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Master Thesis

Market reaction to SEO
announcements in Norway
– a study on “repair offerings”

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Abstract

This master thesis investigates the market reaction to the announcement of a type of seasoned equity offerings (SEOs) called “repair offerings”, at the Oslo Stock Exchange in the period 1996–2009. A “repair offering” is a rights offering issued subsequent to a private placement and announced simultaneously. This flotation method has been preferred by an increasing number of firms in Norway in recent years. We find that repair offerings are associated with negative abnormal returns for all our event windows, and that they tend to be issued at a substantial discount.

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1 Introduction

In this thesis we present a study on the market reaction to seasoned equity offering (SEO) announcements. Several studies have been done on SEOs worldwide, but none have examined the relatively new flotation method generally referred to as a “repair offering”.¹ This selling mechanism has to date only been observed in the Norwegian market. Thus, we find it interesting to study the market reaction to the announcement of this equity issuance, and compare it to some of the more common flotation methods.

Seasoned equity offerings are new equity issues of securities by a company that has previously issued securities through an initial public offering (IPO). A SEO can be issued through a number of flotation methods. We will, in addition to study repair offerings, consider two other flotation methods; private placements and rights offerings. A private placement is defined as the sale of a block of securities to a small and clearly identifiable group of investors (Wruck 1989). These investors can either be current shareholders or new relationships (Wruck and Wu 2009). Furthermore, rights offerings are public placements of equity, which give current shareholders the right to purchase a portion of the new shares at a fixed price in a given period of time. These rights may or may not be transferable, and unsubscribed rights may be reallocated among subscribing shareholders (Eckbo, Masulis and Norli 2007). The rights offering can be issued “uninsured” when the firm bears the risk of undersubscription. Alternatively, a firm can hire an underwriter who commits to purchase the unsubscribed portion of the shares. The latter is referred to as “standby underwriting”.

A repair offering is a rights offering issued subsequent to a private placement. Although being a public offering, a repair offering is only open for subscription by current shareholders not invited to participate in the private placement. As a

¹ Although no established term exist for this flotation method, we have chosen to use “repair offering” in our thesis, as this is the term used by most companies in their English-language issue announcements. Whether the term is directly translated from the Norwegian word “reparasjonsemisjon”, or the other way around, is unknown, but we chose to use the English word for obvious reasons.

consequence of the private placement, the uninvited shareholders will experience dilution. The purpose of a repair offering is to give these investors an opportunity to buy new shares in order to maintain their relative ownership in the firm.

Repair offerings are generally issued as uninsured rights, but there are some observed occurrences of the issue being underwritten. An uninsured rights offering is the method with the lowest flotation cost, despite the general preference for underwritten rights offerings (Bøhren, Eckbo and Michalsen 1997). Due to our relatively small sample of repair offerings, and the observed preference for the uninsured method in such issuances, we have chosen not to distinguish between the two in our sample. The repair offering is issued at the same price as the private placement, which according to Hertz, et al. (2002) is typically sold at a substantial discount. The discount provides investors with an increased incentive to participate in the offering. Thus, most investors are expected to participate and the risk of low subscription decrease.

Acquiring knowledge about this new flotation method will be important for several reasons. First of all, no prior research exists on this topic. Given the fact that the announcement consists of both a private- and a public equity issue, which generally are associated with opposite abnormal returns, it is interesting to compare our results with results reported in preceding empirical research on SEOs. Although there are national differences, public placements of equity are generally associated with negative abnormal returns on announcement day, while private placements are typically associated with positive abnormal returns. Several research papers on the US stock market report negative abnormal returns associated with the announcement of public equity issues, e.g. Asquith and Mullins (1986) and Loughran and Ritter (1996). However, there is growing evidence showing non-negative abnormal returns in smaller equity markets. Eckbo and Norli (2004) reports non-negative results across flotation methods when studying the market reaction to SEO announcements on the Oslo Stock Exchange (OSE).

Secondly, repair offerings have to date only been observed in Norway and have become more frequent over the last few years. Thus, it has a growing economic impact. To understand how investors interpret such announcements will be

important information for managers who consider issuing equity through a repair offering in the future. We present evidence in this thesis suggesting that investors interpret a repair offering announcement as unfavourable news of the true firm value. Finally, we need to consider the issue price relative to the stock price. We show that a repair offering is typically associated with a substantial discount.

We use a market model to find the market reaction associated with equity issues by firms listed on OSE in the period 1996-2009. Our findings suggest a negative market reaction associated with the announcement of both a private placement and a repair offering. However, we find positive announcement effects for private placements, indicating that the repair offering alone contributes to the negative abnormal return.

Our thesis will proceed in the following manner. Section 2 will highlight some of the previous literature on seasoned equity offerings. Section 3 provides our main hypotheses of this thesis. Section 4 describes the data applied as well as descriptive statistics. Section 5 will present the methodologies applied. Section 6 will feature our findings and discussion, while section 7 concludes the paper.

2 Literature review

A repair offering is a relatively new equity issue flotation method, which to our knowledge only has been observed in the Norwegian stock market. We have not found any prior research on this topic, but there are a number of research papers investigating other flotation methods. We will present some of them in this section.

In this paper we study how the announcement of an equity offering will affect the market value of a firm. According to Fama's (1970) efficient market hypothesis; the stock price of a firm should always reflect all available information. Hence, the announcement of an equity offering should not affect the value of the firm, since a security can always be sold at a fair price. The net present value of selling

a security should be zero. However, several studies suggest that announcements of SEOs are associated with abnormal results.

Under the assumption that management contain private information of the firm that causes the market price to be too high or too low, Myers and Majluf (1984) provide an explanation of the negative announcement effect for SEOs. Their adverse selection model², assumes that the management wants to maximize existing shareholders' wealth. The management will therefore only issue equity when the stock price is overvalued, and when debt financing is not an option. Rational investors will observe this and thus view an equity offering as unfavourable news. This will cause the firm value to drop. A firm with large financial slack or the ability to issue default-risk-free debt will avoid this problem and invest in all positive NPV projects. This is in line with Myers' (1984) suggestion that cost of adverse selection drives a pecking order of financial instruments. His theory states that firms prefer internal to external financing of investment opportunities and debt over equity.

Eckbo and Norli (2004) present a theoretical pecking order of selling mechanisms rather than financing instruments. They look at the average market reaction to a complete set of flotation methods in the Norwegian stock market. They use both uninsured rights and standby undewritten rights as in Eckbo and Masulis (1992), but also include a fully guaranteed flotation method called a "private placement" or "firm commitment". They find that the market reaction is non-negative for all flotations methods, and significantly positive for uninsured rights and private placements. This work is consistent with the research by Bøhren, Eckbo and Masulis (1997) in Norway and Cronquist and Nilsson (2005) in Sweden, who report a non-negative market reaction associated with announcement of public equity offering. This differs from the research done on the US market by Eckbo and Masulis (1992), which report a negative abnormal return for standby rights.

The framework provided of Myers and Majluf (1984) is the leading theoretical explanation for the findings in US empirical research, where market reaction to an announcement of equity offerings is found to be negative. Asquith and Mullins

² Hereafter referred to as the Myers-Majluf model.

(1986) study the announcement effect of 531 common stock offerings by utility and industrial firms listed on the American Stock Exchange (AMEX) and the New York Stock Exchange (NYSE) in the period 1963 to 1981. They find a negative stock price effect of -0.9% and -2.7% for utility and industrial firms, respectively, on announcement day. In a two-year period prior to the announcement, the industrial sample outperforms the market with 33% on average. Their results support the two hypotheses which states that the announcement of an equity offering are viewed by investors as an unfavourable signal about the firm's current performance and future prospects, and that the demand curve for company shares are downward sloping.

Additional research associating negative abnormal returns with the announcement of SEOs include Korajczyk, Lucas and McDonald (1991). They argue that asymmetric information also has implications for the timing of equity offerings. By studying earnings releases, they find that firms prefer to issue equity immediately after information disclosures when the market is fully informed. In addition, they find that the magnitude of the announcement effect is increasing in time since the last earnings release.

Loughran and Ritter (1995) find evidence of significant long term underperformance of equity issuing firms compared to non-issuing. They further suggest that this could be explained by a period of high returns prior to the SEO. The announcement should therefore be associated with the market revaluation of the stock, so that it is no longer overvalued. However, the market does not revalue the stock properly and the stock is still overvalued at issue date. Ritter (1991) argues that managers are able to take advantage of a "window of opportunities" that arises in a period when investors are overly optimistic about the future of the firm.

As a repair offering is a subsequent rights offering announced at the same time as a private placement, it is relevant to present some research on private equity offerings as well. Announcements of private equity offerings are found to be reversely related to announcements of public offerings. One of the first studies on private placements was conducted by Wruck (1989). She studied the announcement effect of private placements performed by companies listed on

NYSE and AMEX in the period from mid-1979 through 1985. Her results show a significant positive abnormal return of 1.9% and 4.5% on announcement day, for a 2- and 4-day event window respectively. These findings are supported by several studies on the US stock market, including Hertzell and Smith (1993) and Hertzell, et. al (2002). Wruck explains the increase in firm value at announcement day with change in ownership structure. She finds that the change in firm value associated with a private placement announcement is correlated with the change in ownership concentration.³ She further suggest that the substantial discount associated with private placement issues reflect a compensation for expert advice monitoring services provided by private investors.

Hertzell and Smith (1993) support the ownership concentration hypothesis. However, they find that this is not the only cause of the positive market reaction. By extending the Myers-Majluf model, allowing the possibility of private investors assessing the true firm value through negotiation with management, Hertzell and Smith (1993) suggest that investors' willingness to commit funds, signals that the firm is undervalued. Thus, it will mitigate Myers and Majluf's (1984) underinvestment problem. They further argue that the private placement discount reflect the private investors cost to assess firm value. International studies provide similar evidence of positive change in firm value on announcement day, e.g., Eckbo and Norli (2004) in Norway and Cronquist and Nilsson (2003) in Sweden.

According to Hertzell, et al. (2002), private placements follow a period of poor operating performance, with positive announcement effects. Despite the positive effect, firms issuing equity private significantly underperform in the years following the offering. This is consistent with the research of Spiess and Affleck-Graves (1995) and Loughran and Ritter (1995) on SEOs. They further explain the negative post-issue stock performance with the private placement discount being a private investor's reflection of the true firm value.

³ Wruck (1989) defines ownership concentration as the percentage holdings of the largest shareholders. This includes managers, directors, and the 5% or greater beneficial owners.

To guarantee full subscription to a rights offering, an issuer could, theoretically, set a low subscription price. However, deep discount signals negative information about the stock's true value. Heinkel and Schwartz (1986) study this negative information. They develop a model for an uninsured rights issuer who expects the stock price to fall over the offer period. Given that offer failure is costly, the issuer would select a low issue price relative to the current market price in order to prevent the offer from failing. Looking at the size of the issue price discount, the market would in equilibrium know the issuer's private information. This would cause the stock price of overvalued firms to fall, and state that thus higher the discount, the larger the decline in the stock price will be. Earlier research shows that there are premiums paid for private placements in Norway, while rights offerings usually are issued with a discount.

There are observed international differences on the topic of SEOs. Eckbo, Masulis and Norli (2007) study the security issue activity on the US stock market in the period 1980–2004, as well as direct issue costs across security types and flotation methods. They also look at security issue announcements and their valuation effects. Their findings suggest that the negative market reaction to security issue announcements is only specific to the United States. Internationally, they are shown to have a positive market reaction, as a combination of the great ownership concentration and different selling mechanisms. The paper's conclusion suggest that information assymetries have a first-order effect on the choice of which security to issue, and which flotation method to use.

3 Hypotheses

We wish to investigate the reasons behind repair offerings, more specifically why the management choose to issue equity directly after a private placement. The answer behind this question could be many, and may be a combination of many factors. Our paper will primarily be focusing on the stock price effect of a repair offering announcement, which is measurable in empirical studies. From this we have formed our research question:

What is the market reaction to a repair offering announcement, are there abnormal returns associated with this announcement?

Earlier research suggests a positive market reaction to announcements of private placements. A repair offering is generally announced at the same time as a private placement, raising the question of whether the subsequent offering announcement results in the same market reaction or if it leads to a different one. If so, it may be connected to management's decision to carry out the repair offering.

H₀: There are no abnormal returns on announcement date

H_A: There are abnormal returns on announcement date

This hypothesis will be the main subject of discussion throughout this research paper. But as additional research we look at the details of the repair offerings; if they are tradable or not, and if they tend to be uninsured or underwritten. These findings are interesting to document, due to the discount appearing after a private placement, which somewhat forces the existing shareholders to participate in the repair offering.

4 Data description

The first evidence of a repair offering being announced by a company listed on the Oslo Stock Exchange (OSE) was found in 1996. We have consequently collected data on private placements and rights offerings (incl. repair offerings) during the period from 1996 until 2009. Over the course of this period, we found a significant amount of repair offerings. The collected data consists of 511 private placements and 245 rights offerings, whereas approximately one third of the latter are classified as repair offerings. The yearly distribution of the respective flotation methods is illustrated in figure 1.

When collecting data on rights offerings, we used NewsWeb as our main source to find the date where the firm first announce the issue to the public, along with other offering details.⁴ In Newsweb, it is only possible to search for announcements dated back to March 1998. Consequently, we have used newspaper announcements found in ATEKST to specify announcement dates in the period 1996-1998.⁵ Additional information, like the stock-, market-, and risk-free return, as well as all private placement data were provided by Professor Øyvind Norli at BI Norwegian Business School. The provided returns were collected from day -251 until day 10 after the announcement, which amounts to one whole calendar year. The benchmark for market return is calculated on the basis of a value-weighted portfolio consisting of all the OSE-listed stocks, less the 10 per cent smallest stocks the month before.

We chose to include all historical issuances in our sample, and not only offerings by firms who are traded on the Oslo Stock Exchange today. Doing so helps us to avoid the survivorship bias, which appears when only surviving companies (e.g. active issuers) are taken into account.

During the process of cleaning the data, we stumbled across some rare cases. For instance, we noticed that a private placement and a rights offering sometimes were announced on the same day, but that the rights offering were not revealed as a

⁴ NewsWeb is a database showing announcements related to firms on the Oslo Stock Exchange.

⁵ ATEKST is a digitised article archive from Norwegian printed newspapers, by Retriever.

repair offering until the following day. In those cases we chose the first day as announcement day for both offerings.

The complete dataset, consisting of a total of 756 seasoned equity offerings, were then divided into three subsets; (1) a *repair offering sample*, where 81 repair offerings have been extracted from the total 245 rights offerings found, (2) a *rights offering sample*, consisting of the remaining 164 rights offerings not classified as repair offerings, and (3) a *private placement sample*, consisting of 467 private placements after excluding those announced at the same date as a related repair offering. The latter was necessary to avoid the announcement effect on private placements to be affected by the announcement effect on the repair offering as well.

Sample characteristics

As we see from figure 1, during our time period 1996–2009, one third of the rights offerings is classified as repair offerings. According to our data, 16 per cent of the private placements have a subsequent repair offering, as all repair offerings are issued in relation to a private placement.

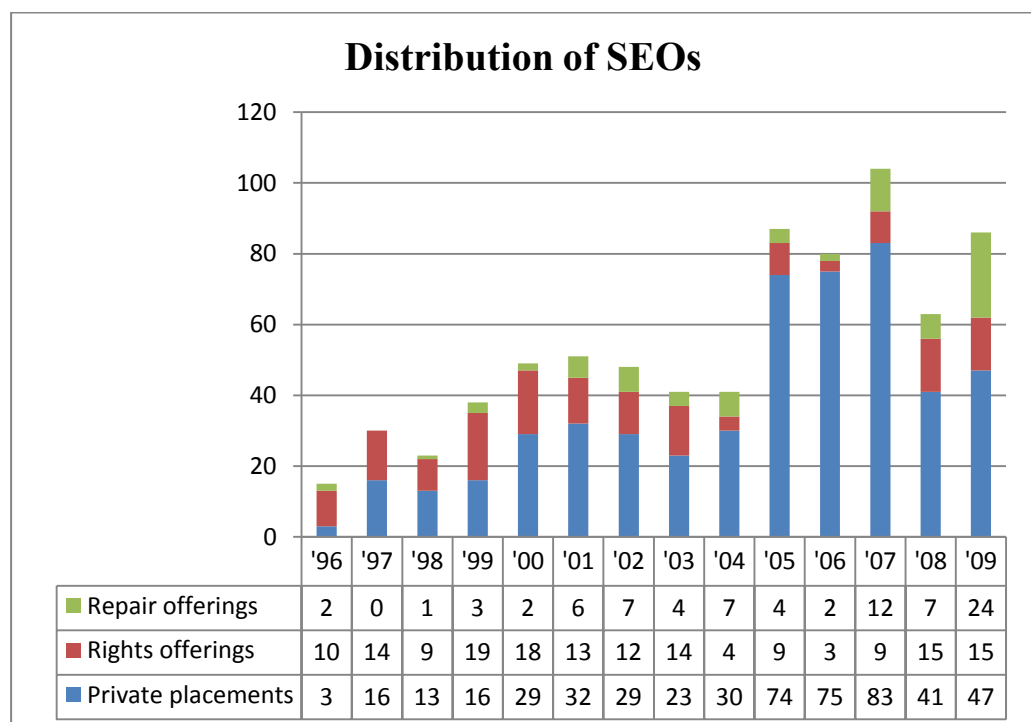


Figure 1: Number of offerings by flotation method and issue year

The number of private placements peaked between 2005 and 2007, while the number of repair offerings have been increasing the last few years of our sample, amounting to 50% of the rights offerings between 2006 and 2009. A reason for this trend could be that we in 2008 witnessed the start of the late-2000s financial crisis, which gave investors a reason to demand a larger discount on their placements due to higher liquidity risk.

5 Methodology

Abnormal returns

In order to investigate the market reaction to the announcement of repair offerings we use an extended market model applied in Eckbo and Norli (2004):

$$r_{it} = \alpha_i + \beta_i r_{mt} + \sum_{j=1}^2 \delta_{ij} d_{jt} + \epsilon_{it}$$

where;

r_{it} = the continuously compounded daily stock return of firm i over period t

α_i = the active return of firm i

r_{mt} = the daily return on a value weighted market portfolio of all OSE-listed stocks, less the 10 % smallest stocks the month before, over period t

β_i = the sensitivity of the stock return of firm i to the market return

d_{jt} = a dummy variable taking on a value of one during the specified estimation/event window, and zero otherwise

δ_{ij} = the daily abnormal return to firm i averaged over the corresponding estimation/event window

The announcement of equity offerings on Oslo Stock Exchange (OSE) is generally published on NewsWeb. Since this will affect the market price instantly, day 0 is set as the announcement day ($t = 0$). However, if the equity issue is announced after OSE is closed, the market will not respond until the next morning. Thus, we have chosen to include day 1 in some event windows. In other words, the announcement day will in these event windows be defined as two days.

Taking this into consideration, we have chosen to use four different “announcement” dummy variables d_{2t} which will be taking on a value of one during; (1) the two-day event window from day -1 through day 0 , (2) the three-day event window from day -1 through day 1 , (3) the four-day event window from day -3 through day 0 , or (4) the five-day event window from day -3 through day 1 , and zero otherwise. The reason we include the two- and four-day event windows is to compare our results to earlier research on this topic. Our dummy variable d_{1t} is a “run-up”-variable based on a six month estimation window, taking on a value of one from day -126 through day -4 , and zero otherwise.

The daily average abnormal return (\overline{AR}) is defined as:

$$\overline{AR}_t = \frac{1}{N} \sum_{i=1}^N AR_{it}$$

where N is the number of firms, and AR_{it} is the daily abnormal return to each firm i at day t . Thus the cumulative average abnormal return to each firm (\overline{CAR}) in the the estimation/event window $[t_1, t_2]$, is given by:

$$\overline{CAR}(t_1, t_2) = \sum_{t=t_1}^{t_2} \overline{AR}_t$$

The results of these cumulative abnormal returns are found in tables 1–3.

Due to the fact that the private placement and the subsequent repair offering are published in the same announcement, our results will provide a combined effect of both equity offerings. As this paper focuses on the market reaction to a repair offering announcement, we are interested in the isolated announcement effect. In order to control for this effect, we have also investigated abnormal returns of firms announcing a pure private placement.

We define the isolated cumulative average abnormal returns for repair offerings ($\overline{CAR}_{Isolated Rep}$) as the difference between the cumulative average abnormal

returns for firms issuing equity through a private placement and a subsequent repair offering (\overline{CAR}_{Rep}), and the cumulative average abnormal returns for firms issuing equity through a pure private placement (\overline{CAR}_{PP}):

$$\overline{CAR}_{Isolated\ Rep} = \overline{CAR}_{Rep} - \overline{CAR}_{PP}$$

Discount – Premium

To examine if the issuer sets a low subscription price, in order to guarantee full subscription to a rights offering, we find any discounts or premiums in the offer by comparing the issue price against the stock price four days prior to the announcement:

$$Average\ discount/premium = \frac{1}{N} \sum_{i=1}^N \frac{P_{i_{issue}} - P_{i_{t-4}}}{P_{i_{t-4}}}$$

where;

- $P_{i_{issue}}$ = the issue price for firm i
- $P_{i_{t-4}}$ = the stock price of firm i , four days prior to the announcement
- N = the total number of firms issuing SEOs

A negative result will result in an average discount on the respective offering, while a positive result will mean an average premium on the offering. We chose to use 4 days prior to the announcement, as the comparing stock price, to avoid any stock price variation related to the issue in question.

6 Empirical results

Abnormal return

Repair offerings

After running our OLS regression on the *repair offering sample* we find the following abnormal results, along with the p-values for the hypothesis of zero abnormal return⁶:

Event window	Six-month run-up	-3 to 1	-3 to 0	-1 to 1	-1 to 0
AR	0.10%	-0.84%	-1.45%	-1.59%	-3.18%
CAR	11.79%	-4.20%	-5.78%	-4.77%	-6.35%
p-value	0.3326	0.0881	0.0090	0.0127	0.0001

Table 1: Abnormal returns on repair offerings

As reported in the second column of table 1, the six-month run-up in the issuer's stock price for repair offerings are found to be statistically insignificant. This indicates that the average repair offering announcement do not follow a period where the issuing firm outperforms the market on average. This finding is not consistent with earlier findings on rights offerings in Norway. Bøhren, Eckbo and Michalsen (1997) report a significant 40-day run-up in the issuer's stock price.

⁶ To ensure that the abnormal return is significantly different from zero we have used one of the test statistics in Campbell, Lo and MacKinlay (1997):

$$J_1 = \frac{\overline{CAR}(t_1, t_2)}{[\hat{\sigma}^2(t_1, t_2)]^{\frac{1}{2}}}$$

where $\hat{\sigma}^2$ is a consistent estimator of the variance in \overline{CAR} , in the event window $[t_1, t_2]$. Given the two-tailed test statistic J_1 and its degree of freedom, it is then converted into a probability value.

However, negative abnormal returns are found across the different event windows. The five-day event window shows an average abnormal return of 4.2%, although only significant on the 10% level. In the smaller event windows we find more significant values. The three-day event window shows a significant abnormal return of 4.8%, while the two- and four-day event windows show a significant abnormal return of approximately 6%. This is consistent with earlier findings on US rights offerings, e.g. Eckbo and Masulis (1992). However, since this survey considers the Norwegian market, it is unexpected that we fail to support the non-negative announcement effect reported by Bøhren, Eckbo and Michalsen (1997) on Norwegian rights offers.

Rights offerings

To set our negative repair offering returns in perspective, we have also analysed the *rights offering sample* consisting only of those not classified as repair offerings. Since a repair offering is issued as a public rights offering, we should expect the results to closely follow the repair offering results:

Event window	Six-month run-up	-3 to 1	-3 to 0	-1 to 1	-1 to 0
AR	0.02%	-0.86%	-0.96%	-1.29%	-1.70%
CAR	2.73%	-4.31%	-3.85%	-3.86%	-3.40%
p-value	0.7270	0.0071	0.0073	0.0019	0.0009

Table 2: Abnormal returns on rights offerings

Table 2 show a statistically insignificant six month run-up in issuer's stock price for the *rights offering sample*, which is consistent with what was observed for the *repair offering sample*.

The cumulative abnormal returns found on rights offerings are all significant on the 1% level, showing a negative abnormal return of approximately -4% across event windows. The results from this sample are quite similar compared to what is found in the *repair offering sample*. Hence, according to our findings, a firm

announcing a private placement and a subsequent rights offering can expect to experience similar market reaction as one announcing a single rights offering.

Due to our relatively small sample size of repair offerings, we have chosen not to distinguish between uninsured and standby rights in our *repair offering sample*, and we will thus avoid separating them in the *rights offering sample* as well. Our complete sample do, however, result in a finding consistent with Asquith and Mullins (1986), who report a significant negative abnormal return of -2.7% in their US industrial sample. In contrast, Eckbo and Norli (2004) find no significant abnormal return for standby underwritten rights offerings in Norway, but they do find significantly positive abnormal returns for uninsured rights. This is consistent with the findings of Bøhren, Eckbo, and Michalsen (1997) in their slightly smaller rights offering sample. They find an average positive abnormal return of 0.5% for their complete sample, though not consistent with our negative abnormal returns.

Private placements

As previously mentioned, a repair offering is announced at the same time as the private placement. It is thus difficult to try to explain the abnormal returns of a repair offering announcement, without considering the effect of private placements.

Event window	Six-month run-up	-3 to 1	-3 to 0	-1 to 1	-1 to 0
AR	0.11%	0.38%	0.49%	0.16%	0.28%
CAR	13.65%	1.90%	1.98%	0.48%	0.56%
p-value	0.0001	0.0064	0.0016	0.3699	0.1999

Table 3: Abnormal returns on private placements

Studying our *private placement sample*, we find a significant positive six-month run-up. This indicates that the average private placement announcement would follow a period where the issuer's stock price is associated with abnormal returns. This is consistent with the private placement results by Eckbo and Norli (2004).

Furthermore, we find indications of a non-negative effect across all event windows. The returns from the 2- and 3-day event windows are not significantly different from zero, while we find a positive abnormal return of about 2% in the 4- and 5-day event window (statistically significant on the 1% level).

The positive signal from private placement announcements is consistent with numerous empirical research studies on private equity offerings worldwide (see Appendix 1). In the only study performed on the Norwegian market, Eckbo and Norli (2004) find significant results in their 4-day event window only. Their 2-day event window, like ours, is statistically indistinguishable from zero.

Isolated repair offerings

Based on the repair offering results and the results from the *private placement sample*, we try to isolate the effect of the repair offering. This is done by subtracting the market reaction of a repair offering announcement, by the reaction to an announcement of a pure private placement. We then obtain the isolated abnormal return on repair offerings in the respective event windows. Although we are unable to prove that the returns are statistically significant, we can illustrate the relative magnitude:

Event window	-3 to 1	-3 to 0	-1 to 1	-1 to 0
Repair offering	-0.84%	-1.45%	-1.59%	-3.18%
Private placement	0.38%	0.49%	0.16%	0.28%
AR	-1.22%	-1.94%	-1.75%	-3.46%
CAR	-6.10%	-7.76%	-5.25%	-6.91%

Table 4: Abnormal returns on isolated repair offerings

Since the two issues are announced simultaneously, the isolated repair offering abnormal return is difficult to prove statistically. However, separate results for the

4- and 5-day event windows are found to be significant. The positive reaction related to the announcement of a private placement, increases the negative market reaction associated with the repair offering, resulting in negative abnormal returns of greater magnitude.

Comparing the findings to what is found in our analysis of rights offerings; we discover a great difference in average abnormal returns. Though not statistically comparable, the market seems to interpret the repair offering as more inferior news about the true firm value, than what is the case for regular rights offerings.

Summary and discussion

As we have shown in our results, we find positive abnormal returns for our *private placement sample*, which is supported by multiple empirical papers. Contradictory to earlier research in Norway, we find negative abnormal returns for our *rights-* and *repair offering sample*. Our results seem to be more in line with empirical research on the US market. This might be due to the differing periods of study or sampling error. The *repair offering sample* is relatively small compared to samples used in earlier research implying that our sample is more affected by extreme returns from a single firm. There is also the possibility of other events affecting the stock price. Such events include firm specific events as well as market cycles. Although we have no reason to believe that such events have affected our data, we cannot rule out the possibility.

There are several issues complicating the explanation of the negative market reaction of a repair offering. First of all, the announcement occurs at the same time as the private placement. Earlier research on public- and private equity offerings suggest opposite market reactions from the two selling mechanisms. In an attempt to explain the negative announcement effect of public offerings, Myers and Majluf (1984) argue that a firm will issue equity only when a firm is overvalued. Hence, they assume managers hold inside information that affect the true value of the firm. An announcement of a public equity offering signals unfavourable news concerning the true value of the firm. Our results are consistent with the negative effect. One problem with the Myers-Majluf model in our setting is their assumption of the “old” shareholders being passive. Thus,

existing shareholders are assumed to “sit tight” if new stocks are issued, meaning that the offering is directed towards a different group of investors. Since a repair offering is directed towards existing shareholders, the strict model is not applicable when attempting to explain repair offerings.

Hertzel and Smith (1993) extend the Myers-Majluf model and argue that a private placement mitigates the underinvestment problem. They explain the positive reaction to private placements with investors being able to acquire the true value of a firm through negotiations. Their decision to commit funds should consequently send a positive signal to the market. Our results on private placements support their hypothesis of positive announcement effect. However, when adding the subsequent repair offering to the announcement, we find significant negative abnormal returns. This could imply that the repair offering mitigates the positive signals from the private placement commitment. Our results on the isolated repair offering effect are consistent with this. However, it is difficult to get any statistical support for the theory.

Asquith and Mullins (1989) suggest that stock price performance prior to announcement is reversely related to the market reaction associated with the announcement of public equity offerings. We find no such relationship in either the *repair-* or the *rights offering sample*. Both samples show an insignificant run-up in the issuer’s stock price in a six month period prior to announcement day. However, as Asquith and Mullins use a two-year run-up, we only use six months.

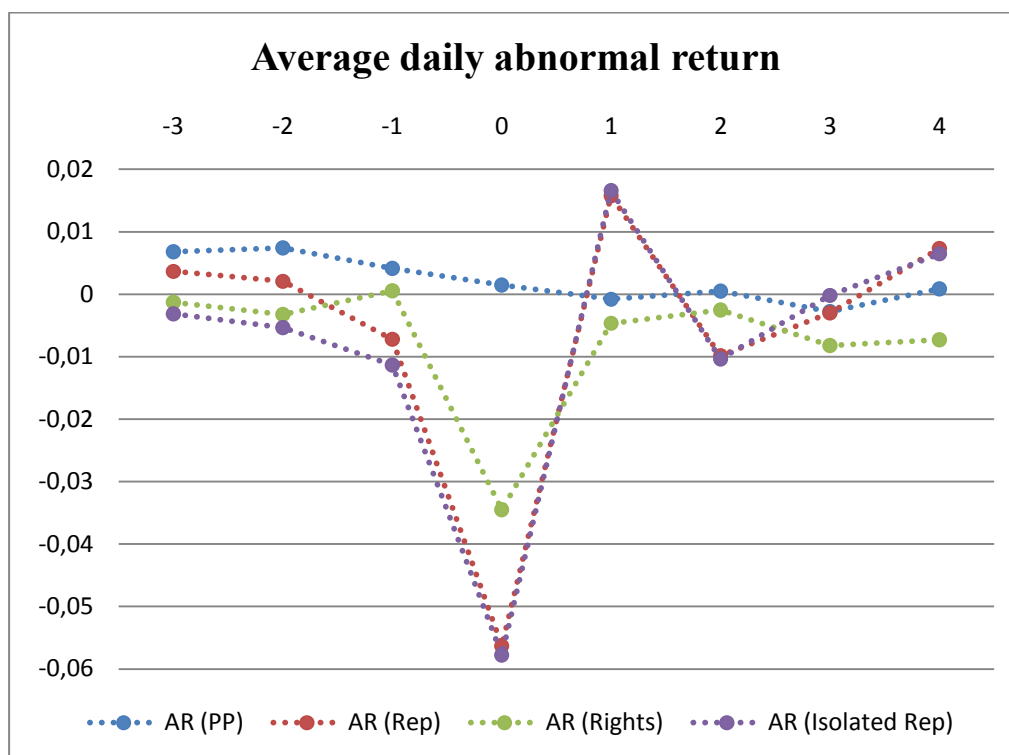


Figure 2: Average daily abnormal return on day t .

Figure 2, above, illustrates the volatility in daily abnormal return for all flotation methods. The largest effect is found close to the announcement day (day 0), which indicates that we have been able to identify the announcement date fairly accurate. However, there are signs indicating some reaction even earlier, especially when considering private placements. This might be due to several reasons: It could be a result of the market being able to predict that an equity issue announcement is forthcoming, due to information indicating a firm's need for capital expenditure or to decrease their debt ratio. Other possible reasons could be to question if stocks, in a small equity market like the Oslo Stock Exchange, follow a random walk. However, Jennergren and Korsvold (1974) provide evidence suggesting a non-random walk.

Figure 3, below, graphically illustrates the development in average cumulative abnormal returns during the event window. As day 0 on the horizontal axis is defined as the announcement day, we see that the development of the return around this day is more linear for our *private placement sample* than with the *repair-* and *rights offering sample*. The latter samples clearly suggest a more negative reaction compared to the former.

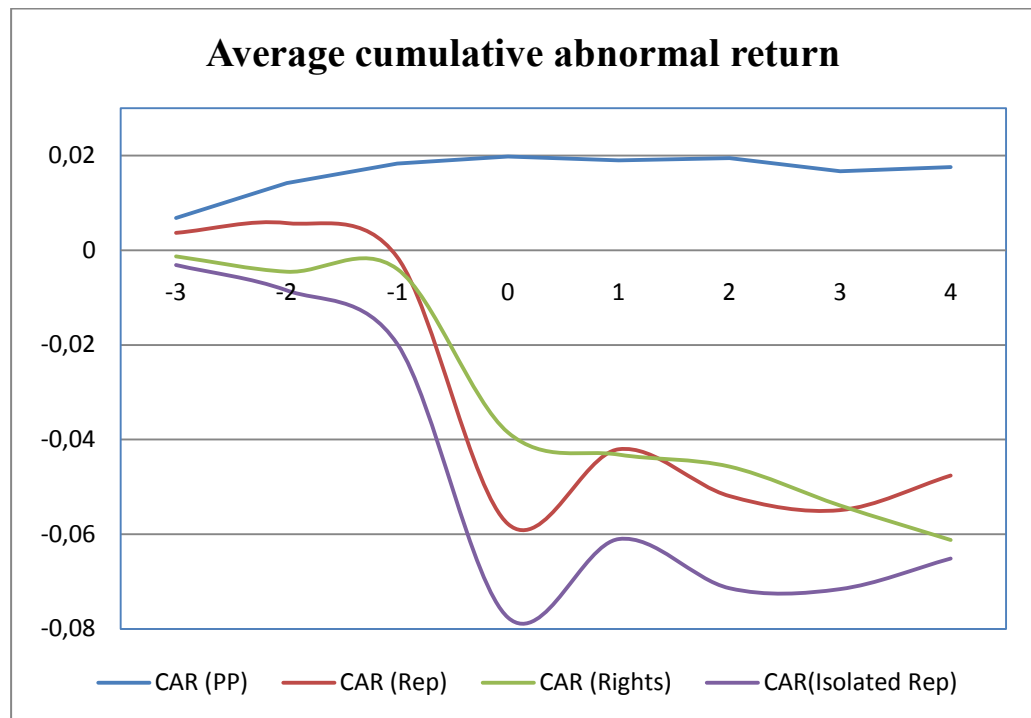


Figure 3: Average cumulative abnormal return at day t.

Discount – Premium

In addition to investigate the market's immediate reaction to an equity issuance, we examine if a repair offering is on average sold at a discount or at a premium. Table 5 shows the average and median percentage values of the discount in the issue price relative to the stock's price four days prior to the announcement.

Flotation method	Mean	Median	Trimmed mean			
			1%	5%	10%	25%
Repair offerings	-19.90%	-13.17%	-19.90%	-20.65%	-20.03%	-18.00%
Private placements	4.59%	-0.61%	2.68%	0.22%	0.13%	-0.14%
Rights offerings	-28.18%	-29.43%	-28.18%	-33.02%	-32.58%	-31.11%

Table 5: Flotation method discounts (-) and premiums (+)

In our *repair offering sample* we found that only 19% of the observations were issued at a premium, resulting in an average discount of almost 20%.⁷ We get about the same result if we exclude 5% of the extreme observations. This could be due to the general observation that repair offerings are non-tradable, and is therefore awarded with a substantial discount in order to get the offer fully subscribed.

According to the Norwegian Limited Liability Companies Act §10-1; the issue price has to be set at least three weeks prior to the start of the subscription period. As the subscription period needs to be a minimum of two weeks, the issuer has to predict the firm's market price at least five weeks ahead to determine the rights offering discount optimal for the respective equity offering.

In addition, the issue price is included in the first public announcement of the rights offering in Norway, while they in the US do not publicly reveal the issue price until the start of the rights offering period. This period is on average four weeks after the first Wall Street Journal announcement of the pending rights offering. (Eckbo and Masulis 1992). This might be a reason why our discount results differ from US results.

Turning to our *private placement sample*, we document almost equal amounts of premiums and discounts, with a slight overweight of discounts. However, our *private placement sample* was consistent with Eckbo and Norli (2004), and resulted in an average premium of 4.6%. Trimming the mean using the same percentage as we used with the repair offerings, we find an average premium close to zero.

⁷ When calculating the average discount on repair offerings, we had to remove observations with missing values, and a special case that had a premium of 4900 % due to a reverse stock split exercised in between the announcement and the execution of the offering. Consequently, the total number of observations was reduced to 78.

7 Conclusion

In Norway there is a trend to issue a rights offering subsequent to a private placement. This new flotation method, called a “repair offering”, is announced at the same time as the private placement and has the last few years signified 50% of all rights offerings. With no prior research on this type of equity issuance, our sample, consisting of 81 repair offerings in the time period 1996–2009, show that a repair offering tend to have negative abnormal return and is issued with a substantial discount.

The announcement of a repair offering contains information on both a private placement and a subsequent rights offering. In our five-day event window, we find a positive stock price effect of 1.9% for the private placement announcements, which is consistent with the conclusions of empirical studies on private placements worldwide. In the same event window, we find negative market reactions to both rights- and repair offerings, –4.3% and –4.2% respectively. These negative announcement effects are consistent with the findings on US rights offerings, but fail to support the recent findings of non-negative abnormal return for rights offerings in smaller equity markets like Norway.

In the four- and five-day event window we find statistically significant abnormal returns across all flotation methods. The only insignificant abnormal returns are found in the two- and three-day event windows in the *private placement sample*. This restricts us to only find isolated repair offering effects in the larger event windows.

The isolated announcement effect for a repair offering is found by excluding the announcement effect associated with private placements. Because the private placement results show positive abnormal returns, the negative announcement effect for isolated repair offering were found to increase in magnitude. Our results suggest average abnormal returns of –6.1% and –7.8% for the four- and five-day event window, respectively.

In addition to identify the market reaction to equity issues, we also consider the discounts or premiums obtained in the different flotation methods. We found that the majority of the repair offerings were offered at a discount, with an average discount of -20% . For private placements we found a 4.6% premium on average, while the standard rights offerings were on average issued at a discount of -30% .

We experience difficulties when attempting to explain the negative announcement effect of repair offerings with existing theoretical frameworks on equity issues. The difficulties arise because the nature of a repair offering violates several assumptions in theories related to SEOs. Examples of such violations include that current shareholders are invited to participate, and that the offering is subsequent to a private placement. The negative abnormal returns found for repair offering announcements support the theory of Myers and Majluf (1984) stating that an equity issue announcement signals unfavourable news about the true firm value. However, explaining our result in a Myers-Majluf setting is difficult because a repair offering targets existing shareholders.

It would be interesting to study what impact ownership concentration has on the abnormal return of a repair offering. This has previously been studied by Wruck (1989) and Wruck and Wu (2009) on private placements. We leave it up to future research to investigate this impact.

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9 Appendix 1

The table compiles some of the related studies that use daily stock return to measure the SEO announcement effect. The event windows used are [-1, 0] and [-1,1]. The figures in *italic* are found to be non-significant, while the figures in **red** are calculated by the weighted-average of uninsured and underwritten rights offerings.

Country	Study	Sample period	Sample size	Abnormal return
(1) Private placements				
USA	Wruck (1989)	99	1979–85	1.89%
USA	Hertzel and Smith (1993)	106	1980–87	1.72%
USA	Hertzel, Lemmon, Linck, and Rees (2002)	619	1980–96	2.40%
Norway	Eckbo and Norli (2004)	136	1980–96	<i>1.39%</i>
Sweden	Cronqvist and Nilsson (2005)	136	1986–99	7.27%
(2) All rights offerings				
USA	Asquith and Mullins (1986)	266	1963–81	-2.70%
USA	Eckbo and Masulis (1992)	181	1963–81	-0.67%
Norway	Bøhren, Eckbo, and Michalsen (1997)	188	1980–93	0.47%
Norway	Eckbo and Norli (2004)	219	1980–96	-0.05%
Sweden	Cronqvist and Nilsson (2005)	160	1986–99	<i>0.37%</i>
(2.1) Uninsured rights				
USA	Eckbo and Masulis (1992)	53	1963–81	<i>-0.59%</i>
Norway	Bøhren, Eckbo, and Michalsen (1997)	74	1980–93	1.55%
Norway	Eckbo and Norli (2004)	76	1980–96	0.95%
Sweden	Cronqvist and Nilsson (2005)	107	1986–99	<i>0.19%</i>
(2.2) Standby underwritten rights				
USA	Eckbo and Masulis (1992)	128	1963–81	-0.70%
Norway	Bøhren, Eckbo, and Michalsen (1997)	114	1980–93	<i>-0.23%</i>
Norway	Eckbo and Norli (2004)	143	1980–96	<i>-0.58%</i>
Sweden	Cronqvist and Nilsson (2005)	53	1986–99	<i>0.72%</i>

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**BI Norwegian School of Management
Preliminary Thesis Report**

**Market reaction to SEO
announcements in Norway**

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Campus:
BI Oslo

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Programme:
Master of Science in Business and Economics: Major in Finance

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Introduction

Several studies have been made on seasoned equity offerings (SEO) worldwide. SEOs are new equity issues of securities by a company that has previously issued securities through an initial public offering. Private placement (firm commitment) and rights offerings are two of the different equity issue methods that exist. The latter could be offered as uninsured rights or by standby underwriting.

This paper investigates the relatively new phenomenon generally referred as “repair offerings”. This form of issuing equity occurs when a firm which recently has issued equity through a private placement, perform a subsequent rights offering. The following issue gives the existing shareholders an opportunity to buy shares in order to maintain their relative ownership in the firm. Repair offerings are a phenomenon which to date only is observed in the Norwegian market. To our knowledge, no earlier research is performed on this topic. However, there are a substantial number of papers investigating seasoned equity offerings. The research presented in this paper will be based on earlier research performed on this topic.

The repair offering is generally issued as an uninsured rights offering, but there are some observed occurrence of the issue being underwritten. Uninsured rights offering are the method with the lowest flotation costs, despite the general preference for underwritten rights offer (Bøhren, Eckbo and Michalsen 1997). The repair offering is generally offered at the same price as the private placement, which according to Hertz, et al. (2002) is typically sold at a substantial discount. The discount provides investors an increased incentive to participate in the offering. Thus, most investors are expected to participate and the risk of low subscription decrease. The fact that a private placement is already carried out, and the needed capital is possibly already collected, raises the question of the firm’s need of high subscription. The question will be essential in the research provided in this paper.

Hypotheses

We wish to investigate the reasons behind the repair offering, more specifically why the management choose to issue equity directly after a private placement. The answer behind this question could be many, and may be a combination of many factors. Our paper will primarily be focusing on the impact ownership structures have on management decisions and the announcement effect of a repair offerings. Both these questions are measurable in empirical studies. From this we have formed two main hypotheses:

1. Does the ownership structure of a firm affect management's decision to carry out a repair offering directly after a private placement?

In a private placement the new shares are only offered to a limited group of investors, resulting in a decreasing relative ownership by existing shareholders. Myers and Majluf (1984) assume that the management wants to maximize existing shareholders wealth in their adverse selection model.

H₀: Ownership structure does not affect management's decision to carry out a subsequent equity offering (repair offering)

H_A: Ownership structure has an impact on management's decision

2. What is the market reaction to a repair offer announcement, are there abnormal returns associated with the announcement?

Earlier research suggests a positive market reaction to announcements of private placements. The repair offering is generally announced at the same time as the private placement, raising the question of whether the subsequent offering announcement leads to a different market reaction. If so, it may be connected to management's decision to carry out the repair offering.

H₀: There are no abnormal returns on announcement date

H_A: There are abnormal returns on announcement date

These two hypotheses will be our main objective during this research paper. But as additional research we might also look further into the result of the offerings, and check if the any of them were over-/undersubscribed, if the rights were tradable or not, and if the subsequent offering were underwritten. These findings are interesting to document, due to the discount appearing after a private placement, which somewhat forces the existing shareholders to participate in the repair offering.

Literature review

There is limited research performed on SEOs in the Norwegian stock market, especially in terms of ownership structure. Cronqvist and Nilsson (2004) did a study on the Swedish stock market over the period 1986–1999, where they provided a new incentive for the choice of flotation method. They showed that family-controlled firms were more likely to avoid issue methods that dilute control benefits, like a private placement to a new investor. They also found that moral hazard and adverse selection costs were reduced, when conducting a private placement. At times with increasing level of assymmetric information, they conclude that firms tend to choose a flotation method that involves an underwriter or a private placement.

Some studies have focused on how the market estimates firm value in terms of voting rights. Using cross-sectional analysis, Wruck (1989) finds that the way firm value changes with private placement announcements correlates strongly with the change in ownership concentration. She defines ownership concentration as the “*percentage holdings of the largest shareholders*”, and finds that private placements increase this concentration. When the level was low (0–5%) or high ($\geq 25\%$), the correlation between the change in firm value at announcement and changes in ownership concentration was found to be positive. While in the middle range (5–25%) this relation was found to be negative, since current shareholders have a tendency to become entrenched. This tendency outweighed any benefits of having a large shareholder in place.

In order to address the question of repair offerings, we need to look at earlier research on equity offerings. Myers (1984) suggests that the cost of adverse selection is caused by pecking order of financial instruments. This causes management to prefer internal to external financing of investment opportunities. Eckbo and Norli (2004) present a theoretical pecking order – not of financing instruments but of selling mechanisms. They looked at the average market reaction to a complete set of flotation methods in the Norwegian stock market. They use both uninsured rights and standby undewritten rights as in Eckbo and Masulis (1992), but also include a fully guaranteed flotation method, called a “private placement” or “firm commitment”. They found that the market reaction was non-negative for all flotations methods, but significantly positive for both uninsured rights and private placements. This differs from the research made on the US market. For example, Myers and Majluf (1984), Korajczyk, Lucas and McDonald (1991) and Asquith and Mullins (1986) find evidence of negative announcement effect on the US market.

Under the assumption that management contain private information that causes the market price to be too high or too low, Myers and Majluf (1984) provide an explanation for the negative announcement effect of SEOs. Their adverse selection model assumes that management wants to maximize existing shareholders wealth. Management will therefore only issue equity when stock price is overvalued and debt financing is not an option. Rational investors knows this and stock price will drop as a result of the announcement. The study however, takes the degree of information asymmetry between insiders and outsiders as given. Korajczyk, Lucas and McDonald (1991) study the announcement effect given that the information asymmetry is not fixed over time. They argue that firms prefer to issue equity immediately after information disclosures, when the market is fully informed. The stock price decline should decrease in time since the last information release. They also conclude that equity issues generally follow earnings releases reporting unusually good news about the firm. This is consistent with the findings of Asquith and Mullins (1986), who finds evidence of firms issuing equity, significantly outperforms the market in the two years preceding the issue.

Loughran and Ritter (1995) find evidence of significant long term underperformance of equity issuing firms compared to non-issuing. According to their research, this could be explained by a period of high returns prior to the SEO. The announcement should therefore be associated with the market revaluation of the stock, so that it is no longer overvalued. However, the market does not revalue the stock properly and the stock is still overvalued at issue date. Ritter (1991) argues that managers are able to take advantage of a “window of opportunities” that arises in a period when investors are overly optimistic about the future of the firm.

Eckbo, Masulis and Norli (2000) present a potential solution to Loughran and Ritter’s (1995) “new issue puzzle”. Their findings suggest that the underperformance is a result of the change in systematic risk. They argue that the decrease in leverage after an equity issue lowers the systematic risk of issuer. Firms with less risk should have lower returns.

The subsequent offering covered in this paper follows a private placement. According to Hertz, et al. (2002), announcements of private placements do not lead to the same market reaction as for SEOs. Instead, they suggest that private placements follow a period of poor operating performance, with positive announcement effects. Despite the positive effect, they find that firms issuing equity private significantly underperform in the years following the offering. This is consistent with the research of Spiess and Affleck-Graves (1995) and Loughran and Ritter (1995) on SEOs. They further explain the negative post-issue stock performance with the private placement discount being a private investor’s reflection of the true firm value.

Eckbo, Masulis and Norli (2007) looks at the security issue activity on the US stock exchange in the period 1980–2004, as well as direct issue costs across security types and flotation methods. They also look at security issue announcements and their valuation effects. Their findings suggest that negative market reaction to security issue announcements is only specific to the United States. Internationally, they are shown to have a positive market reaction, as a combination of the great ownership concentration and different selling mechanisms. The papers conclusion suggest that information assymetries have a

first-order effect on the choice of which security to issue and which flotation method to use.

Methodology

Hypothesis 1: Does the ownership structure of a firm affect management's decision to carry out a "repair offering" directly after a private placement?

To test the hypothesis that ownership structure is affecting management's decision to carry out a subsequent equity offering, we will apply a somewhat similar methodology as Cronqvist and Nilsson (2004). We will apply a nested logit model (McFadden (1978, 1981)) to examine how firms choose between a pure rights offering, a Private Placement or a Private Placement with a subsequent repair offering. The different probabilities of choosing a flotation method over another will be based on a number of parameters. We will get the different parameters as aggregate values from Professor Norli's data set on ownership structure.

Using a logistic regression will ensure the predicted values to not exceed the true values, which is between 0 and 1. This is helpful since several of the explanatory variables, as well as the dependent variable (flotation method), are binary. The regression determines the relationships using an exponential and logistic function:

$$\ln(z) = \frac{e^z}{1 + e^z}$$

We will also try to back up our quantitative results with qualitative research based on observations made in the data collection process. This might also include over/under-subscription, tradable or non-tradable rights, and evidence on underwritten repair offerings. Another interesting aspect we might look at is the company's motive to conduct a repair offering. Is it just to raise more equity, to let current shareholders retain their initial holding percentage, or any other reason?

Hypothesis 2: Are there excess returns associated with the announcement of repair offerings?

In order to test the hypothesis concerning abnormal returns following an announcement of a repair offering, we will use the methodology applied by Asquith and Mullins (1986). To measure stock market reaction to announcement of the subsequent offering, we use daily excess returns.

$$XR_{it} = R_{it} - E(R_{it})$$

Where XR_{it} is the excess return of stock i at time t , R_{it} is the actual return and $E(R_{it})$ is the expected return described in the capital asset pricing model (CAPM) by Sharpe (1964), Lintner (1965) and Mossin (1966)

$$E(R_i) = r_f + \beta(E(r_m) - r_f)$$

We will use the daily return on Oslo Stock Exchange Benchmark index as an estimate of $E(R_{mt})$. The excess return of each security is defined as the difference between the actual returns and the expected return (market return). The average excess return for each day is defined as

$$XR_t = \frac{1}{N} \sum_{i=1}^N XR_{it}$$

N is the number of securities with excess returns at day t . The cumulative excess return for each security i , are given by

$$CER_{i,K,L} = \sum_{t=K}^L XR_{it}$$

Where $CER_{i,K,L}$ is for the period from $t = \text{day } K$ until $t = \text{day } L$. The announcement of equity offerings on Oslo Stock exchange is generally published on NewsWeb. Since this will affect the market price instantly, the day of the announcement defined as $t = 0$. However, if the equity issue is announced after the market close, the market will not respond until the next morning. Thus, we need to include $t = 1$ in the announcement period. In other words, the announcement day will in this paper be defined as two days.

The subsequent repair offering is, as previously mentioned, issued directly after a private placement. Earlier research indicates that private placements have a positive announcement effect. The repair offering is in most cases announced at

the same time as the private placement, indicating that the excess return might be a result of the private placement and not the subsequent offering. In order to control for this effect, we will also test for excess returns of firms performing a private placement without the following repair offering. The excess returns which occur as a result of the repair offering can be defined as

$$CER_{RO,K,L} = CER_{PP \text{ and } RO,K,L} - CER_{PP,K,L}$$

Where

$CER_{RO,K,L}$ = cumulative excess return after a repair offering announcement

$CER_{PP \text{ and } RO,K,L}$ = cumulative excess return after a private placement and repair offer announcement

$CER_{PP,K,L}$ = cumulative excess return after a private placement announcement

This will provide us the excess returns associated with the announcement of the repair offering.

Data sources

We will study the period from the first evidence found of a repair offering issued by a company listed on the Oslo Stock Exchange (OSE) until 2009. All needed information, like announcement dates, offering details, results of offerings, et cetera, are found on NewsWeb. We have already collected data on rights offerings from 2003 until 2009, and have found evidence of a significant amount of repair offering announcement over these years. We will continue to collect post-1997 data in order to complete the data set. Pre-1997 data is already gathered by Professor Øyvind Norli. Our research will depend on data concerning announcement dates of firms performing private placements as well. These data will also be provided by Professor Norli.

The data we already have collected consists of 135 rights offers, whereas 40% of them seems to be repair offerings. Since repair offerings tend to be signalled in the

announcement of a Private Placement, there might be some offerings that are announced, but not followed through. These will therefore be discovered in the received data set on Private Placements.

Our further progress in the research of repair offerings, will start with collecting the missing data.

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