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Impact of Use of Proceeds Disclosure in Seasoned Equity Offerings

Empirical evidence on how the intended use of proceeds impacts stock price returns and offer price discounts in seasoned equity offerings on the Oslo Stock Exchange

Erlend Width and Olav Andreas Årseth

Supervisor: Nataliya Gerasimova

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Abstract

We add to the existing research on security issues by examining the announcement effect of seasoned equity offerings on the Oslo Stock Exchange between 2005 and 2018. Previous studies report significant costs for firms attempting to raise equity and highlight the relevance of information asymmetry and agency issues between managers and investors. By distinguishing between firms raising equity for *Acquisition* purposes, *Investment* purposes, *General* purposes, and *Refinancing* purposes, we test if the disclosure of intended use of proceeds impacts the indirect costs of issuing equity. We expect firms that announce specific investment plans (*Acquisition* and *Investment* firms) to benefit from lower discounts and higher abnormal stock returns upon announcement, relative to firms that reveal no specific investment intentions (*General* and *Refinancing* firms). By running cross-sectional analyses, we find that firms announcing acquisition intentions experience no abnormal returns, whereas firms with *Investment, General, or Refinancing* intentions significantly underperform. These findings suggest that firms intending to use the proceeds for acquisition purposes manage to credibly signal valuable investment opportunities, and effectively remove some of investors' suspicion of opportunistic behavior. Furthermore, we find that firms raising equity for *Acquisition* or *Investment* purposes seem to achieve lower discounts than firms raising equity for *Refinancing* purposes. In summary, we provide evidence for the relevancy of firms' disclosure of intended use of proceeds as a measure of asymmetric information and agency issues in the context of seasoned equity offerings.

Preface

This thesis marks the end of our time as students at NHH. We started this semester with a completely different idea of what we wanted to focus our research on. However, a couple of weeks later, a subject Erlend worked on during the summer sparked our interest, and we decided to shift gears.

The process of building our dataset on seasoned equity offerings, proved to be an especially time-consuming task. After manually reviewing and validating information on more than 1000 SEOs on Oslo Stock Exchange between 2005 and 2018, we were grateful to start the analysis. Yet, we believe the hard work has paid off.

We would like to thank DNB Markets and Arkwright Consulting for providing us with access to relevant databases, and our supervisor, Nataliya Gerasimova, for her constructive feedback and support throughout the writing process. Finally, we would like to thank NHH and all the people we have had the pleasure to meet over the course of our studies here in Bergen.

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Erlend August Domaas Width

Olav Andreas Årseth

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1. Introduction

By examining more than 400 seasoned equity offering announcements on the Oslo Stock Exchange between 2005 and 2018, we document how the disclosure of intended use of proceeds affects the stock price and the offer price discount. Our findings demonstrate that firms which announce specific acquisition plans achieve superior abnormal returns, relative to firms that reveal no specific investment intentions. We also find that firms raising equity for dept repayment, or refinancing purposes, offer higher discounts compared to firms raising equity for acquisition or investment purposes. Thus, our research suggests that the disclosure of intended use of proceeds at announcement constitutes a relevant measure for information asymmetry and agency issues in equity offerings.

We categorize SEOs in four groups, based on the intended use of proceeds at announcement. In contrast to previous SEO literature, we make a distinction between issues for acquisition purposes and issues for other investment purposes, as we argue *Acquisition* announcements to be a more credible signal of firm prospects than *Investment* announcements. Accordingly, our findings indicate that firms with the intention of using the raised capital for acquisition purposes experience no abnormal stock price reaction following the issue, while firms with investment, general or refinancing motives experience significantly negative abnormal returns. Further, we provide insights on the determinants of offer price discounts in SEOs. The results suggest that firms stating acquistion or investment purposes acheive lower discounts compared to firms raising equity for refinancing purposes. To our knowledge, no previous studies have considered the relationship between disclosure of intended use of proceeds and discounting. In our analysis we apply event study methodology, using an event window starting three days before the announcement and ending three days after, to calculate cumulative abnormal returns (CAR). By utilizing cross-sectional regression models, we analyze differences in CARs and offer price discounts between the use of proceeds categories, controlling for relevant deal-, firm-, and market-specific characteristics.

We divide the analysis in two parts. The first part focuses on the variation in cumulative abnormal returns between the four use of proceeds categories; *Acquisition*, *Investment*, *Refinancing* and *General*. We expect to observe that firms stating acquisition or investment purposes when raising capital on the Oslo Stock Exchange experience favorable stock price reactions, compared to firms with no specific investment plans, namely general or refinancing purposes. This prediction is consistent with previous findings by Silva and Bilinski (2015),

and Walker and Yost (2008), who document that firms stating investment purposes manage to credibly signal value-increasing opportunities to the market, and thus overperform compared to firms stating general or refinancing purposes. In the second part of the analysis we examine the offer price discount, by performing similar multivariate regressions. We expect to see that firms stating general or refinancing purposes in SEO announcements offer higher discounts compared to firms raising capital for acquisition or investment purposes. Although the primary interest of this paper is to evaluate how use of proceeds disclosure impacts SEO discounts and stock price reactions, we include several explanatory variables previously identified by academics as relevant for explaining the phenomena. Thus, we attempt to isolate the effect from the disclosure of use of proceeds and test its relevance for asymmetric information and agency issues in equity offerings.

Our results suggest that firms stating specific acquisition purposes experience no cumulative abnormal stock price return over the event window, starting 3 days before the announcement and ending 3 after. These results persist when we apply three other event windows of various lengths. Further, the observed reaction is significantly different from firms stating investment, general or refinancing purposes, resulting in an average CAR of -3,5%, -6,0% and -12,5%, respectively. In contrast to other studies investigating use of proceeds, we do not find evidence of investment purposes resulting in significantly different stock price reactions to general- or refinancing-motivated SEOs. Previous studies have, however, not distinguished between investments and acquisitions. Thus, we emphasize the relevance of this distinction in our research. Furthermore, we find similar results when we examine offer price discounts, in which firms that disclose acquisition or investment purposes achieve lower discounts compared to firms stating refinancing purposes. The discount of *General* issues does not seem to differ significantly from the other categories. Contrary to the CAR analysis, we find no difference between *Acquisition* and *Investment* offer price discounts.

A vast number of research is devoted to documenting the announcement effect of SEOs. Most scholars find a negative abnormal stock price reaction following the announcement, and several theories aim to explain the observed effect. Myers and Majluf (1984), and Ross (1977), argue that firms prefer internal to external financing, thus when firms issue equity, investors perceive this as an attempt by managers to exploit that the firm is overvalued. Jensen (1986), and Barclay and Litzenberger (1988) propose that the negative market reaction can be attributed to "principal-agent issues", in which the market requires a compensation for the risk of opportunistic behavior by managers. Walker and Yost (2008) highlight the relevance of

agency issues and information asymmetry between firm managers and investors in the explanation of SEO market reactions. Yet, the signaling effect of disclosing the intended use of proceeds has received limited attention in the academic literature on SEOs. In contrast to researchers who primarily focus on long-run effects (Silva & Bilinski, 2015; Autore, Bray, & Peterson, 2009; Jeanneret, 2005), we approach the topic by considering the short-run implications from public disclosures of use of proceeds. Further, asymmetric information is documented by Corwin (2003) and Altınkılıç and Hansen (2003) as a considerable determinant of offer price discounts in equity issues. However, to our knowledge, no previous studies consider the disclosure of intended use of proceeds as a potential proxy for information asymmetries between management and investors in the context of offer price discounts.

Our research contributes to the existing literature in several ways. First, we examine a large sample from the Norwegian market, by combining deal- and firm-specific data from Dealogic (2018), Factset (2018) and Datastream (2018), and by utilizing Newsweb (2018) for detailed SEO announcement information. We manually review more than 1000 SEOs in Norway between 2005 and 2018, thus providing accurate information on the intended use of proceeds. Second, our paper provides new insights for the Norwegian market as we have not been able to identify any previous studies examining the relationship between public disclosure of use of proceeds and stock price reactions for SEOs at the Oslo Stock Exchange. Third, adding to the existing literature on the subject, we make the distinction between *Acquisitions* and *Investment* when evaluating the impact of use of proceeds. Fourth, we add to the growing literature on determinants of the offer price discount by considering how the disclosure of use of proceeds at announcement impacts the SEO discount.

The remainder of this paper is organized as follows. Section 2 provides a review of selected academic literature related to the disclosure of intended use of proceeds, as well as the offer price discount for SEOs. Section 3 introduces the theoretical concepts which we base our analysis on. Section 4 presents the motivation for examining use of proceeds and what we expect to find in the analysis. Section 5 outlines the methodology for the analysis, defining the event study components and the framework for our cross-sectional regression model. Section 6 introduces the data and describe the sampling process. In Section 7 and 8, we discuss our findings, and present a conclusion.

2. Literature Review

In the following discussion we present some of the previous research on SEOs. First, we discuss prior findings related to the disclosure of intended use of proceeds. Next, we highlight relevant findings from previous research on offer price discounts in SEOs.

2.1 Market Reaction to Disclosure of Intended Use of Proceeds

The announcement effect of seasoned equity issues is extensively documented in academia, with the majority of researchers finding evidence of negative abnormal returns following an announcement[1]. However, from our understanding, the existing literature on how disclosure of intended use of proceeds impacts firms announcing SEOs is quite limited. The study of Walker and Yost (2008) analyze how management's intended use of proceeds impact stock prices at SEO announcements. The authors document that firms stating investment purposes face a 2-day cumulative abnormal return of -2,2%, while firms stating general corporate purposes, or recapitalization, experience 2-day CARs of -3,2% and -3,3%, respectively. However, Walker and Yost (2008) note that the abnormal returns are not significantly different between the groups. Moreover, the authors investigate the market's reaction to management's stated intentions for newly raised capital by running a multivariate regression, using 2-day CAR as the dependent variable and controlling for firm and deal-specific factors. Their results show a positive and significant relationship between the amount of funds intended for investment purposes and the 2-day CAR. In contrast, the coefficients for firms stating general purposes or debt repayment are insignificant. Thus, the authors suggest that the market reacts favorably to firms that provide specific investment plans, as opposed to firms with vague intentions. The negative abnormal returns for firms that are imprecise in their SEO announcement, suggests the market expects the proceeds not to be used to in a value enhancing manner. Adding to the extensive literature on determinants of the market's reactions to SEO announcements, Walker and Yost (2008) provide evidence supporting the notion that agency concerns are a notable factor to consider when firms raise equity. Although primarily focused

[1] Studies finding a negative market reaction following SEO announcements include Myers and Majluf (1984), Masulis and Korwar (1986), Dierkens (1991), and Bayless and Chaplinsky (1996)

on the long-term effects, Silva and Bilinski (2015) find similar results to Walker and Yost, by looking at stock price reactions to SEO announcements in the UK market. Utilizing an event window of 5 days, they find that firms announcing investment purposes experience a 2,7% cumulative abnormal return, as opposed to -2,6% when the stated use is recapitalization (no abnormal reaction for general purposes). Their results provide extended evidence to the role of announcement disclosure as a source for investors to identify and evaluate prospects of SEOs.

Albeit the literature on use of proceeds in SEOs is somewhat limited, several studies investigate how the disclosure of information impacts IPO underpricing. Leone, Rock and Willenborg (2007) find that firms providing a high degree of specificity in their disclosure of use of proceeds, thereby reducing the information gap to investors, experience lower IPO underpricing. Their findings are consistent with previous studies (Schrand & Verrecchia, 2002; Beatty & Ritter, 1986; Ritter, 1984).

A number of prior SEO studies (Jeanneret, 2005; Kim & Weisbach, 2008; Hertzel & Li, 2010; Bayless & Jay, 2013) approach the topic by primarily focusing on the ex-post use of proceeds from SEOs. However, the study of Autore, Bray and Peterson (2009) is the first to apply an ex-ante approach, by looking at how stated intentions for use of proceeds indicate long-run performance, as well as managers' motivation. Their findings suggest that firms stating investment purposes in their S-3 fillings have no significant decline in operating performance or evidence of stock underperformance 2-3 years after the issue. Firms stating recapitalization or general corporate purposes, however, experience significant drops in post-issue performance and long-run abnormal stock returns. The authors argue that these firms are more likely to have a timing motive[2] – by issuing equity when the stock is overvalued. Silva and Bilinski (2015) provide support to Autore, Bray and Peterson's research in their analysis of the UK SEOs. They document that the disclosure of use of proceeds affect firm performance 3-5 years after the equity issue. Although Silva and Bilinski (2015) and Autore, Bray and Peterson (2009) primarily focus on the long-term effects, they provide important insights on the impact of stated use of proceeds. The studies emphasize the relevance of information disclosure as an important determinant of agency issues and asymmetric information in SEOs.

[2] Myers and Majluf (1984) indicate that firms time their SEOs to exploit that their stock is overvalued

2.2 Offer Price Discount

We define the offer price discount as the relative difference between the offer price in the SEO and the stock price prior to announcement, which is consistent with previous studies[3]. The offer price discount in seasoned equity offerings has received growing interest in the academic literature. The majority of studies report an average discount of 2-3% for SEOs, yet this has changed markedly over time. Corwin (2003) and Altınkılıç and Hansen (2003) discover a substantial increase in discounts in the 1990s for US SEOs, reporting an average of 2,9% and 3,2% respectively. Despite the increase in discounts, Mola and Loughran (2004) document that direct costs in SEOs have remained flat. Thus, issuers raise less proceeds, while investors are left with more money. According to Mola and Loughran (2004), much of the rise in discounts can be attributed to changes in issuer composition, and uncertainty related to firm value. Altınkılıç and Hansen (2003) share similar views and argue that the increase comes from a combination of rising demand from capital suppliers and higher risk profile of issuers.

The determinants of the offer price discount in SEOs have not yet been fully explored by previous researchers. We attempt to provide novel insights by investigating whether information in public disclosures at announcement explain some of the observed variations in offer discounts. To our knowledge, the disclosure of intended use of proceeds is not considered in previous research on SEO discounts. Yet, researchers utilize alternative factors to examine how uncertainty and asymmetric information impact discounts. Corwin (2003) applies firm size, stock volatility and bid-ask-spread to proxy value uncertainty and asymmetric information in SEOs. He documents that while uncertainty in firm pricing significantly impacts discounting, asymmetric information appears to have no meaningful impact. Moreover, Corwin (2003) finds a significant positive relationship between the relative offer size and the discount, thus providing evidence of the price pressure hypothesis[4].

Mola and Loughran (2004) assert that issuer uncertainty arises from uncertainty about firm value and stock liquidity. Further, they find evidence for clustering effects, in which underwriters round the offer price down to the nearest integer value, resulting in higher

[3] Altınkılıç and Hansen (2003), Mola and Loughran (2004) and Gao and Ritter (2010)

[4] SEOs can be viewed as temporary liquidity shock to firm's stock, in which a discount would compensate the investors for absorbing the newly issued shares (Corwin, 2003)

discounts for firms with low priced stocks. This underwriter pricing practice is also documented by Corwin (2003), who finds 35% of SEOs to be priced on even dollars, significantly impacting the offer price. Altınkılıç and Hansen (2003) emphasize the important relationship between discounting and asymmetric information in SEOs, and conclude that the main purpose of discounting is primarily to compensate investors for uncertainty about firm value and cost of illiquidity.

3. Theory

The following section presents theoretical concepts underpinning the topic of equity offerings. First, we present fundamental corporate finance theories relevant for firms in need of capital, including the concepts of asymmetric information and agency issues between firm management and investors. Second, we describe the concept of seasoned equity offerings, how firms use them and the implicit costs.

3.1 Efficient Market Hypothesis

If prices fully reflect all available information, and the market immediately adapts to new information, a market is said to be efficient (Fama, 1970). Consequently, it is impossible to make excess profits by trading on new information, implying that investors and analysts have no incentives to analyze firm information. Grossman and Stiglitz (1980) argue that as a result, security prices will no longer reflect all available information, referred to as "the efficiency paradox". For market participants to spend resources on gathering information, they must believe that the market is inefficient, and the level of inefficiency will determine their effort. According to Grossman and Stiglitz (1980), a reasonable market equilibrium both compensate investors for their efforts and partly reflect new information in security prices. The degree of market efficiency varies with several factors, such as the number of analysts following a firm, requirements to the release of company financial documents, as well as firm size (Bodie, Kane, & Marcus, 2009).

Assuming efficient markets, new information is incorporated in the price at the time of announcement (Bodie, Kane, & Marcus, 2009). Therefore, studying effects from the release of new information can indicate the level of market efficiency. Assuming semi-strong market efficiency (that prices incorporate all publicly available information), the full price adjustment takes place immediately following an announcement (Scholes, 1972; Ball & Brown, 1968). However, studies show that the market often deviates from such a reaction, due to misinterpretations by investors. In some cases, the market overreacts before prices are adjusted back to the new equilibrium (De Bondt & Thaler, 1990). Other times it can take several days before new information is fully incorporated into the stock price (Bernard & Thomas, 1989). Theory suggests that rational investors eventually bring the stock price back to its "intrinsic" value.

3.2 Capital Structure in Perfect Markets

Modigliani and Miller (1958) introduce one of the most central theories about capital markets and business finance. They argue that in a perfectly efficient market, the value of a company is independent of its capital structure – the allocation between debt and equity. Rather, the value is determined by the firm's underlying assets and ability to generate value from those assets, as well as the associated risk. Further, the required rate of return on equity increases with firm leverage, as equity becomes riskier. However, these results depend on critical assumptions, some of which are: no transaction costs, no taxes (or neutral taxes), no bankruptcy costs, no agency costs, and no asymmetric information between firms and investors. In practice, these assumptions are unlikely to hold. Next, we elaborate on two market imperfections which we find most relevant for the scope of our research; asymmetric information and agency issues.

3.2.1 Asymmetric Information

When one group of market participants ("insiders") possess superior information compared to other participants ("outsiders"), it gives rise to information asymmetry (Copeland, Weston, & Shastri, 2005). This skewness of knowledge between insiders (managers) and outsiders (investors) can lead to market inefficiencies, some of which we describe in more detail in the following sections.

Adverse Selection

The lemons problem, presented by George Akerlof (1970), seeks to explain how asymmetric information between a buyer and a seller can lead to the deterioration of products. Lacking complete information, a buyer is unable to distinguish a "high quality" product from one of "low quality", and as a result, he is only willing to pay an average price. As the sellers are aware of the true quality, only "low quality" products are offered, ultimately pushing the "high quality" products out of the market.

In financial markets, the management of a company is likely to hold greater knowledge about the firm's true value and its prospects, than outside investors (Berk & DeMarzo, 2014). The greater the asymmetry, the more difficult it is for investors to identify the true value of a firm, and thus, they require a higher rate of return. According to Akerlof's (1970) theory, this implies that "high quality" firms are undervalued in the market, while "low quality" firms

would be overvalued. Consequently, “low quality” firms have an incentive to exploit this by issuing new equity, while the opposite is the case for “high quality” firms.

The Market-Timing Hypothesis

The market-timing hypothesis predicts that managers are more able to detect mispricing than investors and take advantage of this superior knowledge when deciding the means of financing (Berk & DeMarzo, 2014). Baker and Wurgler (2002) find a clear connection between the value of a firm and the timing of new equity issues. They argue that the management has clear incentives to buy back own shares when the firm is undervalued, and to issue new equity when it is overvalued (to maximize gross proceeds). Thus, managers benefit from superior information by timing equity issues accordingly.

Signal Effects

Introduced by Ross (1977), the incentive-signaling model explains how actions taken by management can reveal information to the market about the state of the firm. Aligned with the findings from Baker and Wurgler (2002), Ross finds that investors perceive the firm as overvalued when new equity is raised. Accordingly, the announcement of an equity issue should result in a negative impact on the stock price. Contrarily, issuing new debt signals an undervaluation to investors, as the firm wants to share the potential upside with existing shareholders.

Pecking Order Theory

Building on the theory of signal effects (Ross, 1977), Myers and Majluf (1984) introduce the hierarchy of financing sources. They suggest that firms prefer internal to external financing, and debt to equity if external financing is needed. Internal financing is deemed advantageous because it maintains firm flexibility and avoids dilution of existing shareholders. Also, investors may interpret new equity issues as an attempt by managers to capitalize on firm overvaluation, making it more expensive to raise equity (Ross, 1977). As internal financing and debt are less information sensitive, firms prefer such financing sources to equity. Myers and Majluf (1984) argue that raising equity is only preferred when there are no internal funds available, and when debt capacity is squeezed.

Time-Varying Asymmetric Information

Under the assumption that managers possess superior information about firm value compared to outside investors, Myers and Majluf (1984) argue that managers may forego profitable

investment opportunities if the information cost of issuing equity outweigh potential gains. They suggest that firms should issue securities in times with low levels of asymmetric information, to build up financial slack with as little information costs as possible. Thus, the level of asymmetric information impacts the pricing and timing of security issuances (Korajczyk, Lucas, & McDonald, 1991). Bayless and Chaplinsky (1996) support these findings, explaining that periods of low information costs are perceived as desirable for security offerings.

3.2.2 Agency Issues

A "principal-agent relationship" is an agreement in which an "agent" is engaged by a "principal" to perform a duty, or serve, on their behalf (Jensen & Meckling, 1976). If the interests of the two parties are unaligned, and the principal is not fully able to monitor the actions of the agent, the agent may benefit from opportunistic behavior (Lazear & Gibbs, 2014). The agent can be tempted to act less carefully if he is not exposed to the same risk and consequences as the principal. Jensen (1986) argues that this "principal-agent problem" may occur between managers (the agents) and the debt- or shareholders (the principals), giving rise to agency costs.

Jensen (1986) suggests that managers in control of excess cash flow may have incentives to overinvest and grow firm size at the expense of existing shareholders, referred to as agency costs of free cash flow. He argues that these managers are more likely to initiate value-decreasing investments. The stock price reaction to an SEO announcement is determined by investors' assessment of the likelihood for such unprofitable spending. Supporting Jensen's view, Barclay and Litzenberger (1988) present the wasteful investment hypothesis, in which a stock price decline implies that the market perceives the firm's investment plans as wasteful. They argue that the magnitude of the decline depends on the net present value of the investment, and the size of the security issue. Managers also have incentives to raise equity and invest in unprofitable projects if the loss is offset by the gain from issuing overvalued shares (Myers and Majluf, 1984). Lastly, the wealth effect hypothesis (Galai and Masulis, 1976) suggests that an equity raise transfers wealth from shareholders to debtholders, as an unexpected reduction in leverage decreases the risk of debt. Assuming investors are not fully aware of management's incentives, the risk of such opportunistic behavior is incorporated in the pricing of equity and debt, causing agency costs. According to Jensen and Meckling

(1976), an optimal capital structure balances the agency costs of debt against the corresponding agency costs of equity.

3.3 Seasoned Equity Offerings

Firms are dependent on capital, throughout their lifespan, to pursue new projects, strengthen their financial position or simply avoid bankruptcy. One of the main advantages of going public is the improved accessibility to external financing, as the firms can choose to issue either debt or equity. In this regard, Seasoned Equity Offerings (SEOs) provide an opportunity for listed firms to efficiently raise additional funds via the issuance of new shares (Berk & DeMarzo, 2014). We distinguish between primary and secondary offerings. In a primary offering new shares are made available to investors, thus increasing the number of shares outstanding. Contrarily, in a secondary offering shares are sold by existing shareholders. As a result, the amount of shares outstanding remains unchanged and the proceeds accrue to the selling shareholders. Since we aim to analyze the impact of firms' use of proceeds, we focus our research on primary offers.

When firms decide to raise new capital, they usually employ one or several investment banks to underwrite the offer ("the underwriters"). The underwriters support the issuer throughout the SEO process, advising on the design, pricing and timing of the issue. Further, the lead underwriter normally performs a due diligence for certification purposes and develops a prospectus. Depending on the offer type, underwriters could also take on more responsibility by guaranteeing for the completion of the issue, thereby bearing all the risk of completing the offer. Conversely, in a best effort agreement, the underwriter is not obligated to purchase the entire issue, but rather strives to sell as many shares as possible. Hence, the issuer is left with the financial risk (Eckbo & Masulis, 1995).

3.3.1 Methods of Flotation

Firms contemplating to conduct an SEO have a variety of flotation options to choose from. Generally, we distinguish between public and non-public offerings. Seasoned public offerings (SPOs) are, as the term implies, directed towards the public market of both existing shareholders and outside investors. Non-public offerings are aimed at existing shareholders of the company and normally referred to as rights offerings. Based on previous research of Geddes (2003) and Gao & Ritter (2010), we further divide public offerings in fully marketed

offers and accelerated offers. Note that firms can also choose to combine multiple flotation methods to accommodate different investor groups – however, the following discussion does not consider such hybrid-offerings.

Fully Marketed Offers

In a fully marketed offer, one or several investment banks (underwriters) are engaged to build demand by marketing the offer to potential investors. The process has clear parallels to an IPO process, in which the investment banks typically prepare a preliminary prospectus, indicating the price range of the offer, and travel with management to advertise the offer to investors. Simultaneously, the underwriter uses these meetings to establish investors' demand, referred to as the book-building process. After the marketing period, which usually lasts between two and three weeks, a final prospectus is prepared, and the new shares are allocated to investors (Geddes, 2003). Gao & Ritter (2010) find that marketing efforts help flatten the short-run demand curve facing issuers' stock, leading to higher offer prices and higher post-issue stock price returns. Hence, firms associated with a high degree of asymmetric information and issuer uncertainty are more likely to opt for a fully marketed process.

Accelerated Offers

Accelerated offers provide the issuer with the advantage of significantly reducing time and resources spent on the issue, compared to a fully marketed offer. The period between announcement and completion can span from a few hours to a couple of days, depending on the investment case and market interest. A substantial amount of offers in the Norwegian market are announced after market-close and completed before the market re-opens the following day. This offers stability for investors and prevents market movements from disturbing the book-building process. Accelerated offers are typically conducted by well-known firms with high stock liquidity and primarily directed towards institutional investors.

Bought deals, accelerated bookbuild offers and cash placements constitute accelerated offer types. In a bought deal, investment banks are invited to make bids on the total amount of shares offered by the issuing firm. The investment bank with the highest purchase price wins the auction, and then turns to the market to re-sell the shares. In contrast to an accelerated bookbuild offer, the execution risk rests with the investment bank rather than the issuing firm (Gao & Ritter, 2010). In an accelerated bookbuild process the underwriter(s) is typically selected based on reputation and commercial terms (gross fee). After assessing the market interest in the book-building process, the lead underwriter negotiates with the issuer to

determine an appropriate offer price (Gao & Ritter, 2010). When firms organize the SEO as a cash placement, only a small group of investors is invited to participate in the issue and. The flotation type has the advantage of rapid execution time and reduced cost, considering the issuer is not required to develop a prospectus (Geddes, 2003).

Rights Issue

As opposed to public offerings, rights offers are only directed towards existing shareholders in the firm. Each shareholder is granted the right to subscribe for new shares on a pro rata basis, and they can choose to either exercise or sell this right. Thus, firms can raise new capital without diluting existing shareholders. The issuer can also choose to have the rights offer underwritten by one or more investment banks, referred to as a stand-by rights offering. A stand-by agreement ensures that the required funds are raised, meaning that the underwriter is obligated to purchase any unsubscribed shares. Rights issues follow a rather standardized process, although execution time can vary significantly. However, according to Norwegian regulations (Aksjeloven §10-1) investors should have a minimum of 14 days to decide if they want to exercise their right to purchase new shares.

3.3.2 Cost of SEOs

The costs associated with seasoned equity offerings consist of both direct and indirect costs. Direct costs typically include fees to underwriter, legal and accounting expenses, registration and listing fees, as well as marketing expenses. Underwriting compensation is the main component, representing approximately 90% of the total direct cost in a study by Eckbo and Masulis (1992). Several studies focus on the relationship between SEO costs and the method of flotation[5]. Gao & Ritter (2010) find fully marketed offers to be the most expensive alternative, with an average gross fee of 5,1%. The higher fee is assumed to be caused by a longer marketing and book-building process. Smith (1977) and Eckbo and Masulis (1992) find that rights issues have a significant direct cost advantage to alternative methods, yet US firms tend to choose relatively expensive flotation methods when raising equity. This paradoxical

[5] Bortolotti, Megginson, and Smart (2008), and Calomiris and Tsoutsoura (2010)

demise of rights issues, supported by recent papers[6], is partly explained by indirect costs associated with the choice of flotation method.

Eckbo, Masulis and Norli (2007) highlight three indirect costs components: the offer price discount, the stock price reaction upon announcement, and the cost of postponement or cancellation. The offer price discount is typically the largest indirect cost of an equity issue and receives growing attention in the academic literature. Altınkılıç and Hansen (2003) find an average SEO discount of 3,2% for a sample of US offerings in the 1990s, comprising almost half of the average underwriting fee. Although Eckbo, Masulis and Norli (2007) note that the determinants of the offer price discount have not yet been fully explained, multiple papers investigate the topic and present acknowledged theories. The paper of Corwin (2003) addresses several of these hypotheses and tests their significance:

1) Asymmetric information and uncertainty: Investors require compensation for uncertainty related to the firm's true value, and prospects.
2) Price pressure: Assuming a downward sloping demand curve for a firm's stock, a permanent increase in the supply of shares would imply a decrease in the stock price. SEOs can also be viewed as a temporary liquidity shock, in which investors demand compensation for absorbing the additional shares offered in the SEO.
3) Manipulative trading: Manipulative strategy aimed at depressing pre-offer stock prices and thus reduce the informativeness of market prices – making the winner's curse problem larger[7].
4) Underwriting pricing practices: Larger discounts as a result of underwriters' tendency to round-down offer price to the closest integer value, in addition to determine offer price based on the last bid rather than the reported closing price.

As we examine the relationship between firms' disclosure of use of proceeds and investors' reaction to this information, we focus our attention on theories related to asymmetric information and agency issues.

[6] Ursel and Trepanier (2001), Slovin, Sushka and Lai (2000), Wu, Wang, and Yao (2005), and Gajewski and Ginglinger (2002)

[7] The tendency of the winning bidder to overpay for the shares

4. Use of Proceeds: Motivation and Expectations

We apply the intended use of proceeds as a proxy for information asymmetry and agency issues between firms and investors. The intention of dividing the SEOs into different categories, relates to our belief that the information gap between firms and investors is affected by the disclosure of use of proceeds at announcement. We expect the market to favor firms which manage to credibly signal valuable growth potential and dismiss investors' suspicion of opportunistic behavior. By effectively removing some of investors' uncertainty related to the firms' "intrinsic" value, we expect firms to achieve lower discounts and higher abnormal returns following the offering. In contrast, firms perceived as opportunistic market-timers, or likely to pursue value-destroying projects, are expected to receive less favorable market reactions.

We assign equity issues into four subgroups, based on the intended use of proceeds at announcement. Previous studies distinguish between three motives, namely investment purposes, debt repayment purposes, and general corporate purposes (Autore et al., 2009; Walker and Yost, 2008; Silva and Bilinksi, 2014). However, we choose to include a fourth motive: acquisition purposes. These issues typically relate to the acquisition of a company, or the acquisition of operational assets (platforms, vessels, etc.). The requirement is that the acquisition is specified, and that the asset(s) is acquired instantly. We consider this to be the most informative type of announcement, and the easiest for investors to evaluate efficiently. Hence, we expect the market to favor such issues. *Investment* issues include all other investment intentions, such as project financing, R&D expenditures, future (unspecified) acquisitions and capital expenditures. We argue that the value of these long-term investments is more challenging for investors to assess than acquisitions, yet more informative than *General* and *Refinancing* announcements. *General* offers include "generic" statements, featuring limited material on specific investment plans. These non-disclosing firms typically list "strengthen balance sheet", "increase working capital", and "general corporate purposes" as motives. The final group, *Refinancing* issues, also disclose minimal information on investment opportunities. The purpose of these issues is either to complete a financial restructuring, or to repay debt. In line with Autore, Bray and Peterson (2009), we argue that *General* and *Refinancing* firms are more likely to be opportunistic market-timers, or face less valuable investment opportunities, compared to *Acquisition* and *Investment* firms.

Accordingly, we expect these issuing firms to suffer higher information and agency costs, reflected in the stock price reactions and the offer discounts.

Information on intended use of proceeds is extracted from Dealogic (2018) and Newsweb (2018), by manually examining each SEO announcement. In Appendix B we present three SEO examples for each of the four use of proceeds categories.

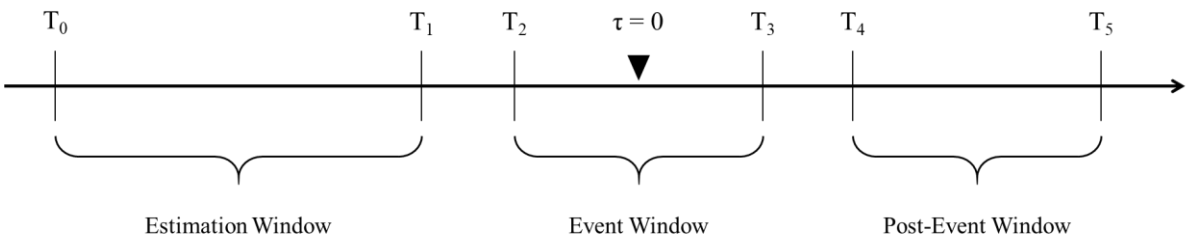
5. Methodology

In this section we introduce the methods applied in the subsequent analysis. We start by defining the event study design used to estimate cumulative abnormal returns (CARs) for each SEO in our sample. Next, we define the components of the cross-sectional regression models, as well as the theoretic and economic variables assumed to explain variations in CARs and offer price discounts.

5.1 Event Study

The event study is a widely used approach to measure the effects of a specific event. The methodology is especially helpful in analyzing how firm value is affected by corporate events, such as M&A announcements, equity offering announcements and changes in management. Thus, it enables stakeholders to evaluate the implications of corporate decisions. Furthermore, the event study is commonly used to test market efficiency and has, in this regard, delivered significant contributions to the field of empirical corporate finance. Drawing on the research of Brown and Warner (1985), MacKinlay (1997), and Kothari and Warner (2006), we outline the design of the event study. Figure 5.1 provides a visual representation of the two periods examined. Although MacKinlay (1997) argues that the inclusion of a post-event window can increase the robustness of the estimations, researchers rarely apply this window for other purposes than long-run studies (Ahern, 2009).

Figure 5.1 – Timeline for Event Study



The normal returns are modeled for each security using an estimation window ($T_0 - T_1$) of 240 days. Next, abnormal returns are calculated over the event window ($T_2 - T_3$), where τ denotes the event date. 11 days separate T_1 and T_2 to avoid event specific factors from influencing the estimation of normal returns. Note that the length of the estimation window may vary between individual securities, however, we require a minimum of 6 months of stock price observations prior to the event.

5.1.1 Event Window

The first objective of the event study is to determine the event of interest and establish the timeframe in which the event is examined, commonly referred to as the event window. When firms release information at multiple points in time, via official statements, prospectus disclosure and final board approval, identifying the correct event date becomes complex. We consider the date of the official SEO announcement on the Oslo Stock Exchange as the most appropriate event date, which is supported by similar studies on mergers & acquisitions. Dodd (1980) argues that the first official announcement of the proposed transaction carries the highest information content and hence, is considered the most appropriate date to measure market reactions. We validate announcement information gathered from Dealogic (2018), by examining firms' statements in Newsweb[8] (2018).

Using an event window longer than the exact date of announcement is deemed beneficial in terms of capturing effects that impact prices just before and after the event (MacKinlay, 1997). Similar to previous research designs[9], we apply a 7-day event window symmetrically around announcement. This is likely to capture the market reactions from the event, while avoiding unrelated effects to cause biased estimates. The choice between implementing a long or short event window is a thoroughly debated subject among scholars. One motivation for using

[8] Newsweb is managed by the Oslo Stock Exchange and publishes announcements from listed firms

[9] Silva and Bilinski (2015), Walker and Yost (2008)

longer event windows is to account for the potential lag between the announcement and the full stock price adjustment (Bernard & Thomas, 1989; De Bondt & Thaler, 1990). However, McWilliams and Siegel (1997) contend that a long window increases the likelihood of capturing effects unrelated to the event, and thus produce biased results. Further, Brown and Warner (1985) find that an extended event window reduces the statistical power of the abnormal returns. In the analysis section we examine alternative event window lengths, for robustness.

5.1.2 Estimation Window

The estimation window is used to model normal returns for individual securities. We utilize an estimation window of 240 days, ending 11 days before the announcement date. Allowing a gap between the estimation and the event window is considered effective to prevent event-specific effects from distorting the calculation of normal returns (MacKinlay, 1997). Deciding the length of the estimation window is a trade-off between estimation accuracy and avoiding influence from extraordinary events. Long estimation windows ensure better predictions of normal returns, albeit the risk of capturing abnormal firm and market specific events increases (Park, 2004). However, considering our relatively large sample we expect unrelated events to have small impact on our estimates. Several studies investigate the predictability of returns from various estimation window lengths and suggest that a minimum of 6 months prior to announcement is sufficient to produce robust results (Benninga, 2014, p. 333). Thus, we require a minimum of 126 trading days for each SEO in our sample.

5.1.3 Abnormal Return Calculation

The abnormal returns around SEO announcement are estimated based on the market model approach. The market model, commonly known as the single index model, assumes joint normality across security returns and a linear relationship between the firms' stock returns and the returns of the market portfolio (MacKinlay, 1997). As we exclusively consider firms on the Oslo Stock Exchange in our analysis, we employ the Oslo Stock Exchange Benchmark Index (OSEBX)[10] as a proxy for the market portfolio.

[10] OSEBX includes a representative selection of all the stocks on Oslo Stock Exchange. Index constituency is revised semi-annually, and adjusted for dividends

Despite the inherent simplicity of the market model, scholars have demonstrated that competing multifactor statistical models, such as the CAPM and APT, offer limited gains in terms of reduced variance of estimated returns (MacKinlay, 1997). In a recent meta study, examining 400 previous event studies, Holler (2012) provides strong evidence in favor of the market model's legitimacy, finding it to be the predominant method for computing normal returns.

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \tag{1}$$

$$E(\varepsilon_{it}) = 0 \qquad Var(\varepsilon_{it}) = \sigma_{\varepsilon_i}^2$$

$$where\ i = security, \qquad t \in [T_0, T_1]$$

$R_{it} = Return\ of\ security\ i\ in\ period\ t$
$R_{mt} = Return\ of\ OSEBX\ Index\ in\ period\ t$
$\varepsilon_{it} = Error\ term$

Using the market model outlined in formula (1), and daily stock price data from Factset (2018), we apply standard OLS (ordinary least squares) methodology to produce estimates of β_i and α_i values for each SEO in our sample. These estimates are in turn applied to estimate daily abnormal returns (AR) for each security, in the event window.

$$\widehat{AR}_{i\tau} = R_{i\tau} - \hat{\alpha}_i - \hat{\beta}_i R_{m\tau} \tag{2}$$

$$where\ i = security, \qquad \tau \in [T_2, T_3]$$

We aggregate the estimated daily abnormal returns over the event window. Thus, we end up with a cumulative abnormal return (CAR) for each issuing firm in our sample. CAR act as the dependent variable in our cross-sectional analysis, allowing us to investigate the market reactions to SEO characteristics, and particularly, the disclosure of use of proceeds.

$$\widehat{CAR}_i(\tau_1, \tau_2) = \sum_{\tau=\tau_1}^{\tau_2} \widehat{AR}_{i\tau} \tag{3}$$

$$where\ i = security, \qquad \tau_k \in [T_2, T_3]\ and\ \tau_1 \leq \tau_2$$

In Appendix A we provide a comprehensive mathematical description of the methodology and assumptions related to the estimation of AR and CAR. We also present a description of tests used to evaluate statistical significance of CARs and offer price discounts.

5.2 Cross-Sectional Analysis

Cross-sectional analysis is applied to analyze variations in abnormal returns and offer price discounts between the various groups. We divide the analysis in two sections and apply multiple cross-sectional regression models to test the impact of various explanatory variables. First, we examine the relationship between CARs and firms' disclosure of use of proceeds. To achieve robust results, we further control for relevant deal-, firm- and market-specific characteristics. In the second part, we analyze differences in SEO discounts between the four categories, and employ multiple regression models, controlling for many of the same factors as in the CAR analysis. To identify relevant variables, we draw on insights from previous research, as well as economic intuition. In section 6.3 we explain and justify the rationale for including these variables.

In both analysis, we apply standard OLS methodology to estimate the regression models. Additionally, we run the regressions using White-Huber standard errors to prevent biased estimates. Robust standard errors have been documented to control for heteroskedasticity and non-normality issues (King & Roberts, 2015).

5.3 Possible Limitations of Methodology

5.3.1 Non-Synchronous Trading

Non-synchronous trading becomes relevant if we record returns over a specific trading interval when, in reality, prices are recorded over a different time interval. The phenomenon is particularly relevant when we utilize daily closing prices in the calculations of abnormal returns. Depending on the trading frequency of a stock, the time of the last transaction is not necessarily the same each trading day. Campbell, Lo and MacKinlay (1997) argue that wrongly assuming stock prices to be equally spaced across 24-hour intervals, can lead to biased OLS estimations. However, Jain (1986) argues that adjusting for this issue is not crucial, as he documents a minimal difference between ordinary OLS betas and adjusted betas.

Furthermore, Brown and Warner (1985) indicate that failing to account for non-synchronous trading do not seem to cause misspecification in the event study.

5.3.2 Clustering

Clustering occurs when the event windows of different securities overlap in time. This effect can potentially induce serial correlation in the estimations, as excess returns are no longer independent across observations in the sample. Brown and Warner (1985) report that the consequences of ignoring extreme correlations can substantially increase the risk of falsely rejecting the null hypothesis. However, if there is no overlap between the event window and estimation window, Campbell, Lo and MacKinlay (1997) do not consider clustering a serious problem. Furthermore, Brown and Warner (1985) argue that adjusting for cross-sectional dependence provides little benefit when the dependence is small, and can in some cases be more harmful than simply assuming independence.

5.3.3 Normality of Estimation Errors

The estimation of abnormal returns relies on the assumptions of joint normality, independence, and identical distribution across security returns (Campbell, Lo, & MacKinlay, 1997). Deviation from these assumptions can cause biased estimators. However, Brown and Warner (1985) argue that non-normality is generally not an issue in event studies. Although the authors find daily excess returns to be highly non-normal, they show that the cross-sectional distribution of mean excess returns quickly converges to normal as the sample size increases.

6. Data

In the subsequent section we introduce the data applied in the analysis. First, we describe the data selection process and the various adjustments implemented to arrive at a sample of 403 relevant SEOs. Further, we present and discuss descriptive statistics as well as the motivation for including the selected explanatory variables in the analysis.

6.1 Data Collection and Adjustments

We collect data on SEO transactions from the Dealogic Equity Capital Markets (ECM) Analytics database (2018). Gao and Ritter (2010) find Dealogic to provide more accurate data on ECM transactions compared to the alternative database Thomson Financial Securities Data Company's (SDC). In addition, we favor Dealogic (2018) due to detailed descriptions on intended use of proceeds. Factset (2018) and Datastream (2018) are used to extract daily (adjusted) stock prices, OSEBX rates, as well as various company financial data. To verify and extract further information on the intended use of proceeds, actual announcement date, and other deal-specific data, we manually examine relevant offerings in Newsweb (2018). The original dataset contains information on 1,213 equity issues in the Norwegian market from January 1, 2005 to August 1, 2018. We note that issues of consideration shares in relation to M&A transactions are not included in the dataset from Dealogic (2018). Further, we exclude deals based on the following criteria:

Not Listed on the Oslo Stock Exchange

As Oslo Stock Exchange represents approximately 90% of the equity offering volume in the Norwegian financial market (Oslo Stock Exchange, 2017, p. 13), we ignore transactions on the smaller exchanges, namely the Oslo Axess, the Merkur Market, and the Norwegian OTC Market. Thus, firms not listed on the Oslo Stock Exchange at the time of the equity issue announcement, are removed from the dataset (234 issues).

Convertible Bonds and IPOs

The scope of this paper is exclusively related to seasoned equity offerings, and consequently, all equity issues related to initial public offerings, or convertible bonds, are disregarded (199 issues).

Secondary Shares

We exclude all pure sales of existing (secondary) shares and offerings which give no proceeds to the firm (158 issues), as we cannot draw inference from the firm's use of proceeds in these cases. In line with Walker and Yost (2008), only equity issues which include an offering of primary shares, thereby increasing the outstanding share capital, are considered. If an issue consists of both primary and secondary shares, we exclude the transaction if secondary shares comprise more than 50% of the offering size (3 issues).

Repair Offerings

Firms use repair issues to avoid dilution of existing shareholders. These issues are typically announced in combination with a primary offering and tend to be of small size. Therefore, we exclude such deals from our sample (123 issues). Rather, we add a dummy variable for whether the equity issue announcement includes the intention of completing a subsequent repair offering.

Deal Size

In line with previous studies (Corwin, 2003; Mola and Loughran, 2004; Butler, Grullon & Weston, 2005), we require the offer size to be a minimum of 25m NOK, effectively removing another 35 issues. Although the abovementioned studies set substantially higher limits ($20-$25m), we argue that the smaller Norwegian market justify a considerably lower threshold.

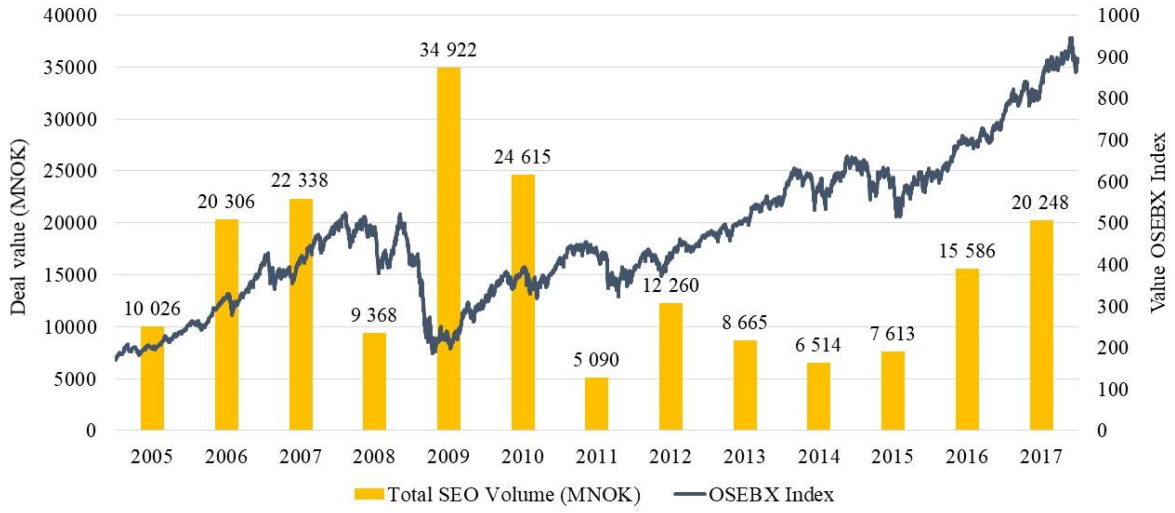
Missing Data

We remove firms with inadequate amount of relevant data from the sample (58 issues). This applies primarily to firms with less than 126 trading days (6 months) prior to announcement.

6.2 Descriptive Statistics

Finally, we end up with a sample of 403 unique seasoned equity offerings for the last 13 years on the Oslo Stock Exchange (OSE). Figure 6.1 shows that the total equity issue proceeds, as well as the OSEBX fluctuates substantially over time. Never has more equity been raised than in 2017 on the OSE (Oslo Stock Exchange, 2018). However, relative to 2009 and 2010, a considerable amount of the proceeds was issued in relation to IPOs or on the smaller exchanges. Thus, only 20 of the 60bn (NOK) equity proceeds in 2017 are reflected in our dataset.

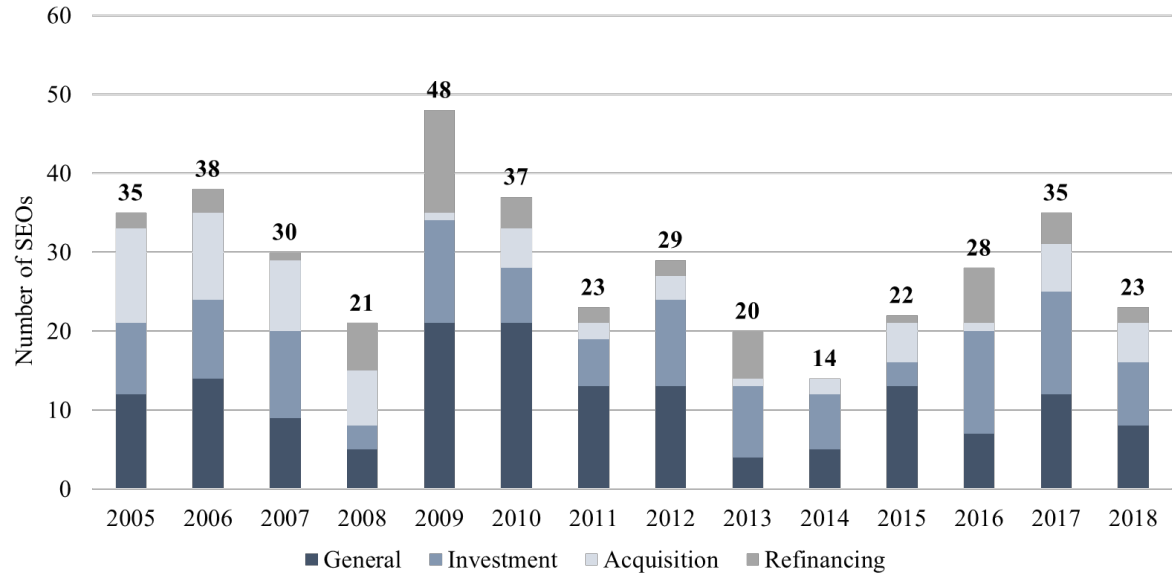
Figure 6.1 – Sample SEO Volume and OSEBX Development



The figure displays annual SEO volume, in million NOK, from our sample on Oslo Stock Exchange (left axis) and the index-value of OSEBX (right axis) over the period 2005-2017. We exclude 2018 since we do not have data for the entire year. Daily price data on the OSEBX is retrieved from Datastream (2018).

In Figure 6.2, we document that the number of SEOs vary greatly from year to year, and that *General* (157 issues) and *Investments* (122 issues) are the most frequent motives for raising capital. *Acquisition* issues account for a meaningful share of total offerings prior to the financial crisis but are less frequent in subsequent years (70 issues in total). *Refinancing* is stated as the intended use of proceeds in merely 54 of the 403 offer announcements.

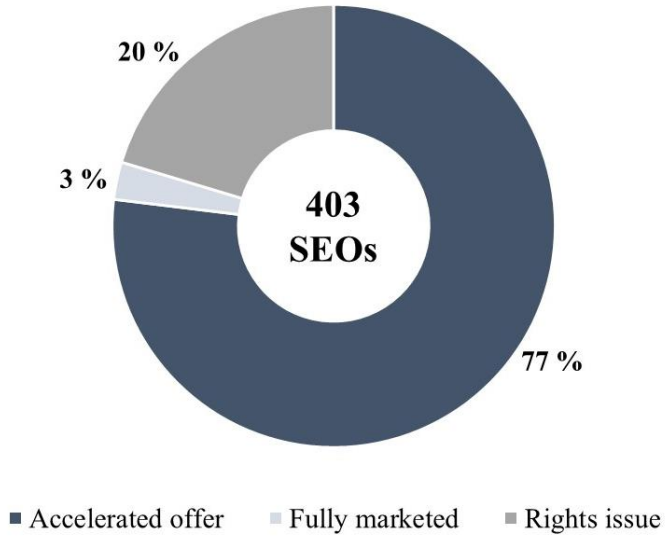
Figure 6.2 – Number of Yearly SEOs by Intended Use of Proceeds Type



The figure displays the yearly distribution of completed SEOs from our sample, segmented by intended use of proceeds (General, Investment, Acquisition or Refinancing). Note that 2018 only comprises deals between January and August.

Figure 6.3 illustrates that accelerated offers are by far the most popular method of executing equity issues, accounting for 77% (310 issues) of the sample. Rights offers aggregate to 82 issues, 20% of the total, while fully-marketed offers compose the remaining 3% of the SEO sample. Further, we note that our sample is skewed towards the Oil & Gas sector, representing 136 of the 403 issues. Shipping & Transportation accounts for 57 of the issues, followed by Technology (44), Healthcare (34), and Finance (32).

Figure 6.3 – Distribution by Deal Type for Full Sample



The figure displays the deal types relative share of the full SEO sample.

Descriptive statistics for our explanatory variables are listed in Table 6.1. From the median values, we observe that a typical issue raises net proceeds of approximately 200 MNOK and constitutes almost 20% of the firm's pre-announcement market value. Further, more than half of the sample firms have not issued any equity within the last year, prior to announcement, and more than half of the sample issues are completed within a day. We also note that a typical issuing firm experience an average of 100% buy-and-hold return over the last 6 months prior to announcement.

Table 6.1 – Descriptive Statistics

Variable	# Obs	Mean	Median	Std. Dev.	Min	Max
Offer size (MNOK)	403	515	200	1 166	25	14 008
Market cap (MNOK)	403	2 962	1 013	6 750	23	88 088
Relative offer size	403	41 %	17 %	90 %	1 %	1362 %
P/B	403	x3,0	x1,8	x5,6	0	x90,3
Trading volume (m)*	400	0,8	0,1	2,8	-	36,4
Days since issue**	326	642	376	841	1	8 334
Days to Pricing	403	10	1	20	-	180
Stock run-up	403	106 %	99 %	59 %	-122 %	392 %
Stock volatility	403	4 %	3 %	3 %	0 %	25 %
Market volatility	403	21 %	17 %	11 %	8 %	84 %

*3 SEOs with missing data on trading volume
**77 SEOs in the sample have no preceding offering, i.e. first issue of relevant firm
The table displays number of observations, mean, median, standard deviation and min/max values for the non-binary variables in the SEO sample. "Days since issue" is the number of days since last equity issue and is represented through the "Recent issue" variable. "Days to Pricing" is the number of days from announcement to the completion of the offer and is represented through the "Overnight offer" variable. Note that Market volatility is annualized. For more detailed descriptions of the remaining variables see section 6.3

6.3 Explanatory Variables

The main purpose of the analysis is to evaluate the implication of firms' disclosure of intended use of proceeds at announcement. We control for variables which previous empirical SEO studies identify as relevant. Additionally, we include factors we believe serve as potential determinants of offer price discounts and stock price reactions. We divide all factors in the following groups: *Deal-Specific*, *Firm-Specific*, and *Market-Specific & Fixed Effects*. In the subsequent discussion we describe and justify our inclusion of these variables. Table 6.2 provides a short description of each variable and where we collect the data.

Table 6.2 - Summary of Explanatory Variables

Variable	Source	Description
Deal-Specific Characteristics		
Use of proceeds	Newsweb	Intended use of raised capital as declared in firm's statement on announcement, categorized by four dummy variables: (1)Acquisition, (2)Investment, (3)General and (4)Refinancing
Acquisition announcement	Dealogic / Newsweb	1 if the firm announces an acquisition in the event window, 0 otherwise
Relative deal size	Dealogic / Factset	Size of offering relative to market capitalization one day prior to announcement
Deal type	Dealogic / Newsweb	Method of flotation used in the SEO. We assign three dummy variables to distinguishing between deal types: (1)Accelerated offer, (2)Fully marketed offer, (3)Rights offer
Repair announcement	Newsweb	1 if the firm announces intentions of completing a repair offering, 0 otherwise (not relevant for rights offer)
Overnight offer	Dealogic / Newsweb	1 if the SEO is completed within a day, 0 otherwise
Overnight discount	Dealogic	Offer price discount for overnight offers, calculated as the percentage difference between offer price and last closing price before announcement
Firm-Specific Characteristics		
Recent issue	Dealogic	1 if the firm has completed an SEO in the last 365 days prior to announcement, 0 otherwise
Stock run-up	Factset	Buy-and-hold return in the window (-126 to -11) relative to announcement
Market capitalization	Dealogic / Factset	Pre-event market value in million NOK one week prior to announcement
Trading volume	Factset	Average daily trading volume over the last 6 months before the event, in millions
Stock volatility	Factset	Stock price volatility in the window (-41 to -11) relative to the announcement, calculated using daily standard deviation of stock returns
P/B	Factset	Price-to-book ratio, reported last day of the month prior to SEO announcement
Inverse stock price	Dealogic	Calculated by dividing 1 with the last closing price before the offer
Market-Specific Characteristics		
Market Volatility	Datastream	Annualized market volatility in the OSBEX index over the window (-71 to -11) relative to announcement
Fixed Effects		
Industry	Dealogic	Dummies for general industry type
Year	Dealogic	Yearly dummies for the period 2005-2018

The table shows description and data source for each explanatory variable used in the analysis, categorized by Deal-, Firm- and Market-Specific factors and Fixed effects

6.3.1 Deal-Specific Characteristics

Acquisition Announcement

To account for the potential effect of an acquisition announcement, we add a dummy variable which is equal to 1 if the firm announces an acquisition in the event window, and 0 otherwise.

Relative Offer Size

Mola and Loughran (2004) include the relative size of the offer as a proxy for liquidity uncertainty. They suggest that a larger relative offer is likely to induce negative stock price reactions and higher offer price discounts. Relative deal size is calculated by dividing the offer proceeds by the firm's market capitalization one week prior to announcement.

Deal Type

Previous literature unveils fundamental differences between issue types, with regards to announcement effects, as well as the underlying motives for the issue (Fields & Mais, 1991; Gomes & Phillips, 2012). We control for these differences by including a dummy for each offer type, namely accelerated offers, fully marketed offers and rights offers.

Repair Announced

When existing shareholders are not invited to participate in an equity issue, they may suffer from dilution in the absence of a repair offering. We expect a negative reaction from the market when management circumvent OSE regulation of equal treatment (The Norwegian Securities Trading Act § 5-14), and control for this by adding a dummy variable for whether the SEO announcement contains the intention of executing such a repair offering. By definition, rights issues give all existing shareholders the opportunity to subscribe for new shares. Thus, the announcement of a repair issue is only relevant for accelerated and fully marketed offers.

Overnight Offer

Issuers in the Norwegian market seem to favor a rapid process: 20 of the 23 sample SEOs in 2018 are completed within a day of the announcement. We control for potential advantages (and disadvantages) of a swift completion by including a dummy variable for whether the offer is carried out overnight. As the deal type correlates with number of days between announcement and pricing, we remove the deal type dummies when utilizing the *Overnight offer* variable in the multivariate regression.

Discount Effect

Researchers document a negative relationship between the discount and the stock price reaction, arguing that high discounts may signal the stock is overvalued (Slovin, Sushka, & Lai, 2000). For overnight offers, the discount is disclosed to the market during the event window, thus revealing the result of the issue. We control for this potential effect by including an interaction term between the offer price discounts and the overnight dummy.

6.3.2 Firm-Specific Characteristics

Recent Issue

According to Jegadeesh, Weinstein and Welch (1993) issuers are willing to leave money on the table at earlier offerings to make investors more inclined to repeat the process when the firm needs additional funding. Mola and Loughran (2004) find evidence of significant lower SEO discounts for firms that issue equity within a year prior to the event of interest. Equivalently, we apply a dummy variable for whether the firm has conducted an equity offering within the last year, prior to announcement.

Stock Run-Up

Myers and Majluf (1984) and Eckbo, Masulis and Norli (2007) suggest that firms attempt to capitalize on a positive share price momentum by timing equity issues accordingly. To capture potential timing motives for the SEOs in our sample, we calculate the 6 month buy-and-hold return for each stock, ending 11 days before the announcement.

Market Capitalization

Firm size serves as a proxy for information asymmetry in several previous SEO studies, as larger firms are more prone to the attention of analysts, media and investors. Asquith and Mullins (1986) show that the market value influences abnormal returns at announcement, while Corwin (2003) presents similar results for the offer price discount. We apply the market capitalization one week prior to announcement.

Trading Volume

Dierkens (1991) employs trading volume as a measure of information asymmetry, arguing that higher trading intensity suggests lower information costs in the pricing of the firm's equity. We control for the effect by including daily average trading volume over the 6 months prior to announcement.

Stock Volatility

Corwin (2003) and Altınkılıç and Hansen (2003) apply stock return volatility as a proxy for asymmetric information in their studies on offer price discounts. Higher volatility is associated with increased risk and uncertainty regarding firm value. To account for this effect, we calculate monthly standard deviation for each firm, using daily adjusted returns ending 11 days before the announcement.

P/B

A high (low) price-to-book ratio can indicate high (low) growth opportunities or that the stock is overvalued (undervalued) (Rhodes-Kropf, Viswanathan, & Robinson, 2005). While overvaluation should be inversely correlated to post-announcements returns, the opposite is the case for firms with profitable prospects. Pilotte (1992) suggests that higher price-book ratios imply superior growth opportunities, leading to less severe stock price reactions to new equity financing. We apply the price-book ratio reported on the last day of the month prior to announcement.

Inverse Stock Price

Altınkılıç & Hansen (2003) apply the inverse pre-offer stock price as a proxy for uncertainty about firm value, finding that investors demand a larger discount for lower priced stocks. These findings are supported by Mola and Loughran (2004) and Corwin (2003), who report evidence of underwriters rounding down offer prices in SEOs, causing higher discounts for lower priced stocks. We employ the inverse of the pre-announcement stock price.

6.3.3 Market-Specific Characteristics & Fixed Effects

Market Volatility

Similar to stock volatility, market volatility is typically applied to capture uncertainty, or risk, in financial markets. Higher market volatility prior to an SEO implies more challenging market conditions for issuers. Market volatility is calculated as the annualized standard deviation of daily returns on the OSEBX over the course of two months, ending 11 days before the announcement.

Year and Industry Dummies

We control for time and industry fixed effects by adding year and industry dummies. We end up with the following ten sectors: Construction & Real Estate, Energy, Finance, Food &

Agribusiness, Healthcare, Industry, Oil & Gas, Shipping & Transportation, Technology, and ‘Other’.

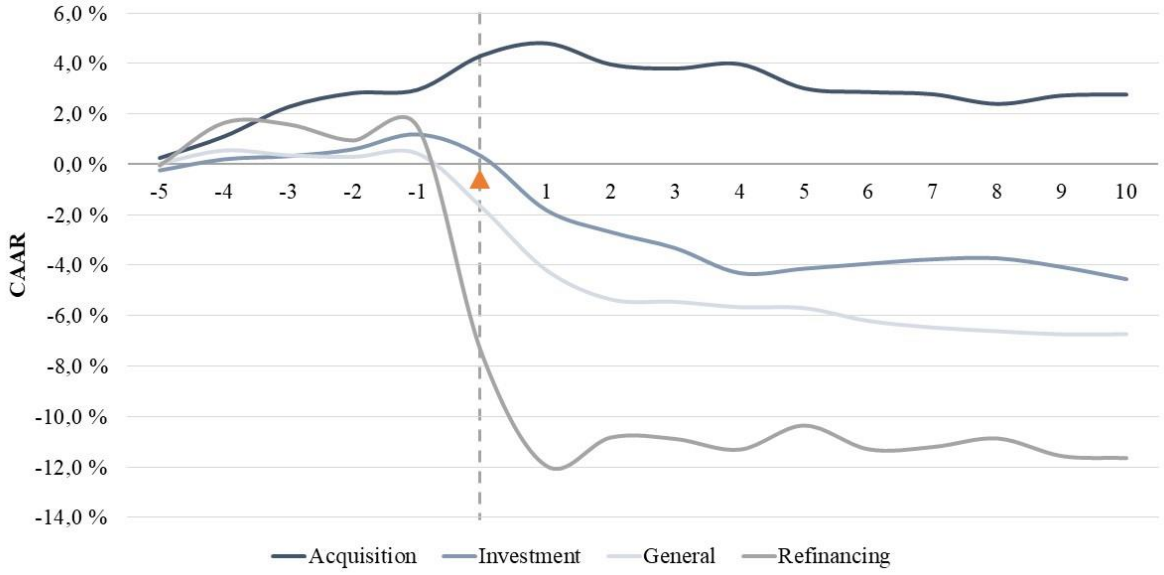
7. Results and Discussion

In the following section we present and discuss the results of the cross-sectional analysis. We find evidence of a significant offer price discount, as well as a stock price decline following the announcement of an equity offer, in line with theory on SEOs. We also find evidence of differences between firms announcing different intentions with the proceeds, thus supporting our expectation that the disclosure of use of proceeds impacts the level of information and agency problems in equity offerings. More specific, firms stating acquisition as the main purpose of raising equity experience no abnormal stock returns upon announcement, suggesting the market favors such issues. *Investment* firms, *General* firms and *Refinancing* firms, however, significantly underperform following SEO announcements, suggesting these firms are perceived as overvalued (Ross, 1977), or as more likely to carry out wasteful spending (Barclay & Litzenberger, 1988). Firms raising equity for the purpose of refinancing also seem to suffer from higher discounts, compared to *Acquisition* and *Investment* firms, thus supporting the wealth effect hypothesis (Galai and Masulis, 1976). We test the relevance of use of proceeds by running two-sample significance tests, as well as multivariate regressions, controlling for firm-, deal-, and market-specific characteristics.

7.1 Analysis of Abnormal Returns

Figure 7.1 illustrates the development in cumulative abnormal returns around announcement for the use of proceeds categories in our sample. Most firms exhibit negative abnormal stock price returns when issuing equity, thus implying that the market perceives the firm as overvalued (Ross, 1977) or believes that the proceeds are used in a value-decreasing manner (Barclay & Litzenberger, 1988). However, firms stating acquisition purposes as the intended use of proceeds seem to receive more favorable market reactions. Aligned with our expectation of lower information and agency issues, these firms enjoy positive cumulative abnormal returns over the event window (on average). We also recognize that investors appear to react more favorably to *Investment* issues relative to *General* and *Refinancing* offers, while *Refinancing* firms suffer the lowest abnormal returns. According to the efficient market hypothesis of semi-strong efficiency, the full stock price adjustment should be incorporated immediately post-announcement (Fama, 1970). We notice that a substantial amount of the stock price movement occurs within a (-1,1) window, seemingly supporting the hypothesis of semi-strong efficiency.

Figure 7.1 – CAAR over (-5,10) Window by Use of Proceeds Type



The figure depicts equally-weighted cumulative average abnormal return (CAAR) starting 5 days before announcement and ending 10 days after, categorized by use of proceeds (Acquisition, Investment, General, Refinancing).

Mean and median cumulative abnormal returns, as well as t-statistics, are listed in Table 7.1. Four event windows of various lengths are applied, thus considering the market's ability to adapt to new information – the degree of market efficiency. In line with previous studies, the full sample illustrates a CAR of approximately -5%, across all event windows. Nonetheless, firms which state an acquisition as the main use of proceeds experience CARs not significantly different from zero, implying that investors believe the proceeds from these issues will not be spent in a value-decreasing manner, as suggested by Jensen (1986). The evidence from *Acquisition* issues stands out from the rest of the sample, as the three remaining subgroups experience significantly negative abnormal returns. Thus, the results suggest that information asymmetry and agency issues vary between the groups. *Investment* offers enjoy higher abnormal returns (on average) than *General* and *Refinancing* issues, although the median observations do not differ notably.

Table 7.1 – Stock Price Reaction to SEO announcement

Use of Proceeds Category	N	CAR (0,2)	CAR (-3,3)	CAR (-2,5)	CAR (-5,10)
Acquisition	70				
Mean		1,00 %	2,69 %	0,74 %	2,78 %
Median		-1,13 %	-0,38 %	-1,00 %	0,59 %
t-value		(0,679)	(1,365)	(0,364)	(1,259)
σ		(0,124)	(0,165)	(0,169)	(0,185)
Investment	122				
Mean		-3,89 %	-3,54 %	-4,48 %	-4,56 %
Median		-2,92 %	-3,13 %	-4,84 %	-2,54 %
t-value		(-3,631)***	(-3,011)***	(-3,854)***	(-2,971)***
σ		(0,107)	(0,118)	(0,116)	(0,154)
General	157				
Mean		-5,77 %	-5,99 %	-6,05 %	-6,71 %
Median		-3,28 %	-3,09 %	-3,72 %	-5,60 %
t-value		(-3,829)***	(-3,815)***	(-3,918)***	(-3,797)***
σ		(0,189)	(0,197)	(0,193)	(0,222)
Refinancing	54				
Mean		-12,31 %	-12,52 %	-11,93 %	-11,63 %
Median		-3,56 %	-3,22 %	-5,07 %	-2,32 %
t-value		(-3,077)***	(-2,826)***	(-2,715)***	(-2,216)**
σ		(0,294)	(0,326)	(0,323)	(0,386)
Full sample	403				
Mean		-4,90 %	-4,61 %	-5,18 %	-5,07 %
Median		-2,71 %	-2,69 %	-3,72 %	-3,29 %
t-value		(-5,377)***	(-4,597)***	(-5,242)***	(-4,344)***
σ		(0,183)	(0,202)	(0,198)	(0,234)

* p < 0.10, ** p < 0.05, *** p < 0.01
The table displays mean and median CARs for SEOs within each use of proceeds category over different event windows. The t-values are reported in parenthesis, indicating whether the mean CAR is significantly different form zero. Standard deviation (σ) is also reported. N represents the number of observations for each use of proceeds type.

To test for statistical differences between groups, we apply the two-sample t-test (Welch adj.), and the Wilcoxon's rank sum test (Mann-Whitney U-test), which is more robust to outliers and the normality assumption (MacKinlay, 1997). In line with previous studies, we apply a 7-day event window around the announcement (-3, 3), which appears to capture a substantial amount of the abnormal stock price movement (see Figure 7.1). The test statistics is presented in Table 7.2**,** along with the associated p-values. In line with the observations in Table 7.1, *Acquisition* offers differ significantly from the other issues, at the 5% level. The cumulative abnormal returns of *Investment* issues however, do not significantly differ from neither *General*, nor *Refinancing* offers, although the two tests give very different p-values. We find

no evidence of any differences between *General*- and *Refinancing* issues. These findings support the expectation that *Acquisition* offers benefit from a superior market perception compared to offers stating unclear investment intentions. However, we do not find the same effect for firms that list specific investment purposes as the motivation for raising funds. These firms do not significantly outperform firms raising equity for general or refinancing purposes. Differences between the groups, or the absence of, are potentially explained by other factors. To account for this, we apply various deal-, firm-, and market-specific characteristics in the subsequent analysis.

Table 7.2 – Two-Sample Tests on CAR (-3,3) between Use of Proceeds Categories

	Two-sample Wilcoxon rank-sum test (Mann-Whitney)	**Two-sample t-test of means, with unequal variances (Welch adjusted)**
Use of Proceeds Category	*CAR (-3,3)*	*CAR (-3,3)*
Acquisition vs. Investment		
Test-statistics	-2,542**	-2,715***
p-value	(0,011)	(0,008)
Acquisition vs. General		
Test-statistics	-3,048***	-3,445***
p-value	(0,002)	(0,001)
Acquisition vs. Refinancing		
Test-statistics	-2,076**	-3,137***
p-value	(0,038)	(0,002)
Investment vs. Refinancing		
Test-statistics	-0,452	-1,960*
p-value	(0,651)	(0,055)
Investment vs. General		
Test-statistics	-0,669	-1,249
p-value	(0,504)	(0,213)
Refinancing vs. General		
Test-statistics	-0,072	1,390
p-value	(0,942)	(0,169)

* p < 0.10, ** p < 0.05, *** p < 0.01
The table displays two tests to examine whether the CARs over a 7-day window are significantly different between the use of proceeds categories. The left column reports Z-statistics for the Wilcoxon rank-sum test. The right column reports t-statistics using Welch's test for unequal variances. Corresponding p-values for both tests are reported in parenthesis.

We apply multiple OLS regressions to further assess the stock price reactions to the use of proceeds disclosure. Four models are listed in Table 7.3, controlling for relevant factors. *Acquisition* (use of proceeds) and *Accelerated offer* (deal type) are omitted dummy variables, and thus, the estimated coefficients should be interpreted accordingly. We control for time-

and industry fixed effects across all models. As expected, all dummies for the various use of proceeds have negative coefficients, thus implying that the market react more favorably to *Acquisition* purposes. We interpret the coefficients from model (1) as follows: firms stating investments as the intended use of proceeds, experience (on average) a cumulative abnormal return 5.3 percentage points below that of firms listing an acquisition as the main motive of the issue. The equivalent (relative) impacts for firms stating general or refinancing purposes, are -8.4 and -13.2 percentage points, respectively. We test for the robustness of these results, by adding deal-, firm-, and market-specific explanatory variables.

Table 7.3 – OLS Regression on CAR (-3,3)

	(1) Use of Proceeds	(2) With deal characteristics	(3) With firm and market characteristics	(4) Incl. overnight- and discount effect
Investment	-0.053**	-0.048**	-0.059**	-0.060**
	(0.026)	(0.024)	(0.026)	(0.025)
General	-0.084***	-0.063**	-0.060**	-0.058**
	(0.027)	(0.026)	(0.027)	(0.026)
Refinancing	-0.132***	-0.100**	-0.067*	-0.057
	(0.047)	(0.042)	(0.038)	(0.038)
Acq. announcement		0.041	0.034	0.026
		(0.029)	(0.029)	(0.027)
Ln (relative offer size)		-0.002	0.011	0.024
		(0.018)	(0.018)	(0.018)
Fully marketed offer		-0.125	-0.130*	
		(0.077)	(0.076)	
Rights offer		-0.075**	-0.062*	
		(0.032)	(0.032)	
Repair announced		-0.051*	-0.047*	-0.030
		(0.026)	(0.025)	(0.027)
Recent issue			0.036*	0.038**
			(0.019)	(0.019)
Stock run-up			-0.004	-0.005
			(0.017)	(0.017)
Ln (market cap)			-0.005	-0.007
			(0.007)	(0.007)
Trading volume			0.006**	0.005*
			(0.003)	(0.003)
Stock volatility			-1.060**	-0.923*
			(0.511)	(0.522)
Ln (P/B)			0.025*	0.019
			(0.014)	(0.013)
Market volatility			-0.440*	-0.406*
			(0.246)	(0.217)
Overnight offer				0.123***
				(0.033)
Overnight discount				-0.004**
				(0.002)
Constant	-0.011	0.005	0.136	0.054
	(0.050)	(0.063)	(0.102)	(0.095)
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Observations	403	403	400	400
Adjusted R^2	0.073	0.095	0.150	0.194

Robust standard errors in parentheses / * p < 0.10, ** p < 0.05, *** p < 0.01

The table reports four Ordinary Least Squares regressions, examining deal-, firm- and market-specific factors that impact CAR. The dependent variable in all models is cumulative abnormal return (CAR), using an event window starting 3 days before the announcement and ending 3 days after. Ln transformation is applied to relative offer size, market value and Price/Book. Acquisition (Use of proceeds dummy) and Accelerated offer (Deal type dummy) are omitted variables in all four regressions. Industry and Year dummies are included in every regression to control for industry specific effects and time fixed effects. The sample consists of selected SEOs on OSE between 2005 and 2018, based on criteria outlined in section 6.1. Note that model (3) and (4) lack three observations due to missing data on average daily trading volume (Trading volume).

The coefficients for *Investment* and *General* issues are still significantly different from zero, in all models. The same applies to the coefficient for *Refinancing* in model (1) - (3) (at the 10% level). When testing for differences in coefficients, we do not find any significant differences between the three subgroups included in the model. Hence, *Acquisition* is the only use of proceeds category that seems to differ (positively) when we control for deal-, firm-, and market-specific factors. These findings are partly in line with Walker and Yost (2008), and Autore, Bray and Peterson (2009), who find that firms that are specific about their investment plans receive relatively favourable reactions from the market. However, in contrast to our categorization, these studies apply three subgroups: *Investment*, *General* and *Repayment (Refinancing)*. We argue that by recognizing *Acquisition* purposes as a stand-alone group, we are better able to isolate the potential effects of disclosing specific investment intentions to the market. Jensen (1986), and Barclay and Litzenberger (1988) argue that the stock price reaction to an equity issue will depend on the market's value assessment of the planned investment. Accordingly, if a firm manages to credibly inform the market that the proceeds will be spent on a profitable investment, the issue should be associated with lower agency and information costs. We argue that it is easier for firms to credibly inform investors about the profitability of specific acquisitions (*Acquisition* issues), compared to alternative long-term investments (*Investment* issues) and non-disclosed investments (*General* and *Refinancing* issues). Thus, this may explain the significant higher abnormal returns for *Acquisition* firms, relative to the rest of the sample.

We do not find equivalent abnormal returns for firms communicating R&D investments, project financing, future (unspecified) acquisitions, or capital expenditures as the purpose of the offer (*Investment* firms). Compared to *Acquisition*, we argue that the value contribution from these growth investments are more uncertain at the time of announcement, implying investors find it more difficult to assess the quality of these investments. Jensen (1986) argues that agency issues impact SEO announcement reactions, as market participants suspect that managers initiate unprofitable investments, or riskier projects, simply to grow in size. Managers may also have incentives to raise equity and undertake unprofitable investments if they believe the firm is overvalued (Myers & Majluf, 1984). Accordingly, the negative market reaction might indicate that the firm does not manage to credibly dismiss investors' suspicion of opportunistic behavior. In contrast to our initial expectation, we find no significant differences between the coefficients of *Investment*, *General,* and *Refinancing*. This suggests

that *Investment* firms are not perceived as less likely to engage in wasteful spending, relative to *General* and *Refinancing* firms.

For firms stating general corporate purposes as the reason for issuing new shares, we find negative abnormal returns, as expected. If the firm in fact has valuable growth opportunities, the managers have an incentive to disclose this to investors at announcement, thereby mitigating the information gap. Yet, a substantial amount of the offerings in our sample belong to this group of non-disclosing firms (157 of 403). As Walker and Yost (2008) argue, announcing general corporate purposes as the motive of the issue may signal opportunistic behavior from firm managers, or less valuable investment opportunities, compared to firms that specify their investment plans. Consequently, investors might anticipate that the proceeds will be used for value-decreasing projects, implying poor market reactions to the SEO announcement (Jensen, 1986). Furthermore, the market-timing hypothesis (Berk & DeMarzo, 2014) suggests that companies have clear incentives to issue equity at a time of overvaluation. Accordingly, the market may interpret the announcement of an equity issue as a signal of overvaluation, resulting in negative abnormal stock returns (Ross, 1977). Supporting these theories, Autore, Bray and Peterson (2009) argue that *General* firms are more likely to be opportunistic market timers.

Firms which reveal a financial restructuring, or the intention of repaying debt (*Refinancing* firms), also suffer from poor market reactions to equity offer announcements. If the market is fully efficient, the refinancing of a firm should not impact its value (Modigliani & Miller, 1958). However, we observe significantly negative abnormal returns for firms raising equity for recapitalization purposes, thus implying that the assumptions of Modigliani & Miller do not hold. If managers intend to repay debt with new equity, they have an incentive to maximize gross proceeds by issuing equity at a time of overvaluation (Baker & Wurgler, 2002). Several previous papers suggest that firms raising equity to recapitalize, often do so in an attempt to time the market (Hertzel & Li, 2010; Autore, Bray, & Peterson, 2009). Thus, *Refinancing* announcements may reveal information about the true value of the firm, leading to poor reactions from market participants (Ross, 1977). Moreover, the negative abnormal returns may also be a response to an unexpected reduction in leverage, as it suggests the transfer of wealth from shareholders to debtholders (Galai & Masulis, 1976). However, we note that the *Refinancing* dummy falls outside the 10% significance level in model (4). From the models, we observe that *Stock volatility, Market volatility and Overnight offer* have significant impact on the CARs. *Refinancing* firms have higher pre-announcement stock and market volatility

than the rest of the sample, and less than half of the offers are completed overnight, notably lower than the full sample average of ~70%. Thus, these factors partly explain the negative abnormal returns for *Refinancing* firms.

We observe that the announcement of an acquisition (*Acquisition announced*) does not impact the abnormal stock returns. In contrast to our expectation, the coefficient for *Repair announced* implies that the announcement of a subsequent (repair) offering reduces CAR with approximately 5 percentage points, all else equal (significant at the 10% level). We argue that a possible explanation may be that the very announcement of a repair offering signals that the issue is likely to cause significant dilution to existing shareholders. In line with previous studies, the completion of an equity issue within the last year prior to announcement increases the cumulative abnormal return (~4 percentage points), implying that these firms benefit from investor loyalty (Jegadeesh, Weinstein, & Welch, 1993). Further, we find a positive relation between the market reaction and the *Trading volume* of a stock (at the 10% significance level), supporting Dierkens (1991) suggestion that higher trading intensity implies less information asymmetry between managers and investors. *Stock* and *Market volatility*, proxies for uncertainty regarding the value of the firm, are inversely related to the abnormal returns (at a 10% significance level), as expected. The negative coefficients of *Rights offer* and *Fully marketed offer* suggest that these flotation types are associated with lower CARs, relative to accelerated offers (albeit *Fully marketed offer* is significant at the 10% level in only one of the models). As rights offers and fully marketed offers take longer time to complete (on average) than accelerated offers, we want to control for the potential effect of completing an equity issue rapidly. Hence, in model (4) we replace the deal type dummies with the *Overnight offer* dummy (offers completed within a day). The results give a good indication as to why firms favor a rapid process: completing the equity issue within a day suggests a significant positive effect on CAR of approximately 12 percentage points. By adding an interaction term between the offer price discount and the *Overnight offer* dummy, we attempt to capture the potential effect of the market being informed of the SEO discount within a day of the announcement. As expected, higher discounts have a negative impact on CAR. Still, the coefficient of this interaction term is not substantial. To fully reverse the positive effect of running a overnight process, the discount must increase by ~29 percentage points (all else equal). We note that equity issues being completed within a day, experience an average discount of ~8%, compared to the average of ~30% for the rest of the sample. Next, we consider the offer price discount

for our SEO sample and analyze whether it differs for firms with contrasting financing motives.

7.2 Analysis of Offer Price Discount

In Table 7.4, we find the mean and median SEO discounts, along with t-statistics for each use of proceeds category. The full sample shows an average discount of 15%, highlighting the indirect cost of issuing new equity. The mean discount for each group is statistically different from zero, thus suggesting the presence of information and agency costs regardless of the motivation for raising equity. Aligned with our expectation of variation in information asymmetry, *Acquisition* and *Investment* issues seem to benefit from substantially lower discounts (mean of ~8% and ~10% respectively), followed by *General* issues (~18%), and *Refinancing* issues (~28%).

Table 7.4 – Offer Price Discount by Stated Use of Proceeds Category

	Acquisition	Investment	General	Refinancing	**Total**
N	70	122	157	54	**403**
Mean	7,77 %	9,79 %	17,95 %	27,61 %	**15,01 %**
Median	2,46 %	4,96 %	8,05 %	18,18 %	**6,04 %**
t-value	(3,859)***	(8,011)***	(10,245)***	(7,083)***	**(14,348)*****
σ	(0,169)	(0,135)	(0,220)	(0,286)	**(0,210)**

* p < 0.10, ** p < 0.05, *** p < 0.01
The table shows mean and median offer price discount for SEOs within each use of proceeds category (Acquisition, Investment, General and Refinancing). The t-values are reported in parentheses and indicate whether the offer price discount is significantly different from zero. N represents the number of observations for each category.

We test for statistical differences between the subgroups by applying the two-sample two-sided t-test (Welch adjusted), and Wilcoxon's rank sum test (Mann-Whitney U-test). The results are reported in Table 7.5 and illustrate significant discount differences between the four use of proceeds groups. *Acquisition* issues result in far lower discounts relative to *General* and *Refinancing* issues, illustrated by the significant difference at the 1% level. Yet, the tests report opposing results with respect to the difference between *Acquisition* and *Investment* issues. The Wilcoxon's test concludes with a significance on the 1% level, whereas the Welch test reports no significant difference between the groups. However, investment issues differ significantly from *General* and *Refinancing* issues (at the 5% level), aligned with our initial expectation of reduced investor uncertainty related to the disclosure of specific investment plans. Further,

there seem to be some evidence (at the 10% level) in favor of lower discounts for *General* issues, versus *Refinancing* issues, implying that *Refinancing* issues are associated with higher information and agency problems.

Table 7.5 – Two-Sample Tests of Discounts Between Use of Proceeds Categories

	Two-sample Wilcoxon rank-sum test (Mann-Whitney)	**Two-sample t-test of means, with unequal variances (Welch adjusted)**
Use of Proceeds Category	*Offer price discount*	*Offer price discount*
Acquisition vs. Investment		
Test-statistics	2,755***	0,860
p-value	(0,006)	(0,391)
Acquisition vs. General		
Test-statistics	4,203***	3,812***
p-value	(0,000)	(0,000)
Acquisition vs. Refinancing		
Test-statistics	4,144***	4,521***
p-value	(0,000)	(0,000)
Investment vs. Refinancing		
Test-statistics	3,546***	4,359***
p-value	(0,000)	(0,000)
Investment vs. General		
Test-statistics	2,500**	3,814***
p-value	(0,012)	(0,000)
Refinancing vs. General		
Test-statistics	-1,871*	-2,261**
p-value	(0,061)	(0,027)

* p < 0.10, ** p < 0.05, *** p < 0.01
The table displays two tests to examine whether the discounts differ significantly between the use of proceeds categories. The left column reports Z-statistics for the Wilcoxon rank-sum test. The right column reports t-statistics using Welch's test for unequal variances. Corresponding p-values for both tests are reported in parenthesis.

The results appear to coincide with our initial expectation that firms disclosing acquisition or investment purposes at the announcement of an SEO receive superior offer price terms in the subscription phase. Seemingly, these firms manage to reduce asymmetric information and agency issues by disclosing specific details about their intended use of proceeds. Nonetheless, there might be other fundamental factors which explain the differences between the groups. Thus, we control for relevant deal-, firm- and market-specific factors in the following OLS regressions.

Table 7.6 – OLS Regression on Offer Price Discount

	(1) Use of Proceeds	(2) With deal characteristics	(3) With firm and market characteristics	(4) Incl. overnight-effect
Investment	-0.027	0.010	0.004	0.017
	(0.026)	(0.025)	(0.028)	(0.027)
General	0.054**	0.033	0.019	0.044*
	(0.027)	(0.026)	(0.027)	(0.026)
Refinancing	0.158***	0.071*	0.073*	0.076*
	(0.043)	(0.040)	(0.040)	(0.040)
Acq. announcement		-0.021	-0.025	-0.025
		(0.029)	(0.031)	(0.032)
Ln (relative offer size)		0.076***	0.059***	0.053***
		(0.013)	(0.015)	(0.015)
Fully marketed offer		-0.065	-0.060	
		(0.046)	(0.044)	
Rights offer		0.166***	0.161***	
		(0.031)	(0.031)	
Recent issue			0.022	0.015
			(0.018)	(0.018)
Stock run-up			-0.009	-0.009
			(0.018)	(0.017)
Ln (market cap)			-0.006	-0.006
			(0.008)	(0.008)
Trading volume			-0.002	-0.001
			(0.003)	(0.004)
Stock volatility			0.369	0.443
			(0.571)	(0.560)
Ln (P/B)			-0.009	-0.012
			(0.012)	(0.012)
1 / stock price			0.033***	0.033***
			(0.011)	(0.010)
Market volatility			-0.053	-0.048
			(0.192)	(0.201)
Overnight offer				-0.121***
				(0.027)
Constant	0.096	0.202***	0.222**	0.313***
	(0.062)	(0.059)	(0.090)	(0.097)
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Observations	403	403	400	400
Adjusted R^2	0.173	0.419	0.445	0.417

Robust standard errors in parentheses / * p < 0.10, ** p < 0.05, *** p < 0.01

The table reports four Ordinary Least Squares regressions, examining deal-, firm- and market-specific factors that impact offer price discount. The dependent variable in all models is offer price discount, defined as the difference between the realized offer price and the last trade price prior to announcement. Ln transformation is applied to relative offer size, market value and Price/Book. Acquisition (Use of proceeds dummy) and Accelerated offer (Deal type dummy) are omitted variables in all four regressions. Industry and Year dummies are included in every regression to control for industry specific effects and time fixed effects. The sample consists of selected SEOs on OSE between 2005 and 2018, based on criteria outlined in section 7.1. Note that model (3) and (4) lack three observations due to missing data on average daily trading volume (Trading volume).

We apply four models to analyze the impact on SEO discounts, in table 7.6. Year and industry dummies are utilized to control for fixed effects. Again, *Acquisition* and *Accelerated offer* are omitted dummy-variables and the included coefficients are interpreted accordingly. None of the four models indicate any significant discount difference between acquisition and investment purposes. This stands in contrast to the CAR analysis, in which we find *Acquisition* firms to significantly outperform *Investment* firms. We argue that selected investors (informed investors), who are invited to participate in the equity offering, are likely to hold better knowledge of the firm than the general market (uninformed investors). While the demand from informed investors determine the offer price discount, the stock price returns are influenced by both informed and uninformed investors. If uninformed investors are more likely to perceive the firms' spending as wasteful, they will require a higher rate of return than informed investors (Jensen, 1986; Barclay & Litzenberger, 1988). Therefore, we suggest that information asymmetry and agency problems may have more impact on the stock price returns, compared to the offer price discounts. This would explain why *Investment* issues achieve significantly lower abnormal returns relative to *Acquisition* firms, yet not significantly different offer price discounts.

Although firms that announce general corporate purposes as the motive of an equity issue have significantly higher discounts than *Acquisition* and *Investment* issues (on average), the *General* dummy is only significant in model (1) and (4), at the 10% level. The coefficient in model (4) implies that the discount increases with 4.4 percentage points for such issues, relative to *Acquisition*. We find no significant difference to the *Investment* and *Refinancing* group, respectively. Thus, the results give limited evidence of higher (or lower) information and agency costs for *General* issues, compared to firms listing other use of proceeds. We argue a similar explanation might apply for *General* issues as for *Investment* issues. If the selected investors possess superior information about the firm and are better able to assess the value contribution of the proposed issue, this could potentially justify why investors do not demand greater discounts for *General* relative to *Acquisition* issues. Further, we note that the *Rights offer* dummy in model (2) and (3) increases the discount with ~16 percentage points, relative to *Accelerated offers*. As a relatively large amount of the *General* issues are completed as rights issues (31% against 20% for the full sample), it partly explains the high discounts for such offers.

Refinancing issues bear significantly higher discounts than the *Acquisition* group in model (1), and the variable is significant at the 10% level in model (2) – (4). The coefficient implies that raising equity for refinancing purposes, rather than acquisition purposes, increases the discount with ~7 percentage points. The variable is also significantly different from the *Investment* dummy in model (1) – (3), at a 10% level. This is in line with our previous results and expectations: that acquisition and investment disclosures narrow the information gap between managers and investors, relative to refinancing disclosures. Therefore, we argue that *Refinancing* issues may signal that the firm is overvalued, in line with the theory of Ross (1977). Furthermore, investors might require a higher discount due to the transfer of wealth from shareholders to debtholders (Galai & Masulis, 1976), implying that there are agency costs related to the issue. We also highlight that the relative offer sizes of *Refinancing* firms are substantially larger (avg. of 86%) than for the rest of the sample (avg. of 41%), that the stock price of these firms are almost half that of the remaining sample (on average), and that ~30% of the offers are completed as rights issues. These explanatory factors have significant impact on the offer price discount, and thus capture some of the investors' uncertainty related to *Refinancing* issues.

For a 10% increase in relative deal size, the discount increases with ~0.5-0.8 percentage points (significant coefficient at the 1% level in all models). These findings are supported by several previous papers and corroborate the growing evidence of price pressure effects in SEOs. Corwin (2003) suggests that issuing firms need to compensate investors for absorbing the additional shares. As previously argued by Altınkılıç and Hansen (2003), the stock price inverse captures investors uncertainty related to firm value. Our results support this theory, as the discount increases for lower priced stocks. Moreover, as previously discussed, the *Rights offer* coefficient implies significantly higher discounts for this flotation method, aligned with the previous findings of greater adverse selection problems in rights offerings (Eckbo and Masulis, 1992). In model (4) we apply the *Overnight offer* dummy, which illustrates the effect of completing an issue within a day. As we outlined in the analysis of cumulative abnormal returns, there are substantially lower discounts for firms completing the offer overnight, thus suggesting that the shorter time frame is associated with lower investor uncertainty.

8. Concluding Remarks

This paper highlights the relevance of asymmetric information and agency issues for firms deciding to raise equity in the financial market. We examine more than 400 seasoned equity offerings on the Oslo Stock Exchange, completed between January 2005 and August 2018, and categorize these issues by the firms' intended use of proceeds at announcement. We differentiate between firms raising equity for *Acquisition* purposes, *Investment* purposes, *General* purposes, and *Refinancing* purposes. Previous studies report significant indirect costs of issuing equity, reflected in high offer price discounts and poor stock price returns upon announcement. We expect such indirect costs to vary between the four use of proceeds groups, and apply cross-sectional regression models to analyze differences in CAR and offer price discount.

Our findings support the presence of information and agency costs between firms and investors in seasoned equity offerings. In line with our expectations, we demonstrate that a firm's intended use of proceeds impacts the indirect cost of raising equity. Firms announcing acquisition intentions experience no abnormal stock price movement in the event window, starting three days before the issue announcement and ending three days after. These firms seem to credibly inform the market that the planned investment will not be wasteful, thereby reducing information asymmetries and agency issues related to the offering. Contrarily, firms disclosing *Investment, General or Refinancing* purposes underperform significantly, suggesting investors anticipate these firms to invest the proceeds in a value-decreasing manner (Jensen, 1986), or perceive the firms' decision to issue equity as a signal of overvaluation (Ross, 1977). Previous studies find *Investment* issues to outperform *General* and *Refinancing* issues. However, we do not find support for these results when we distinguish between acquisition motivated issues and issues with other investment motives. Thus, we argue investors might perceive the value of these investments, and the managers' motives, as more uncertain than for pure acquisitions.

We document significant offer price discounts for the full sample, illustrating the general cost of issuing new equity. Controlling for relevant deal-, firm- and market-specific factors, we do not find the same evidence of significant differences between firms with varying issuing motives. However, firms raising equity for acquisition or investment purposes seem to achieve lower discounts than firms raising equity for refinancing purposes. Accordingly, investors may perceive such *Refinancing* firms as opportunistic market-timers (Autore, Bray & Peterson,

2009), or as an attempt by managers to transfer wealth from shareholders to debtholders (Galai & Masulis, 1976). Although *Acquisition* firms experience significantly higher abnormal returns than *Investment firms* at announcement, we find no difference between the two groups in offer price discounts. We argue that investors participating in the subscription phase are likely to possess better knowledge about the firm than the general market. As a result, information and agency problems seem to have less impact on the offer price discount in seasoned equity offerings, relative to the stock price reaction.

Our study provides two additional insights to the existing research on SEOs. First, no previous study, to our knowledge, makes the distinction between firms raising equity for acquisition purposes and firms raising equity for other investment purposes. From our analysis on cumulative abnormal returns, this distinction appears to be rather impactful as the market reacts more favorably to *Acquisition* than *Investment* announcements. Second, we do not identify any previous research examining the relationship between the offer price discount and the disclosure of intended use of proceeds. Our results suggest that firms which manage to credibly signal valuable investment opportunities by disclosing use of proceeds intentions, can effectively remove some of the information and agency problems that drive the offer price discount. Consequently, we provide evidence for use of proceeds as a measure of asymmetric information and agency issues in Norwegian SEOs.

For further research, we believe it would be interesting to investigate whether the same findings hold for other markets, and for larger samples. We also consider the relationship between use of proceeds disclosure and offer price discounts to be a relevant area to further examine.

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Appendix A: Methodology

Calculation of Normal and Abnormal Returns

In the following section we provide a comprehensive overview of the calculations for modelling normal and abnormal returns. Section 4 provides a thorough explanation for the different components of the event study. Thus, this section only addresses the technical aspects not covered in the methodology chapter.

We utilize the Market model approach to establish estimates of normal returns. The market model assumes the following linear relationship between the stock return and the OSEBX:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \tag{4}$$

$$E(\varepsilon_{it}) = 0 \qquad Var(\varepsilon_{it}) = \sigma_{\varepsilon_i}^2$$

$$where\ i = security, \qquad t \in [T_0, T_1]$$

$R_{it} = Return\ of\ security\ i\ in\ period\ t$
$R_{mt} = Return\ of\ OSEBX\ Index\ in\ period\ t$
$\varepsilon_{it} = Error\ term$

The parameters of the market model are α_i, β_i and $\sigma_{\varepsilon_i}^2$. Applying OLS methodology, using daily returns for each security in the SEO sample, we estimate the parameters in the Market model:

$$\hat{\beta}_i = \frac{\sum_{t=T_0+1}^{T_1}(R_{it} - \hat{\mu}_i)\,(R_{mt} - \hat{\mu}_m)}{\sum_{t=T_0+1}^{T_1}(R_{mt} - \hat{\mu}_m)^2} \tag{5}$$

$$\hat{\alpha}_i = \hat{\mu}_i - \hat{\beta}_i \hat{\mu}_m \tag{6}$$

$$\hat{\sigma}_i = \frac{1}{L_1 - 2} \sum_{t=T_0+1}^{T_1} \left(R_{it} - \hat{\alpha}_i - \hat{\beta}_i R_{mt}\right)^2 \tag{7}$$

The length of the estimation window is defined as $L_1 = T_1 - T_0$ and consist of 240 days for the majority of SEOs in our sample (minimum length is 6 months). $\hat{\mu}_i$ and $\hat{\mu}_m$ are the mean returns for security *i* and the OSEBX, respectively:

$$\hat{\mu}_i = \frac{1}{L_1} \sum_{t=T_0+1}^{T_1} R_{it} \tag{8}$$

$$\hat{\mu}_m = \frac{1}{L_1} \sum_{t=T_0+1}^{T_1} R_{mt} \tag{9}$$

After calculating the estimated coefficients from formula (5), (6) and (7), we can continue to calculate the abnormal returns for each security in the event window:

$$\widehat{AR}_{i\tau} = R_{i\tau} - \hat{\alpha}_i - \hat{\beta}_i R_{m\tau} \tag{10}$$

$$where\ i = security, \qquad \tau \in [T_2, T_3]$$

Under the assumption that SEO announcement have no impact on abnormal return we formulate the following null hypothesis (conditional on the market returns in the event window):

$$\widehat{AR}_{i\tau} \sim N\left[0, \sigma^2\left(\widehat{AR}_{i\tau}\right)\right] \tag{11}$$

Where the conditional variance is given by variance of the error term ($\sigma_{\varepsilon_i}^2$) in addition to variance caused by sampling error from the Market model. However, as the length of the estimation window (L_1) becomes larger, the variance of abnormal return approaches $\sigma_{\varepsilon_i}^2$:

$$\sigma^2\left(\widehat{AR}_{i\tau}\right) = \sigma_{\varepsilon_i}^2 + \frac{1}{L_1}\left[1 + \frac{(R_{m\tau} - \hat{\mu}_m)^2}{\hat{\sigma}_m^2}\right] \tag{12}$$

By aggregating abnormal returns over the relevant event window (starting in T_2 and ending in T_3), we calculate the cumulative abnormal return:

$$\widehat{CAR}_i(\tau_1, \tau_2) = \sum_{\tau=\tau_1}^{\tau_2} \widehat{AR}_{i\tau} \tag{13}$$

$$where\ i = security, \qquad \tau_k \in [T_2, T_3]\ and\ \tau_1 \leq \tau_2$$

The mean CAR for the entire sample is calculated by aggregating CAR for all SEO in the sample and dividing by the total number of SEOs (denoted by N):

$$\overline{CAR}(\tau_1, \tau_2) = \frac{1}{N}\sum_{i=1}^{N} \widehat{CAR}_i(\tau_1, \tau_2) \quad (14)$$

Under the assumption of no clustering (zero covariance between events), we formulate the following null hypothesis:

$$\overline{CAR}(\tau_1, \tau_2) \sim N\left[0, var\left(\overline{CAR}(\tau_1, \tau_2)\right)\right] \quad (15)$$

With variance:

$$var\left(\overline{CAR}(\tau_1, \tau_2)\right) = \frac{1}{N^2}\sum_{i=1}^{N} \sigma_i^2(\tau_1, \tau_2) \quad (16)$$

$$\sigma_i^2(\tau_1, \tau_2) = (\tau_2 - \tau_1 + 1)\sigma_{\varepsilon_i}^2 \quad (17)$$

Statistical Significance Tests

In the following section we describe the methodology for the various test statistics applied in this study.

T-test for Significance

We utilize standard t-test to determine whether CAR values and offer price discounts for each use of proceeds category are significantly different from zero.

We formulate the following null hypothesis for CAR and discount (denoted by D)

$$\overline{CAR}(\tau_1, \tau_2) = 0 \quad (18)$$

$$\bar{D}(\tau) = 0 \quad (19)$$

And the corresponding test estimators

$$\theta_1 = \frac{\overline{CAR}(\tau_1, \tau_2)}{\sqrt{var\left(\overline{CAR}(\tau_1, \tau_2)\right)}} \sim N(0,1) \quad (20)$$

$$\theta_2 = \frac{\bar{D}(\tau)}{\sqrt{var\left(\bar{D}(\tau)\right)}} \sim N(0,1) \tag{21}$$

We note that the test assumes no correlation between abnormal returns or discounts of different issues. The test statistics is presented in Table 7.1 and Table 7.4 with indication of significant at the 1%, 5% and 10% level. Thus, illustrating the probability of falsely rejection the null hypothesis.

Two-Sample t-test with Unequal Variances (Welch adjusted)

We employ the parametric student's two-sided t-test to determine if the mean CAR and discount values are significantly different between the four use of proceeds categories. The t-test has been commonly employed in previous literature, while implying adequate statistical power (Kliger & Gurevich, 2014; Ahern, 2009; Brown & Warner, 1985)

The test assumes that the sample is normally distributed, and that the sample groups are independent. We account for the presence of unequal variances by utilizing Welch's adaption (1947). The t-statistics is calculated using the following general formula:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{s_1^2}{N_1} + \frac{s_2^2}{N_2}}} \tag{22}$$

X_1 and X_2 are the mean CAR and discount for the categories of interest. Further, s_i and N_i denotes the sample variance and the number of observation in each group, respectively (Welch, 1947)

Two-sample Wilcoxon Rank-Sum Test (Mann-Whitney U-test)

For further robustness, we apply Wilcoxon's Rank Sum Test (Mann-Whitney U-test), the non-parametric counterpart to the Student's t-test. This is line with previous studies, such as Corwin (2003), and Butler, Grullon and Weston (2005). The Wilcoxon test do not follow the normal distribution assumption, is more robust to outliers, and minimizes the potential issues of event-induced volatility and cross-sectional correlation (MacKinlay, 1997; Corrado, 1989; Khotari & Warner, 2006). The Wilcoxon test ranks observations according to value, and then compares the summed ranks of the two groups to test for a statistically significant difference.

Appendix B: Use of Proceeds Examples

Table B – Specific Examples of SEOs for each Use of Proceeds Category

Company	Announcement Date	Use of Proceeds Category	Use of Proceeds as Reported by Newsweb
Petroleum Geo-Services ASA	22.11.2016	Refinancing	To finance an inter-conditional exchange offer for the Company's existing 7.375% Senior Notes due December 2018
Archer Ltd	31.01.2013	Refinancing	To finance (i) US$100m to prepay the November 2013 debt installment, and (ii) US$150m to reduce other debt facilities
Aker BioMarine ASA	15.03.2010	Refinancing	General refinancing solution previously announced, in which the equity of the Company will be strengthened and the debts reduced, inter alia to facilitate the extension of the maturity date of the Company's bond loan with three years
Data Respons ASA	20.03.2018	General	The net proceeds from the issue will be used to strengthen the Company's balance sheet, increase the Company's flexibility to finance the Company's organic and non-organic growth strategy and for general corporate purposes
Songa Offshore SE	16.02.2010	General	Proceeds are for general corporate purposes
DiaGenic ASA	16.03.2006	General	The purpose of the placement is to strengthen the company`s working capital in order to finance the continued commercialization of the product portfolio and strengthen the company`s institutional shareholder base
Schibsted ASA	21.11.2017	Investment	The net proceeds from the Offering will be used to strengthen the Company's capital base and to finance strategic acquisition activities, especially within the Online Classifieds segment, where the Company sees opportunities to do value accretive in-market consolidation
Thin Film Electronics ASA	01.12.2016	Investment	The net proceeds from the New Share Issue will be used to prepare and equip Thinfilm's newly leased manufacturing site at Junction Road, North San Jose, California in order to achieve an expected production capacity of five billion NFC units
Sevan Marine ASA	15.10.2007	Investment	The proceeds of the transaction will be used to part-finance the Company`s existing and future construction program and potential capacity expansion of existing units

Company	Announcement Date	Use of Proceeds Category	Use of Proceeds as Reported by Newsweb
Aker BP ASA	30.10.2017	Acquisition	The Company intends to apply the net proceeds from the offering to finance the acquisition of Hess Norge AS
Borr Drilling Ltd	06.10.2017	Acquisition	Proceeds intended to partly secure the financing for the acquisition of the nine premium jack-up rigs from PPL Shipyard Pte Limited
Nutri Pharma ASA	21.01.2010	Acquisition	Proceeds are to support the acquisition of Bionor Immuno AS

The table presents a selection of three typical SEOs within each use of proceeds category. The rightmost column shows the information retrieved from Newsweb (2018) and provide more detailed explanation for the categorization

Appendix C: Additional Regression

Table C - OLS Regression on CAR (0,2)

	(1) Use of Proceeds	(2) With deal characteristics	(3) With firm and market characteristics	(4) Incl. overnight- and discount effect
Investment	-0.041*	-0.037*	-0.047**	-0.049**
	(0.022)	(0.021)	(0.023)	(0.023)
General	-0.067***	-0.050**	-0.054**	-0.052**
	(0.022)	(0.023)	(0.024)	(0.024)
Refinancing	-0.116***	-0.092**	-0.064*	-0.053
	(0.041)	(0.038)	(0.035)	(0.035)
Acq. announcement		0.036	0.031	0.024
		(0.025)	(0.026)	(0.024)
Ln (relative offer size)		0.002	0.013	0.024
		(0.016)	(0.016)	(0.017)
Fully marketed offer		-0.152*	-0.157**	
		(0.078)	(0.078)	
Rights offer		-0.066**	-0.057*	
		(0.029)	(0.029)	
Repair announced		-0.047**	-0.045**	-0.040
		(0.023)	(0.022)	(0.026)
Recent issue			0.015	0.017
			(0.018)	(0.018)
Stock run-up			-0.007	-0.009
			(0.016)	(0.016)
Ln (market cap)			-0.004	-0.005
			(0.007)	(0.007)
Trading volume			0.005*	0.004
			(0.002)	(0.002)
Stock volatility			-0.307	-0.221
			(0.478)	(0.533)
Ln (P/B)			0.028**	0.024*
			(0.013)	(0.013)
Market volatility			-0.456**	-0.429**
			(0.197)	(0.185)
Overnight offer				0.115***
				(0.031)
Overnight discount				-0.003*
				(0.002)
Constant	-0.012	0.014	0.127	0.052
	(0.049)	(0.065)	(0.102)	(0.095)
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Observations	403	403	400	400
Adjusted R^2	0.052	0.079	0.127	0.155

Robust standard errors in parentheses / * p < 0.10, ** p < 0.05, *** p < 0.01

The table reports four Ordinary Least Squares regressions, examining deal-, firm- and market-specific factors that impact CAR. The dependent variable in all models is cumulative abnormal return (CAR), using an event window starting at the announcement and ending 2 days after. Ln transformation is applied to relative offer size, market value and Price/Book. Acquisition (Use of proceeds dummy) and Accelerated offer (Deal type dummy) are omitted variables in all four regressions. Industry and Year dummies are included in every regression to control for industry specific effects and time fixed effects. The sample consists of selected SEOs on OSE between 2005 and 2018, based on criteria outlined in section 6.1. Note that model (3) and (4) lack three observations due to missing data on average daily trading volume (Trading volume).

Appendix D: Variable Statistics

Table D1 – Descriptive Statistics by Use of Proceeds Category

	Acquisition		**General**		**General**		**Refinancing**	
Observations	*70*		*122*		*157*		*54*	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Offer size (mNOK)	1008	300	392	210	358	130	612	401
Market cap (mNOK)	5045	1461	2786	1372	2493	711	2024	617
Relative offer size	39 %	17 %	21 %	11 %	41 %	17 %	86 %	52 %
P/B	x2,6	x2,1	x3,8	x2,3	x3,3	x1,4	x1,0	x0,5
Trading volume (m)	1,03	0,12	0,54	0,11	0,72	0,05	1,45	0,07
Days since issue	583	288	461	305	811	495	709	520
Days to Pricing	7	1	3	1	13	1	18	2
Stock run-up	2 %	-3 %	0 %	-3 %	-4 %	-5 %	-1 %	-6 %
Stock volatility	3 %	3 %	3 %	3 %	4 %	3 %	5 %	5 %
Market volatility	19 %	18 %	19 %	16 %	20 %	19 %	26 %	20 %
Stock price (NOK)	41,26	16,25	28,31	9,20	28,99	9,21	15,38	6,31

The table shows mean and median values for the non-binary variables in the SEO sample divided by the four different use of proceeds categories.

Table D2 – Correlation Matrix

	Acquisition	Investment	General	Refinancing	Acq. announcement	Accelerated	FM	Rights	Repair announcement	Recent issue	Overnight offer	Discount effect	Ln (Relative size)	Ln (Market cap)	Stock run-up	Ln (P/B)	Trading volume	Stock volatility	Market volatility	Inverse stock price
Acquisition	1,000	-0,301	-0,367	-0,178	0,652	-0,006	0,126	-0,068	-0,037	0,102	-0,023	-0,113	-0,025	0,153	0,047	0,084	0,036	-0,115	-0,042	-0,046
Investment		1,000	-0,529	-0,257	-0,149	0,193	-0,011	-0,240	0,014	0,166	0,241	0,043	-0,174	0,144	0,166	0,255	-0,066	-0,099	-0,105	-0,019
General			1,000	-0,314	-0,288	-0,126	-0,073	0,213	-0,078	-0,151	-0,081	-0,011	-0,043	-0,173	-0,109	-0,052	-0,028	0,060	-0,003	0,062
Refinancing				1,000	-0,111	-0,073	-0,021	0,094	0,134	-0,122	-0,185	0,083	0,325	-0,117	-0,121	-0,365	0,090	0,176	0,193	-0,012
Acq. announcement					1,000	0,073	0,068	-0,092	-0,014	0,128	0,043	-0,090	-0,076	0,132	0,028	0,056	0,025	-0,087	-0,081	-0,037
Accelerated						1,000	-0,241	-0,728	0,287	0,153	0,696	0,292	-0,244	0,224	0,223	0,190	0,070	-0,119	-0,135	-0,098
FM							1,000	-0,085	0,118	-0,012	-0,251	-0,078	0,105	-0,066	-0,066	0,033	-0,046	0,011	0,000	0,011
Rights								1,000	-0,342	-0,159	-0,744	-0,233	0,304	-0,240	-0,248	-0,255	-0,028	0,106	0,113	0,115
Repair announcement									1,000	0,026	0,149	0,384	0,332	-0,208	-0,133	-0,165	-0,032	0,100	0,062	0,057
Recent issue										1,000	0,103	-0,007	-0,062	0,090	0,086	0,123	0,137	-0,020	-0,085	0,126
Overnight offer											1,000	0,310	-0,420	0,278	0,295	0,259	0,070	-0,113	-0,147	-0,113
Discount effect												1,000	0,183	-0,167	-0,048	-0,135	-0,001	0,175	0,110	0,067
Ln (Relative size)													1,000	-0,554	-0,350	-0,475	-0,096	0,323	0,147	0,186
Ln (Market cap)														1,000	0,298	0,249	0,236	-0,394	-0,108	-0,293
Stock run-up															1,000	0,342	0,129	-0,016	-0,206	-0,228
Ln (P/B)																1,000	-0,038	-0,100	-0,237	-0,187
Trading volume																	1,000	0,050	-0,078	0,012
Stock volatility																		1,000	0,206	0,398
Market volatility																			1,000	-0,023
Inverse stock price																				1,000

The table displays the correlation between the explanatory variables in the regression models.