Stockholm School of Economics

Master Thesis

Department of Finance

Seasoned Equity Offerings: The Market Reaction to the Disclosure of Intended Use of Proceeds – Evidence from Sweden

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Abstract

Using a hand-collected sample of 228 Seasoned Equity Offerings (SEOs) on the Swedish market between 2010 and 2019, we investigate the effect of the disclosure of intended use of proceeds on share price at announcement, distinguishing between firms raising money for *investment purposes*, *refinancing purposes* and *general corporate purposes*. Previous literature on the intended use of proceeds in SEOs finds that the market reacts less negatively to motives for investment in the disclosure. The same results were expected for firms in the Swedish market. We find that the market reacts more favorably to firms stating *investment purposes* as compared to *refinancing purposes* and *general corporate purposes*. Moreover, we aim to extend previous literature by investigating whether there are mechanisms that prevent all firms issuing seasoned equity from stating motives for investment. By running cross-sectional analyses, we find that the market differentiates firms who state specific investment plans depending on the level of investment post-issue compared to pre-issue. Our results show that the disclosure of use of proceeds plays a significant role within the framework of agency issues and asymmetric information in SEOs.

Acknowledgements

We want to give a special thanks to our tutor Alvin Chen for his valuable guidance and support throughout the process of writing this thesis

Keywords: Event Study, Seasoned Equity Offering, Use of Proceeds, Agency Issues, Information Asymmetry

1. Introduction

When internal funds are not sufficient or debt is not possible to raise, a common way for firms to raise financing externally is through equity. Once having entered the equity market through an IPO it is not rare that companies return to offer seasoned equity, either through rights offers to existing shareholders or through equity offers to new investors. Evidence suggests that on average the market reacts negatively to a seasoned equity offering (SEO) and, more specifically, that after the company has announced its intention to issue new equity abnormal returns are negative overall (Berk, DeMarzo, 2014). Myers & Majluf (1984) explain this trend through theories of information asymmetry and adverse selection, stating that managers tend to have better information about the firm's "true" value and future prospects. Hence the market will lower the stock price at announcement of fear that the firm is overvalued and is timing their equity issue or that managers would more likely engage in wasteful spending after collecting the funds due to agency issues.

Previous studies have investigated whether the disclosed intended use of proceeds in equity offerings have an impact on the market's reaction to the capital raise. Examples of purposes of equity offerings are to finance investments, R&D, capital expenditures, acquisitions and repaying debt. Walker and Yost (2008) find that for U.S. equity issues, the market will react less negatively in the short-term to firms who state that their use of proceeds is for investment purposes, as compared to firms stating refinancing and general corporate purposes. Furthermore, Silva and Bilniski (2015) find that firms citing investment needs show no abnormal performance after the offering on a long-term basis as compared to issuers who state general corporate purposes and refinancing, which underperform after the offering. Hence, we pose the question, if prior evidence shows that if firms tell the market that the SEO proceeds are to be used for investment purposes and that this disclosure lessens the negative impact on current stock price - what mechanisms prevent all firms from always stating that their intended use of proceeds are for new investments? Is it possible that when firms publish a press release disclosing their intention to issue equity, as well as how they plan to use the raised funds to invest in projects, the market is able to differ between firms with real intentions to fulfil future growth opportunities and firms that are just timing the market and taking advantage of the benefits that such a disclosure will bring?

1.1. Contribution

This study aims to further investigate the abnormal returns and information asymmetry puzzle associated with SEOs, and to provide clarification as to what motivates firms to their disclosure at announcement. The study differentiates from other research papers in the area in the following ways. First, we hand-collect a large dataset from the Swedish market between 2010 and 2019 that combines deal-specific data of use of proceeds from Nyemissioner.se with company-specific data from Datastream (2019) and announcement date data from Retriever (2019). Second, to our knowledge, there is currently no existing research on SEOs and the relationship between the market's reaction to announcement of intended use of proceeds at the Stockholm Stock Exchange between 2010 and 2019. Third, we add to the literature in our robustness tests another use of proceeds group, *acquisition purposes.* Thus, by studying companies in the Swedish main market Nasdaq Stockholm and analyzing their disclosure in press releases, stock price performance as well as relevant balance sheet items, we aim to add another dimension to current findings in the area.

First of all, by studying how the cumulative abnormal returns (CARs) around the SEO announcement differ between different categories of stated purposes with the capital raise, we find that the market reacts more favorably to firms stating *investment purposes* rather than other types of purposes. This is in line with previous findings. Second, we find that on average, firms stating *investment purposes* at the announcement increase their levels of investment post-issue compared to pre-issue - with significance. Lastly, by regressing the CARs around announcement on inter alia the intended use of proceeds as well the level of investments, we find that the market is able to differentiate firms with higher levels of investment from firms with constant (or negative) levels of investment post-issue compared to pre-issue. More specifically, the market seems to react more negatively to announcements of firms with higher levels of investment, which we connect to the theory of *wasteful spending.* Our findings provide further evidence on the topic of SEOs and the role of asymmetric information through the disclosure of intended use of proceeds and is consistent with the notion that agency issues are important in SEOs in a Swedish setting.

2. Previous Literature

The following section outlines findings from previous research on SEOs, abnormal returns and intended use of proceeds. The first part details findings by some of the first scholars who focused their research on SEOs, which has later become the foundation from which many other scholars extend their research. The second part describes previous research on the focus area of this paper - intended use of proceeds in SEOs.

2.1. SEOs and Abnormal Returns

SEOs have been studied frequently by previous scholars in many different contexts. Some of the first to study SEOs and abnormal returns were Myers and Majluf (1984). They found that stock prices fall on average at announcement of an equity issue and explain this trend through information asymmetry and the lemons problem, proposed by Akerlof (1978). They argue that since managers tend to have more information about the firm's intrinsic value compared to investors, the market will discount the stock price at announcement of fear that the firm is overvalued.

Building on this research, most scholars have observed an average discount of approximately 3% at the announcement of an equity issue (Dierkens, 1991). Asquith and Mullins (1986) study a sample of 128 SEOs by industrial firms between 1963 and 1981 to analyze the CARs centered around the announcement of the equity issue. Consequently, they find that stock prices decrease on average 3% on the day of the announcement of a SEO and that the CAR falls by approximately 1% five days post-announcement - results with high significance. Masulis and Korwar (1986) study a sample of 1,406 primary offering announcements to issue seasoned common stock between 1963 and 1980 by companies listed in the US. Further, they divide their sample of firms into industrial and public utilities and conclude that both subgroups have negative abnormal returns upon announcement, however the market tends to react more to the announcement of industrial firms (-3.25%) compared to public utilities (-0.68%).

Dierkens (1991) extends this research by relating the market's reaction to the *degree* of information asymmetry prevailing, and concludes that the higher the information asymmetry, the higher the observed drop in price at announcement. Moreover, Dierkens (1991) notes that firms for this reason tend to think strategically about the timing of the equity issue, aiming for when information asymmetry is the lowest possible. Many researchers to date provide in their

research cross-sectional analyses to further study the impact of various information-related variables on negative market reaction caused by SEO announcements, in order to further understand what drives the negative abnormal returns and what are the determinants of the SEO announcement reaction.

2.2. SEOs and Intended Use of Proceeds

Several scholars have explored the possibility to tie the degree of information asymmetry, and hence the market's reaction to the firm's disclosure of intended use of funds when announcing the issue. This area is however still somewhat unexplored - especially outside of the U.S.

Autore, Bray and Peterson (2009) study the relationship between firms disclosed intended use of proceeds at announcement of an SEO and the firm's subsequent long-run stock- and operating performance. They divide the intended use of proceeds into three categories, namely investment purposes, general corporate purposes and recapitalization purposes. Consequently, they find that firms stating general corporate purposes or recapitalization purposes at announcement experience negative long-run abnormal stock returns whereas for firms stating investment purposes they are unable to conclude any long-run stock underperformance. These scholars do not however investigate the market's immediate reaction to the announcement, i.e. the short-term abnormal returns. Hence, one could question how well they are able to filter out adjustments in the market's expectations based on actual use of proceeds post-issue as well as disclosure of additional information.

Silva and Bilinski (2015) study the relationship between disclosure of intended use of proceeds, choice of underwriter and both long-run and short-run stock performance after equity issue for firms in the UK. For their short-run analysis, they find that firms expressing investment purposes as intended use of proceeds experience significant positive abnormal performance post-issue whereas firms that express recapitalization purposes experience negative abnormal performance after the issue. Firms expressing general corporate purposes, on the other hand, experience almost no price reactions at all. Moreover, they find that firms disclosing investment as intended use of proceeds have higher rates of investment post-issue compared to before. On the contrary, firms disclosing general corporate purposes or refinancing purposes at announcement, who have similar rates of investments post-issue as pre-issue, tend to increase their leverage ratio after the issue. Their findings conclude that firms that state investment purposes are signalling profitable investment opportunities and are viewed more favorably.

Walker and Yost (2008) study companies issuing seasoned equity and their intended use of proceeds, their actual use of funds post-issue as well as the market's reaction to this information. They conclude that irrespective of stated intention, all firms seem to utilize equity capital markets in combination with debt capital markets to increase investment rather than for pure liquidity or recapitalization reasons. More specifically, they argue that firms expressing the intention of using funds for investment or general corporate purposes tend to increase investment even more compared to firms that state intention to recapitalize at announcement. Analyzing abnormal announcement returns, firms stating investment purposes have the smallest negative returns (-2.18%) compared to general corporate purposes (-3.20%) and recapitalization purposes (-3.26%). Furthermore, they find that the more specific the firm is about their intended use of proceeds, the more favorably does the market react to the announcement, indicating that even though being more general in announcements provides higher flexibility for companies, the market tend to value investment purposes. What they do not however answer in their research, is the question what mechanisms prevent all firms from always stating that their intended use of proceeds is for new investments? This leads us to formulate the following research question:

Does the market react differently to firms stating investment purposes as their intended use of proceeds upon announcement of a seasoned equity offering, depending on if firms actually do invest or not post-issue?

3. Theory

The following section outlines some of the most central concepts in financial theory that have been found relevant when studying the topic of SEOs and intended use of proceeds disclosure. The first part of the chapter details commonly cited theories related to capital markets and firms' choice of capital structure, external financing need, information asymmetry and signalling. The second part of the chapter focuses on defining the core concepts related to SEOs.

3.1. Relevant Financial Theories

3.1.1. Capital Structure in Perfect Capital Markets

One of the most fundamental building blocks in financial theory is the proposition for valuing firms in perfect capital markets, introduced by Modigliani and Miller (1958). They argue that in perfect capital markets, i.e. when market prices are competitive, when there are no taxes, transaction- or issuance costs and when all relevant information is available to all parties in the market (information symmetry), the capital structure of a firm is irrelevant to the value of the firm. Thus, Modigliani and Miller's first proposition states that irrespective of whether the firm chooses to fund its operations through equity or debt, the total value of the firm would always be the same.

This proposition was however later revised, as Modigliani and Miller acknowledged that the assumptions of the conditions in perfect capital markets are not reflective of reality and hence considered the presence of taxes in their revised version of their proposition. According to the second version of Modigliani and Miller's first proposition, the total value of a levered firm is equal to the value of the unlevered firm net savings from tax. As opposed to the first version of the Modigliani Miller Theorem, this would imply that the choice of capital structure is actually decisive to the value of the firm and hence managers would prefer some way of funding over others under certain circumstances. By this new way of looking at the value of firms, an optimal capital structure would be found by increasing debt (thereby increasing the value of the interest tax shield) until the firm's taxable earnings reaches zero (and the firm no longer benefits from the interest tax shield) (Berk, DeMarzo, 2014).

This model has later been developed further by Kraus and Litzenberger (1973), stating that the firm's optimal capital structure is also affected by the costs of debt, and that the firm value is maximized by taking on the amount of debt that captures as much of the tax shield as

possible but where the risks (costs) of debt do not outweigh its benefits. This way of reasoning is often referred to as the *trade-off theory* of capital structure.

The following section further explores the implications of the market imperfection *information asymmetry* on capital structure and equity funding.

3.1.2. Asymmetric Information

Adverse Selection and the Lemons Problem

In reality, management tends to have more information compared to outside investors, as described by Myers and Majluf (1984). The related concepts *adverse selection* and the *lemons problem* were first introduced by Akerlof (1978), in which he explains how information asymmetry between sellers (management) and buyers (investors) can cause the value of assets (e.g. stock prices) to deteriorate. Akerlof (1978) argues that in environments where information asymmetry is present, the quality of the assets in the market tend to be lower than average, commonly known as *adverse selection*. Since buyers do not have equal amounts of information about the assets offered in the market as the sellers, they will only buy the assets at discounted prices to cover for the possibility that the quality may be low, i.e. the *lemons principle*. Hence, sellers of high-quality assets will not sell in these types of markets, as they will be selling their assets at a deeply discounted price. Based on this reasoning, high-quality firms would be under-valued and low-quality firms over-valued by the market, leading to low-quality firms being more incentivized to issue equity as opposed to high-quality firms.

Leland and Pyle (1977) applies this reasoning specifically to stock prices in the equity market. They explain that managers most likely possess more accurate information about the future prospects of the company compared to its investors. Hence, firms announcing their desire to sell their shares in equity capital markets will most likely be greeted by the market with a decline in stock price in accordance with the *lemons principle* (Asquith and Mullins, 1986; Masulis and Korwar, 1986). Furthermore, Asquith and Mullins (1986) find that stock prices have a tendency to rise on average before equity issues are announced by the company. These findings are in accordance with the findings of Lucas and McDonald (1990), who explain this trend with the fact that when a stock is undervalued and information about the company's "real" value becomes public, the stock price will eventually rise. For obvious reasons, managers would not want to issue equity if their shares are substantially undervalued, and hence tend to wait before issuing equity that is currently undervalued. In an extended study, Korajczyk, Lucas and McDonald (1991) also find that because of equity issue underpricing, firms tend to try to issue equity when information asymmetry is minimized. According to the scholars, the degree

to which information in a firm is asymmetric varies with time, commonly referred to as *time-varying asymmetric information.* As an example, information asymmetry decreases after reports issues (Korajczyk, Lucas and McDonald, 1992). The same tendency is also observed by Dierkens (1991), who also finds that equity issues are favored by managers when there is low information asymmetry, as increased information asymmetry before an equity issue leads to a higher drop in the share price at announcement.

Market Timing Hypothesis

The market timing hypothesis is based on the idea that managers possess superior information to investors and use that information to time their equity issues. Managers with superior information therefore choose to issue new equity when market value is high and tend to repurchase equity when market value is low (Baker, Wurgler, 2002). This leads to the reasoning that managers are better at identifying misalignments in valuation compared to investors and use this to their advantage when making the decision to raise new financing. Because of this, Myers and Majluf (1984) argue that when the cost of raising external financing through equity is more costly than the gains of pursuing positive investment opportunities, managers decide not to pursue them. Instead, managers should issue equity when the information asymmetry is as low as possible, which leads to firms issuing external financing in periods when this is the case (Myers, Majluf, 1984).

Pecking Order Theory

Research has not only covered the implications of adverse selection on equity issuance, but also on the implications on capital structure decisions of firms. Myers (1984) has formulated an additional theory to the famous trade-off theory, explaining firms' choices of optimal capital structure. This theory, the *pecking order theory*, states that due to the tendency of drop in prices during equity issuance, firms tend to turn to cheaper alternatives as a first source of funding before eventually seeking funds from the relatively more expensive equity capital markets. More specifically, the fundamental idea behind this reasoning is that the more information asymmetry, the more expensive is the type of funding. Hence, Myers states that firms tend to firstly aim for using internal funds such as retained earnings as this is the cheapest type of capital. Secondly, firms would issue debt that is closest to the risk-free rate as this is the least risky option. Lastly, they would turn to equity capital markets. Moreover, the theory implies that in good times, firms store their internally generated funds in reserves to be able to use them in bad times. This means that companies that frequently tend to raise external financing through

equity capital show signs of financial difficulties, as they go to the last resort of financing that is also the costliest. This theory is of course relevant when studying firms that choose equity funding and more specifically, when studying their stated reasons behind issuing equity. Myers and Majluf (1984) argue that firms with positive investment opportunities but lack of internally generated funds or ability to use debt should not pursue the investment if that means issuing equity. They also conclude that rather than issuing equity, firms should go to raise funds in the bond market.

3.1.3. Efficient Market Hypothesis

Financial theories used for explaining changes in stock prices are built on an asset pricing model first introduced by Fama (1970). Fama argued that if markets were efficient, prices would reflect all information available in the market and prices would adjust naturally with new information available so that no investor would be able to arbitrage before anyone else. Fama defined an efficient market as a market where the following conditions prevail. There are no transaction costs for trading securities, information is available at no cost for all players in the market and the expectations on how current information impacts current price as well as future prices of the security is the same for all investors.

Furthermore, Fama introduced three models with varying degrees of information availability in order to test the level of efficiency prevailing in the market. The weak form of market efficiency states that prices reflect all *current* information but that it should not be possible to profit from trading based on historic information. The semi-strong form of market efficiency states that prices reflect all *publicly available* information. Lastly, the strong form of market efficiency states that prices reflect all information in the market, *both public and private*, and hence under this form of market efficiency it should never be possible to profit from arbitrage.

Signalling Theory

In the perfect world with efficient markets, there would be no need for managers to send signals to the market, as information is available to everyone. However, introducing the *signalling* theory, Spence (1973) shows that information asymmetry does exist in the market. Signalling builds on the idea that the party with more information will credibly convey information he or she has to the party with less information out of own interest. Spence (1973) argues that if managers of a company aim to serve the market for a longer time period, they find self-interest in being honest to their investors and sharing the information they have about the company's

future prospects. Ross (1977) describes how the choice of financing can act as a signal for investors to convey information about the company's future. Barclay and Litzenberger (1988) extend to the literature by providing three different hypotheses related to signaling in an equity issuance setting.

The first hypothesis is the *existing asset value signal hypothesis* which states that managers are better informed than shareholders about the value of the firm and its assets, and pursuing investment opportunities due to insufficient funds through issuing equity shall only be done if managers think that the intrinsic value of the firm is lower than market value. This means that managers expect the stock price to drop and should account for it, and the market will not react differently depending on what the use of capital is intended for.

The *cash flow signalling hypothesis* is built on the idea that there is information asymmetry regarding a firm's internal fund generation. The value of the investments and assets are however known to investors. Upon announcement of external financing, regardless of whether it is debt or equity, the market will react negatively as it would convey the difficulties of generating sufficient internal funds.

The *wasteful investment hypothesis* is based on the agency theory of Jensen (1986), which states that managers are inclined to overinvest and accept value-destroying projects when having access to larger amount of capital. The hypothesis states that there is symmetric information about a firm's assets as well as internal cash flows, but information asymmetry about a firm's planned investments. Hence, when a firm announces the need for external financing, this would reveal information of the firm's investment plans according to the *wasteful investment hypothesis*. Barclay and Litzenberger (1988) argue that when the net present value of a project is negative, the stock price will fall when the firms announce the need for equity or debt financing.

Agency Theory

One theory fundamental to the concept of information asymmetry is the *principal-agency relationship,* in which managers in a company act as agents appointed by the stakeholders to manage the company and thereby their funds invested (Jensen, Meckling, 1976). This leaves the stakeholders in a vulnerable position having to rely on managers properly maintaining their invested capital. A problem arises if the interests of managers substantially differ from that of the stakeholders and the managers have incentives to act on these (Eisenhardt, 1989). There is a conflict between the stakeholders and management when it comes to the returns and profits of the company, as shareholders want management to invest in positive net present value

projects in order to increase their returns in the short-term, but management would rather see the capital remaining in the firm to be used for the future (Jensen, Meckling, 1976). Information asymmetry further enhances this problem, as the work of the managers becomes even more difficult to monitor from the outside without full access to the same information as the agents.

3.2. Seasoned Equity Offerings

There are many reasons to why firms decide to issue equity capital in an SEO. Firms want to issue equity to finance investment projects, solve issues with liquidity, improve the capital structure, finance expansion and investments or to acquire other companies. The SEO is a possibility for firms that are public to raise additional funding with new shares (Berk, DeMarzo, 2014). However, Eckbo and Masulis (1995) argue that the issuer is exposed to several risks related to the SEO, as the common method is to employ an investment bank to underwrite the offer. The underwriter can either guarantee to sell all shares offered or, in the case of a best efforts underwritten offer, to sell at a minimum sales level where the firm bears the rest of the risk which in turn depends on the type of offering done by the firm. Going back to the model of adverse selection by Myers and Majluf (1984), managers have superior information about the true value of the assets in place as compared to the market. Eckbo and Masulis (1995) state that one way to solve the adverse selection problem is to communicate information to the market through investment bankers who already have a good reputation on the market to be truthful in their disclosure of information.

3.3. Definitions of Methods of Flotation

In this section we focus on introducing two types of flotation methods for an SEO, namely rights issues and share placements, following the U.K. study by Silva and Bilinski (2015). The reason for this is mainly because the number of fully marketed offerings (i.e. SEOs directed to the broader public and fully marketed through roadshows involving both underwriters and management) are very few in the studied set of companies. Public offerings are a common method often applied in the U.S. and welcome all investors to participate in the SEO through an underwriting process. Other forms of public offerings that are not fully marketed offerings, such as accelerated offers and bought deals (overnight offers) and cash placements are included under the share placements category as they differ from fully marketed offerings by being much faster in completion and require less extensive underwriter marketing (Gao, Ritter, 2010). These types of offerings are also more common in the European market than fully-marketed

offerings. The most common equity issuance methods in Sweden are rights issues (directed to existing shareholders) and share placements (targeting a specific group of institutional investors), which we will cover below. Compared to the U.S. where public offerings dominate, Swedish firms are expected to be less incentivized to signal misleading information in their use of proceeds and time the market as their main target audiences are existing shareholders and more sophisticated investors, and we perceive that disclosures will be more informative of growth opportunities.

Rights Issues

Rights issues give current shareholders preemptive rights that can be exercised to buy new shares in the firm during the SEO where the exercise price is normally set to a discount for current shareholders not to exercise their rights, as the discount makes it very costly. The shareholder has two choices; either participate in the rights offering and prevent dilution by exercising the rights or sell the rights in the secondary market. Rights issues are often said to be non-dilutive, meaning that existing shareholders are not affected by adverse selection nor by wealth transfers by participating in the issue proportionally (Burkart and Zhong, 2018). This is however not the case if the existing shareholders are given the opportunity to resell the newly issued shares in the public market. Rights issues are the predominant procedure to issue equity in the Swedish market, and is a common method in Europe and Asia, unlike the U.S. where rights offers are virtually nonexistent (Gao, Ritter, 2010).

Share Placements

Share placements are in this paper classified as equity offerings to a selected group of investors, rather than to the public market. Placements are argued to overcome the adverse selection problem as sophisticated investors are accessing exclusive firm information and purchase the equity to ensure that through monitoring, the resources in the firm will be used in a more efficient way (Wruck, 1989). Share placements do not require as much time and costs to spend on the issue as compared to rights issues. This type of issues is completed over a shorter time, ranging from a few hours to a couple of days. As we observe in our dataset, share placements are usually announced at market close and are completed the next day. The investors are often large investors, institutions or mutual funds. The share placements category covers bought deals, accelerated book build offers, and cash placings. In a bought deal, the issuing firm announces that it wants to sell shares and starts a bidding process from investment banks on the shares, where bids are submitted after market close and the winning bank resells the shares to institutional investors within 24 hours (Gao, Ritter, 2010). In accelerated book build offers

the firm selects the underwriter, who performs a book building process where the terms of the SEO are agreed mutually. Lastly, we include cash placings as a category following Silva and Bilinski (2015) since we notice that a large amount of issues are done as placings in the Swedish market. Cash placings are done towards a smaller group of investors and according to the certification hypothesis developed by Hertzel and Smith (1993) these investors thereby stamp their approval of the market valuation of the firm by purchasing a large amount of stock in the placing, certifying that there is no over-valuation of the firm.

4. Research Hypotheses

Based on the above outlined evidence from previous literature as well as financial theories central to this study, we connect the theories covering information asymmetry to the signalling effect of stated motives in the intended use of proceeds in the research hypothesis.

4.1. Investment Purposes Hypotheses

Many studies have investigated the subject of SEOs and its impact on a firm's share price. Short-run event studies by Asquith and Mullins (1986), Barclay and Litzenberger (1987), Walker and Yost (2008) and Silva and Bilinski (2015) have shown that there is a relationship between SEO announcements and negative market reactions. Although studies have shown that announcing and conducting an SEO leads to underperformance, firms still continue to use this method as their source of financing.

Several factors can explain the abnormal returns around the announcement of an SEO, and research done lately has emphasized the impact of motives for issuance, more frequently looking at the statement of the use of proceeds. We believe that, based on the theories covered in the section above, a factor that can decrease information asymmetry in SEOs is the disclosure of the use of proceeds at announcement. We therefore expect the market to react favorably to firms which are clear in communicating that the funds will be used for positive net present value projects or signalling growth prospects, in turn leading to higher abnormal returns. Supporting these expectations, previous literature on the use of proceeds in SEOs finds that the market reacts less severely to investment motives in the disclosure, showing that firms stating *investment purposes,* rather than *general corporate purposes* or *refinancing purposes*, receive more favorable market reactions. Based on these findings, why do not all firms choose to state *investment purposes* in their disclosure?

Dierkens (1991) connects greater information asymmetry to a greater drop in the share price at announcement. We connect this finding by arguing that disclosing information about the motive of the equity issue will decrease information asymmetry, ultimately resulting in a smaller share price drop. We therefore expect that it exists another level in the market's reaction to the announcement of disclosure of use of proceeds, since we believe the market will distinguish opportunistic market timers from firms with positive net present value investment opportunities.

By stating investment purposes in their intended use of proceeds, firms are signalling their investment opportunities, and we expect the market to be able to predict which firms that have credible investment opportunities based on their use of proceeds statement. Based on firms' use of proceeds statement, the market should be able to distinguish credible firms that have value-increasing growth opportunities (firms that do invest more in the future), from firms that do not have any particular investment opportunities. The latter firms are rather expected to leverage the timing of better market reactions with stating *investment purposes*. We expect the latter type of firms not to increase their investments as compared to firms stating *investment purposes* and declare that the issue proceeds will be used for specific projects that highlight growth opportunities. This leads us to propose the following hypothesis:

H1: Stating investment purposes in the intended use of proceeds of an SEO at announcement leads to greater cumulative abnormal returns if a firm's investments 1 year ex post are larger than 1 year ex ante the SEO, compared to if a firm does not increase its investments

5. Methodology

The following section presents the methods that are used in the main analysis of the study. We start by introducing the methodology for classifying the intended use of proceeds. Second, we introduce the event study methodology that is used to calculate the CARs. Additionally, we provide the statistical methods to test the significance of the event study. Lastly, we show the methodology of the multivariate regression along with explanatory variables, which aims to answer the research question.

5.1. Classification of Intended Use of Proceeds

In order to draw any interferences on the difference in abnormal returns based on a firm's use of proceeds, we classify each SEO by their use of proceeds disclosure in the announcement according to three groups, namely *investment purposes*, *refinancing purposes* and *general corporate purposes*. We follow previous literature in the classification of equity issues (Autore et al., 2009; Walker and Yost, 2008; Silva and Bilinski, 2014). To compare any differences between the three groups, the abnormal return is cumulated and averaged for all SEOs in each group in the event window.

Investment Purposes

The classification *investment purposes* is applied on firms stating the intention to use the capital for more specific purposes and investments, such as already identified or announced acquisitions, investments or capital expenditures, to increase the asset base of the firm or for already planned R&D purposes. The disclosures in this group are more informative and detailed compared to the other two groups. An example of a disclosure within the *investment purposes* category is NeuroVive's announcement of its rights issue in 2016, providing the following motivation.

> *"The main motivation for the SEK 94.4 million New Issue before expenses is to raise new capital to bring CicloMulsion® for acute kidney injury and NeuroSTAT® for traumatic brain injury through clinical Phase II studies to licensing, and to complete pre-clinical studies in NVP019."*

Refinancing Purposes

The second group, *refinancing purposes,* should according to their announcement information be using the capital raised from the SEO to repay outstanding debt, often specifying the loans that are amortized or repaid. This group does not expose information on investment opportunities and firms are more likely expected to use market timing in their issues for the restructuring. An example of a disclosure within the *refinancing purposes* category is Hembla's (former D. Carnegie & Co) announcement of its directed rights issue in 2016, providing the following motivation.

> *"...diversify the institutional shareholder base and in a time efficient manner secure partial financing and repayment of three convertible subordinated loans in the Company and a promissory note issued by the Company in order to improve the Company's capital structure and financing."*

General Corporate Purposes

In the last category, *general corporate purposes,* firms are not describing a specific motive for the intended use of the capital. Most often, firms state that the capital will be used for "strengthening the working capital" or "general corporate purposes" in their announcement. As an example of a disclosure within this category, Anoto Group provides the following motivation in their announcement in 2015.

> *"The Company intends to use the proceeds from the issue to strengthen the working capital".*

5.2. Event Study Methodology

In order to test the hypothesis of the study, an event study methodology is used. More specifically, we use the standard event study methodology as described by MacKinlay (1997). Event studies investigate how a specific event can affect a firm's share price and market value in order to separate firm-related events from market- and industry-events. Moreover, an event study most often implies trying to identify what specific mechanisms of the event determines or drives the stock market's response to the event. Applying this methodology to our study, we investigate how the mechanism *"stated intended use of proceeds"* affects the difference in the magnitude of market reaction during the event *"the announcement of an SEO"*.

Defining the Event Study Timeline

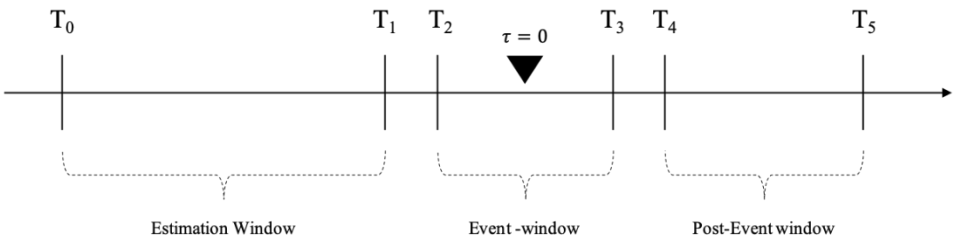
According to Strong (1992) there are three main steps in an event study. The first step is to identify the event date to be investigated. In this thesis, the event date of the study is when the SEO is first announced to the public. As the aim is to fully capture and correctly measure the market's reaction to the news of an SEO in relation to the disclosure of the intended use of proceeds, it is the announcement (and not e.g. the subscription period) that is the core of the event period. Thus, the earliest possible date of the announcement of the event is chosen for each event. This is done through screening news and press releases from several sources, including Retriever Business, Cision News and company websites.

Three time periods are usually used in an event study, namely the estimation window, the event window and a post-event window. In addition to determining the date of the event, these need to be defined. The event window is the period around the event date studied in order to determine abnormal changes in the share price, in this case related to the announcement of the equity offering. More specifically, we study the actual return in relation to the expected return at the days around the event date. The event window is defined as -2, +2, meaning that the event window is starting two days before the announcement day and spans to 2 days after the announcement.

The estimation period is the window chosen for estimating the firm's *normal* return. There is no set estimation window used by previous research and the length differs across studies but according to Benninga (2014), a minimum window of 6 months prior to the event date is estimated to be adequate for providing robust test statistics. The event window and the estimation window should however not overlap as the event can have an impact on the estimation of the normal return (MacKinlay, 1997). Hence in this study, the estimation period is set to begin 180 trading days before the announcement and end 10 days before the announcement date.

MacKinlay (1997) argues that including a post-event window will increase the validity of the estimation, however they are not often used other than in long-run event studies (Ahern, 2009). A post-event window is in this study defined for the second part of the analysis - i.e. to investigate whether the firms actually use the proceeds for the intended purposes. See Figure 1 for a representation of the period examined in the event study.

Figure 1 – Timeline for the Event Study



This figure presents the time line of the event study where the estimation window (T_0 -T_1) is 180 days. The abnormal returns are calculated over the event window (T_2 -T_3) that span over 5 days around the announcement day. There are 10 days in between T_1 and T_2. The τ stands for the event date, the announcement date.

Determining the Benchmark Model and Estimating Abnormal Returns

The second step in an event study according to Strong (1992) is to determine the benchmark model as well as to estimate abnormal returns.

The abnormal return is interpreted as the impact of the event on the value of a firm's equity (Campbell et al., 1997). To conclude whether the return is abnormal during the event window we calculate the difference between the actual and the normal return. The abnormal return AR is calculated as presented in equation 1.

$$AR_{i\tau} = R_{i\tau} - E(R_{i\tau}|X_\tau) \tag{1}$$

where $AR_{i\tau}$ is the abnormal return, $R_{i\tau}$ is the actual return and $E(R_{i\tau}|X_\tau)$ is the normal return for firm *i* in period *t*. The normal return can be defined as the return that we expect if the event would not happen (also called the expected return). MacKinlay's (1997) presents a number of different statistical models for calculating the normal return that are used frequently in event studies. The simplest model, the *constant mean return model*, assumes a constant average return of each security over time. As an improvement to this model, removing the part of the return related to systematic variation, the *market model* instead assumes a stable linear relation between each security and the market return. Moreover, as an extension to this model, two-factor methods where the real return is compared to both the market as well as e.g. the industry return during the estimation period are also used in some studies (MacKinlay, 1997). However, since research shows that the gains from using multi-factor models in event studies have been limited as compared to using the market model (MacKinlay, 1997). Hence, the market model is used in this study.

The normal return of a stock is estimated through the market model as shown in equation 2.

$$R_{it} = \alpha_i - \beta_i R_{mt} + \varepsilon_{it} \tag{2}$$

$$E(\varepsilon_{it} = 0) \qquad var(\varepsilon_{it}) = \sigma^2_{\varepsilon_i}$$

$$\text{Where } t \in [T_0, T_1]$$

where R_{it} is the return of the firm *i* at time *t*, R_{mt} is the market index OMXSPI return at time *t*, β is the volatility of the security in relation to the market index and ε_{it} is the error term and random component that is not correlated with the market index return, i.e. the abnormal returns. We use the OMXSPI index as our indicator for the returns on the Swedish equity market i.e. our market portfolio. We assess this to be the most relevant index in order to get a fair overview on the market return, since it includes all listed firm on OMX NASDAQ Stockholm Stock exchange. The index is adjusted for dividends, stock splits and factors that can affect the estimation of the normal return.

Moreover, equation 3 shows how the abnormal returns are obtained, where $\hat{\alpha}_i$ and $\widehat{\beta_i}$ are firstly obtained from the estimation window through an OLS regression, for each firm *i*. We then proceed by using the market parameters and the movement in the OMXSPI during the event period to compute the daily abnormal returns, AR. This is done for each firm *i* for each trading day in the estimation period.

$$\widehat{AR}_{i\tau} = R_{i\tau} - \hat{\alpha}_i + \hat{\beta}_i R_{m\tau} \tag{3}$$

To be able to draw overall interferences for the event of interest, the abnormal returns have to be aggregated along two dimensions - through time for the individual security and then across both securities and time (Campbell et al., 1997). In order to estimate the CARs during the event period for each SEO, abnormal returns are calculated for each day during the event window. The abnormal returns are then cumulated for all days of the event window to obtain cumulative abnormal returns - the dependent variable in our analysis, for each SEO. The mean CAR for each group in the sample is estimated through aggregating the CARs and dividing them by the number of SEOs in the respective subgroups.

$$\widehat{CAR}_i(\tau_1, \tau_2) = \sum_{\tau=\tau_1}^{\tau_2} \widehat{AR}_{i\tau} \tag{4}$$

$$\text{Where } \tau \in [T_2, T_3]$$

The last step of the event study according to Strong (1992) is to run statistical tests to test the hypothesis. The tests used in this study are further detailed in the below sections.

5.3. Significance Tests on the Cumulative Abnormal Returns

In order to determine the level of significance in our results of the event study, we perform statistical tests on the CARs for each event period. The significance tests are performed on each category of use of proceeds (*refinancing purposes*, *investment purposes* and *general corporate purposes)* in order to determine whether the mean CAR in each group is significantly different from zero. There is no standard notation regarding statistical tests in event studies, but they can be divided into non-parametric and parametric tests. Parametric tests assume normal distribution in each firm's abnormal returns, comparing and testing for the difference in two population means. Non-parametric tests test the equality of matched pairs of observations by using the matched-pairs signed-ranks test, since the null hypothesis states that both distributions are the same (Wilcoxon, 1945). Following Silva and Bilinski (2015) we test the CARs for each of the use of proceeds categories for four different event windows, (-2,2), (-1,1), (0,2), and (0,1), in order to compare their averages and test their statistical significance.

5.3.1 Parametric Statistical Hypothesis Test

To draw conclusions about the effect on the cumulative abnormal return around the announcement across the groups of intended use of proceeds we use a standard Z-test. This is calculated as the average abnormal return divided by the standard deviation of the average abnormal returns. As the standard t-test is prone to volatility, several new tests have been introduced to overcome high return standard deviations, low liquidity and low prices. More specifically, previous test statistics assume an identical distribution of abnormal results as well as the same cross-sectional variance. To overcome this matter, we employ the Patell test, which is used in the study to test the significance of the CARs by first *standardizing* the abnormal returns, and thereafter weighing these against their standard deviation (Patell, 1976).

We begin the Patell test by testing the significance of the abnormal returns for each event and day in the event window. The abnormal returns (i.e. the error term of the market model) are assumed to be normally distributed (Campbell et al., 1997). Equation 5 shows the variance of the abnormal returns where the additional component in brackets is the sampling error in the estimation period, based on the market model regression. However, if the estimation

period (L) will be large (in this study at least 180 trading days) the second term in brackets will disappear, meaning that the variance of AR equals the variance in the estimation period.

$$\sigma^2\left(\widehat{AR}_{i\tau}\right) = \sigma_{\varepsilon_i}^2 + \frac{1}{L}\left[1 + \frac{(R_{m\tau} - \bar{R}_m)^2}{\hat{\sigma}_m^2}\right] \tag{5}$$

Based on this assumption, the second step of the Patell test is to standardize the cumulative abnormal returns following the calculations of equation 6, for each security over the estimation period. Based on the Patell-Z-Score (1976), the abnormal return for each security is normalized by the standard deviation for the estimation period.

$$SAR_{i\tau} = \frac{AR_{i\tau}}{S_{AR_{it}}} \tag{6}$$

We then proceed by estimating the cumulative standardized abnormal returns (CSAR) for each firm, i, following equation 7.

$$CSAR_i = \sum_{\tau=\tau 1}^{\tau 2} SAR_{i\tau} \tag{7}$$

Lastly, in order to obtain the Z-statistic for the standardized cumulative abnormal returns, we take the average SCAR across all securities (N) and divide by the standard deviation of the standardized cumulative abnormal returns, presented in equation 8.

$$Z_{Patell} = \frac{1}{\sqrt{N}} \sum_{i=1}^{N} \frac{CSAR_i}{S_{CSAR_i}} \tag{8}$$

Where s_{SCAR_i} is the standard deviation for each security i's CSAR.

5.3.2. Non-parametric Statistical Hypothesis Test

To complement our parametric tests, we provide a non-parametric statistical hypothesis test, the Wilcoxon signed-rank test, which considers the sign and the magnitude of the abnormal returns. More specifically, it considers the fact that emphasis should be put on large rather than small abnormal returns. Under the null hypothesis, the Wilcoxon signed-rank test assumes that the sum of the ranks below and above the median are similar. The aim of the test is to see if the sample median is significantly different from the hypothesized value, which in this study is that the median CAR equals zero. The test presents the deviation from the median of the

positive and negative CAR's. A significant test means that the abnormal return on the announcement date of the SEO significantly impacts the return of the firm, positive or negative.

We begin the Wilcoxon signed-rank test by ranking the cumulative abnormal returns by their absolute value (no positive or negative sign) in ascending order for each firm. After this, the sign of the abnormal return is put back to the ranks. The test is defined as:

$$W_t = \sum_{i=1}^{N} rank(A_{it})^+ \tag{9}$$

Where $rank(A_{it})$ is the positive or negative rank of the absolute value of CAR.

The Wilcoxon test statistic is then calculated through equation 10.

$$Z_{Wilcoxon_t} = \frac{W - N(N-1)/4}{\sqrt{N(N+1)(2N+1)/12)}} \tag{10}$$

5.4. Measuring Post-SEO Performance

To follow up on the stated use of proceeds and whether firms do as they say they will do with the capital raised, we study each firm's balance sheet one year before the SEO, the year of the SEO and two years after. Worth noticing is that the studied sample in this analysis is smaller compared to the dataset used for the above section as we filter firms out based on availability of balance measures sheet two years after the announcement. Hence, firms that have executed an SEO in the year 2017 or later will not have sufficient balance sheet data to measure, and are therefore excluded in this revised dataset.

Furthermore, the year of the SEO is defined as year 0. We follow Walker and Yost (2008) in providing the balance sheet ratios for our measures. To investigate whether firms do as they state they will do in the announcement in the years after the SEO, we calculate the change of the balance sheet measures of interest in year 0, 1 and 2 (yr. N) in relation to the total assets (TA) the year before the SEO, year -1.

Investment

The measure for investment used in this analysis is defined as INV(yr. N)/TA(yr. -1) where INV is the capital expenditures plus R&D expenses, divided by total assets in year -1. Looking at this measure post SEO, we can see whether firms' investment levels increase or not. Hence, by studying this ratio for the group *investment purposes*, we will be able to see whether there is a relationship between the market reaction and firms who actually do what they claim they

will do (i.e. increase investment) compared to firms who do not follow through with their intentions (i.e. decrease investment or keep it at the same level).

Long-Term Debt

In order to investigate to what extent firms change their debt levels after the SEO, we calculate the debt ratio as LTD(yr. N)/TA(yr. -1) where LTD is a firm's long-term debt. This measure is used mainly in order to show whether firms in the *refinancing purposes* group are actually decreasing their borrowing.

Working Capital

In measuring the liquidity of the firm, we use the ratio of working capital to total assets, i.e. WC(yr. N)/TA(yr. -1). This measure is of interest when analyzing whether *general corporate purposes* firms are improving their liquidity. Another way of interpreting the measure is through the hypothesis of market timing motive, that issuing equity is done at the time when a firm's shares are overvalued (Greenwood, 2005). This theory would mean that a firm finances investment opportunities with different means of funds, either debt or equity, depending on when they are cheaper to raise. This way, a firm could transfer wealth from raised equity capital and, in the short-term, store the funds in working capital until investment opportunities can be realized.

To compare the differences in the medians between the years, we perform a two-population Wilcoxon rank-sum (Mann-Whitney) test. We compare the difference in the medians for year 0, +1 and +2 relative to year -1.

5.5. Cross-Sectional Regression Analysis

Since previous research concludes that stating *investment purposes* receives less impact on abnormal returns compared to stating *general corporate purposes* and *refinancing purposes*, we aim to extend the literature by asking the question whether the market can distinguish firms within the *investment purposes* group depending on the change in their investment levels after the SEO. More specifically, we investigate whether firms increasing their investments one year after the SEO, in relation to one year before, will experience higher abnormal returns compared to firms that keep their investment levels the same.

To examine this hypothesis, we use a multivariate regression model, where our dependent variable is the price reaction to the SEO announcements. The model has the form:

$$CAR(0,2)_{it} = \alpha + \beta_1 INVESTMENT_{it} + \beta_2 POSTINVDUM_{it} + \beta_3 (INVESTMENT * POSTINVDUM) + \gamma' X_{it} + \epsilon_{it}$$

where *i* is the firm index and *t* is the time index.

INVESTMENT is a dummy that takes the value of one if the firm states *investment purposes* in the disclosure of use of proceeds, and 0 otherwise.

POSTINVDUM is an indicator variable that takes a value of one if:

INV(yr. 1)>INV(yr. -1)

meaning that the firm's investment in capital expenditures and R&D is larger the year after the SEO compared to the year before the SEO.

Inspired by Walker and Yost (2008), we proceed by creating the main variable for the analysis - β_3, the interaction term between INVESTMENT and POSTINVDUM. This variable takes the value of one if both the INVESTMENT dummy and the POSTINVDUM dummy have the value of one. A positive and statistically significant interaction term in this analysis would mean that the group with the *investment purposes* use of proceeds that have an investment level in year +1 above the level the year before the SEO experience higher abnormal returns compared to firms in the *investment purposes* group that do not increase the investments compared to year -1.

5.6. More on Interactions

In this study, we use a model with an interaction term between two dichotomous variables, namely INVESTMENT and POSTINVDUM. The dummy INVESTMENT has the coding *investment purposes* = 1 (*general corporate purposes* and *refinancing purposes* = 0) and the dummy POSTINVDUM has the coding *higher investment* = 1 (*no difference in investment/lower investment* = 0). The interaction effect will focus on how two variables interact when taking into account the variance in the dependent variable *over and above* the individual additive effects (Afshartous, Preston, 2011).

The possibilities that we are interested in, in this model, are presented in the table below:

Case	Mean outcome for the case
No Investment AND Investment Purposes	β_1
Higher Investment AND GCP* and Refinancing Purposes	β_2
Higher Investment AND Investment Purposes	$\beta_1 + \beta_2 + \beta_3$

*General corporate purposes

The mean value for *investment purposes* (INVESTMENT = 1) when a firm does invest (POSTINVDUM = 1) in a model without an interaction term would be $\beta_1 + \beta_2$, since it represents the additive effect of having invested more than year -1 in year 1 to the effect of stating *investment purposes* at announcement. By including the interaction term as shown in the table above, the interpretation changes since the mean value for *investment purposes* (INVESTMENT = 1) when a firm does invest (POSTINVDUM = 1) is now $\beta_1 + \beta_2 + \beta_3$. The β_3 implies the interaction effect, *over and above* the additive lower order effect of *investment purposes* and having invested more, representing the *moderating effect* of POSTINVDUM on the relationship between INVESTMENT and CAR. To give an example, a positive, and significant, interaction coefficient will indicate that the slope of the regression is more positive for when POSTINVDUM is 1 compared to the slope when POSTINVDUM is 0.

5.7. Control Variables

$\gamma' X_{it}$ is a vector of several control variables in our regression model, included in order to avoid any factors that could cause biased estimators. These variables are included as they are also expected to influence abnormal returns and are divided into deal-specific characteristics and firm-specific characteristics. We provide a summary of all variables used in the multivariate analysis in Appendix 1. We control for both deal-specific characteristics and firm-specific characteristics that we believe can impact market reactions to the stock price at announcement. One factor that can influence stock price reactions at an SEO is PROCEEDS, i.e. larger issues depress stock prices. This reasoning is supported by Asquith and Mullins (1986), who find that announcement day abnormal returns are inversely correlated with the offer size. We include RECENT ISSUE as a control variable following the *good taste hypothesis* introduced by Mola and Loughran (2004). They argue that the investor experience with previous SEOs by the same

firm will affect the SEO abnormal return. We apply the hypothesis expecting SEOs with a recent issue within a year to have more favorable abnormal returns. In addition to the main indicator variable INVESTMENT, we also control for SEOs with the use of proceeds at announcement being *general corporate purposes* (GENERAL), since previous literature finds that investors react more favorably to SEO announcements where firms state *investment purposes* and *general corporate purposes* compared to firms that state *refinancing purposes* (Silva, Bilinski, 2015). Moreover, the indicator variable RIGHTS controls for choice of flotation method using rights offerings, since evidence supports that abnormal returns upon announcement of rights issues are negative (Burton, Alasdair Lonie & Power, 1999). We also include the indicator variable OVERNIGHT to capture the trend of more firms conducting SEOs overnight to avoid pre-issue selling pressure that affects stock prices surrounding the SEO issuance (Gustafson, 2018). To capture the extent of information asymmetry in equity issues we include TRADINGINTENSITY**,** which is the average trading volume during six months prior to the announcement. This is supported by Dierkens (1991), who argues that higher trading intensity, ceteris paribus, conveys more information about the firm. Hence, we expect the variable TRADINGINTENSITY to be positively correlated to abnormal returns. Firms' book to market ratio (B/M) in the previous month prior to the SEO is also included as a proxy for investment opportunities and controlled for, since the market timing argument states that firms have incentives to issue equity as a result of overvaluation (Berk, DeMarzo, 2014). Firms with high book to market ratios (low valuations) are considered not to time the market and are anticipated to have higher abnormal returns. Following Pilotte (1992) and Denis (1994), we control for the actual change in long term debt (CHANGELTD) and change in working capital (CHANGEWC) from year -1 to year +1 since subsequent growth is a good proxy for anticipated growth at the time of announcement.

Moreover, we control for industry- and year fixed effects by adding dummies for each industry and year. The sample consists of firms from the following 12 GICS sectors; Agriculture, Communication Services, Consumer Discretionary, Consumer Staples, Energy, Financials, Health Care, Industrials, Information Technology, Materials, Real Estate and Utilities.

5.8. Robustness Tests

When manually collecting the announcement text data in order to classify firms into their specific use of proceeds, we come across many firms that specifically state in their announcement text that they will use the proceeds for acquisition of a company. An example

of an *acquisition purposes* firm is Elanders, publishing the following motivation in an announcement in 2014.

> *"The proceeds from the issue will be used for financing the acquisition of Mentor Media".*

Since previous literature includes acquisitions of other companies in the *investment purposes* classification, we decide to create a new group called *acquisition purposes.* We group all *acquisition purposes* in one group, and *investment purposes* with no acquisitions of companies in a second group, with the name *other investment*. The purpose of this test is to analyze whether the abnormal return upon announcement of SEOs in conjunction with an acquisition announcement is different from announcements of SEO where the use of proceeds will be for *investment purposes* that are not of other companies. The *acquisition purposes* group is related to an acquisition of a company. Other acquisitions, such as real estate assets and vessels, are included in the *other investment* group as it relates to investments made frequently within the industry.

Barclay and Litzenberger (1988) build upon Jensen's (1986) theoretical model by arguing that unexpected announcements of equity signals a higher level of investment, and that the stock price reaction will be positively related to the gross present value profitability index of these planned investments. Therefore, we argue that by dividing the group of *investment purposes* further, separating out *acquisition purposes,* we can separate out more specific investment intentions. We argue that these firms ought to be more credible and informative than other long-term investment intentions in the *investment purposes* group. Based on this argument, we expect the market to react to *acquisition purposes* more favorably than to *other investment* that do not include *acquisition purposes.*

Considering *acquisition purposes* in the robustness test, we compare this group to the *other investment* group both in the event study analysis of the abnormal returns and the post-issue analysis of the balance sheet measures. In the multivariate regression, we do not consider separating out *acquisition purposes* from *investment purposes* since the number of observations end up being too few to be included for the main interaction variable INVESTMENT*POSTINVDUM. In addition to this, we perform robustness tests on an additional event window range to see whether there is an impact on the outcome if we include the 2 pre-announcement days to show the full 5-day CAR, i.e. CAR(-2,2).

To further test the robustness of the regression, we change the investment indicator variable used. The dummy POSTINVDUM is therefore replaced by a new variable in the robustness regression, and instead of testing whether the absolute change in the investment is higher year +1 than year -1 we extend the analysis by looking at the relative change in investment. We name the new variable RELATIVE_INV in the regression model. This variable is binary, taking the value of one if the relative change in investment in year +1 compared to year -1, both standardized by the book value of assets in the respective years, is in the top quartile. Conversely, the variable takes the value of zero if the relative change is not in the top quartile. The relative change in investment is calculated as $(INV_{+1}/TA_{+1})/(INV_{-1})/TA_{-1}$. A value above 1 means that the firm is investing more in year +1 relative to year -1 based on the size of the firm and considering the fact that the size of the firm is affected after the capital injections of the SEO. When the value of the relative change in investment is above 1, this means that the firm is investing more in CAPEX and R&D, taking the firm's size into account. We choose to assign the binary variable RELATIVE_INV the value of one if the relative change in investment is in the top quartile. We use this method in order to assure that firms that are given the value of 1 will invest more according to their change in size. The interaction between RELATIVE_INV and the variable INVESTMENT is expected to yield the same sign as the interaction between INVESTMENT and POSTINVDUM, since they are both supposed to answer the same hypothesis, but by different methods of deriving the increase in investment.

The results from all robustness tests are presented in Appendix 3.

6. Data

The sample of SEOs in this study consists of companies that are listed on NASDAQ OMX and have conducted an SEO between the years 2010 and 2019. The time period is chosen in order to avoid the effects stemming from the financial crisis in the years 2008 and 2009. We end the period of our first sample version on August 15th, 2019 to start our study with as large a sample as possible.

To obtain the information on which firms have made an SEO on the main market, we manually collect data from the website Nyemissioner.se. The website Nyemissioner.se lists all SEOs that have been completed on the main and alternative stock markets in Sweden, and includes information on the dates of the subscription rights trading period, deal value and offer price, which are good indicators for further gathering of data for the respective SEOs. Information regarding the announcement date is collected from Cision News, company press releases and Retriever Business. Cision News is a website database distributing press releases worldwide and is regarded as our main source of information for the announcement dates. If the information is not found on Cision News we check the company websites and respective press releases for the first announcement of the SEO.

According to the Swedish Securities Market Act (SFS 2007:528) Swedish issuers are obligated to inform the public of the SEO and make the announcement available on their website as soon as possible. Moreover, firms need to keep the press release on the company website for a minimum of 5 years (NASDAQ, 2019). The Rule Book for Issuers at NASDAQ OMX Stockholm (2019) also sets requirements for what information needed to be disclosed when issuing financial instruments. The requirements are "at a minimum, to include the reasons for the issue, expected total amount to be raised, terms and conditions for the issue, subscription price, any agreements or commitments to subscribe, time schedule and, where relevant, to whom the issue is directed". Hence, the information in the press release is the main source of information for this study. From the press release we are able to manually collect the text where the issuers state the use of proceeds from the SEO, the announcement date, the type of SEO and the deal size. Moreover, the use of proceeds disclosure is double-checked against each SEO prospectus that is available for rights issues.

We exclude certain issues that do not fit the following criteria. First, we do not consider issues that have been conducted on the alternative markets, such as Spotlight, First North or NGM Equity due to issues with illiquidity leading to interference with normal return estimations. Further we do not consider issues related to IPOs or issues of secondary shares.

All SEOs in the sample satisfy the criteria below:

- The company has made an SEO between the years 2010 and August 15th, 2019
- The company has complete data of share price
- The firm's common equity is listed on the NASDAQ OMX Stockholm for at least a year prior to the issue
- No simultaneous issues, such as private placements or settlements, are announced

Quantitative data for the event study and the cross-sectional regression is gathered from Thomson Reuters Eikon, including daily adjusted stock prices, OMSX PI rates and financial data. Finbas is used to collect data on average trading volume and book value of equity.

The total amount collected for the event study analysis is 228 SEOs, during the period 2010-2019. We exclude issues by firms that have done a second SEO within the period of 180 trading days counted after the end of the first issue trading period, if it is a rights issue, and from the day of the completion of the SEO if it is a placing. We do this to not cause interference of the event window with the estimation of the normal performance. The phenomenon *frequent issuers* is relatively common on the Swedish market, and is the main reason for why more than a 100 SEOs are removed from the sample. It is common for frequent issuers to state the same use of proceeds in the preceding issues, so capturing the reaction by the market from the first SEO made by the firm is important and kept as the starting point for frequent issuers in removing issues falling within the estimation period of the next SEO. All SEOs, including the ones made until August 15th, 2019, are kept for the parametric and non-parametric tests of the CAR in order to draw conclusions of the event study with a larger dataset.

For the second part of the analysis, we study firms' balance sheet measures one year prior to and two year post the SEO. In order not to overlap estimation- and post-event windows, each firm can only have one issue during a 3-year period in the dataset. Due to many frequent issuers, this criterion reduces the dataset significantly. Additionally, we remove issues in 2018 and 2019 due to insufficient time to gather data after the year of the SEO. As a result, the dataset for the second part of the study consists of 103 SEOs.

6.1. Descriptive Statistics

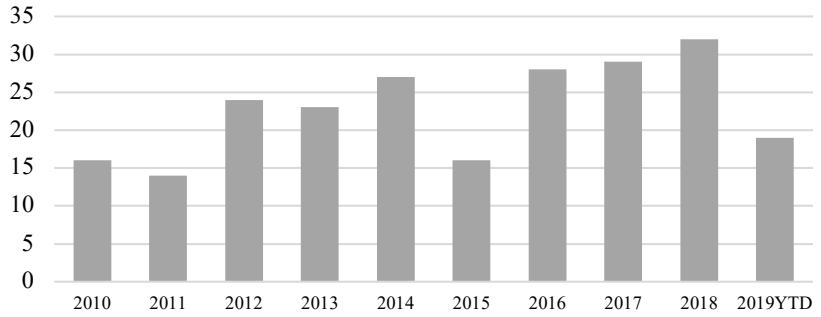
The following section further details the characteristics of the datasets used for the analysis. Here, we aim to give a more detailed view on the environment for SEOs in Sweden's main market over the past years and thus the section is focused on the larger set used for the CAR

significance tests. For complete details on the narrower dataset used in the regression, please see Appendix 2.

Figure 2 details the number of SEO announcements for each year between 2010 and 2019. Worth noting is the fact that 2010 and 2011 have relatively lower yearly amounts of SEO announcements, most likely a by-product of the financial crisis. Moreover, we note a relatively lower amount for 2015 which is also the case before the data is cleaned. Lastly, we note that the lower amount of SEO announcements during 2019 is due to this number being YTD as of August 15th and not the full year.

Figure 2

Yearly SEO Announcements

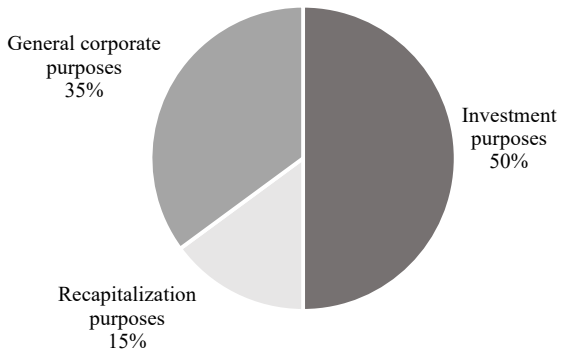


The figure displays the yearly distribution of number of SEO announcements from the total sample. Note that 2019 only includes SEO announcements between January and August 15th.

Next, we further explore the fraction of the different categories of intended use of proceeds in total (i.e. overall years and the entire set). As can be seen in figure 3 and 4, both datasets contain the largest fraction of *investment purposes,* which is also roughly the same in both datasets. The main difference between the two datasets is the fact that the fractions of *general corporate purposes* and *recapitalization purposes* are more similar in size for the smaller dataset.

Figure 3

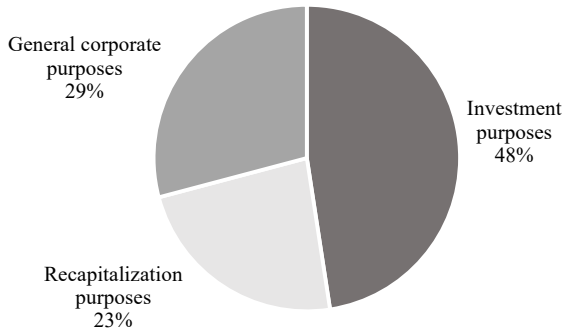
Fraction of Intended Use of Proceeds (Large Dataset)



The figure displays the relative share of the intended use of proceeds groups in the SEO sample used for the Event Study.

Figure 4

Fraction of Intended Use of Proceeds (Small Dataset)

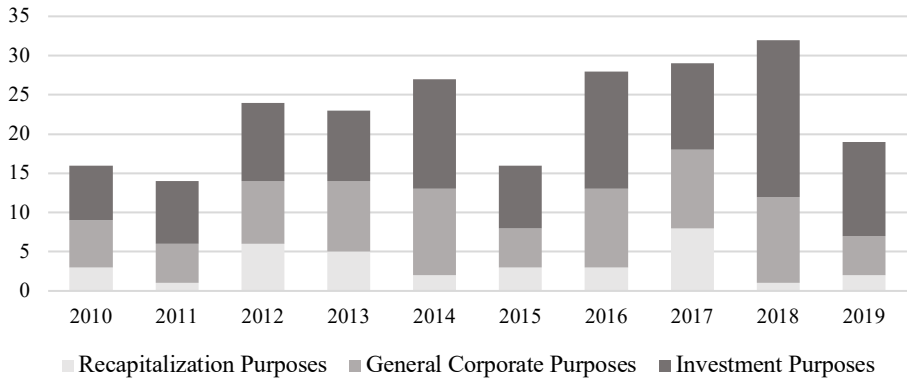


The figure displays the relative share of the intended use of proceeds groups in the SEO sample used for the multivariate regression.

Zooming into the fraction of the different categories in each year investigated, we get the figure 5 and 6 for the larger dataset. Worth noting is the fact that the categories have relatively similar fractions over the full analyzed time span. The *investment purposes* fraction ranges from 38 % in 2017 to a max of 63% in 2018 and 2019 YTD respectively.

Figure 5

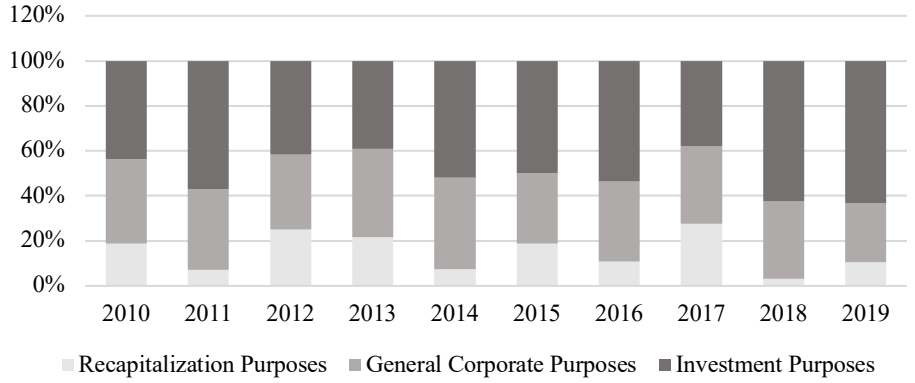
Yearly SEO Announcements Per Category



The figure displays the yearly distribution of number of SEO announcements from the total sample, divided into the intended use of proceeds groups *investment purposes, general corporate purposes* and *refinancing purposes*. Note that 2019 only includes SEO announcements between January and August 15th.

Figure 6

Yearly SEO Announcements Percentage Per Category

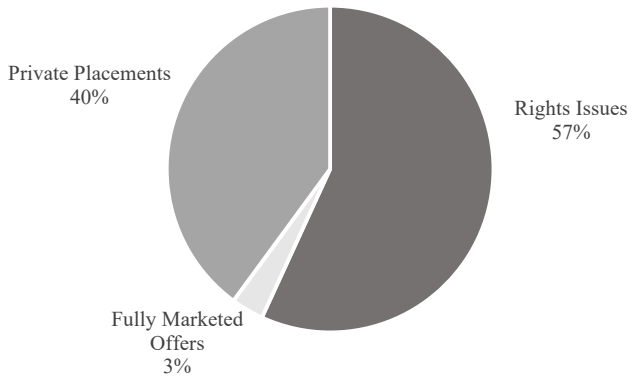


The figure displays relative share of the intended use of proceeds groups *investment purposes, general corporate purposes* and *refinancing purposes* in the total sample of SEO announcements.

Furthermore, we note that 46 of the 228 issues in the larger dataset has recent issues, i.e. issues that are subsequent another issue from the company within the past 1 year. Lastly, by looking at the fraction of deal types in the dataset, we can see that there is a relatively even distribution of firms performing private placements and rights issues respectively.

Figure 7

Fraction of Deal Types



The figure displays the relative share of the methods of flotation in the SEO sample used for the Event Study.

7. Results and Analysis

The following section details the results of our investigation. We begin by presenting the CARs for the different categories around announcement, coupled with significance tests on the results. We then proceed by presenting the post-issue actual use of proceeds for the respective categories. Lastly, we present the cross-sectional regression ultimately investigating our core hypothesis.

Worth noting is the fact that the significance tests are performed on a larger set of firms compared to the analysis of post-issue use of proceeds as well as the cross-sectional regression. The reasoning for this is to capture as many firms as possible in our study when possible, in order to achieve the most reliable results as well as a higher degree of comparability to previous studies. We deem that using a smaller dataset when unable to proceed with the larger dataset will allow us to capture part of this dataset, whilst at the same time having in mind that the results might have been different if the dataset would be larger. Based on this reasoning, we interpret our results with caution.

7.1. Significance Tests on the Cumulative Abnormal Returns

Table 1 represents a summary of CARs and significance tests. In the top of each row section, we can see the CAR for each category of intended use of proceeds within different time frames around the announcement date. The two rows below further present the results from the parametric as well as non-parametric statistical hypothesis tests, testing whether the means of the respective CARs are statistically different from zero.

Table 1

Price Reactions to Equity Issue Announcements by Intended Use of Proceeds

	N	*CAR(0,1)*	*CAR(0,2)*	*CAR(-1,1)*	*CAR(-2,2)*
Recapitalization	34	-8.60%	-9.03%	-8.03%	-8.36%
Z-test		(-2.86)***	(-2.52)***	(-2.76)***	(-2,43)***
Wilcoxon test		[-2.59]***	[-2.49]***	[-2.51]***	[-2.45]***
General Corporate Purposes	80	-6.27%	-6.24%	-5.46%	-5.14%
Z-test		(-5.88)***	(-5.69)***	(-5.22)***	(-5.26)***
Wilcoxon test		[-4.87]***	[-4.85]***	[-4.15]***	[-3.86]***
Investment	114	-1.79%	-1.63%	-1.48%	-1.50%
Z-test		(-1.69)*	(-1.36)	(-1.34)	(-1.09)
Wilcoxon test		[-1.67]**	[-1.61]	[-1.41]	[-1.60]

This table presents cumulative abnormal returns (CAR), calculated through the market model, around the equity issue announcements calculated for each category of intended use of proceeds. The percentage CAR's are averaged across the subsamples. In parentheses, we report the Z-values from the Patell (1976) standardized cross sectional test and the Z-values from the Wilcoxon signed-rank test. N denotes the number of observations and *, ** and *** are the statistical significance levels at 10%, 5% and 1% level, respectively.

In accordance with previous empirical evidence as well as the basis for our hypothesis, the companies disclosing *investment purposes* as intended use of proceeds display the least negative CARs around announcement. Worth noting however, is the fact that both the parametric and non-parametric tests only show significant results on day 0 and 1 CAR for firms within the *investment purposes* category. Hence, we can conclude that the median of the CAR in the window (0,1) is statistically different from zero but that the other results within this category might not be representative for a larger set of any firms classified in the same category. As earlier stated however, evidence from previous literature suggests that these results still give us an accurate indication of the level of CARs in relation to the other categories of intended use of proceeds investigated.

Moreover, both companies disclosing *recapitalization purposes* and *general corporate purposes* experience CARs much below zero. Additionally, through the parametric and non-parametric statistical hypothesis tests, we can conclude that the CARs for both *recapitalization purposes* and *general corporate purposes* are significant. Worth noting as well is the fact that both categories experience CARs much below the average found by previous scholars for all types of SEOs (negative 3%). This also confirms the hypothesis of the market reacting less negative to the announcement of SEOs by *investment purposes* firms, pushing up the average CAR irrespective of intended use of proceeds. The category *recapitalization purposes* has consistently, and with high significance, the most negative CARs around announcement. This could most likely be explained by the *lemons problem* and *signalling* outlined and highlighted in the theory section. As the disclosure of intended use of proceeds could be seen as a means for signalling to investors, firms disclosing purposes related to investments or even working capital indicates faith in future company growth prospects (acquisition or organic) to investors. This most likely mitigates the effect of investors thinking that the SEO is timed during undervaluation as well as comforts investors of the fact that managers will not engage in wasteful spending when receiving the capital.

To further validate the above conclusions, Table 2 presents the results from an additional test, namely a two-sample t-test (Welch adjusted), investigating whether the means in the different categories are statistically different from each other. We can conclude that this is the case for the *investment* category, indicating that the CAR on investment-related SEOs are statistically greater than the CAR on the other two stated purposes.

Table 2

Two sample Welch Adjusted T Tests of means on CAR Between Use of Proceeds Categories

Category	***CAR(-2,2)***	***CAR(0,2)***
Investment vs. Refinancing		
Test Statistic	1.737*	1.907*
Investment vs. General Corporate Purposes		
Test Statistic	-1.886*	-2.776***
Refinancing vs. General Corporate Purposes		
Test Statistic	0.972	0.707

This table presents if the cumulative abnormal returns (CAR) over either a 5-day or 2-day window differ between the use of proceeds categories. The test statistics display the t-statistics using the Welch adjusted test of means for unequal variances. *, ** and *** are the statistical significance levels at 10%, 5% and 1% level, respectively.

Lastly, worth noting is the fact that the number of observations within each category are highly skewed. 50% of the firms in the observed set are categorized within *investment purposes* whereas only approximately 35% and 15% of the firms in the set are categorized within *general corporate purposes* and *recapitalization purposes* respectively. This of course impacts the reliability as well as the significance of the results. Thus, it could be questioned whether this is a coincidence and a result of a relatively small data set or whether it is rather a result of the fact that *investment firms* experience the least negative market reactions. If assuming the latter, one could also question whether this is a consequence of the fact that companies not intending to use their proceeds for investment tries to avoid equity issues and turns to other sources of capital (leaving most companies still turning to equity market being *investment firms*). Alternatively, one could question whether this is rather a result of firms claiming the intended use of proceeds are for investments, irrespective of their actual intentions, in order to mitigate the negative market reaction from issuing equity. These questions are further investigated in section 7.3.

7.2. Post-Issue Actual Use of Proceeds

Table 3 shows post-issue firm characteristics of the respective firm categories. To be able to analyze the actual use of proceeds in relation to the intentions stated in the press releases, the measures analyzed are based on the subcategories for intended use of proceeds. Hence, the main measures are capital expenditures and R&D expenses (representing category *investment purposes*), long-term debt (representing category *recapitalization purposes*) as well as working capital (representing category *general corporate purposes*).

Table 3
Use of Funds

	[Variable (yr. N)/TA (yr. -1)]				Yr. 2 Comparisons	
	yr. -1	yr. 0	yr. 1	yr. 2	vs. Invest	vs. General
	(1)	(2)	(3)	(4)	(5)	(6)
TA						
All	1.000	1.217***	1.323***	1.743***		
Invest	1.000	1.274***	1.496***	1.736***		
General	1.000	1.134***	1.126***	1.200*	0.113	
Refinancing	1.000	1.058	1.155**	1.273***	0.397	0.476
INV						
All	0.047	0.046	0.055***	0.058***		
Invest	0.057	0.061***	0.066***	0.078***		
General	0.052	0.050	0.074	0.032	0.000	
Refinancing	0.033	0.036	0.046	0.042	0.000	0.914
LTD						
All	0.131	0.183	0.211*	0.265***		
Invest	0.145	0.306	0.359*	0.505***		
General	0.021	0.065	0.089*	0.026**	0.043	
Refinancing	0.199	0.192	0.210	0.223	0.249	0.762
WC						
All	0.089	0.058	0.098	0.111		
Invest	0.098	0.064	0.149	0.122		
General	0.169	0.060	0.120	0.079	0.815	
Refinancing	0.052	0.056	0.052	0.142	1.000	1.000

This table shows the sample of firms that did an SEO that meet data requirements. TA stands for total book assets in year N. INV is CAPEX + R&D in year N. LTD is long term debt in year N. WC is working capital in year N. All values reported are in medians. Wilcoxon rank.-sum tests are used to test differences in the medians for years 0, +1 and +2 in relation to year -1. *. ** and *** denote the statistical significance in the differences in the medians at the 1%, 5% and 10% level. The columns (5) and (6) report the *p*-values for comparisons across subsets for the statistics of the year 2+ median differences.

In accordance with Walker and Yost (2008), all measures are denominated by the asset base of the company the year before the issue in order to analyze the use of funds relative to the company's size pre-issue. The development of the total asset base is also included as a characteristic parameter for reference.

First of all, we can conclude that in accordance with Walker and Yost (2008), all firm categories tend to increase their asset base post-issue relative to pre-issue with high significance - even the *refinancing purposes* firms which have stated the intention to replace current debt with equity rather than to grow the firm. Secondly, we can also conclude that the increase is the steepest within the *investment purposes* category. This is in line with our expectations considering the fact that these firms have stated intention to use funds for expansion purposes in combination with the fact that expansion through acquisitions in most cases yields faster results than organic expansion (*general corporate purposes* / increase in working capital).

Moreover, we look at the proxy for leverage and conclude that all firm categories except for *refinancing firms* themselves experience significant results 1 and 2 years post-issue respectively. Even though insignificant, we find it interesting to note that the portion of long-term debt for the *recapitalization purposes* firms tend to decrease marginally during the year of the SEO to then increase marginally in the years 1 and 2 post-issue. From this result, we can draw the same conclusions as Walker and Yost (2008) - first, that the large inflow of equity capital from the SEO causes leverage to decrease during the year of the SEO and second, that the intention to use the equity proceeds to repay debt does not mean purely replacing debt with equity but rather to repay one kind of debt in order to be able to use other sources in the debt market at a later stage. For the other two categories however, we observe different patterns of leverage from Walker and Yost (2008). *Investment purposes* firms tend to increase their leverage ratio every year post-issue compared to pre-issue (with year 1 and 2 post-issue of significance). This could be explained through the fact that acquisitions can enable diversification and hence a higher leverage for the combined firm. It could also be a tendency of the analysis made for *recapitalization* firms - e.g. that expensive and short-term bridge facilities are repaid using equity proceeds to thereafter be replaced by a larger amount of cheaper and more sustainable debt. The post-issue leverage characteristics are significant for *general corporate purposes* firms in the year 1 and 2 post-issue, and here we observe a tendency of these firms first increasing their leverage level to then eventually going back to the pre-issue level of leverage 2 years post-issue. The reason for this could be that these firms are in need for immediate and large amounts of capital from various sources in order to grow their business organically (and increase working capital) however ultimately aims to maintain an "optimal" level of leverage when the peak of their expansion phase is over. Furthermore, working capital are insignificant for all firms and no clear patterns can be observed.

Lastly and most importantly, by looking at the fraction of capital expenditures plus R&D expenses relative to pre-issue firm size, we can conclude that *investment purposes* firms overall experience a steep increase in investments in year 0, 1 and 2 compared to the pre-issue year. Observing the same firm characteristics for the other categories, we observe patterns that investments are increasing year 1 relative to year -1, but these values are insignificant. Our following question from the significant increase in investments for *investment purposes* firms in combination with the observed lower and insignificant cumulative abnormal returns for these firms in the section above of course then becomes - are all firms (and not only the median firm) increasing their investment ratio post-issue? If so, is this a result of the market being able to detect firms actually investing post-SEO amongst all firms signalling positive investment

opportunities, thereby responding differently to their announcements? This question is further investigated in the following section, *Cross-Sectional Regression Analysis*.

7.3. Cross-Sectional Regression Analysis

Table 4 presents the cross-sectional regression results of the cumulative abnormal returns at announcement. As previously stated, the regression aims to investigate whether the market is able to detect firms actually investing post SEO amongst all firms signalling positive investment opportunities, by responding differently to their announcements.

Table 4

Regression on abnormal announcement returns

	(1) Use of proceeds and interaction	(2) Deal characteristics	(3) With deal and firm characteristics
INVESTMENT	0.113***	0.119*	0.176***
	(0.040)	(0.060)	(0.065)
POSTINVDUM	0.074	0.068	0.065
	(0.045)	(0.046)	(0.049)
INVESTMENT*POSTINVDUM	-0.108**	-0.109*	-0.133**
	(0.058)	(0.059)	(0.076)
GENERAL		0.002	0.054
		(0.974)	(0.056)
LN(PROCEEDS)		0.007*	-0.002
		(0.011)	(0.012)
OVERNIGHT		-0.109	-0.108
		(0.072)	(0.091)
RIGHTS		-0.149**	-0.120
		(0.067)	(0.091)
RECENT		0.026	0.038
		(0.049)	(0.042)
TRADINGINTENSITY			0.001
			(0.005)
CHANGELTD			0.049
			(0.035)
CHANGEWC			0.005
			(0.013)
B/M			6.349
			(4.710)
Year Dummies	YES	YES	YES
Industry Dummies	YES	YES	YES
Adjusted R^2	0.012	0.045	0.074
N	103	103	103

This table presents results for the main regression where the dependent variable is the cumulative abnormal return, CAR for a 2-day event window from day 0 and day +2 where day 0 is the announcement day. Market model parameters are estimated over days (-180, -10). INVESTMENT is an indicator variable that equals to one if the firm is categorized as a firm stating investment purposes in the SEO announcement. TA is total book assets. POSTINVDUM is a binary variable that takes the value of one if the firm has a positive coefficient for change in investment $[(INV_{+1}-INV_{-1})/TA_{-1}]$ where INV is CAPEX + R&D. INVESTMENT*POSTINVDUM is an interaction variable between INVESTMENT and POSTINVDUM. LN(SIZE) is the natural logarithm of the firm's market value in the month prior to announcement. B/M is the book to market ratio in the month prior to announcement. LN(PROCEEDS) is the natural logarithm of the issue proceeds. RIGHTS refer to right issues. TRADINGINTENSITY is the natural logarithm of average traded shares in the 6 months prior to announcement. OVERNIGHT is a binary variable that takes the value of one if the issue was completed and announced over the course of maximum 2 days. RECENT is a binary variable that takes the value of one if the firm has made an issue within 365 days before the announcement of the current issue. CHANGELTD is the firm's change in long term debt (LTD) calculated as $[(LTD_{+1}-LTD_{-1})/TA_{-1}]$ CHANGEWC is the firm's change in working capital = current assets – current liabilities (WC) calculated as $[(WC_{+1}-WC_{-1})/TA_{-1}]$. The models use robust standard errors reported in the parentheses and *, ** and *** denote statistical significance at the 10%, 5% and 1% level respectively.

As introduced in the methodology section, our dependent variable is the price reaction to the SEO announcements, i.e. CAR. Moreover, the dummy variable INVESTMENT is an indicator of whether the firm is classified as an *investment purposes* firm - taking the value of 1 if the firm states *investment purposes* in the disclosure of use of proceeds, and 0 otherwise.

In finding an appropriate measure to determine whether firms fulfill their intentions of investing, we have assumed a high plausibility that companies disclosing *investment purposes* and suggesting plans for further expansion / growth would most likely increase investment compared to historical levels. For this reason, the model also includes the indicator variable POSTINVDUM for distinguishing firms increasing their investments post-issue as compared to pre-issue (i.e. thought of as fulfilling their stated intentions) from firms who do not increase their investment levels.

The main variable for testing our hypothesis is the interaction term between INVESTMENT and POSTINVDUM*,* that takes the value of 1 if both the INVESTMENT and the POSTINVDUM dummies have the value of 1. For this reason, this will be the main focus of the following analysis. As stated earlier, a positive and statistically significant interaction term would mean that the market would be able to differ between firms increasing their investment levels post-issue and those who don't, rewarding firms increasing their investment levels. As can be seen however, the interaction term is statistically significant but negative across all three models, meaning that the market can distinguish firms increasing their level of investment but tend to be more negative towards these firms. It seems as if the market does not solely interpret the increase in investment as the firm fulfilling its intentions and seizing investment opportunities in order to grow further, but rather chooses to focus on the potential risks associated with an increasing investment level. This can be connected to the theory of *wasteful spending.* If the market believes that the risks of the company using the equity proceeds on irrelevant or even value destroying projects outweighs possible gains, the correlation between the market reaction upon announcement and the interaction term is most reasonably negative. Moreover, this tendency of investors benchmarking future expectations against past investment levels could be linked to a cognitive bias within behavioral finance implying that investors tend to base their expectations of the future much on past (and especially most recent) performance.

To conclude, the market seems to find different "layers" of risk that firms will engage in wasteful spending. The first layer impacting CAR upon announcement is the difference between disclosed information by the company of the intended use of proceeds (i.e. *investment purposes*, *recapitalization purposes* and *general corporate purposes*). The second layer

impacting CAR upon announcement seems to be the difference between past and future investment ratios. To this analysis we also add a speculative hypothesis - since the market evidently is highly sensitive to companies drastically increasing their investment ratio, the market is also most likely able to detect companies stating interesting investments that are in reality not value additive at all (i.e. companies falsely disclosing *investment* as a purpose for the SEO).

8. Robustness

In the following section, tests for robustness of the above results are presented. The section has the same structure as the above results section, starting with robustness of the CAR significance hypothesis tests, proceeding with post-issue use of funds and lastly testing the robustness of the cross-sectional regression results.

8.1. Significance Tests on the Cumulative Abnormal Returns - Division of Investments

Table 5 represents CAR and significance tests for *investment purposes* when this category is divided into two, namely firms that have an acquisition announcement in conjunction with the analyzed SEO announcement and *other investment*, such as real estate assets and vessels. The purpose of this division is detailed in section 5.3.

Table 5

Robustness Test: Price Reactions to Equity Issue Announcements by Intended Use of Proceeds

	N	*CAR(0,1)*	*CAR(0,2)*	*CAR(-1,1)*	*CAR(-2,2)*
Acquisition	46	1.59%	1.66%	-2.50%	3.04%
Z-test		(1.30)*	(1.62)*	(1.63)*	(2.05)**
Wilcoxon test		[0.85]	[0.95]	[1.32]	[1.63]
Other Investment	68	-4.08%	-3.84%	-4.18%	-4.58%
Z-test		(-3.68)***	(-2.65)***	(-3.64)***	(-3.00)***
Wilcoxon test		[-2.62]***	[-2.51]**	[-2.70]***	[-2.99]***

This table presents robustness tests for the cumulative abnormal returns (CAR), calculated through the market model, around the equity issue announcements by the intended use of proceeds for the group "investment" that has been divided into Acquisition purposes and Other Investment. The percentage CAR's are averaged across the subsamples. In parentheses, we report the Z-values from the Boehmer et al. (1991) standardized cross sectional test and the Z-values from the Wilcoxon signed-rank test. N denotes the number of observations and *, ** and *** are the statistical significance levels at 10%, 5% and 1% level, respectively.

As can be seen in Table 5, the firms announcing acquisitions in conjunction with their SEO announcement have positive CARs around the event (with the Z-test showing slight significance for these results). Firms with other types of *investment purposes* on the other hand, show negative and highly significant CARs around announcement. These results are in line with our expectations - since firms in the *acquisition purposes* category are able to prove already seized or more adjacent investment opportunities they are most likely received as more credible compared to *other investment* firms.

8.2. Post-Issue Use of Funds

In Table 6, post-issue firm characteristics are presented for *investment purposes* firms by the same split as the above section - *acquisition purposes* or *other investment*.

Table 6
Robustness: Use of Funds

	[Variable (yr. N)/TA (yr. -1)]				Yr. 2 Comparisons
	yr. -1	yr. 0	yr. 1	yr. 2	vs. Acquisition
	(1)	(2)	(3)	(4)	(5)
TA					
Acquisition	1.000	1.685***	1.837***	2.118***	
Other Investment	1.000	1.180***	1.319***	1.202***	0.000
INV					
Acquisition	0.057	0.050	0.089	0.083*	
Other Investment	0.060	0.087	0.065	0.072	0.837
LTD					
Acquisition	0.169	0.422*	0.444**	0.509***	
Other Investment	0.134	0.130	0.168	0.262	0.113
WC					
Acquisition	0.101	-0.041**	0.094	0.111	
Other Investment	0.095	0.128	0.158	0.123	0.761

This table shows the sample of firms that did an SEO that meet data requirements. TA stands for total book assets in year N. INV is CAPEX + R&D in year N. LTD is long term debt in year N. WC is working capital in year N. All values reported are in medians. Wilcoxon rank.-sum tests are used to test differences in the medians for years 0, +1 and +2 in relation to year -1. *. ** and *** denote the statistical significance in the differences in the medians at the 1%, 5% and 10% level.

By looking at the fraction of investments relative to pre-issue firm size, we can conclude that *acquisition purposes* firms increase their investment ratio slightly post-issue compared to pre-issue - however these results are not significant (with the exception of 1% significance for *acquisition purposes* 2 years post-issue). Moreover, for *other investment*, we observe insignificant results and no clear pattern.

Furthermore, we note that *acquisition purposes* significantly increase their portion of long-term debt relative to pre-issue firm size between year -1 and year 0, indicating that they most likely raise more debt to fund the acquisition in addition to the equity funds raised. These firms significantly increase their levels of debt both one and two years after the announcement as well. This is in line with the results in section 6, and could hence be explained through the same reasoning - that expensive and short-term bridge facilities are used in the acquisitions and then repaid using equity proceeds to thereafter be replaced by a larger amount of cheaper and more sustainable debt. Lastly, we note the same patterns for *other investment*, although insignificant, applying the same explanations here as well.

8.3. Cross-Sectional Regression

Table 1 in Appendix 3 presents the cross-sectional regression results if applying a 5-day CAR rather than a 2-day CAR, as presented in the results section. As can be seen if comparing the two, the results are highly similar. The interaction terms across all six models are negative and

significant, although slightly lower for model 1 and 2 in the 5-day CAR results compared to the same models in the 2-day CAR regression. The results from the third model however are almost intact in the two regressions. Hence, we conclude that the results are robust regardless of what event window we choose for our short-term CAR analysis.

In order to test the robustness of our results further, we replace our interaction variable with an interaction between INVESTMENT and the relative investment dummy RELATIVE_INV. The resulting regression can be seen in Table 2 in Appendix 3 (still using 5-day CAR). As stated before, we expect the interaction variable to have the same sign as in our main regressions since the variable RELATIVE_INV is an alternative way of measuring the increase in investment from our main method. In all regressions, the coefficient of new interaction variable remains negative, although significance is lost, and the values are smaller. We can also conclude that despite the lost significance, the magnitude of the coefficients are not substantively different from the main regressions. What we do notice is that the RELATIVE_INV dummy is significant in model 1 and model 3 on a 10% level and that the signs for RELATIVE_INV and the POSTINVDUM dummy are the same. The dummy INVESTMENT keeps its significance level in all three regressions and remains positive.

9. Critical Discussion of Research Method

9.1 Sample Bias

In the sample selection leading to our smaller dataset for the regression, we filter out many SEO observations. The main reason for filtering the variables is to keep balance sheet data one year before the SEO, and two years after without having the impact of the same firm conducting a second SEO during this time span. Since a firm can only have one issue during a 3-year period in the dataset, we excluded a significant amount of observations from the dataset due to frequent issuers. Thus, we argue that it is possible that our adjustments to the data may have had an impact on the regression outcome since we filter out valuable data, and we interpret the results with caution keeping this shortcoming in mind.

9.2 Classifying Firms in the Use of Proceeds Categories

As shown in the robustness test, we extend the three commonly used categories in previous literature of use of proceeds and SEOs and add another group named *acquisition purposes* to increase the specificity of the analysis further. We argue that firms can be classified into even more specific categories such as firms stating how they will use the funds by specific amounts or percentages, firms being more clear than others on how they will spend the capital stating *investment purposes* and firms who disclose that they will use the money both for repaying debt and for specific investments.

Moreover, we highlight the fact that interpreting a text in order to categorize it is very difficult and highly subjective. In this case, we see that firms can be vague or short in their statements even though they disclose *investment purposes* and as a result, there is a risk that we did not fully capture all firms that should be in this category. By having more clear guidelines on how to classify firms, we could assume that this would have produced more accurate results, however we cannot know this for sure. Since previous literature has not given clear guidelines on how to properly classify firms based on their statements, it is up to the author to develop own classifications and where to ultimately draw the line between *investment purposes* and *general corporate purposes*. Further, we argue that more general statements by firms, such as “financing future expansions” or “financing future growth” were hard to classify and we leave it to future research to investigate further how to interpret such disclosures and whether the market treats them differently.

Another suggestion of a potential shortcoming in classifying firms into their use of proceeds categories is the practical example of the SEO disclosure of Fingerprint Cards in 2018, stating that the proceeds will be used for both CAPEX and working capital;

> *"The proceeds will be mainly used for investment and costs for recruitment of personnel, consultants, growth projects and acquisitions of technology companies".*

We classified this proceeds text as *investment purposes*. Worth criticizing, is the fact that the firm is expected to not only use the proceeds for capital expenditures but also for working capital. Based on this, we think that a better method would be to treat each *investment purposes* firm separately in classifying how they will increase their investments. Previous literature classify investment as consisting of capital expenditures and R&D, but we would rather argue that this has to be either industry-specific or firm-specific to generate more accurate results and we leave it for further research to do so.

9.3 Measuring the Level of Investment

In Sweden, firms are not obliged to state how much of the proceeds they will use for what, which is one factor that may affect the reliability of measuring investment opportunities in our study. We do not know how much firms actually plan to invest, and we only base our post investment measure on how it relates to past investment. If we would know how much firms do plan to invest in the future, it would be easier to tie to our interaction variable. Then the indicator variable POSTINVDUM would instead indicate the value of one when firms meet their stated investment plans in year 1 (perhaps with a 10 percent margin) and the value of zero if they either invest less or even more than they stated that they would do. We come to this reasoning since we argue that firms who state *investment purposes* might not be expected to invest more than the year before the SEO since they might need a capital injection due to financial distress or for survival purposes.

There are other ways to estimate investment opportunities and growth prospects, such as with Tobin's Q, indicating a firm's investment efficiency and capturing the change in the Q-value between the years. Tobin's Q is the most widely used measure in estimating investment efficiency, and is developed by Brainard & Tobin in 1969. Firms with a Q-value of more than one have an abundance of investment opportunities and should increase the capital stock of the firm since it is higher priced by the market as compared to its acquisition cost (Brainard, Tobin,

1968). However, Walker and Yost (2008) argue that Tobin's Q has many interpretations in addition to being a proxy for growth opportunities, such as under- or over-valuation and it is therefore risky to interpret the relationship between Q and valuation. If having used Q in our study, we would expect the market to react more favorably to firms with higher Q's as they are perceived as being more able to pursue their growth opportunities. We would then compare a firm's Q after the SEO to the year before, in order to see how the different categories of use of proceeds are changing their Q's. The reason why we do not use Tobin's Q in our study is because of the above described ambiguity of the variable. Tobin's Q could either be a proxy for over- and under-valuation showing that the market is inefficient, or represent the level of asymmetric information about the firm's assets connected to the pecking order theory.

10. Suggestions for Future Research

This study aims to extend the existing literature on the relationship between the disclosure of intended use of proceeds and abnormal returns by further investigating which mechanisms have an impact on the market's reaction to stated *investment purposes* in disclosures. The results in our study, in combination with the discussion of the limitations of research method, provide interesting insights that can be further researched in the future in order to extend or tweak the analysis.

First of all, it would be interesting to study the phenomenon of frequent issuers, since these represent a large fraction of the total dataset. We encourage future research to investigate whether the market treats frequent issuers differently based on their use of proceeds statements, and whether these frequently issuing firms are consistent in their statements from the first SEO to the preceding SEO. This could provide different insights on the relationship between disclosure of intended use of proceeds and abnormal returns based on how frequently a firm decides to issue equity.

Furthermore, due to the small dataset in this study (as compared to studies in the U.K. and U.S.) we would suggest further research to study a larger dataset including other countries in the Nordics to get a more comprehensive overview of whether the results from our study is only representative for Sweden or if they can also be applied to other Nordic countries.

Finally, due to the limited size of the dataset, we did not perform any further analyses on the methods of flotation, namely rights issues versus placings. However, since both institutional features as well as the most common methods of flotation differ between Sweden and the U.S., we suggest further studies to be made on different types of direct placements to institutions. Studies could then investigate how choosing to conduct a share placement affects how firms disclose their proceeds, how the market reacts to what firms state and whether there is a difference from when firms choose to do a rights issue.

11. Conclusion

In this paper, we have investigated the market's reaction upon SEO announcements in relation to stated intended use of proceeds and post-issue use of proceeds, in order to provide clarification as to what motivates firms to their disclosure at announcement.

To conclude, we find that the market's reaction to SEO announcements much depends on the communicated purpose with the SEO. More specifically, the market reacts less negatively to firms communicating that the funds will be used for *investment purposes* (rather than *recapitalization purposes* or *general corporate purposes*), thereby signalling future growth prospects. Furthermore, we find that the *average* firm stating the intention of using the proceeds for *investment purposes* actually does increase the investment level post-issue - results with significance unlike the average firm in other categories of intended use of proceeds. Lastly and most importantly, from regressing the cumulative abnormal returns around announcement on the combination of disclosing *investment purposes* at announcement and increasing the level of investments post-issue, we find that the market is able to differentiate firms with a higher level of investment from firms with a constant (or negative) level of investment post-issue and pre-issue. More specifically, we find that the market reacts less favorably to announcements by firms that increase their investment levels post-issue - results that might seem puzzling at first. However, if connecting the results to the theory of *wasteful spending*, we argue that the market does not interpret an increased investment level post-issue as purely seizing value-creating investment opportunities but rather that the market links an increased investment level to a higher and predominant risk that the company is using the equity proceeds on irrelevant or even value destroying projects. Moreover, we connect our results to a cognitive bias within behavioral finance implying that investors tend to base their expectations of the future much on past (and especially most recent) performance.

This study provides further insights to the existing literature on SEOs and the disclosure of use of proceeds. We provide support for the fact that agency issues through information of the intended use of proceeds are an important factor in Swedish SEOs. Based on our findings, we argue that there are different "layers" of risk that affect how firms will engage in wasteful spending upon receiving the equity proceeds from the SEO, which impacts the CAR upon announcement. The first layer the market reacts to is communicated use of proceeds, assessing a lower risk of wasteful spending if the intended use is for *investment purposes* rather than other purposes. The second layer the market reacts to is increased spending on investment compared to past levels, assessing that the risk of wasteful spending (e.g. irrelevant or value-

destroying projects) is higher when the level of investment increases compared to historic levels. We leave it for further research to analyze whether the cautiousness of investors is legitimate - i.e. analyzing the post-issue operational performance of the firm in relation to its degree of investment post-issue. Thereby finding out if post-issue firms that increase their investments relative to historical levels tend to perform worse compared to firms maintaining the same level of investments (however still invest, and issue funds in order to be able to invest in value-creating projects). To sum up, it seems like the market is positively directed towards firms spending proceeds on investments rather than anything else, however is rather conservative when it comes to how drastic firms are in their actual spending on investment.

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Appendix

Appendix 1.

Table 1

Definition and Source of Variables

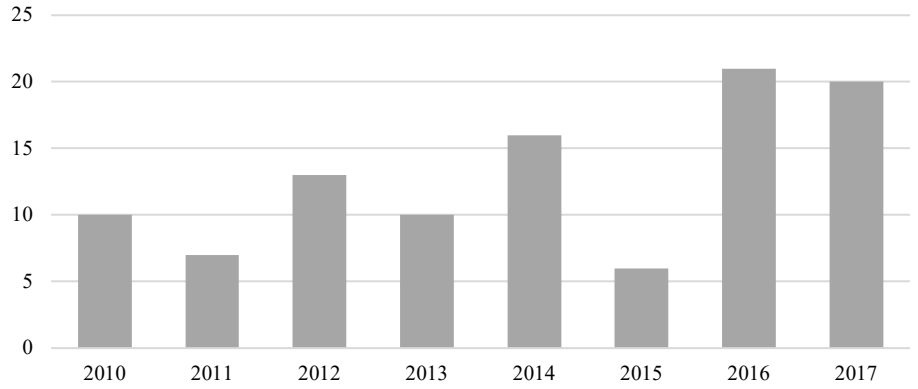
Variable	Source	Description
Use of proceeds – used for the INVESTMENT and GENERAL dummy	Retriever Business	Disclosure of intended use of capital raised, found mainly in firms' press releases. The dummy represents the value of one if it belongs to either of the use of proceeds groups: *investment purposes, general corporate purposes* and *refinancing purposes*
POSTINVDUM	Eikon	A dummy representing one if CAPEX + R&D in year +1 is larger than CAPEX + R&D in year -1, where year 0 is the SEO year
LN(PROCEEDS)	Nyemissioner.se	Size of the offering in millions of SEK, is calculated as the natural logarithm of the total deal size
RECENT ISSUE	Nyemissioner.se	A dummy variable representing one if the firm has conducted an SEO in the last 365 days since the announcement of the current SEO
RIGHTS	Nyemissioner.se	A dummy variable representing one if the firm is conducting a rights issue
OVERNIGHT	Nyemissioner.sr	A dummy variable representing one if the firm has announced and conducted an SEO over the course of 24 hours, usually announcing
TRADINGINTENSITY	Finbas	Trading intensity is calculated as the average number of traded shares for a firm, for the 6 months leading to the announcement date
B/M	Finbas	The book to market ratio is calculated as the total book value of equity divided by the market capitalization of the firm, both based on the last day of the month in the month prior to the announcement date
CHANGELTD	Eikon	Represents the change in long term debt from year -1 to year +1, where year 0 is the SEO year
CHANGEWC	Eikon	Represents the change in working capital, calculated as current assets less from year -1 to year +1, where year 0 is the SEO year
INV	Eikon	Represents the sum of capital expenditures and research and development expenditures in year N
LTD	Eikon	Represents the sum of long-term debt in year N
WC	Eikon	Represents the sum of working capital, calculated as current assets less current liabilities in year N

This table shows the data sources and description of each variable used in the analysis in this study. The first column includes the variable name, the second column the main source of the variable, and the third column describes the variable in detail or how the variable was calculated.

Appendix 2.

Figure 1

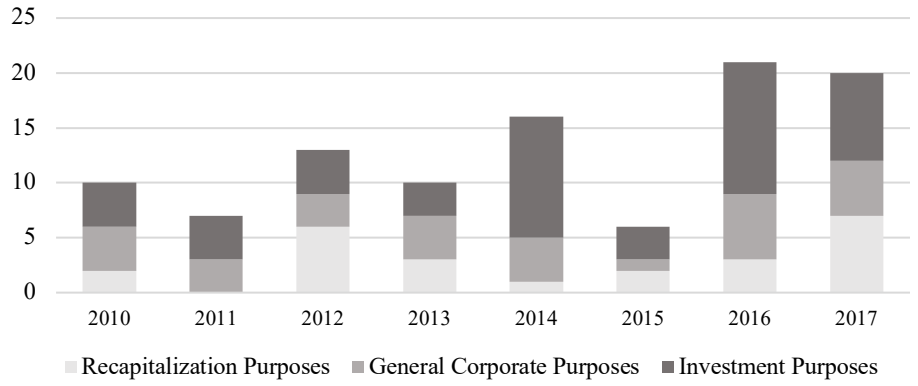
Robustness: Yearly SEO Announcements



The figure displays the yearly distribution of number of SEO announcements from the small sample used for the multivariate regression.

Figure 2

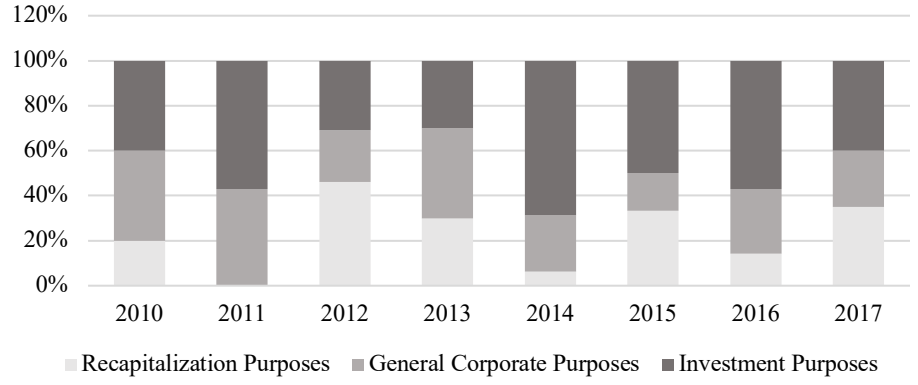
Robustness: Yearly SEO Announcements Per Category



The figure displays the yearly distribution of number of SEO announcements from the small sample used for the multivariate regression, divided into the intended use of proceeds groups *investment purposes, general corporate purposes* and *refinancing purposes*.

Figure 3

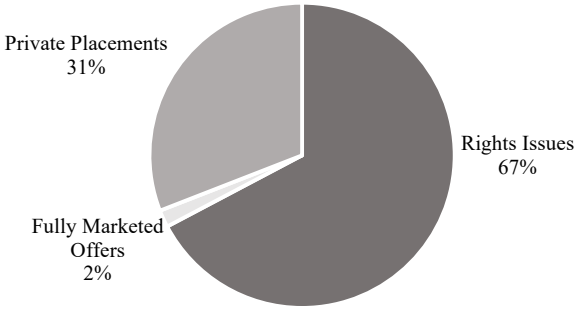
Yearly SEO Announcements Percentage Per Category



The figure displays relative share of the intended use of proceeds groups *investment purposes, general corporate purposes* and *refinancing purposes* in the small sample of SEO announcements used for the multivariate regression.

Figure 4

Fraction of Deal Types



The figure displays the relative share of the methods of flotation in the SEO sample used for the multivariate regression.

Appendix 3.

Table 1

Robustness: Regression on abnormal announcement returns – 5-day CAR

	(1) Use of proceeds and interaction	(2) Deal characteristics	(3) With deal and firm characteristics
INVESTMENT	0.129***	0.173**	0.176***
	(0.046)	(0.066)	(0.065)
POSTINVDUM	0.079	0.080	0.065
	(0.048)	(0.050)	(0.049)
INVESTMENT*POSTINVDUM	-0.129*	-0.138*	-0.132*
	(0.069)	(0.071)	(0.076)
GENERAL		0.050	0.054
		(0.0575)	(0.056)
LN(PROCEEDS)		-0.003	-0.002
		(0.011)	(0.012)
OVERNIGHT		-0.098	-0.108
		(0.089)	(0.091)
RIGHTS		-1.112	-0.120
		(0.089)	(0.091)
RECENT		0.046	0.039
		(0.056)	(0.042)
TRADINGINTENSITY			0.001
			(0.005)
CHANGELTD			0.043
			(0.035)
CHANGEWC			0.005
			(0.014)
B/M			6.349
			(4.710)
Year Dummies	YES	YES	YES
Industry Dummies	YES	YES	YES
Adjusted R^2	0.028	0.029	0.074
N	103	103	103

This table presents results for the main regression where the dependent variable is the cumulative abnormal return, CAR for a 5-day event window from day -2 and day +2 where day 0 is the announcement day. Market model parameters are estimated over days (-180, -10). INVESTMENT is an indicator variable that equals to one if the firm is categorized as a firm stating investment purposes in the SEO announcement. TA is total book assets. POSTINVDUM is a binary variable that takes the value of one if the firm has a positive coefficient for change in investment $[(INV_{+1}-INV_{-1})/TA_{-1}]$ where INV is CAPEX + R&D. INVESTMENT*POSTINVDUM is an interaction variable between INVESTMENT and POSTINVDUM. LN(SIZE) is the natural logarithm of the firm's market value in the month prior to announcement. B/M is the book to market ratio in the month prior to announcement. LN(PROCEEDS) is the natural logarithm of the issue proceeds. RIGHTS refer to right issues. TRADINGINTENSITY is the natural logarithm of average traded shares in the 6 months prior to announcement. OVERNIGHT is a binary variable that takes the value of one if the issue was completed and announced over the course of maximum 2 days. RECENT is a binary variable that takes the value of one if the firm has made an issue within 365 days before the announcement of the current issue. CHANGELTD is the firm's change in long term debt (LTD) calculated as $[(LTD_{+1}-LTD_{-1})/TA_{-1}]$ CHANGEWC is the firm's change in working capital = current assets – current liabilities (WC) calculated as $[(WC_{+1}-WC_{-1})/TA_{-1}]$. The models use robust standard errors reported in the parentheses and *, ** and *** denote statistical significance at the 10%, 5% and 1% level respectively.

Table 2

Robustness: Regression on abnormal announcement returns – Relative Investment Dummy

	(1) Use of proceeds and interaction	(2) Deal characteristics	(3) With deal and firm characteristics
INVESTMENT	0.091**	0.114*	0.117**
	(0.037)	(0.058)	(0.056)
RELATIVE_INV	0.106*	0.099	0.101*
	(0.056)	(0.061)	(0.055)
INVESTMENT*RELATIVE_INV	-0.089	-0.090	-0.109
	(0.097)	(0.100)	(0.089)
GENERAL		0.029	0.031
		(0.0596)	(0.056)
LN(PROCEEDS)		-0.003	-0.002
		(0.011)	(0.012)
OVERNIGHT		-0.084	-0.101
		(0.093)	(0.095)
RIGHTS		-1.112	-0.123
		(0.092)	(0.093)
RECENT		0.037	0.028
		(0.053)	(0.042)
TRADINGINTENSITY			0.000
			(0.005)
CHANGELTD			0.047*
			(0.013)
CHANGEWC			0.005
			(0.013)
B/M			6.005
			(4.213)
Year Dummies	YES	YES	YES
Industry Dummies	YES	YES	YES
Adjusted R^2	0.031	0.022	0.075
N	103	103	103

This table presents results for the main regression where the dependent variable is the cumulative abnormal return, CAR for a 5-day event window from day -2 and day +2 where day 0 is the announcement day. Market model parameters are estimated over days (-180, -10). INVESTMENT is an indicator variable that equals to one if the firm is categorized as a firm stating investment purposes in the SEO announcement. TA is total book assets. RELATIVE_INV is a binary variable that takes the value of one if the firm has a positive coefficient if the firm belongs to the upper quartile for the relative change in investment $[(INV_{+1}/TA_{+1})]/[(INV_{-1})/TA_{-1}]$ where INV is CAPEX + R&D. INVESTMENT*RELATIVE_INV is an interaction variable between INVESTMENT and RELATIVE_INV. LN(SIZE) is the natural logarithm of the firm's market value in the month prior to announcement. B/M is the book to market ratio in the month prior to announcement. LN(PROCEEDS) is the natural logarithm of the issue proceeds. RIGHTS refer to right issues. TRADINGINTENSITY is the natural logarithm of average traded shares in the 6 months prior to announcement. OVERNIGHT is a binary variable that takes the value of one if the issue was completed and announced over the course of maximum 2 days. RECENT is a binary variable that takes the value of one if the firm has made an issue within 365 days before the announcement of the current issue. CHANGELTD is the firm's change in long term debt (LTD) calculated as $[(LTD_{+1}-LTD_{-1})/TA_{-1}]$ CHANGEWC is the firm's change in working capital = current assets – current liabilities (WC) calculated as $[(WC_{+1}-WC_{-1})/TA_{-1}]$. The models use robust standard errors reported in the parentheses and *, ** and *** denote statistical significance at the 10%, 5% and 1% level respectively.