delta\text{CONTROL} + \varepsilon. \end{aligned}$$

The results from the OLS regression of Model II is presented in Table 6. The table indicates a positive and statistically significant (*p*-value is 0.0038) relationship between discount-adjusted abnormal returns and financial restructurings. This result is consistent with the information hypothesis. More interestingly, it stresses the information content of dichotomous payoffs. This result will be further examined.

The coefficient on *insider investor* is negative and significant (*p*-value is 0.0169). This result is consistent with the Jensen and Meckling convergence-of-interests hypothesis, the Leland and Pyle signaling model, and with increased monitoring. Notably, the result only captures a combined effect of these hypotheses. In the sample, there are 8 observations of manager investors and 12 owner-investors, and the two categories coincide in 5 instances. Unfortunately, separating between the two categories does not produce significant coefficients in alternative regressions. The

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[22]The book-to-market ratio is used rather than the market-to-book ratio because the latter measurement will tend to behave badly when the book value is close to zero.

[23] As is explained later in the paper, the primary reason for not separating between manager and owner investors is that this does not generate significant coefficients, whereas lumping them together appears to capture a significant combined effect of monitoring and alignment effects.

result is inconsistent with the prediction of Hertzel and Smith, and with the hypothesis of insider opportunism.

In contrast to Hertzel and Smith, the coefficients on the relative issue size and the book-to-market-equity ratio are statistically insignificant. The sign on the firm size coefficient is, consistent with the information hypothesis, negative, however insignificant. The Δ*Control* indicator also receives an insignificant coefficient.

Table 6. Cross-sectional regression of discount-adjusted abnormal returns: MODEL II
The table exhibits the results from the OLS regression of discount-adjusted abnormal returns in a sample of 76 private placement announcements in the period November 1986 - August 1994. Firm size is defined as the market value of equity 30 days before the announcement to the private placement announcement prior to announcement. Issue size is measured as thegross proceeds from the private placement. Book-to-market equity measures the ratio of the last reported book value of equity before announcement to the market value of outstanding equity 30 days before announcement. "Financial restructuring" equals one if the private placement proceeds are used for capital restructuring, and zero otherwise. "Insider investor" equals one if the new shares are purchased by a manager, director, or an existing owner. The ΔControl indicator variable equals one if the private placement results in a change in the controlling owner, and zero otherwise.

Independent variables	Coefficients (t-statistics) {p-values}	Predicted sign under the information hypothesis
Intercept	–0.0439 (–0.50) {0.6216}	
Firm Size	–0.00001 (–1.44) {0.1548}	(–)
ln(Issue Size)	0.0066 (0.79) {0.4325}	(–)
Issue Size/Firm Size	0.0023 (0.06) {0.9530}	(+)
Book-to-Market Equity Ratio	14.5137 (0.87) {0.3873}	(–)
Financial Restructuring	0.1626 (3.00) {0.0038}	(+)
Insider Investor	0.1139 (2.45) {0.0169}	(–)
ΔControl	–0.0402 (–0.73) {0.4672}	(+)
R^2	0.289	
Adjusted R^2	0.215	
F-statistic	3.940	
p-value, joint hypothesis	0.0012	
Number of observations	76	

6.1.3 Sophisticated and primitive signals

Information signaling models tend to prescribe intricate signaling mechanisms triggered by managements to resolve problems of asymmetric information concerning the value of firms' assets-in-place or new projects. This is the modeling rationale behind, for example, Leland and Pyle (1977), Myers and Majluf (1984), Miller and Rock (1985), and Hertzel and Smith (1993). However, there is an important distinction between information effects from using equity issues for systematic signaling of firm value and information effects that emanate from more trivial information implications of external financing. Although the information hypothesis suggests positive market reactions to private placements regardless of whether proceeds are used for financing new projects or for restructuring financially distressed firms, the underlying mechanisms are different. In the former case, information effects may reflect sophisticated signaling. In the latter, it is a response to a more primitive form of "signal": the announcement of the resolution of an acute financial problem. To capture the relative importance of these two mechanisms, I specify an alternative regression model (Model III), where I multiply the quantitative variables firm size, ln(issue size), the relative issue size and the book-to-market-equity ratio with dummy variables indicating whether the private placement proceeds are used for capital restructuring or for financing new projects. The results from this regression are presented in Table 7.

The table shows that all quantitative variables receive significant coefficients in private placements used for capital restructurings. The size of the firm and the natural logarithm of the placement proceeds in firms involved in financial restructuring are negatively related to discount-adjusted abnormal returns. This is consistent with the hypothesis of larger information asymmetries in small firms. The relative issue size receives a negative coefficient, and the book-to-market equity ratio receives a positive coefficient. These results appear to confirm, and in fact reinforce, the prediction of larger information effects when the potential degree of undervaluation is high. In the sample, 11 private placements (14.5%) are used for financial restructurings.

In contrast, in placements used for project financing, all of the coefficients are insignificant.

The results suggest there are significant information effects, but they do not appear to be the result of sophisticated signaling about the value of investment projects. Instead they pertain to the information conveyed by announcements of resolutions of uncertainty about dichotomous outcomes. This inhibits the empirical support for the signaling rationale behind the Hertzel and Smith (1993) information hypothesis and the Leland and Pyle (1977) model.

Table 7. Cross-sectional regression of discount-adjusted abnormal returns: MODEL III
The table exhibits the results from the OLS regression of discount-adjusted abnormal returns in a sample of 76 observations from 1987 to 1994. "Financial restructuring" equals one if the private placement proceeds are used for capital restructuring, and zero otherwise. "New project" equals one if the private placement proceeds are used to finance a new project, and zero otherwise. Firm size is defined as the market value of equity 30 days prior to the private placement announcement. Issue size is measured as the gross proceeds from the private placement. Book-to-market equity measures the ratio of the last reported book value of equity before announcement to the market value of outstanding equity 30 days before announcement.

Independent variables	Coefficients (t-statistics) {p-values}	Predicted sign under the information hypothesis
Intercept	0.0542 (2.07) {0.0422}	
Financial Restructuring×Firm Size	–0.00002 (–1.95) {0.0560}	(–)
Financial Restructuring×ln(Issue Size)	0.0214 (3.12) {0.0027}	(–)
Financial Restructuring×(Issue Size/Firm Size)	0.6285 (3.32) {0.0014}	(+)
Financial Restructuring×Book-to-Market Equity	–157.3372 (–2.95) {0.0043}	(–)
New Project×Firm Size	0.000004 (0.40) {0.6912}	(–)
New Project×ln(Issue Size)	–0.0040 (–0.76) {0.4499}	(–)
New Project×(Issue Size/Firm Size)	–0.0894 (–0.60) {0.5509}	(+)
New Project×Book-to-Market Equity	29.9709 (1.10) {0.2749}	(–)
R^2	0.355	
Adjusted R^2	0.278	
F-statistic	4.619	
p-value, joint hypothesis	0.0002	
Number of observations	76	

6.2. Determinants of discounts

Hertzel and Smith propose that private placement discounts reflect investor compensation for information costs. However, they may also reflect compensation for monitoring services, incentive schemes for managers, or just self-serving deals by opportunistic insiders.

If new investments are more difficult to value than the assets in place, it is likely that the cost of information is potentially higher, the larger the relative issue size. Moreover, a large proportion of intangible assets such as human capital resources may also reflect more difficult (and hence more costly) value assessment of a new investment. Under the information hypothesis, we should therefore expect a positive relationship between discounts and issue size/firm size and a negative relationship between discounts and the book-to-market-equity ratio. Moreover, to the extent that there are economies of scale in information production, we should expect a negative relationship between private placement discounts and the size of the issue. I use the natural logarithm of the private placement gross proceeds to measure the size effect.

The empirical predictions under the monitoring hypothesis for book-to-market, and the absolute and relative issue sizes are the same as under the information hypothesis.

Under the information hypothesis we would expect the information costs to be lower if the new shares are purchased by an *insider* because insiders would incur low or zero information costs, thus predicting a negative coefficient. However, under the convergence-of-interests hypothesis a discount may reflect a compensation scheme to promote managerial incentives. Similarly, a discount to an existing owner may reflect compensation for expected monitoring services. I define an indicator variable, *insider investor*, that equals one if the private placement investor is either a manager, director, or an existing shareholder, and zero otherwise. Under these alternative hypotheses, we should expect a positive coefficient for the insider investor indicator variable. Notably, a positive sign would also be consistent with insider opportunism.

To capture possible control premia, I include the dummy $\Delta Control$ as an explanatory variable.

$$DISCOUNT = \gamma_0 + \gamma_1 \times (\text{ISSUE SIZE/FIRM SIZE}) + \gamma_2 \times \text{BOOK-TO-MARKET-EQUITY RATIO} + \gamma_3 \times \ln(\text{ISSUE SIZE}) + \gamma_4 \times \text{INSIDER-INVESTOR} + \gamma_5 \times \Delta\text{CONTROL} + \varepsilon.$$

The results from the regression are presented in Table 8.

Table 8. Cross-sectional regression of private placement discounts

The table exhibits the estimated coefficients from the OLS regression of private placement discounts measured as $(p_0 - p_{offer})/p_0$, where p_{offer} is the private placement offer price and p_0 is the event day stock price (with information) in a sample of 76 observations from November 1986 to August 1994. Issue size is measured as thegross proceeds from the private placement. Firm Size is measured as the value of equity 30 days prior to the private placement announcement. The insider variable indicates that the new equity is purchased by a manager, director or existing shareholder. ΔControl equals one if the private placement results in a new controlling owner. Book-to-market equity is the ratio of reported balance sheet value of equity to the market value of equity 30 days before the private placement announcement.

Independent variables	Coefficients (t-statistics) {p-values}	Predicted sign under the information hypothesis
Intercept	0.4397 (3.04) {0.0033}	
Issue Size/Firm Size	–0.0947 (–1.44) {0.1534}	(+)
Book-to-Market Equity Ratio	57.2762 (2.07) {0.0418}	(–)
ln(Issue Size)	–0.0341 (–2.61) {0.0110}	(–)
Insider	0.3277 (4.05) {0.0001}	(–)
ΔControl	–0.1685 (–1.83) {0.0721}	
R^2	0.300	
Adjusted R^2	0.250	
F-statistic	6.005	
p-value, joint hypothesis	0.0001	
Number of observations	76	

The coefficient on ln(issue size) is negative and significant (*p*-value is 0.0110). This appears consistent with both the information hypothesis and the monitoring hypothesis.

The table shows a significantly positive coefficient (*p*-value = 0.0001) on the *insider investor* indicator variable. This result is consistent with the monitoring and convergence-of-interests hypotheses. The sign is also consistent with insider

opportunism, however, this explanation seems less plausible as it is contradicted by the results from the regression of Model II. The negative coefficient on the insider investor dummy is inconsistent with the information cost compensation explanation.

The book-to-market-equity ratio receives a significantly positive coefficient (*p*-value is 0.0418). This result runs counter to the one predicted by the information and monitoring hypotheses. Unfortunately, it does not seem to have a straightforward interpretation. It may be the case that the book-to-market-equity ratio is simply a bad proxy for information and monitoring costs. The coefficient on the relative issue size is insignificant.

The change-in-control dummy receives a negative coefficient that receives a *p*-value of 0.0721. The sign is consistent with the existence of a control premium.

The results seem to suggest that a combination of monitoring and alignment effects accounts for a substantial part of the variation in private placement discounts, while information costs seem to explain an insignificant part. The results contrast with those obtained by Hertzel and Smith. A possible reason for the discrepancy may be found in the fact that I use a wider definition of insiders, including existing shareholders in this category, hence possibly capturing a combined effect of convergence in interests and monitoring. As before, separating between the two categories does not produce significant coefficients.

7. Summary and conclusions

The paper confirms the basic result presented by Wruck (1989) and Hertzel and Smith (1993) that equity private placements are associated with positive excess stock returns on average. The additional result of insignificant announcement effects to rights issues, reinforces the empirical support for the monitoring hypothesis and for the information hypothesis. The insignificant market reactions to rights issues are not inconsistent with the adverse selection mechanism in Myers and Majluf (1984) and Eckbo and Masulis (1992). However, the event study results appear inconsistent with several theories which imply negative market reactions to both rights issues and private placements, such as the price-pressure hypothesis [Scholes (1972)], the wealth

redistribution hypothesis [Galai and Masulis (1976)], and with alternative information hypotheses by Ross (1977), Masulis (1983), Miller and Rock (1985), and Healy and Palepu (1990).

Because of high initial ownership concentration on the Stockholm Stock Exchange, most private placements result in decreasing rather than increasing ownership concentration. This would appear to suggest that less weight should be placed on the monitoring hypothesis as a rationalizing argument. However, cross-sectional analysis reveals that the impact of the change in the level of ownership concentration on stock returns depends on the firm's initial ownership structure. For firms where the initial ownership concentration is in the 25-50% range, there is a significant positive relationship between the change in ownership concentration. This is consistent with the monitoring hypothesis. Taking into account the general differences in ownership concentration between Swedish and American listed firms, the results exhibit noticeable similarities to those reported by Morck, Shleifer, and Vishny (1988) and by Wruck (1989).

In addition, private sales to managers, directors and existing shareholders are positively related to stock price reactions. This suggests that monitoring and alignment of manager and owner interests, as suggested by agency theory, are important determinants of stock price effects.

A striking result is that the information effects appear to be largest for firms where the private placement proceeds are used for financial restructurings, while only insignificant effects are found for firms using private placements to finance new projects. An implication of this is that the presumption that managers systematically use equity issues as sophisticated signaling devices becomes less plausible. Although the result corroborates the Hertzel-Smith prediction that the information effects should be larger when resolution of state-of-the-world risk is essentially dichotomous, it simultaneously inhibits the signaling rationale behind their model, as well as alternative signaling models such as Leland and Pyle (1977).

Private placement discounts seem to reflect purchases by insiders, where insiders are broadly defined as managers, directors and stakeholders in the firm. The result is consistent with the idea of discounts as compensation for monitoring services and managerial incentive schemes, while it is inconsistent with the rationalization of

discounts as compensation for information costs. The alternative hypothesis of insider opportunism is contradicted by positive stock price effects.

Control-changes are negatively related to private placement discounts, which is consistent with the existence of control premia.

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