

Ownership structure and choice of issue method in seasoned equity offerings - European evidence

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Konsta Ruutu
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Department of Accounting and Finance
HELSINGIN KAUPPAKORKEAKOULU
HELSINKI SCHOOL OF ECONOMICS





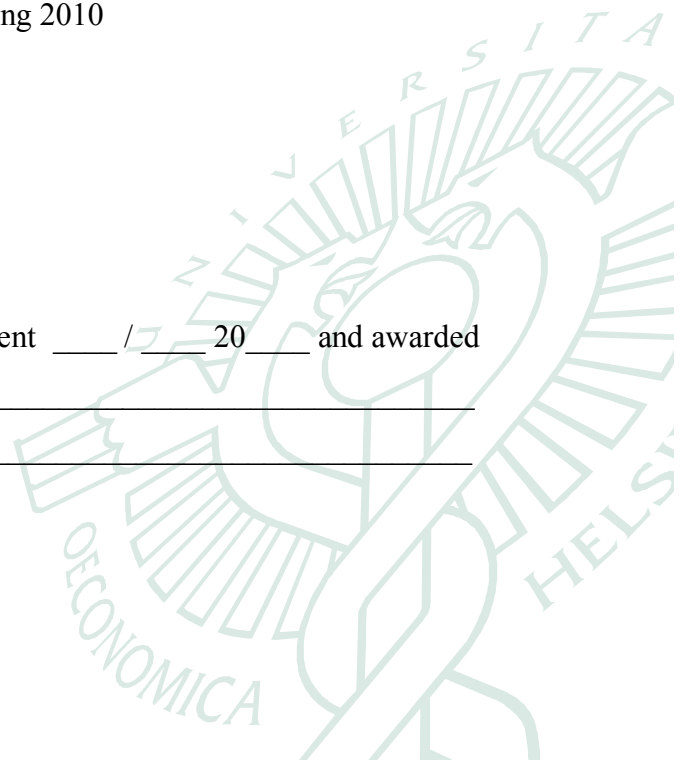
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European evidence

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EQUITY OFFERINGS – European evidence

PURPOSE OF THE STUDY

The purpose of the thesis is to provide new evidence on seasoned equity offerings (SEOs) in Europe. The thesis addresses the lack of empirical research on different public issue types, in particular the distinction between fully marketed offerings and accelerated offers, in addition to studying ownership characteristics. More specifically, new evidence is provided on the influence of the issue method, institutional ownership, and ownership concentration on the offer price discount, announcement effect, and long-run post-issue returns; and to whether ownership characteristics affect the choice of issue method.

DATA

The data on SEOs employed in the thesis is sourced from the Dealogic database, which provides the needed classification for the issue type absent in the SDC database. The sample consists of SEOs carried out in Europe during the period 2000-2005, with the total number of SEOs amounting to 364. The data on ownership characteristics consists of pre and post-issue institutional holding and ownership concentration, and has been manually handpicked from Thomson Financial. Data on various firm characteristics is sourced from Thomson Financial and Dealogic, while stock prices and market indices are retrieved from Datastream.

RESULTS

The results indicate that SEOs which are carried out by a fully marketed process suffer to a lesser extent from the offer price discount than SEOs which are carried out by an accelerated process. On the other hand, ownership characteristics do not seem to affect the offer price discount. The announcement effect is not affected by the issue method or ownership characteristics. Additionally, high ownership concentration is negatively associated with 24 and 36-month post-issue returns. High institutional holding is positively associated with 24-month post-issue returns – however this result is not observable for 36-month returns. The issue method does not seem to affect post-issue returns. Finally, SEOs which are characterized by high pre-issue institutional ownership and low pre-issue ownership concentration are likely to be carried out by an accelerated process.

KEYWORDS

Seasoned equity offering, issue method, ownership structure, institutional ownership, ownership concentration, offer price discount, long-run underperformance

OWNERSHIP STRUCTURE AND CHOICE OF ISSUE METHOD IS SEASONED

EQUITY OFFERINGS – European evidence

TAVOITTEET

Tutkimuksen tavoitteena on tuottaa uutta tutkimustietoa osakeanneista Euroopassa. Tutkimus keskittyy eri antitapojen eroavaisuuksiin sekä omistusrakenteen vaikutuksiin. Erityisesti tutkimus tarkastelee millä tavalla annin järjestelytapa, instituutio-omistus sekä omistuksen keskittyneisyys vaikuttavat annin hinnoitteluun, annin julkistusvaikutukseen, sekä pitkän aikavälin menestykseen. Lisäksi tutkimus selvittää omistusrakenteen vaikutusta annin järjestelytapaan.

AINEISTO

Tutkimuksen aineisto koostuu Euroopassa järjestetyistä osakeanneista vuosina 2000-2005. Osakeantiaineisto on peräisin Dealogic tietokannasta, joka tarjoaa tarkan luokituksen annin järjestelytavasta, antien kokonaislukumäärän ollessa 364. Aineisto omistusrakenteesta koostuu ennen antia sekä annin jälkeen vallitsevasta instituutio-omistuksen tasosta sekä omistuksen keskittyneisyydestä. Omistusrakenne on manuaalisesti haettu Thomson Financial tietokannasta. Muu aineisto yrityskohtaisista muuttujista on haettu Thomson Financial sekä Dealogic tietokannoista, kun taas osakekurssi- ja indeksiaineisto on peräisin Datastream tietokannasta.

TULOKSET

Tutkimuksen tulokset osoittavat, että annit joita edeltävät perusteellinen markkinointiprosessi kärsivät vähemmän alihinnoittelusta kuin muut annit. Toisaalta omistusrakenne ei näytä vaikuttavan annin alihinnoitteluun. Annin järjestelytapa tai omistusrakenne ei vaikuta annin julkistusvaikutukseen. Korkea omistuksen keskittyneisyys vaikuttaa negatiivisesti 24 ja 36 kuukauden annin jälkeisiin tuottoihin. Korkea instituutio-omitus vaikuttaa positiivisesti 24 kuukauden annin jälkeisiin tuottoihin – tämä suhde ei kuitenkaan ole havaittavissa 36 kuukauden tuotoissa. Toisaalta annin järjestelytapa ei näytä vaikuttavan pitkän aikavälin annin jälkeisiin tuottoihin. Lisäksi, annit joissa on matala instituutio-omistus sekä korkea omistuksen keskittyneisyys järjestetään todennäköisemmin perusteellisen markkinointiprosessin edeltämänä.

AVAINSANAT

Osakeanti, annin järjestelytapa, omistusrakenne, instituutio-omistus, omistuksen keskittyneisyys, annin alihinnoittelu, pitkän aikavälin alisuoriutuminen

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1. Introduction

1.1. Background and motivation

Seasoned equity offerings (SEOs) are an important source of funding for exchange-listed companies. However, they do not receive as much attention as initial public offerings (IPOs), in which a non-listed company raises equity by listing in a stock exchange. The volume of SEOs rose in 2009, partly due to companies needing additional financial without having the possibility of going to the debt markets due to high leverage ratios. Moreover, IPO volumes in 2009 were particularly low, with investors being risk averse and hesitant to finance risky IPO companies. These factors contribute to SEOs being an interesting and contemporary topic of study. Most studies published in academic journals have documented SEOs in the US, with only a handful focusing on European or other stock markets. Due to this, I have chosen Europe as the geography in the thesis.

Seasoned equity offerings have been studied widely in academic literature. Perhaps the most documented phenomenon has been the negative announcement effect of SEOs, which indicates that equity issues convey negative information about the issuing company to the market. Other popular research areas relating to SEOs include the run-up preceding the issue, the long-run underperformance of issuing companies, the pricing of the issue, and the choice of issue method between public and rights issues. However, academic literature has lacked a theoretical or empirical treatment of the choice between accelerated offers versus traditional fully marketed offerings. Especially as accelerated offers (versus fully marketed offers) have lately increased in popularity, the choice of public issue method is an interesting topic of study.

The role of institutional investors in SEOs has been studied up to some extent, but not to the same magnitude as is the case with IPOs. The role of institutional investors has increased in recent years, making it an interesting topic of study. For example, institutional investors in 2003 controlled 59.2% of the equity outstanding in the US (\$7.97 trillion), compared with only 28.4% or \$376 billion in 1980 (Chemmanur et al., 2009). Ownership concentration in SEOs has been studied to some extent. Most studies have concentrated on comparing how concentration is increased more in rights offerings versus public offerings (e.g. Kothare, 2007). However, ownership concentration in different public issue types has not been documented to the same extent.

In this thesis, I study how the issue method and ownership structure affect the pricing of the issue, the announcement effect, and the long-run performance of the issuing company. More precisely, I look at the level of institutional holding and ownership concentration in SEO firms prior and subsequent to the offering. Additionally, I inspect how the choice of issue method is affected by ownership characteristics. I focus on three public issue types: fully marketed offerings, accelerated bookbuilt offerings, and bought deals. Rights offers have been left out of the study due to their different nature from the abovementioned public offer types.

1.2. Research questions

This thesis studies how the choice of issue method and ownership characteristics affect stock price behavior in SEOs. Moreover, I study whether ownership characteristics affect the choice of issue method. The following research questions are covered:

- Does institutional ownership affect the offer price discount in SEOs?
- Does ownership concentration affect the offer price discount in SEOs?
- Does institutional ownership affect the post-issue stock price performance of issuing companies?
- Does ownership concentration affect the post-issue stock price performance of issuing companies?
- Does institutional ownership affect the choice of issue method?
- Does ownership concentration affect the choice of issue method?

1.3. Contribution to existing literature

The thesis contributes to existing literature in various ways. First of all, the thesis addresses the relatively limited literature on SEOs in Europe by employing SEOs from all major European stock exchanges.

Secondly, the thesis provides new evidence on public issue types, including accelerated bookbuilt offerings, bought deals, and fully marketed offerings. One reason explaining the lack of empirical literature on these public issues types is the absence of a reliable issue type classification in the SDC database, which most previous studies have used as a source for data. I have had the possibility to use the Dealogic database, which has been documented to provide a much more accurate classification of the issue type (Gao and Ritter, 2007). For

example, Bortolotti et al. (2007) use the SDC classification but state that it poses a challenge in the sense that it frequently gives multiple designations to a single tranche. Therefore the results of this study can be considered as more accurate as to the classification of the issue type.

Thirdly, I contribute to the relatively limited amount of papers on ownership characteristics in SEOs taking place in Europe. One reason explaining this lacking empirical evidence is the lack of an easily accessible ownership database. For example, in the US this type of data has been long available. In the thesis I use a unique set of manually handpicked data for ownership characteristics to study how institutional ownership and ownership concentration impact stock price behavior in SEOs.

Fourthly, the thesis combines the data on issue types and ownership characteristics to investigate whether pre-issue institutional ownership or ownership concentration affect the choice between the different public offer types. This sort of analysis on *pre-issue* ownership characteristics has not been performed previously in academic literature with data from Europe, even though practitioners have been aware that accelerated offers are often targeted at institutional investors resulting in increased *post-issue* institutional ownership.

1.4. Results

The study finds that the issue method in which the SEO is carried out in has a strong influence on the offer price discount. Fully marketed offerings do not require an equally high discount as accelerated offers, including accelerated bookbuilt offers and bought deals. This result, at least partly, justifies the use of fully marketed offerings, even though high out-of-pocket costs are incurred to the issuing company in the form of investment bank fees.

Ownership characteristics, or changes in them, on the other hand do not have a significant effect on the offer price discount. However, ownership characteristics do affect the choice of issue method. For issuing companies with high pre-issue institutional holding an accelerated offer is more likely. This can be explained by these companies having a lower need to market the issue to potential subscribers of shares. Moreover, as accelerated offers are often targeted at institutional investors, it seems natural that also pre-issue institutional ownership has been high to begin with. On the other hand, for issuing companies with high pre-issue ownership concentration, fully marketed offerings are more likely, which can be explained by these companies having a higher need to market shares.

The announcement effect is statistically significant for accelerated bookbuilt offerings (negative) and bought deals (positive). However, after controlling for firm characteristics, the announcement return does not seem to be affected by the choice of issue method. Moreover, ownership characteristics do not seem to affect the announcement effect.

Furthermore, post-issue institutional ownership seems to have a strong positive effect on long-run returns for a 24-month time period. This can be explained at least to some extent by the monitoring gain that institutional investors bring to companies. Also, institutional owners can be thought to have better stock-picking ability than the average investor. However, this result does not persist with a time period of 36 months, which could be caused by changes in institutional holding during the time period. Ownership concentration has a negative effect on long-run post-issue returns. This can be explained by lower float and liquidity of these companies, which reduce the number of attracted investors. This result is observable for the 24 and 36-month time periods. On the other hand, changes in neither of the two studied ownership characteristics resulting from the offer seem to affect long-run returns.

1.5. Limitations to the study

The study is subject to a certain degree to certain limitations typically present in event studies. First of all, the data requirements employed in the study lead to the exclusion of a significant portion of SEOs conducted in Europe. Especially the ownership data is very limited and exists only since the year 2000 in Thomson Financial, making the final sample relatively small. Secondly, long-run event studies have been criticized for model misspecification and inadequate benchmarks for the measuring of abnormal returns. In this study country indices have been used to measure long-run returns, which to a certain extent mitigates the risk of using an inadequate benchmark.

1.6. Structure of the study

The thesis is structured as follows. The second chapter presents SEOs and different offer types. The third chapter presents a theoretical framework for the capital acquisition process, including a review of the announcement effect, offer price discount, long-run underperformance, and ownership characteristics. The fourth chapter presents the hypotheses of the study. The fifth chapter presents the data and methodology used. The sixth chapter presents the empirical results. The seventh chapter concludes the study. The eighth chapter presents the references used. The ninth chapter is the appendix.

2. Seasoned equity offerings and different issue types

This chapter provides a brief description of seasoned equity offerings. The chapter begins by reviewing the SEO process, the role of investment bankers in the process, and the costs incurred for the issuing company. Moreover, the chapter provides a description of the different offer types studied in the thesis, in addition to explaining rights offers. Finally, the chapter concludes by reviewing previous literature on different offer types.

SEOs are an important form of equity financing for publicly listed companies. An SEO can be described as a sale of additional shares by a company whose shares are already publicly traded, and that all equity offerings occurring subsequent to an IPO can be regarded as SEOs. In an SEO, the issuing company sells shares to the market similarly as in an IPO. However, the distinction to an IPO is that in an SEO the issuing company has a public quote ex ante to the offering, which makes the setting of the offer price relatively easier than what is the case in an IPO process. Nevertheless, also in SEOs the price setting is an important factor contributing to the success of the SEO. Masulis and Korwar (1986) point out that common stock offerings have two major impacts on a firm: the increase in equity capital lowers the firm's leverage, and the proceeds are generally used to finance capital expenditures. SEOs provide an alternative to debt financing, which is important especially for companies with strained balance sheets and high leverage ratios

It is worthwhile to make a distinction between selling new (primary) shares to the public and selling old (secondary) shares to investors. In the former new equity is raised, whereas in the latter a block of old shares is sold to a new owner without new capital being raised. In this study secondary offerings are excluded due to their deviating nature..

2.1. The SEO process

The SEO process is characterized by a high degree of information disclosure – perhaps only in an IPO more disclosed information is required (Gibson et al. 2004). The shares issued in an SEO need to be sold to investors, which requires that an investment story be created. Due to this, the issuing company and the investment bankers the company hires carry out marketing efforts, including the drafting of a prospectus, a road show, and conference calls. This provides outside investors with the possibility to interact with the issuing company's management and the investment bankers selling the issue, including their sell-side analysts.

2.1.1. The role of investment bankers and the importance of the order book

The underwriting syndicate, comprising the investment banks hired to carry out the SEO process, has various roles in an SEO, including marketing. Typically in a public SEO, investment bankers try to understand the demand level of investors and influence it by marketing efforts such as road shows where the issuing firm is promoted and its investment story told. In other words, the information asymmetry between insiders and investors is decreased by giving easy access to already public information. According to the head of the Finnish office of a leading Nordic investment bank, the more time spent on this process, the minor is the information asymmetry and consequently the discount at which the new shares are sold.

Cornelli and Goldreich (2003) study the effects of bookbuilding in international equity issues and describe the role of investment bankers: they conduct a preliminary analysis, choose the offer price, allocate the shares, and stabilize the aftermarket price. In the bookbuilding procedure in IPOs, the investment bank announces an indicative price range and institutional investors submit bids for shares. After the bookbuilding process, a demand curve is constructed and the issue price chosen accordingly. The investment bank relies heavily on the information contained in the bids when setting the price, and the bids that most influence the issue price are the ones which are favored in the allocation of shares. This supports the findings of Benveniste and Spindt (1989), who state that investors supply information in exchange for a more favorable allocation.

Benveniste and Spindt (1989) and Spatt and Srivastava (1991) state that through bookbuilding the investment bank extracts information from investors which will be helpful in pricing the issue accurately, thus reducing the adverse selection among investors. Cornelli and Goldreich (2003) state that in SEOs investment banks build a book even though there is an existing market price for the issuing firm's share in situations where the stock is illiquid or the number of shares being issued is large relative to the shares already trading, i.e. in situations where the banker is concerned that the issue of additional stock might affect the market price and consequently cannot rely completely on the existing price. In SEOs there is no initial price range as is the case with IPOs, since the pre-issue market price reflects all pre-issue information. Nevertheless, even in SEOs where a pre-issue market price exists, there is information provided by investors through bookbuilding beyond the existing market price (Cornelli and Goldreich, 2003).

Benveniste and Spindt (1989) also state that in principle issuing IPO firms can collect premarket indications of interest without employing an underwriter. However, an underwriter can reduce required underpricing by selling IPOs repeatedly to the same regular investors. Thus it is possible to quantify the economies (in the form of higher proceeds) that can be realized because of the extra capacity an underwriter firm can bring to the premarketing process.

Baron and Holmstöm (1980) state that investment banking syndicates have three basic services they offer to the issuing firm: they provide advice and counsel regarding the type of securities to be issued, coupon rates, maturity, timing, offer price, etc; they offer an underwriting function by bearing some or all of the risk associated with the proceeds of the issue; and they provide a distribution function by selling the securities to investors. If no asymmetric information exists between the issuer and the bank regarding the issue price there is no need to use the services of the bank; however most often the bank has superior information as to the demand of the issue and the state of the capital market. The information asymmetry may be due to the bank having private information about the demand of the securities through its preselling contracts with potential buyers. The investment bank wants to assure that the offer is fully sold to investors and as a result wants to set a lower price than what would be optimal for the issuer. The bank faces costs when acquiring private information regarding the demand, and because of this it wants to limit those costs by pricing lower than the issuer would like. The problem for the issuer is that it does not know what price would be the most optimal, which decreases its chances to impose scrutiny to the price the bank suggests. However, the fact that the investment banking industry is competitive mitigates this problem, as investment bank who continually price issues lower than the industry norm end up losing market share. Moreover, the problem is mitigated also if the issuer is financially sophisticated, i.e. it has capability to evaluate whether the price the investment bank sets is too low.

Investment banks also act as certifiers in an equity issue. Asymmetric information often exists between the issuing company's existing shareholders and outsiders who are potential subscribers to new issues. Underwriters can be employed to certify that the issue price is consistent with the inside information about future earnings prospects of the firm. Issuing firms are viewed as 'leasing' the brand name of an investment banker to certify that the issue price reflects available inside information. Smith (1986) calls the overcoming of information asymmetry the certification role of investment banks. Carter and Manaster (1990) use a

ranking for investment bank reputation to determine the influence of the banks' prestige on post-IPO performance.

2.1.2. Costs incurred in an SEO

When investment banks are hired to underwrite and market an SEO, they expect to receive fees for their work. There are various factors for which investment banks are paid, including the underwriting risk and the marketing efforts they carry out. For the issuing company, these fees often represent a significant cost. If the issuing company chooses to carry out a fully marketed offering in which shares are underwritten, the underwriting costs cannot be avoided. However, the fees which result from investment banks' marketing efforts can be questioned: do investment banks carry out marketing which is worth the money that they receive from it? Marketing can help mitigate the information asymmetry problem, and thus decrease the offer price discount that investors demand for participating in the offer.

The fees that investment banks charge of course depend on the circumstances in which the SEO is carried out. One important factor affecting the ease of marketing is the liquidity of the issuing firm's stock. One would expect there to exist more information asymmetries in low-liquidity stocks than in high-liquidity stocks, because in high-liquidity stocks more information is available on the company. Butler et al. (2005) report that investment banks' fees are significantly lower for firms with more liquid stock. Moreover, Corwin (2003) reports that liquidity may also reduce the underpricing in SEOs. Moreover, in times of uncertainty, the information costs and hence issuing costs in equity offerings will be higher, as investment banks have to spend more resources in tempting potential investors (Bhagat and Frost, 1986). Therefore it can be predicted that in volatile stock markets issuing shares is more expensive.

Bhagat and Frost (1986) report that issuing costs in underwritten equity offerings are a function of the risk of the offering, the size of the offering, and information costs. The authors also state that there are three components to the costs of an underwritten equity offering: the commission paid to the investment banker(s) for providing the underwriting services; the cost borne by the issuing company (e.g. accounting fees, filing fees, the opportunity cost of the issuing firm's management time spent in planning the offering, etc.); and the underpricing of the shares. The underwriting investment bank(s) are paid for the risk they bear with a failed offering (Bhagat and Frost, 1986). If the offer price turns out to higher than the share price of

the issuing company on the day of the offer, the underwriter bears an unexpected loss from their compensation because the new shares cannot be sold at their original issue price.

It is believed that there are economies of scale in issuing new stock (Bhagat and Frost, 1986). Hansen and Pinkerton (1982) suggest that equity offerings include fixed costs such as legal and accounting fees, registrar's fees, and overhead costs such as printing and engraving costs. As the issue size increases, the average fixed costs decrease. However, the increased risk associated with very large issues may more than offset the diminishing effect of economies of scale and average costs may begin to increase (Bhagat and Frost, 1986).

2.2. SEO issue methods

SEOs can be arranged by different methods. Gao and Ritter (2007) rely on categorization used by the Dealogic database, and state that the three major issue types are fully marketed offers, accelerated offers, and rights offers. They also state that they have found the Dealogic database to be more accurate with filing dates and more consistent with its classification of the offer method compared to the SDC database. According to the Dealogic classification, fully marketed offers and accelerated offers are public offers, in which shares are offered to the public in general (i.e. not only to current shareholders). Accelerated offers can be divided into accelerated bookbuilt offers and bought deals. As opposed to public offers, in rights offers shares are sold to existing shareholders. Table 1 provides an illustration of different offer types, their target market, and the speed in which they are conducted.

Table 1: SEO offer types

The table presents selected SEO offer types, their target markets, and the illustrative relative speed of the offer.

<u>Offer type</u>	<u>Target market</u>	<u>Speed of offer</u>
Accelerated bookbuilt offering	Shares sold to the public	Fast
Bought deal	Shares sold to the public	Fast
Fully marketed offering	Shares sold to the public	Slow
Rights offer	Shares sold to existing shareholders	Fast or slow

The issue type can practically be categorized in an as detailed manner as one chooses, but for the purposes of this study I will not go into a more detailed description. An example of a more detailed categorisation is the study by Eckbo and Masulis (1995). In the article alternative methods for floating seasoned common stock are studied, including firm commitment offers, best effort offers, rights offers with standby underwriting, direct issues (e.g. to security holders of acquired firms), and private placements.

2.2.1. Public issues

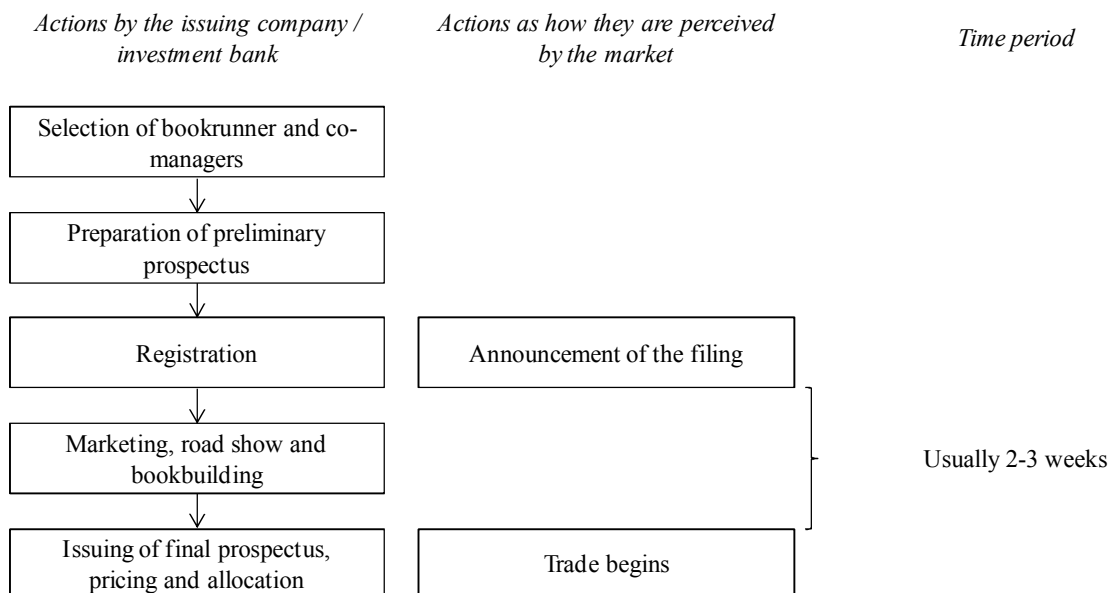
In a public offer shares are sold to investors in general, and not only to existing shareholders of the issuing firm. In contrast to rights offerings, the ownership by existing shareholder can be subject to dilution because shares are sold to new investors in addition to existing ones. In order to protect current shareholder rights, in many European countries like Finland, the issuing company needs the approval of 2/3 of shareholders in the annual general meeting to carry out the public offering. Public offerings include fully marketed offerings, accelerated bookbuilt offerings, and bought deals. These are presented next.

Fully marketed offer

In a fully marketed SEO, the issuing company chooses an investment bank(s) to market the offer and set the price. The process resembles a bookbuilt IPO, because the investment bank hired to carry out the offering gathers information about investors' demand and builds an order book, which is used to help determine the offer price. The marketing function of the investment bank usually includes a road show, in which the issuer's management and the investment bankers meet with institutional investors, analysts, and securities sales personnel over a two week period. Figure 1 provides an illustration of the fully marketed process.

Figure 1: Fully marketed offering process

The table presents a simplified illustration of the fully marketed offering process. Based on Gao and Ritter, 2007



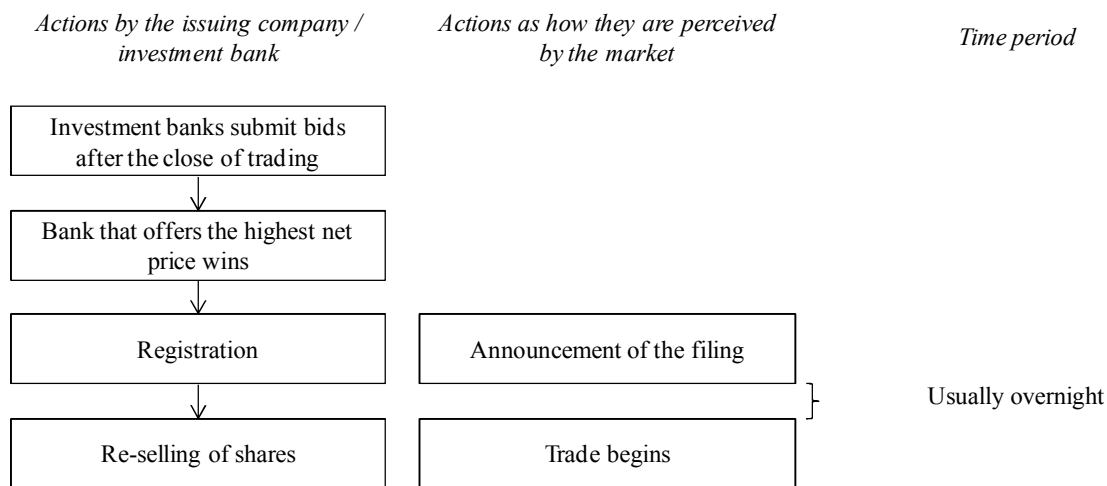
Bought deal

In a bought deal, the issuing firm announces the amount of stock it wishes to sell and investment banks bid for these shares. The bank that offers the highest net price wins the deal,

and then re-sells the shares on the open market or to its investors, usually within 24 hours (Gao and Ritter, 2007). Often bought deals are used as a means to sell equity to institutional investors (Bortolotti et al., 2007). After the issue is bought by the winning investment bank, there are no further obligations on the part of the issuer (Eckbo and Masulis, 1995). This issue method is seen as a way for relatively unknown investment banks to compete for underwriting mandates. Figure 2 provides an illustration of the bought deal process.

Figure 2: Bought deal process

The table presents a simplified illustration of the bought deal process. Based on Gao and Ritter, 2007

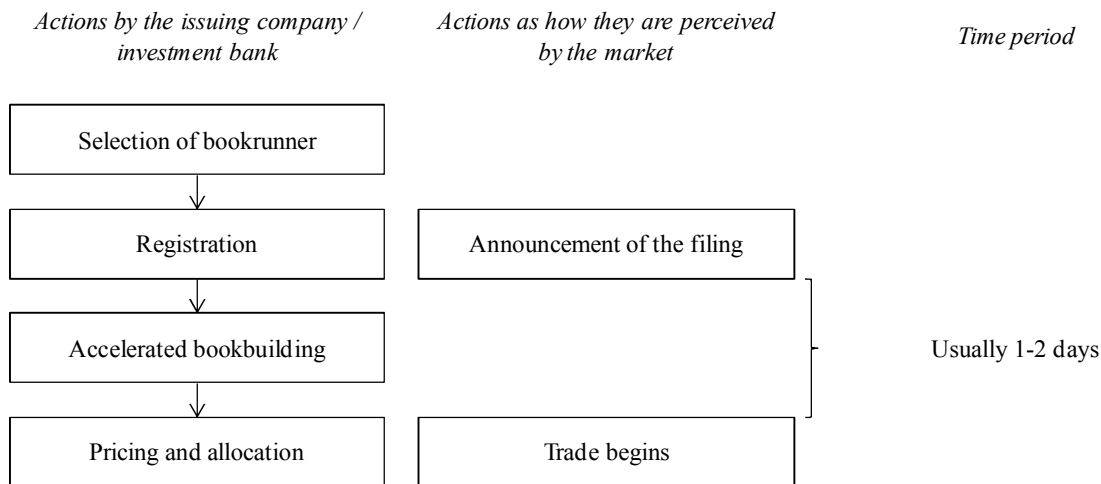


Accelerated bookbuilt offer

In accelerated bookbuilt offers banks do not initially purchase the whole issue from the issuing company, but rather submit proposals where they specify the gross spread but not necessarily an offer price, for the right to underwrite the sale of shares. The winning bank then usually forms a small underwriting syndicate and begins marketing the shares to investors. Similarly to bought deals, often the target audience consists of institutional investors. The offer price is then negotiated between the issuing firm and the bank. No road show is conducted and the underwriting procedure is completed typically within 48 hours. Figure 3 provides an illustration of the accelerated bookbuilt offering process.

Figure 3: Accelerated bookbuilt offering process

The table presents a simplified illustration of the accelerated bookbuilt offering process. Based on Gao and Ritter, 2007



2.2.2. Rights offers

In a rights offer, current shareholders are given short-term warrants on a pro rata basis, allowing them to either purchase the new shares with the warrant or to sell the warrant in the market before expiration (typically 20 days). Unsubscribed shares are offered to shareholders who wish to purchase more shares than their pro rata share of the issue – this being called the overallotment option (Eckbo and Masulis, 1995). Theoretically, in a rights offer the issuer could increase the offer price discount until the offer would be guaranteed to succeed (because current shareholders could in all cases capture the full value of the rights by either exercising the warrant or by selling it in the secondary market). However, in practice issuers often hire an underwriter to guarantee the proceeds on any unsubscribed shares, due to issues such as asymmetric information. This sort of rights issues are commonly known as rights with standby underwriting. Other forms of rights issues also exist. In a best efforts offer, the issuer bears the risk of the offer failing whereas the investment bank solely acts as a marketing agent. In a firm commitment offer on the other hand the investment bank bears the risk of the issue by guaranteeing the proceeds and bearing the responsibility for selling the shares to the market. In the US rights offerings have been surprisingly uncommon, especially when taking into account the issue costs which tend to be lower for rights offers than for public offers. In Europe, on the other hand, rights offers are a popular way of raising equity.

2.3. Empirical studies on different issue methods

Most of the studies that deal with the choice of issue method focus on the choice between public and rights offerings. Studies on the choice between different public offer types have

been relatively uncommon. As Gao and Ritter (2007) point out, there is no theoretical or empirical treatment of the choice between public offer types, such as between accelerated offers and fully marketed offers. This is peculiar, as the volume of accelerated offers has been increasing in recent years after emerging in the 1990s. Before this, the SEO market was dominated by fully marketed offerings (Gao and Ritter, 2007). Bortolotti et al. (2007) find that in 2004, more than a third of issues outside of the US were accelerated offers. Moreover, the fraction of accelerated offers has since increased to over half the value of US SEOs and over two-thirds of European SEOs. The authors also find that accelerated deals have become more popular because they are faster and cheaper than fully marketed offerings. Moreover, the authors find that in Europe the mean underpricing for accelerated offers has amounted to 2.97%, with the figure for non-accelerated offers being 7.32%¹. The authors classify accelerated bookbuilt offerings, bought deals, and block trades as accelerated offers.

As to the choice between rights and public cash offerings, Rinne and Suominen (2009) use European data and develop a model in which the major determinants of the choice are the over and undervaluation of shares and the price impact from selling shares in the market. The price impact is lower for public equity offerings than for rights issues, as in the former the investment bank managing the offer can lower the offer price discount through its marketing efforts. Moreover, rights offers are more likely when the shares of the issuing company are undervalued, supporting previous empirical findings that public offers are common in times of overvaluation.

Wu (2004) examines the impact of information asymmetry and monitoring of managers on the choice between public offerings and private placements. The author finds that private placement firms are characterised by higher information asymmetry than firms conducting public offerings. Therefore public offerings can be considered as a more likely alternative for firms facing information asymmetry. Moreover, monitoring by investors in private placements does not exceed monitoring by investors in public offerings, casting doubt on the view that private placements are motivated by a demand for enhanced monitoring.

Eckbo and Masulis (1992) develop an analytical framework to explain firms' choice of equity flotation method and the near disappearance of rights offers by US exchange-listed firms. The authors state that the choice of issue method between uninsured rights, rights with standby

¹ The authors include offers on public as well as private markets. Moreover, the authors do not apply a minimum deal size for their data selection process. These factors at least partly contribute to the relatively high level of underpricing compared to results found in other previous studies.

underwriting, and firm-commitment underwriting depends on information asymmetries, shareholder characteristics, and the direct flotation costs. The authors state that a possible explanation for the declined popularity of rights offers is that important shareholder-borne costs of this method have been ignored or underestimated, including capital gain taxes, transaction costs of selling rights in the secondary market, and wealth transfers due to anti-dilution clauses.

Smith (1977) reports that even though rights offerings involve significantly lower costs, underwriters are employed in over 90 percent of the offerings covered in the study. The author states that the arguments which explain the use of underwriters (that are present in public offerings) are insufficient to justify the additional costs that arise from the use of them. Smith (1977) hypothesizes that firms nevertheless use underwritten offerings to raise capital because they provide the managers of the issuing firms with perquisites that are absent in rights offers. Moreover, whereas a rights issue is unlikely to change the distribution of voting shares substantially, a sale to the public through an underwriter can increase shareholder dispersion, thereby reducing shareholder monitoring of managers and thus enhancing potential manager welfare.

3. Theoretical framework

This chapter highlights the most relevant theories related to SEOs. The first section concentrates on traditional theories of capital structure. The second section presents the theories regarding the announcement effect in SEOs, the third section the theories on the offer price discount, and the fourth section the theories relating to the long-run underperformance following the issue. Finally, the fifth section describes the role of ownership structure in SEOs.

3.1. Capital structure considerations

3.1.1. Irrelevance of capital structure

Modigliani and Miller (1958) famously present the idea of the irrelevance of capital structure. Without market imperfections capital structure should not matter, and the value of a company should not be affected whether the company issues equity, debt, or hybrid financing. Therefore, when a company issues equity in a SEO, the share price should not be affected assuming that the issue announcement does not convey any additional information related to firm prospects. However, in reality market imperfections do exist: transaction costs, taxes, asymmetric information, and bankruptcy costs play a role in financial decisions that companies face. Moreover, companies are not necessarily able to borrow at a risk-free rate, like the Modigliani-Miller model assumes. Most importantly, companies can benefit from additional leverage in the form of tax advantages as interest payments are tax deductible; but keeping in mind that potential financial distress costs limit the amount of debt a company can take.

3.1.2. Static and dynamic trade-off theories of capital structure

Trade-off theories of capital structure take into account market imperfections, including taxes and bankruptcy costs. The static trade-off theory states that companies have an optimal capital structure, which is a trade-off between the interest tax shield achieved from high leverage, and the costs of financial distress (e.g. Myers, 1984). The dynamic trade-off theory was developed to explain the deficiencies in the static trade-off theory (e.g. Barnea et al., 1987). It states that the optimal capital structure can be achieved by adjusting the debt-to-equity ratio, but that it is not always optimal to make these adjustments immediately after a deviation from the optimal target structure, but only when the costs of adjustment are lower than the costs of having a suboptimal capital structure (Leary and Roberts, 2005). According to the dynamic trade-off

theory, companies gradually adjust towards their optimal capital structures. Both the static and dynamic trade-off theories suggest that raising equity through a SEO does not convey negative information about the company, but that issuing companies are merely moving towards their optimal capital structures.

3.1.3. Pecking order theory

Introduced by Myers (1984), the pecking order theory is based on the assumption that a company's managers and investors are subject to asymmetric information. The managers of a company are more aware of the company's true value, including growth prospects and risk. Managers are more willing to use retained earnings to finance investment because in this way they do not face scrutiny from investors to the same extent as if they would issue debt or equity. This is because debt can be raised without board approval (in general), whereas equity cannot (in general). Moreover, taxes and transaction costs favor funding investments with retained earnings and debt over issuing equity. Raising equity can also convey negative information to investors: an equity issue can be considered as a sign that the stock is overvalued. Because of this, firms adjust their dividend policies to anticipate future investment needs. However, due to reluctance to change dividend policy constantly and changes in cash flow and investment requirements, retained earnings might be more or less than the investment needs. Consequently excess cash will be used to pay off debt prior to repurchasing shares; and if external financing is needed firms issue the safest security first (i.e. first straight debt, then convertibles, and only finally equity if necessary). Eckbo and Masulis (1995) report supporting evidence about corporate funding sources: according to the authors internal equity has remained the dominant funding source for US nonfinancial corporations, and that debt dominates equity as an external funding source.

3.2. Announcement effect of SEOs

According to Eckbo and Masulis (1995), the main theoretical arguments for valuation effects of SEOs are based on adverse selection and signaling effects associated with information asymmetries, agency costs of free cash flow, wealth transfers between classes of security holders, as well as moral hazard problems in lowering managerial stock ownership.

3.2.1. Free cash flow hypothesis

The free cash flow hypothesis states that market participants react negatively to SEO announcements, because an SEO increases the resources and likelihood for poor investments by managers. In other words, when managers have ample free cash flow, they will waste it on negative-NPV projects, consequently destroying firm value. The theory predicts that as long

as there is only a limited number of positive-NPV projects available, issuing firms will experience a decline in operating performance following the offering.

3.2.2. Adverse selection

Studies which discuss theories of how the announcement of a SEO conveys negative information to the market include Myers and Majluf (1984), Miller and Rock (1985), and Lucas and MacDonald (1990). The theories presented in these papers assume that firm managers have inside information about earnings prospects and investment opportunities. Myers and Majluf (1984) state that rational investors believe that firm managers are willing to issue equity when they believe that the shares of their companies are overvalued. Firm managers act on the interests of existing shareholders, who gain if overvalued stock is issued to new shareholders. Thus rational investors perceive an SEO announcement as a sign that the issuing firm's stock is overvalued, which leads to a negative announcement effect. Miller and Rock (1985) state that companies issue new equity when they have the need to compensate low earnings. Therefore investors react to the announcement of a SEO negatively.

3.2.3. Downward sloping demand curve

At least Asquith and Mullins (1986), Gao and Ritter (2007), Benveniste and Spindt (1989), Miller (1977) and Merton (1987) have covered the theory that a negative share price response to SEOs may be caused by a downward-sloping demand curve of the issuing firm's stock. According to an efficient market assumption, demand curves for stocks are horizontal. Market prices reflect all available information and the prices are determined based on expected risk and return because close substitutes for a particular stock are always available with similar characteristics. Therefore the changes in supply and demand for any particular stock should not alter the stock price. However, empirical evidence suggests that this is not the case. Asquith and Mullins (1986) assume that no exact substitutes exist for a particular stock, consequently making the demand curve downward-sloping and not horizontal. Thus, in a SEO when new shares are issued, the price of the issuing firm's stock decreases regardless of the information content of the equity issue.

3.2.4. Empirical evidence on the announcement effect

Various empirical studies performed with US data on SEO announcement report significant negative SEO announcement returns. However, evidence from studies which use data from other markets is mixed, and do not ambiguously prove that SEO announcements would be related to negative announcement returns.

Table 2 pools together some of the empirical evidence regarding the announcement effect. As can be seen, studies which use US data have reported more significant announcement returns. Especially the studies by Mikkelson and Partch (1986) and Kalay and Shimrat (1987) stand out with negative returns of -3.6% and -3.4% respectively.

Table 2: Empirical findings on announcement returns

The table summarizes some of the main findings in the area of SEO announcement returns. All studies employ either [-1,0] or [-1,1] as the event window.

<u>Study</u>	<u>Issuer type</u>	<u>Sample size</u>	<u>Sample period</u>	<u>Market</u>	<u>Abnormal return</u>
Asquith and Mullins (1986)	All	392	1963-81	US	-3.0%
Masulis and Korwar (1986)	All	972	1963-80	US	-3.3%
Mikkelson and Partch (1986)	All	80	1972-82	US	-3.6%
Kalay and Shimrat (1987)	All	455	1070-82	US	-3.4%
Dierkens (1991)	All	197	1980-83	US	-2.4%
Eckbo and Masulis (1992)	All	1,057	1963-80	US	-2.0%
Choe, Masulis, and Nanda (1993)	Industrial	1,456	1963-83	US	-3.2%
Denis (1994)	All	435	1977-90	US	-2.5%
Bethel and Krigman (2004)	All	2,592	1992-01	US	-2.0%
Heron and Lie (2004)	All	3,658	1980-98	US	-2.5%
D'Mello, Schlingemann, and Subramaniam (2009)	All	1,621	1982-95	US	-1.9%
Slovin, Sushka, and Lai (2000)	All	296	1986-94	UK	-1.4%
Barnes and Walker (2006)	All	868	1989-98	UK	-0.3%
Gajewski and Ginglinger (2002)	All	215	1986-96	France	-0.8%
Cronqvist and Nilsson (2005)	All	199	1986-99	Sweden	5.4%
Wu, Wang, and Yao (2005)	All	405	1989-97	Hong Kong	1.9%

Studies conducted with data outside of the US have been relatively uncommon until recently. However, it can be seen that these studies have reported announcement returns which have been less negative than the ones carried out with US data. For example, Gajevsky and Ginglinger (2002), study French public offers and find that the announcement effect is negative but statistically insignificant.

3.3. SEO underpricing and offer price discount

Some papers make a distinction between underpricing and the offer price discount in SEO literature. A usual definition for underpricing is the percent change between the offer price and the following day's price, whereas the offer price discount is usually defined as being the percent change between the closing price on the day prior to the offer and the offer price. However, often underpricing and discounting in SEOs are used interchangeably.

3.3.1. Value uncertainty

Corwin (2003) finds that SEO underpricing is positively related to the level of uncertainty about firm value. New investors must be compensated for the information asymmetry they

face – when a SEO is underpriced investors purchase the shares at a lower price than what the market price is (Parsons and Raviv 1985, among others). Rock (1986) develops a model in which underpricing is necessary to compensate uninformed investors and thereby ensure their participation in the new issue market. Beatty and Ritter (1986) further demonstrate that the winner's curse problem results in a positive relation between underpricing and ex ante uncertainty about the value of the issue. Corwin (2003) finds that underpricing is positively related to offer size, price uncertainty, and pre-offer return. The author also states that underpricing is specifically related to the relative issue size, with the effect being most pronounced for securities hypothesized to have relatively inelastic demand. Altinkilic and Hansen (2003) decompose the SEO discount into expected and unexpected components and find a positive relationship between discounting and value uncertainty. Corwin (2003) finds that underpricing is related to the concurrent level of underpricing in the IPO market. Kim and Shin (2004) also document that ex ante uncertainty and SEO discounts are positively related.

3.3.2. Manipulative trading

Various papers have studied the impact of SEC's Rule 10b-21 in 1988, which imposes restraints to the covering of short sales using shares from SEOs. Prior to the adoption of the rule, it was a popular belief that traders sought short positions in the premarket for SEOs to drive down the offer price, and in the offer purchased shares to cover the short position. For example, Kim and Shin (2004) find that the imposing of the rule makes discounts larger after the 1990s, as pre-offer prices became less informative, as presented by Gerard and Nanda (1993). Safieddine and Wilhelm (1996) also examine Rule 10b-21 and its effect on short-selling activities around SEOs, but find no evidence that it would have increased underpricing (their study period however already ends in 1991).

3.3.3. Clustering of prices

Mola and Loughran (2004) report that offer prices are clustered at integers, and that both IPOs and SEOs priced at integers are subject to more underpricing. This leads to the conclusion that investment bankers with highly regarded analysts have the power to set the price in a way that they leave money on the table for their favored clients. Corwin (2003) and Christie and Schultz (1994) also explain underpricing with rounding conventions.

3.3.4. Price pressure

Corwin (2003) documents that price pressure is an important determinant in underpricing. Price pressure can be seen as similar to the theory of the downward sloping demand curve presented earlier. When the supply of shares is permanently increased in an SEO, the demand

for the shares should decrease, assuming that the demand curve is downward sloping. Alternatively, if the SEO is viewed as a temporary liquidity shock that must be absorbed by the market, a discount is necessary to compensate investors for absorbing the additional shares. Corwin (2003) finds that specifically underpricing is positively related to the relative offer size (which is linked to the relative amount of price pressure induced), especially for companies with relatively inelastic demand.

3.3.5. Insurance against legal liability

Loderer et al. (1991) state that the legal-liability hypothesis related to IPOs presented by Ibbotson (1975) and Tinic (1988) can explain underpricing in SEOs as well. The hypothesis states that underpricing can provide insurance against legal liability and the associated damages to investment bankers' reputations. Underwriters underprice new issues as a cheap way of lowering the probability that the price will fall after the issue, which reduces the likelihood of legal action by unsatisfied buyers.

3.3.6. Analyst coverage

Bowen et al. (2008) find analyst coverage to affect underpricing in SEOs by reducing asymmetric information between market participants. The authors state that because analysts can increase investors' awareness of and knowledge about a firm and presumably reduce information asymmetry among investors, analyst coverage should lower the cost of raising equity capital (*ceteris paribus*). However, various papers regarding IPOs, such as Cliff and Denis (2004), Aggarwal et al. (2002), Chen and Ritter (2000), and Rajan and Servaes (1997) show that underpricing is positively related to the likelihood and amount of subsequent analyst coverage. This is explained by IPO underwriters having the possibility to leave money on the table in the form of underpricing (which the underwriters can allocate to their favored clients) when they are able to provide analyst coverage for the issuing company. For example, James and Karceski (2006) report that underwriter-affiliated analysts provide protection in the form of "booster shots" of stronger coverage if the issuing IPO firm experiences poor aftermarket stock performance.

3.3.7. Empirical evidence on the offer price discount

The empirical evidence on the offer price discount consists mainly of studies which use data from the US. For example, Bortolotti et al. (2007) state that no single study provides systematic evidence on SEO underpricing in European issues. This can partly be explained by the popularity of rights offers in Europe, in which the offer price discount is of lesser importance since the discount ends up in the pockets of existing shareholders and thus does

not provoke such great concern. From Table 3 it can be seen that the offer price discount has increased over time. Corwin (2003) reports that while underpricing averaged only 1.15% in the 1980s, it has risen to 2.92% in the 1990s. Mola and Loughran (2004) report that the amount of money left on the table in SEOs averaged \$7.1 million in 1999, compared to \$0.5 million in 1986. Consequently the interest for understanding the drivers for underpricing has increased. Bortolotti et al. (2007) find in their extensive study that accelerated offers have been characterized by lower discounts in the US, Europe, and globally.

Table 3: Empirical findings on discounting in SEOs

The table summarizes some of the main findings in the area of the SEO offer price discount.

Study	Issuer / issue type	Sample size	Sample period	Market	Discounting
Smith (1977)	All	328	1971-75	US	0.5%
Bhagat and Frost (1986)	Utilities	552	1973-80	US	0.7%
Loderer, Sheehan, and Kadlec (1991)	All	1,600	1980-84	US	1.4%
Eckbo and Masulis (1992)	Industrial	401	1963-81	US	0.4%
Eckbo and Masulis (1992)	Utilities	656	1963-81	US	0.3%
Safieddine and Wilhelm (1996)	All	474	1980-91	US	0.5%
Kim and Shin (2004)	All	1,017	1983-88	US	1.3%
Kim and Shin (2004)	All	2,287	1988-98	US	3.0%
Altinkilic and Hansen (2003)	All	1,703	1990-98	US	3.0%
Corwin (2003)	All	4,454	1980-98	US	2.2%
Mola and Loughran (2004)	All	4,814	1986-99	US	3.0%
Kim and Park (2005)	All	1,040	1989-00	US	3.5%
Bortolotti, Megginson, and Smart (2007)	Non-accelerated	6,363	1991-2004	US	2.5%
Bortolotti, Megginson, and Smart (2007)	Accelerated	243	1991-2004	US	1.8%
Huang and Zhang (2009)	All	2,281	1995-04	US	3.2%
Bortolotti, Megginson, and Smart (2007)	Non-accelerated	13,738	1991-2004	Global	4.9%
Bortolotti, Megginson, and Smart (2007)	Accelerated	2,531	1991-2004	Global	3.0%
Bortolotti, Megginson, and Smart (2007)	Non-accelerated	3,160	1991-2004	Europe	7.3%
Bortolotti, Megginson, and Smart (2007)	Accelerated	2,119	1991-2004	Europe	3.0%

3.4. Long-run underperformance following the SEO

Various academic papers document long-run underperformance of SEO companies following the issue, compared to benchmark indices. Assuming efficient markets, long-run underperformance should not be possible, as the information content of the SEO should be reflected immediately in the share price of the issuing company.

3.4.1. Lower systematic risk

Eckbo et al. (2000) explain that lower post-SEO stock returns are caused by lower systematic risk exposure for issuers relative to comparable non-issuers. When new equity is raised, the leverage of the issuing company decreases and consequently lowers exposure to unexpected inflation and default risk. Subsequently investors should require a lower risk premium for investing in the company, reflecting in a lower required rate of return.

3.4.2. Behavioural models

Various studies relate long-run underperformance to behavioural models, as opposed to more conventional theories such as the Capital Asset Pricing Model or the Fama-French three factor model. Behavioural models assume that investors do not always act rationally and that they are characterized by limited computational power.

For example, Barberis et al. (1998) explain long-run underperformance of SEO firms with a model where investors belong to one of two possible earnings regimes. The first type of investors assume earnings to revert to the mean, i.e. that quarterly changes in earnings are temporary and that earnings will gradually adjust back to their normal level sooner or later. The second type of investors believe that earnings follow either an upward or downward sloping trend. Moreover, investors are reluctant to change the regime they belong to. Consequently, investors are first slow to react to surprises in earnings levels. Once in the second regime, investors will under react to the negative news related to an SEO announcement, as they expect earnings to continue increasing despite the temporary bad news. This leads to the market price not fully reflecting the negative news relating to the SEO announcement, and therefore to long-run underperformance.

Long-run underperformance has also been explained by investors' overconfidence. For example, Daniel et al. (1998) present a model where investors are characterized by overconfidence as they overweight private information and underweight public information in their investment decisions. The authors' model predicts that signals supporting investors' prior beliefs will cause continued miss valuation, and that only after some time public information will correct this miss valuation and pull valuations towards equilibrium.

3.4.3. Window of opportunity and market timing

Various papers (e.g. Loughran and Ritter, 1995; Choe et al., 1993; Hickman, 1953) claim that SEO companies underperform after the issue because they have taken advantage of transitory windows of opportunity by issuing equity when shares have been overvalued. Also, Lucas and McDonald (1990) state that equity issues are common following general market rises.

Baker and Wurgler (2002) state that firms tend to issue equity when market values are high and repurchase shares when valuations are low. This market timing based explanation states that the pre-issue stock price run-up reflects the divergence of the stock price from fundamentals, and causes companies to issue equity at these times. As the divergence from

fundamentals does not last forever, in the long-run share prices of issuing companies come down.

3.4.4. Earnings management

Some studies explain long-run underperformance of issuing firms by earnings management. Earnings are artificially increased before the offering to attract investors. However, in the longer run the issuing company cannot reach the earnings levels investors had presumed before the offer, which results in underperformance. Teoch et al. (1998) finds evidence that manipulation of earnings before the SEO partially explains both earnings underperformance and stock return underperformance. Rangan (1998) also finds that earnings management explains the decline in earnings and stock returns.

3.4.5. Affiliated analysts

Dechow et al. (2000) finds that analysts affiliated with the issuing SEO company release more overly optimistic earnings growth estimates than unaffiliated analysts (non-affiliated analysts also release overly optimistic estimates). This results in long-run underperformance as the issuing company does not reach the anticipated level of the analyst releases. Moreover, the authors document that post-issue underperformance is more severe for firms with the highest long-run growth estimates made by affiliated analysts.

3.4.6. Poorly specified statistical model

Some studies have criticized papers documenting long-run underperformance by SEO companies, stating that inappropriate statistical models have been applied when computing returns. Conrad and Kaul (1993) report that when using cumulated one-month returns over time returns are upwards-biased over long time intervals. Moreover, Barber and Lyon (1997) and Kothari and Warner (1997) study the aggregation of returns, and find similar biases. Mitchell and Stafford (2000) report that traditional buy-and-hold return calculation assumes independence of multi-year abnormal return: after taking into account cross-correlation of returns, the authors find only little evidence of underperformance for SEO firms. Fama (1998) argues that observed long-run underperformance is caused by model misspecification.

3.4.7. Empirical evidence on long-run underperformance

Table 4 shows that long-run underperformance of SEO issuers takes place. Most of the studies on this topic employ the buy-and-hold methodology, and test a time period of 3-5 years. Moreover, most studies use matching firms as benchmark, and this way take into account the effect of size and market-to-book ratio of the tested firms. To simplify, it can be said that the longer the measured time period, the greater the underperformance. There does

not seem to be great difference between geographical markets as to underperformance. The only study in the table below which does not report this phenomenon is by Eckbo et al. (2007), that is when the authors test the underperformance of financial companies.

Table 4: Empirical findings on post-issue buy-and-hold abnormal returns

The table summarizes some of the main findings in the area of SEO post-issue returns. The studies employ the buy-and-hold abnormal return methodology, and use either matching firms or portfolios of matching firms as benchmarks.

Study	Issuer type	Sample size	Sample period	Market	Holding period	BHAR
Loughran and Ritter (1995)	All	3,702	1970-90	US	36 months	-33.0%
Loughran and Ritter (1995)	All	3,702	1970-90	US	60 months	-59.4%
Spiess and Affleck-Graves (1995)	All	1,247	1975-89	US	36 months	-22.8%
Lee (1997)	All	1,513	1976-90	US	36 months	-20.3%
Jegadeesh (2000)	All	2,992	1970-93	US	60 months	-34.3%
Brav, Geczy, and Gompers (2000)	All	3,775	1975-92	US	60 months	-26.3%
Eckbo, Masulis, and Norli (2000)	Industrial	3,851	1964-95	US	60 months	-23.2%
Kahle (2000)	Industrial	1,739	1981-1992	US	36 months	-14.7%
Eckbo, Masulis, and Norli (2007)	Industrial	4,971	1980-00	US	60 months	-29.7%
Eckbo, Masulis, and Norli (2007)	Financial	655	1980-00	US	60 months	0.0%
Eckbo, Masulis, and Norli (2007)	Utilities	659	1980-00	US	60 months	-19.1%
Suzuki (2000)	All	826	1991-96	UK	18 months	-15.1%
Ho (2005)	All	627	1989-97	UK	36 months	-19.5%
Ngatuni, Capstaff, and Marshall (2007)	All	818	1986-95	UK	60 months	-32.1%
Andrikopoulos (2009)	All	1,542	1988-98	UK	36 months	-26.2%
Cai and Loughran (1998)	All	1,389	1971-92	Japan	60 months	-41.7%

3.5. SEOs and ownership structure

Studies on the role of ownership structure in SEOs has been relatively limited, at least when compared to the literature on IPOs and institutional owners [see e.g. Aggarwal et al. (2002), Benveniste et al. (1989), Rock (1986), and Chemmanur and Hu (2006)]. Studies on ownership structure have focused on various aspects, including institutional holding, insider holding, management holding, ownership concentration, changes in ownership characteristics; and how these affect the pricing of the issue, the announcement effect, long-run returns, and operational performance. Next will follow a description of the studies which concentrate on the influence of ownership structure around the issue and on post-issue returns.

3.5.1. The influence of ownership structure around the issue date

Eckbo and Norli (2004) use Norwegian data and study valuation changes around SEO announcements and ownership structure. The authors study ownership concentration (percentage of shares held by the ten largest shareholders) and insider ownership (percentage of shares held by the CEO and the members of the board of directors). The authors fail to reveal a significant influence for ownership concentration on SEO announcement period returns, but state that insider holding is positively related to the announcement return. However, D'Mello et al. (2009) use US data to find that announcement returns are positively and significantly associated with institutional ownership concentration, and also with institutional ownership levels.

Chemmanur et al. (2009) point out that the information possessed by institutional investors will be reflected in pre-offer market prices and trading volume in SEOs, which issuers can potentially use to set the offer price. Institutional investors possess private information about SEOs, and additionally they produce information about SEO firms. Issuers choose the SEO discount in equilibrium balancing the desire to maximize SEO proceeds against the need to minimize the risk of SEO failure, at the same time ensuring that institutional investors have an adequate incentive to produce information about the firm. The existence of a pre-offer market gives rise to the SEO discount, i.e. the fact that the offer price is set on average below the closing price on the previous day. The authors find for their US sample that larger institutional SEO allocations are associated with smaller SEO discounts. Chemmanur et al. (2009) also present the idea that institutional investors can manipulatively trade against their private information in the pre-offer market, and in this way try to increase the offer price discount. However, the authors do not find empirical evidence to support this hypothesis.

Moreover, institutional owners can exert high control and monitoring on the companies they own (Gao and Mahmudi 2008), and thus can be assumed to hold more information on these companies. Consequently they do not need to be provided with information to the same extent as is the case with individual investors, which should be reflected in a lower discount.

Huang and Donghang (2009) use pre-issue institutional ownership as a proxy for the ease of marketing for their sample of US SEOs, since the new shares of an SEO are often placed with institutional investors. Also, managing investment banks have an easier task in promoting the offer when they only have a limited audience to approach. Placing shares to institutional holders can be hypothesized as being easier if more institutional owners are already familiar with the stock. Thus the volume of institutional ownership should be negatively related to the offer price discount in an SEO.

Slovin et al. (2000) study valuation effects of announcements of SEOs in the UK, and report that placings, which increase ownership dispersion, generate significantly positive share price effects, whereas rights offerings have large negative valuation effects. The authors conclude that the option to conduct placings enhances the ability of firms to signal their quality and to use SEOs to reduce ownership concentration.

Intintoli and Kahle (2010) use US data to study SEO underpricing and suggest that higher discounts are partially due to temporary price pressure in recent IPOs with thin public float (the shares outstanding that are available for trading by the public). In other words, ownership concentration causes higher discounts. Moreover, the authors study the effect of insider ownership on underpricing, and state that insider ownership reduces float, thereby increasing price pressure and underpricing.

3.5.2. The influence of ownership structure on post-issue returns

Empirical studies on the ownership structure on long-run returns often concentrate on issues relating to the monitoring of companies. For example, at least Shleifer and Vishny (1986), and Zeckhauser and Pound (1990), document that shareholders with large stakes in firms have a greater ability and incentive to monitor the firm's management. Large shareholders are typically institutional investors, such as pension or mutual funds that hold significant fractions of the firms' stock. They have a comparative advantage in monitoring managers due to several reasons. Managers are typically more receptive to their demands because they hold large blocks of the company. Furthermore, they have greater incentives for monitoring since

they cannot always sell the shares of underperforming firms, possibly fearing adverse price movements from trading their large holdings.

Also, institutional investors have economies of scale when acquiring information about the firm (D'Mello et al., 2009), which should lead to increased stock-picking ability. Institutional ownership also draws attention from analysts: O'Brien and Bhushan (1990) find that more analysts follow the stocks of firms that have larger institutional interest. This should lead to higher returns as more information is created of the company in question hence increasing the number of potential investors.

McConnell and Servaes (1990) find that equity value is positively related to the firm's institutional shareholdings. More specifically, the authors find a positive relation between the Tobins Q measure, a ratio comparing the market value of a company's stock with the value of a company's equity book value, and the fraction of shares owned by institutional investors.

Gibson et al. (2004) investigate whether institutional investors possess an information advantage over individual investors, and whether institutional investors are able to separate potentially overperforming SEO firms from potentially underperforming SEO firms. The authors find that SEOs in which institutional holdings increase around the time of the offer outperform their benchmark portfolios. The authors test the possibility that results are caused by a size effect, i.e. institutions merely buying a larger share of large-firm SEOs (Falkenstein, 1996 and Gompers and Metrick, 2001 find that small stocks exhibit greater post-issue underperformance than large stocks), but find no evidence of the size effect being the explanation for institutional investors' stock-picking ability.

Chemmanur et al. (2009) use transaction-level institutional trading data to determine whether institutions possess and are able to exploit their private information in SEOs. They find that institutions are able to identify and obtain more allocations in SEOs with better long-run stock returns, trade in the same direction as their private information and that their post-SEO trading significantly outperforms a naïve buy-and-hold trading strategy.

Relating to IPOs, Field (1995) finds that those IPOs with high institutional ownership performed better over a subsequent three-year period than those with little or no institutional ownership. Moreover, Krigman et al. (1999) finds that IPOs with heavy institutional first-day selling perform the worst in the following year, consistent with the hypothesis that institutions

either possess information unavailable to individual investors or make better use of publicly available information.

D'Mello et al. (2009) find that post-issue stock returns and changes in operating performance are positively and significantly related to contemporaneous changes in total institutional ownership and the concentration of their shareholdings for SEOs taking place in the US. The authors explain the results with the monitoring hypothesis, and eliminate the argument that the findings are the result of institutional investors possessing superior information which would result in better stock-picking ability; and the argument that institutional investors would merely be buying past winners and selling past losers.

Gao and Mahmudi (2008) use US data to examine the monitoring benefits of institutional ownership in SEOs. The authors find that firms with larger institutional holdings have better SEO outcomes, tend to issue a smaller size of equity, and are more likely to complete announced SEO deals.

Kothare (1997) finds that rights issues in the US are costlier for issuing firms than public issues, because the former lead to a more concentrated ownership structure and thus reduce the liquidity of the issuer's stock. In other words, changes in spreads are correlated with changes in the concentration in share ownership around the issuance of equity. Also, the author finds that trading volume increases significantly following public issues, but not after rights issues. Therefore liquidity changes around stock offerings can influence the firm's choice of issue method. Kothare (1997) uses three measures of ownership concentration: insider holdings (shares owned by the CEO, chairperson, directors, and other senior officers of the company), beneficial or block ownership (ownership of shareholders holding 5% or more of the firm's equity), and the number of shareholders.

Moreover, Amihud and Mendelson (1986) argue that stocks with larger spreads have higher required rates of return and lower value because investors require compensation for higher expected trading costs. In other words, investors require compensation for buying illiquid firms. Holmström and Tirole (1993) argue that concentrated ownership reduces the extent to which market participants monitor the firm, reducing the amount of information available about the firm and increasing spreads and value.

4. Development of hypothesis

This chapter presents the key hypotheses in the study. The hypotheses are mainly based on the previous literature presented earlier. Hypotheses 1-3 relate to the offer price discount, hypotheses 4-6 to long-run post-issue returns, and hypotheses 7-8 to the choice of issue method. For the announcement effect, no explicit hypotheses are presented, but the results concerning it are nevertheless presented in chapter 5.

Hypothesis 1a: *High pre-issue institutional ownership decreases the offer price discount.*

Since the new shares in an SEO are often placed with institutional investors, a high institutional ownership increases the ease of marketing and selling shares. Institutions gain information through the monitoring of companies (Chen et al.), and therefore institutional investors do not have to be tempted to invest via a high discount (to the same extent as, say, individual investors, who do not possess as much private or public information about the issuing company). Moreover, institutional investors participating in the offer will have contributed to the bookbuilding process, hence providing the issuing firm and its investment banker with knowledge regarding the demand, as found by Chemmanur et al. (2009). This eases the price setting as more is known of the market's demand for new shares, and the discount will not be needed to be set at a high level.

Hypothesis 1b: *Increasing institutional ownership from the issue decreases the offer price discount.*

The change in institutional ownership in this study results from the SEO – thus it cannot directly be said that this would affect the discount (as the discount is set *before* the change in institutional ownership has taken place). However, the change in holding can be used as a proxy for the level of institutional allocation (which is known before the discount is set), which has been found by Chemmanur et al. (2009) to lower the discount.

Hypothesis 2a: *High pre-issue ownership concentration increases the offer price discount.*

Intintoli and Kahle (2010) suggest that higher discounts are partially due to price pressure resulting from low liquidity. Therefore ownership concentration, which decreases stock float and liquidity, should cause the discount to be higher. Moreover, investors may need to be compensated to invest in illiquid stock.

Hypothesis 2b: *Increasing ownership concentration from the issue increases the offer price discount.*

Again, the change in ownership concentration cannot directly be said to affect the discount (as the discount is set *before* the change in ownership concentration has taken place). However, if the investment bank arranging the offer anticipates through bookbuilding that ownership concentration will be increased in the offer, the discount may need to be set higher in order to compensate investors for purchasing illiquid stock.

Hypothesis 3: *An accelerated offer increases the offer price discount.*

The marketing process preceding the issue helps in decreasing asymmetric information between market participants (e.g. Rinne and Suominen, 2009; Huang and Zhang, 2009). Moreover, the bookbuilding process preceding the offer helps in gaining knowledge on the demand level of the market, which can be utilized to set the discount at an appropriate level. In accelerated offers, including accelerated bookbuilt offers and bought deals, this period is shorter compared to fully marketed offers. Therefore accelerated offers should require a higher discount.

Hypothesis 4a: *High post-issue institutional ownership increases long-run post-issue returns.*

It can be argued that institutional investors have the ability to pick stocks better than individual investors due to issues such as economies of scale in acquiring information (D'Mello et al., 2009) – thus they subscribe shares in an SEO if they believe that the shares are undervalued. Also, institutions can exert power in and monitor companies where they have large holdings. E.g. Gao and Mahmudi (2008) find that firms with larger institutional holdings have better SEO outcomes due to monitoring benefits. Thus high post-issue institutional ownership should lead to higher returns.

Hypothesis 4b: *Increasing institutional ownership from the issue increases long-run post-issue returns.*

If institutional investors are characterized by superior stock-picking ability as presented by Gibson et al. (2004), they will subscribe to shares in SEOs where they believe that the issuing company has a positive outlook. Moreover, increasing institutional ownership will lead to higher monitoring power. Therefore the increase in institutional ownership should lead to higher returns.

Hypothesis 5a: *High post-issue ownership concentration decreases long-run post-issue returns.*

High ownership concentration decreases float and liquidity, and in this way is costly for firms (Kothare, 1997). Moreover, concentrated ownership reduces the extent to which market participants monitor the firm, reducing the amount of information available about the firm and consequently firm value as the number of potential investors decreases (Holmström and Tirole, 1993). Therefore high ownership concentration should lead to lower returns.

Hypothesis 5b: *Increasing ownership concentration from the issue decreases long-run post-issue returns.*

As a firm's ownership concentration increases, so does its float and liquidity, which have an adverse effect on firm value, as presented in the hypothesis 5a. Therefore increasing ownership concentration should lead to lower returns.

Hypothesis 6: *An accelerated offer increases long-run post-issue returns.*

Companies carrying out accelerated offers usually do not need to market themselves, which can be seen as a sign of quality. Moreover, carrying out fully marketed offerings is costly for the issuing firm due to high out-of-pocket costs. Therefore companies conducting accelerated offers should face higher returns.

Hypothesis 7: *High pre-issue institutional ownership increases the likelihood of an accelerated offer.*

Accelerated offers should be common with companies with high institutional holding, since these investors do not require an equally exhausting marketing process as is the case with retail investors (as stated in hypothesis 1a). Moreover, as accelerated offers are often targeted at institutional investors, it could be the case that already before the offer the institutional holding is high.

Hypothesis 8: *High pre-issue ownership concentration decreases the likelihood of an accelerated offer.*

Accelerated offers should be uncommon with companies with high ownership concentration, since these issues require a higher discount (as stated in hypothesis 2a) and thus a longer marketing process.

Table 5: Summary of hypotheses

The table pools together the presented hypotheses. Hypotheses 1-3 relate to the offer price discount, hypotheses 4-6 to long-run post-issue returns, and hypotheses 7-8 to the choice of issue method.

Hypothesis

Offer price discount

H1a High pre-issue institutional ownership decreases the offer price discount

H1b Increasing institutional ownership from the issue decreases the offer price discount

H2a High pre-issue ownership concentration increases the offer price discount

H2b Increasing ownership concentration from the issue increases the offer price discount

H3 An accelerated offer increases the offer price discount

Long-run returns

H4a High post-issue institutional ownership increases long-run post-issue returns

H4b Increasing institutional ownership increases long-run post-issue returns

H5a High post-issue ownership concentration decreases long-run post-issue returns

H5b Increasing ownership concentration decreases long-run post-issue returns

H6 An accelerated offer increases long-run post-issue returns

Choice of issue method

H7 High pre-issue institutional ownership increases the likelihood of an accelerated offer

H8 High pre-issue ownership concentration decreases the likelihood of an accelerated offer

5. Data and methodology

This chapter introduces the data collection process and methodology used, in addition to presenting selected sample characteristics.

5.1. Construction of the sample

The data used in this study includes SEOs from the Dealogic database carried out in Europe during the years 2000-2005. Offers below EUR 10m have been excluded. Additionally, pure secondary offerings and rights offers have been excluded due to their deviating nature from public offers. Moreover, offers where the company has not existed in Thomson Financial and companies for which share price data has not been found on Datastream have been excluded. If the company has not been directly found from Thomson Financial by a code, it has been attempted to find manually before deleting it from the sample. Thus it can be said that it is very unlikely that companies which actually would have existed in Thomson Financial would have been left out the sample in vain.

Many studies regarding SEOs have examined whether multiple equity issues from one company have an impact on results. E.g. Bayless et al. (2005) study separately samples of SEOs with and without multiple issuers, but come to the conclusion that the results regarding abnormal returns around SEOs are not materially different from each other. Therefore multiple issuers have not been removed from the sample.

The data is unique in the sense that for all the companies still remaining in the sample at the stage of the ownership search, a manual process has been required to hand-pick the ownership characteristics before and after the issue date. Offers for which ownership data has not been available of Thomson Financial have been excluded from the sample. The ownership data has been collected by first looking at the situation at the fiscal quarter ending before the SEO for a specific company, and secondly the situation at the end of the fiscal quarter ending after the offer. Two characteristics have been collected: the fraction of shares held by institutional investors and the concentration of ownership. The concentration of ownership has been calculated by computing the fraction of shares that the ten largest investors of the company hold, similarly to e.g. how Eckbo and Norli (2004) calculate ownership concentration. Regarding the classification of investors into institutional and non-institutional, the following classification used by Thomson Financial has been applied.

Table 6: Classification of investors

The table presents which investors are classified as institutional investors in the thesis, and which are classified as non-institutional investors. Based on the classification of Thomson Financial.

Institutional investors			Non-institutional investors
Investment managers, incl.	Funds, incl.	Brokerage firms, incl.	Corporations
Banks and trusts	Mutual funds	Independent research firms	Government agencies
Endowment funds	Hedge funds	Other research firms	Holding companies
Finance companies			Individual investors (incl. households)
Investment foundations			
Government investment agencies			
Insurance companies			
Investment advisors			
Pension funds			
Private equity funds			
Sovereign wealth funds			
Venture capital funds			

After excluding companies with the above-mentioned criteria, a sample of 364 SEO companies is left. The data relies on the classification used by the Dealogic data for the issue type, including accelerated bookbuilt offerings, bought deals and fully marketed offerings.

Share price data has been obtained from Datastream. Certain firm characteristics which have been used for control purposes, including share turnovers, share price volatilities, market-to-book ratios, market capitalizations, and profitability levels have been collected from Thomson Financial and have been winsorized at the 1% and 99% levels. Other control variables have been collected from the Dealogic database, and include take-up levels, relative offer sizes, and the times from the last equity issues for the SEO companies. Table 7 presents the sample collection process.

Table 7: Construction of sample

The table presents the sample construction process and the sample size left in each stage.

	Sample size
SEOs in Europe in Dealogic database announced between January 2000 and December 2005 with issue size exceeding EUR 10m	2 649
Pure secondary offerings	1 144
Rights issues	346
Companies which do not exist in Thomson Financial	151
Companies with no available stock price data on Datastream	470
Companies where ownership data is not found in Thomson Financial	174
Sample left	364

5.2. Methodology

The study employs mean and median tests, in addition to OLS regression, to analyze the offer price discount, announcement returns, and long-run returns. For the choice of issue method, logit regression is applied.

5.2.1. Offer price discount

The offer price discount in an SEO is defined as being the percent change between the price on the last trade prior to the offer and the offer price. The offer price discount for each security i is defined as:

$$OPD_i = \frac{MP_i - OP_i}{MP_i} * 100 \quad (1)$$

where:

MP_i is the market value of the of security i on the last trade before the offer

OP_i is the offer price of the SEO

Thus it is slightly different from the definition used in many previous papers, where the offer price discount is usually defined as being the percent change between the closing price on the day prior to the offer and the offer price. The definition used in this study is more accurate in the sense that it uses the most recent available data before the offer, and not the closing price on the day before the offer.

5.2.2. Announcement effect

For the announcement effect, firm specific cumulative abnormal stock returns are calculated. More specifically, stock returns adjusted for stock splits and dividends are compared to country specific market indices. For each security i the daily abnormal stock return is defined as:

$$AR_{it} = R_{it} - R_{Mt} \quad (2)$$

where:

R_{it} is the daily return on the SEO firm i on day t

R_{Mt} is the daily return on the benchmark index over the same time period

$t = 0$ is the announcement date of the SEO

The cumulative abnormal return (CAR) is calculated for the two-day time period starting one day before the announcement of the offer and ending on the announcement day of the offer:

$$CAR_i(\tau_1, \tau_2) = \sum_{t=\tau_1}^{\tau_2} AR_{it} \quad (3)$$

Moreover, the equally weighted cumulative average abnormal return is calculated for securities $i = 1 \dots n$

$$\overline{CAR}_i(\tau_1, \tau_2) = \frac{1}{n} \sum_{i=1}^n CAR_i(\tau_1, \tau_2) \quad (4)$$

5.2.3. Long-run returns

For post-issue returns, buy-and-hold abnormal returns (BHAR) are calculated. The BHAR for a specific security is defined as:

$$BHAR_{i,t} = \prod_{t=\tau_1}^{\tau_2} (1 + R_{i,t}) - \prod_{t=\tau_1}^{\tau_2} (1 + R_{M,t}) \quad (5)$$

5.2.4. OLS regressions and robustness check

OLS regressions are carried out for the offer price discount, announcement returns, and long-run returns. For the OLS regressions, a robustness check is conducted to measure the significance of the year 2000 in the models, when the dot-com era was still ongoing. In the regression models which check the robustness, the year 2000 has been excluded from the sample. Should the results stay similar to the models where the year 2000 is included, the results can be considered robust.

The OLS regressions for the dependent variable Y are specified as:

$$Y_i = \beta_1 + \beta_2 X_{2i} + \cdots + \beta_k X_{ki} + u_i \quad (6)$$

where:

X_2, X_3, \dots, X_n are independent variables

In a sample of n observations on variables Y, X_2, X_3, \dots, X_k the OLS regression is used to fit the equation

$$\hat{Y} = b_1 + b_2 X_{2i} + \cdots + b_k X_{ki} \quad (7)$$

where values for coefficients b_1, b_2, \dots, b_n are fitted so that the residuals' sum of squares are minimized.

Additionally, the OLS regressions are tested for that no alarming levels of heteroscedasticity or autocorrelation take place.

5.2.5. Mean and median tests

Mean and median tests are used to test differences in subgroups of the sample for the offer price discount, announcement returns, and long-run returns. For the mean, the one-sided student t-test is used; and for the median the Wilcoxon signed rank test is used. The Wilcoxon signed rank test is used in addition to the student t-test, as the former does not assume normally distributed error terms, which can potentially be the case with the tested subgroups. Hence it provides a complementary method to test the subgroups where the assumption of normally distributed error terms does not need to be fulfilled.

The t-statistic for the student t-test, which is used to calculate the p-value, is defined as:

$$t = \frac{\overline{AR}_t}{\sigma(AR_t)/\sqrt{n}} \quad (8)$$

where:

\overline{AR}_t is the sample mean

$\sigma(AR_t)$ is the sample standard deviation

n is the number of observations in a given sample

The z-statistic for the Wilcoxon signed rank test is defined as:

$$Z = \frac{D - E(D)}{\sigma_D} \quad (9)$$

where:

$$E(D) = \frac{n(n+1)}{4}$$

$$\sigma_D^2 = \frac{n(n+1)(2n+1)}{24}$$

while $E(D)$ and σ_D^2 refer to sample expected value of ranked deviations' sum and variance of ranked deviations respectively. Under the assumption that the subsamples are drawn from the same distribution, z-statistics follow a normal distribution.

5.2.6. Logit regressions

To test the likelihood of an accelerated offering taking place as opposed to a fully marketed offerings, logit regression is applied. Logit estimation with more than one explanatory variable hypothesizes that the probability of a given occurrence is determined by the function:

$$p_i = F(Z)_i = \frac{1}{1 + e^{-Z_i}} \quad (10)$$

where:

$$Z_i = \beta_1 + \beta_2 X_{2i} + \dots + \beta_k X_{ki}$$

5.3. Sample characteristics

Table 8 below presents the number of SEOs and proceeds raised by offer type for the years 2000-2005. It can be seen that the most common offer type has been bought deals (155 offerings), followed by accelerated bookbuilt offerings (145 offerings). Fully marketed offerings on the other hand have not been as common (64 offerings). It can be seen that fully marketed offerings have been a relatively common offer type still in 2000, but in the following years accelerated offers have been of more importance. Moreover, the total number of SEOs and the amount of proceeds raised has been relatively high in 2000, but decreased sharply in 2001. This can partly be explained by the collapse of the dot-com era in 2000, after which companies opted not to raise as much equity as during the dot-com era due to lower share price valuations. Approaching 2005 however the total number of SEOs and proceeds raised started increasing again.

Table 8: SEO volumes

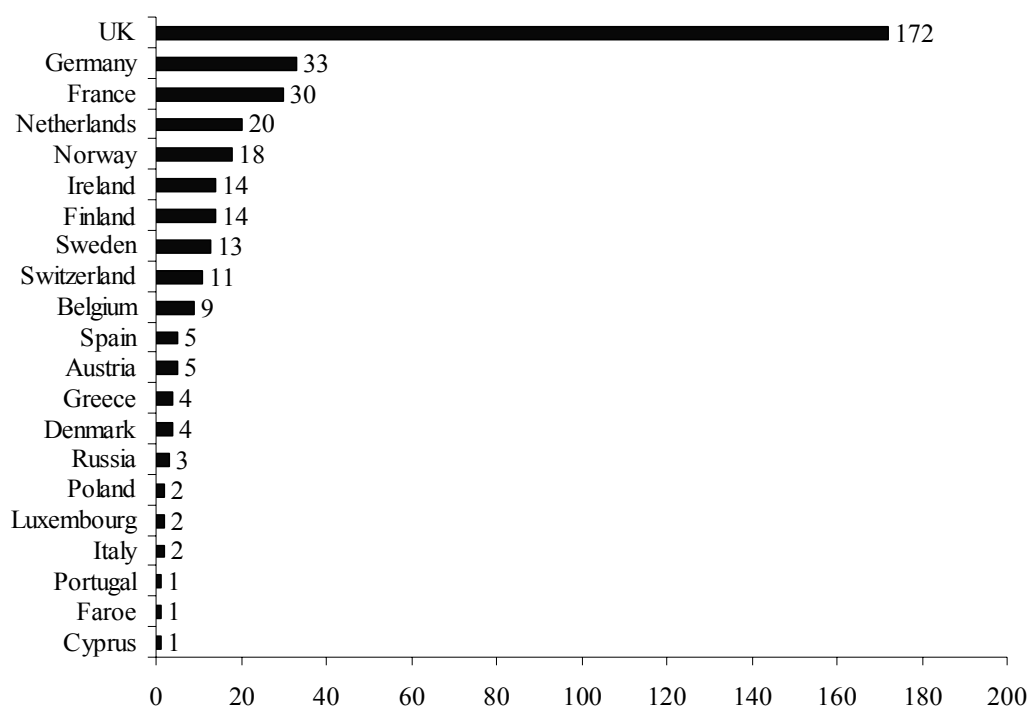
The table presents the number of SEOs and proceeds raised for the whole sample and by offer type and year.

Year	All SEOs		Accelerated bookbuilt offerings		Bought deals		Fully marketed offerings	
	Number	Total proceeds (EUR m)	Number	Total proceeds (EUR m)	Number	Total proceeds (EUR m)	Number	Total proceeds (EUR m)
All	364	100,876	145	65,106	155	10,072	64	25,697
2000	66	23,639	9	1,407	23	4,893	34	17,338
2001	31	13,040	16	6,538	6	171	9	6,331
2002	41	13,685	23	11,918	13	425	5	1,341
2003	47	17,299	20	16,628	25	636	2	35
2004	67	13,229	28	11,364	31	1,550	8	315
2005	112	19,984	49	17,251	57	2,396	6	337

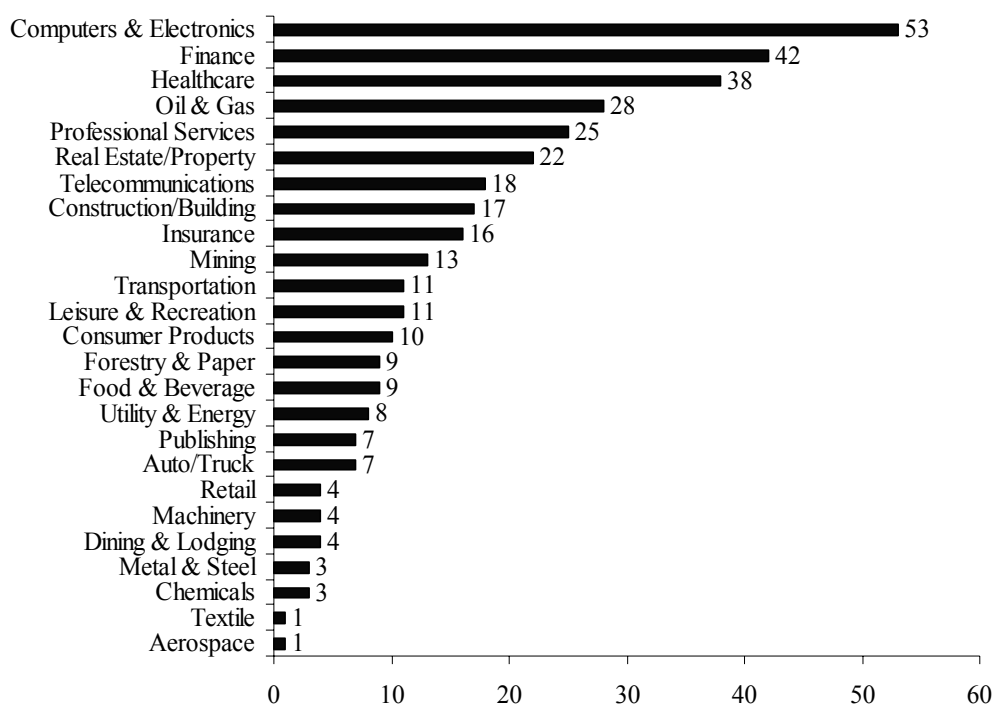
Figures 4 and 5 below present the number of SEOs by country and industry, based on the classification used by the Dealogic database. It can be seen that nearly half of the SEOs have been conducted in the UK. This is natural when considering the dominant position of the London Stock Exchange in Europe for companies to list their shares. Other major economies, including Germany and France, are also represented in the sample with a relatively high importance. It is interesting to note that Finland, albeit being a rather small economy in Europe, ranks seventh in the number of SEOs in the sample. Moreover, certain large economies such as Spain and Italy are represented with only a few SEOs, which can partly be explained with the relatively minor role of stock markets in these countries. Furthermore, it can be seen that the industry with the most SEOs has been computers & electronics. This can partly be explained by the inclusion of the year 2000 in the sample, when IT firms conducted equity offerings. Other industries represented with a relatively high amount of SEOs include finance and healthcare.

Figure 4: SEOs by country

The table presents the number of SEOs in the sample by country. The horizontal axis represents the number of SEOs.

**Figure 5: SEOs by industry**

The table presents the number of SEOs in the sample by industry, as reported by the Dealogic database. The horizontal axis represents the number of SEOs.



6. Results

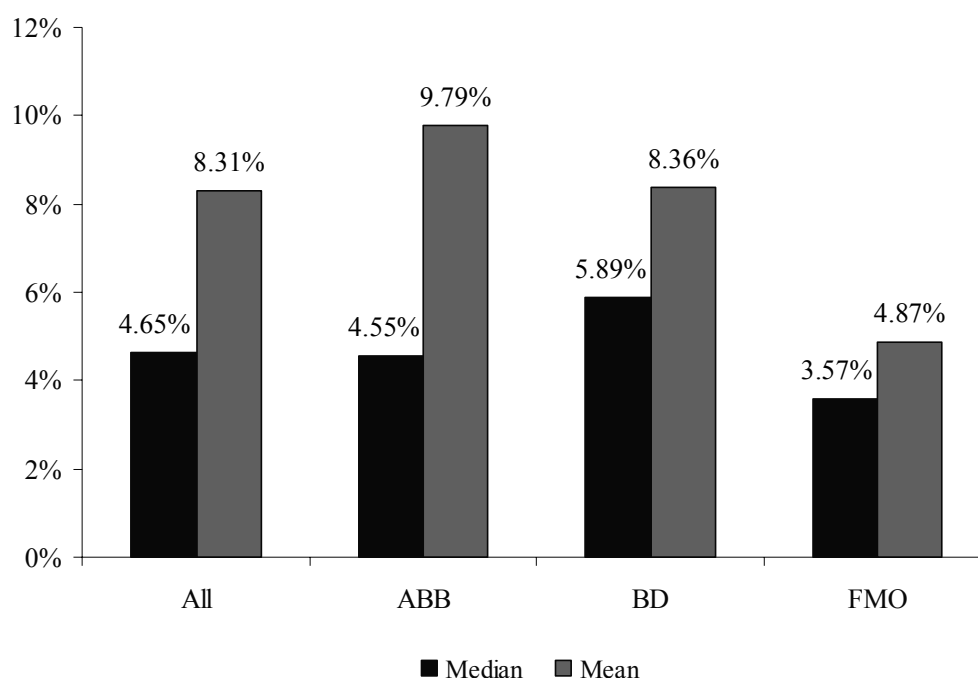
This chapter covers the empirical results of the study, including results regarding the offer price discount, announcement effect, post-issue returns and choice of issue method.

6.1. Offer price discount

The offer price discount for the SEOs in the sample vary significantly depending on the offer type. Figure 6 below shows the median and mean offer price discounts for each studied offer type. Figures for individual years are not presented due to a low number of data points for certain deal types in certain years. As can be seen, fully marketed offerings have been characterized by the lowest median and mean discounts. Accelerated bookbuilt offerings have experienced the highest discounts on average – however when measured by the median bought deals have suffered from the highest discounts. The average figures vary somewhat from the mean figures, indicating that among the sample there are at least some SEOs with extremely high discounts.

Figure 6: Median and mean offer price discounts by offer type

The table presents the median and mean offer price discounts for each offer type. ABB refers to accelerated bookbuilt offerings, BD to bought deals, and FMO to fully marketed offerings.



The observation that fully marketed offerings have faced the lowest discounts can also be seen from the Table 9, where statistical tests for the mean and median have been conducted on sample subgroups. First of all, the figures indicate that the discount for all three offer types has been different from zero at a statistically significant level. Secondly, the difference between the mean discount for fully marketed offerings and accelerated offerings (including accelerated bookbuilt offerings and bought deals) has been -4.18%, statistically significant at the 1% level. The difference in the medians is a somewhat smaller -1.09%, but nevertheless statistically significant at the 5% level.

Similar tests have also been conducted for subgroups based on pre-issue ownership characteristics and changes in ownership characteristics. Again, as can be expected, the discounts for all the subgroups has been different from zero at a statistically significant level. In the subgroups based on pre-issue ownership characteristics there is not significant difference between the groups. In other words, pre-issue institutional ownership nor pre-issue ownership concentration do not significantly affect the offer price discount. The difference in the mean discount between the subgroup with above-median pre-issue institutional ownership and the subgroup with below-median pre-issue institutional ownership is 1.01%. Moreover, the difference in the mean discount between the subgroup with above-median pre-issue ownership concentration and the subgroup with below-median pre-issue ownership concentration is -0.23%. Neither of these is statistically significant.

For subgroups based on changes in ownership characteristics, some differences arise. The difference in the mean discount between the subgroup with above-median increase in institutional ownership and the subgroup with below-median increase in institutional ownership is -1.50%. In other words, increasing institutional ownership has been accompanied with a lower discount. However, this result is significant at only the 10% level. Moreover, the difference in the mean discount between the subgroup with above-median increase in ownership concentration and the subgroup with below-median increase in ownership concentration is -1.65%. In other words, increasing ownership concentration has been accompanied with a lower discount. This results is also significant at the 10% level.

Table 9: Offer price discount for sample subgroups

The table presents the mean and median offer price discounts for sample subgroups based on issue method (panel A), pre-issue ownership characteristics (panel B), and changes in ownership characteristics resulting from the issue (panel C). ABB refers to accelerated bookbuilt offerings, BD to bought deals, and FMO to fully marketed offerings. For ownership characteristics, the 4th quartile has the most and the 1st quartile the least of the variable in question. The one-sided student t-test represents the statistical significance for the mean differing from zero for all columns except for the ones which measure difference. For the columns which measure difference, the one-sided student t-test represents the statistical significance for the means for the two subgroups in question differing from each other, whereas the Wilcoxon signed rank test represents the same for the medians. *** denotes significance at the 1% level, ** at the 5% level, and * at the 10% level.

Panel A: Issue method

Issue method		Difference	ABB	BD	FMO	Accelerated
		(FMO vs. accelerated)				(ABB and BD)
Issue method	Mean	-4.18%	9.79%	8.36%	4.87%	9.05%
	Median	-1.09%	4.55%	5.89%	3.57%	4.65%
	One-sided student t-test p-value	<0.01 ***	<0.01 ***	<0.01 ***	<0.01 ***	<0.01 ***
	Wilcoxon signed rank test p-value	0.05 **				

Panel B: Pre-issue ownership characteristics

Inst. ownership		Difference	Above median	Below median	4th quartile	3rd quartile	2nd quartile	1st quartile
		(above vs. below median)						
Inst. ownership	Mean	1.01%	8.82%	7.81%	8.91%	8.72%	6.69%	8.93%
	Median	0.00%	4.65%	4.65%	4.65%	4.65%	3.73%	5.10%
	One-sided student t-test p-value	0.17	<0.01 ***	<0.01 ***	<0.01 ***	<0.01 ***	<0.01 ***	<0.01 ***
	Wilcoxon signed rank test p-value	0.85						
Ownership conc.	Mean	-0.23%	8.20%	8.43%	7.18%	9.21%	8.71%	8.14%
	Median	0.00%	4.65%	4.65%	4.65%	5.06%	4.65%	4.65%
	One-sided student t-test p-value	0.41	<0.01 ***	<0.01 ***	<0.01 ***	<0.01 ***	<0.01 ***	<0.01 ***
	Wilcoxon signed rank test p-value	0.97						

Panel C: Changes in ownership characteristics

Inst. ownership		Difference	Above median	Below median	4th quartile	3rd quartile	2nd quartile	1st quartile
		(above vs. below median)						
Inst. ownership	Mean	-1.50%	7.56%	9.07%	8.40%	6.72%	6.26%	11.87%
	Median	-0.21%	4.58%	4.79%	4.65%	4.44%	4.55%	5.92%
	One-sided student t-test p-value	0.07 *	<0.01 ***	<0.01 ***	<0.01 ***	<0.01 ***	<0.01 ***	<0.01 ***
	Wilcoxon signed rank test p-value	0.10 *						
Ownership conc.	Mean	-1.65%	7.49%	9.14%	7.92%	7.06%	7.47%	10.80%
	Median	-0.17%	4.59%	4.76%	4.44%	4.65%	4.65%	5.88%
	One-sided student t-test p-value	0.06 *	<0.01 ***	<0.01 ***	<0.01 ***	<0.01 ***	<0.01 ***	<0.01 ***
	Wilcoxon signed rank test p-value	0.05 *						

For a more thorough investigation of the offer price discount, regression analysis has been applied. Table 10 presents the results from OLS regressions in ten models. Models 1a and 1b test all variables jointly. Models 2a and 2b test the influence of the offer type. Models 3a and 3b test the influence of ownership characteristics, including pre-issue characteristics and changes in them. Models 4a and 4b test pre-issue ownership characteristics. Models 5a and 5b test changes in ownership characteristics. All models employ selected control variables. The models labelled with “a” represent the whole data sample, whereas the models labelled “b” exclude the year 2000.

The results indicate that the discount in fully marketed offerings has been lower than that in accelerated offerings, as hypothesised in H₃. This result is consistent in all the tested regression models at the 1% level, including the models where the year 2000 has been excluded as a robustness check to mitigate the influence of the dot-com era ongoing still in 2000. Therefore it can be said that H₃ is accepted. This result contradicts the finding of Bortolotti et al. (2007), who find that accelerated offers suffer to a lesser extent from underpricing than non-accelerated offers. However, the classification of accelerated offers used by Bortolotti et al. (2007) is somewhat different than the one used in the thesis.

The regressions provide weak evidence that pre-issue institutional ownership is associated with higher discounts (significant at the 5% level in models 4a and 4b; and at the 10% level in models 3a and 3b). Also, increasing ownership concentration seems to be associated with lower discounts (significant at the 10% level in models 3a and 3b). These two findings contradict hypotheses H_{1a} and H_{2b}. Moreover, the regressions do not provide evidence that pre-issue ownership concentration or changes in institutional ownership would have an impact on the offer price discount. All in all, the hypotheses H_{1a}, H_{1b}, H_{2a}, and H_{2b} which deal with ownership characteristics affecting the offer price discount are thus rejected.

Certain control variables have been included in the models, including the take-up level in the offer, the six-month share-price run-up preceding the offer, the turnover of the issuing company's shares (which acts as a proxy for liquidity), the volatility of the issuing company's shares, the market-to-book ratio of the issuing company's equity, the relative offer size, the market capitalisation of the issuing company, and the profitability level of the issuing company (measured by the EBIT margin). Out of these variables, pre-issue stock price volatility, the relative offer size and the market capitalization of the issuing firm before the offer all have a positive effect on the offer price discount. Especially the relative offer size in

influential, being significant at the 1% level in all models. This supports the findings of Corwin (2003), who also finds that underpricing is positively related to the relative offer size.

The regression models provide a relatively good fit, with r-squared figures ranging from 0.21 to 0.27. As can be assumed, the models with more included independent variables (e.g. models 1a and 1b) provide a better fit than the ones which test only certain variables (e.g. models 4a, 4b, 5a, and 5b). Furthermore, the highest r-squared figures are derived from the models which include the offer type as an independent variable, which again proves that this has an important influence on the discount.

Table 10: OLS regressions on offer price discount

The table presents the results from the OLS regressions. The models labeled with an “a” represent the whole data sample, whereas the models labeled with a “b” represent the whole data sample excluding the year 2000. The dependent variable is the offer price discount in the SEO. The independent variables are as follows: FMO is a dummy variable which takes the value of 1 if the offer is a fully marketed offer, and 0 otherwise. BD is a dummy variable, which takes the value of 1 if the offer is a bought deal, and 0 otherwise. PREINST is the fraction of shares held by institutional investors before the offer. PRECONC is the fraction of shares held by the ten largest shareholders before the offer. CHANGEINST is the change in institutional ownership measured as the %-point difference from before the offer to after the offer. CHANGECONC is the change in ownership concentration measured as the %-point difference from before the offer to after the offer. TAKEUP is the fraction of new shares subscribed in the offer by existing shareholders. 6MRUNUP is the cumulative index adjusted abnormal return during the six months before the announcement of the offering. TURNOVER is the average monthly trading volume divided by the amount of shares from the 12 months before the announcement of the offering. VOLA is the 6-month volatility of daily returns before the announcement of the offering. MB is the market-to-book ratio 5 days before the announcement of the offering. RELSIZE is the proceeds of the issue divided by the total market value 5 days before the announcement of the offering. MARKETCAP is the natural logarithm of the total market value of the issuing company 5 days before the announcement of the offer. EBITMARGIN is the EBIT (earnings before interest and taxes) margin of the issuing company in the year of the offer. *** denotes significance at the 1% level, ** at the 5% level, and * at the 10% level.

Model	(1a)			(1b)			(2a)			(2b)			(3a)			(3b)			(4a)			(4b)			(5a)			(5b)				
	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.		
FMO	-0.05	-4.28	***	-0.06	-3.65	***	-0.06	-5.03	***	-0.07	-4.37	***																				
BD	-0.04	-2.10	**	-0.05	-2.04	**	-0.04	-2.15	**	-0.05	-2.07	**																				
PREINST	0.03	1.32		0.04	1.53								0.04	1.68	*	0.05	1.78	*	0.05	2.06	**	0.06	2.12	**								
PRECONC	-0.07	-1.15		-0.08	-1.04								-0.09	-1.41		-0.11	-1.43		-0.03	-1.50		-0.03	-1.49									
CHANGEINST	-0.03	-0.41		-0.05	-0.55								-0.03	-0.40		-0.03	-0.32								-0.08	-0.99		-0.08	-0.88			
CHANGECONC	-0.11	-1.58		-0.09	-1.11								-0.12	-1.87	*	-0.13	-1.72	*							-0.05	-1.15		-0.05	-0.79			
TAKEUP	0.05	0.69		0.06	0.71								0.04	0.62		0.06	0.78															
6MRUNUP	-0.01	-1.15		-0.02	-1.19		-0.01	-1.36		-0.02	-1.44		-0.01	-1.40		-0.02	-1.68	*	-0.01	-1.24		-0.02	-1.52		-0.01	-1.76	*	-0.03	-1.89	*		
TURNOVER	-0.01	-1.37		-0.01	-1.60		-0.01	-1.17		-0.01	-1.44		-0.01	-1.56		-0.01	-1.73	*	-0.01	-1.55		-0.01	-1.87	*	-0.01	-1.22		-0.01	-1.42			
VOLA	0.05	2.16	**	0.07	2.15	**	0.05	1.97	**	0.06	1.83	*	0.05	2.04	**	0.07	2.03	**	0.05	2.13	**	0.07	1.94	*	0.04	1.69	*	0.06	1.71	*		
MB	0.00	1.31		0.00	1.54		0.00	1.43		0.00	1.74	*	0.00	0.78		0.00	0.76		0.00	0.45		0.00	0.53		0.00	0.96		0.00	1.02			
RELSIZE	0.16	5.97	***	0.16	5.76	***	0.15	5.81	***	0.16	5.60	***	0.13	4.97	***	0.13	4.60	***	0.12	4.64	***	0.12	4.33	***	0.12	4.74	***	0.12	4.40	***		
MARKETCAP	0.00	2.64	***	0.00	1.63		0.00	3.26	***	0.00	2.42	**	0.00	2.31	**	0.00	1.56		0.00	1.92	*	0.00	1.36		0.00	2.71	***	0.00	1.95	*		
EBITMARGIN	-0.02	-1.46		-0.01	-0.81		-0.02	-1.65		-0.01	-1.05		-0.01	-1.05		-0.01	-0.63		-0.01	-1.13		-0.01	-0.73		-0.01	-1.13		-0.01	-0.67			
Year dummies	yes			yes			yes			yes			yes			yes			yes			yes			yes			yes				
N	364			298			364			298			364			298			364			298			364			298				
R-squared	0.27			0.27			0.25			0.25			0.23			0.22			0.21			0.21			0.22			0.22				

6.2. Announcement effect

The announcement returns for the SEOs in the sample vary somewhat depending on the offer type. Figure 7 below show the median and mean announcement returns for each studied offer type. Figures for individual years are not presented due to a low number of data points for certain deal types in certain years. As can be seen, bought deals have experienced the most positive announcement returns. The two other offer types on the other hand have experienced negative announcement returns – however for fully marketed offerings both the median and mean has been virtually 0%. For the whole sample, the median announcement return has been -0.55% while the mean announcement return has been +0.22%. These returns are somewhat less than has been reported in previous literature, especially with studies conducted with data from the US.

Figure 7: Median and mean announcement CAR by offer type

The table presents the median and mean announcement returns (CAR) for each offer type, employing the [-1,0] event window. ABB refers to accelerated bookbuilt offerings, BD to bought deals, and FMO to fully marketed offerings.

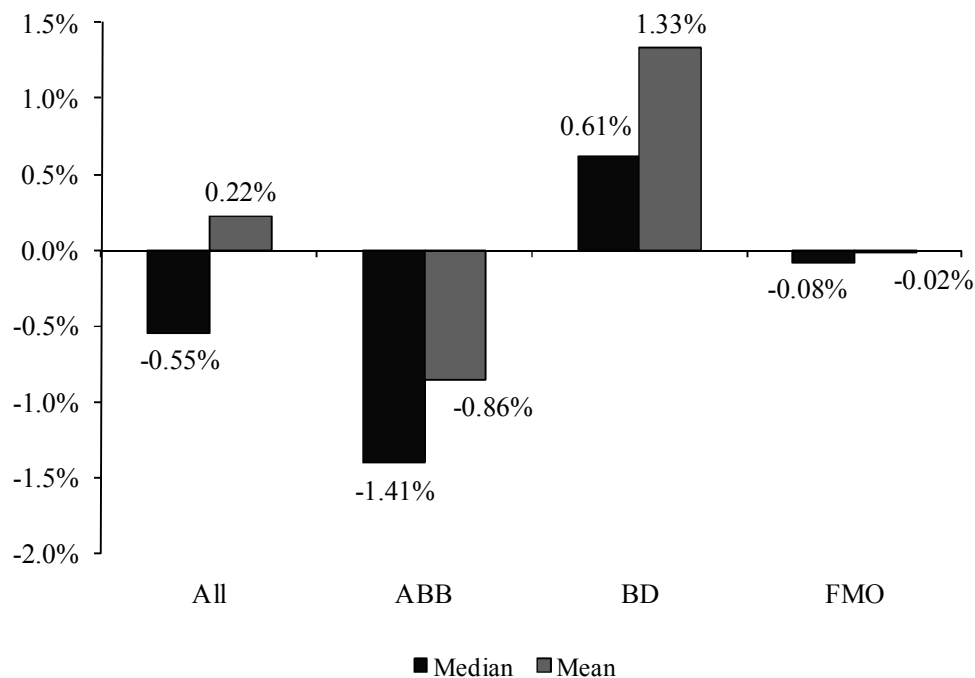


Figure 8 below shows the cumulative abnormal returns for 45 days before and after the announcement of the offer. It can be seen that the announcement reaction varies somewhat for the different issue types, and that the reaction for the sample as a whole is relatively small around the announcement date. For the whole sample it can be seen that there is a rise in

valuation during the 45 days preceding the offer, and that after the offer the valuation remains relatively stable with the rise halting. Accelerated bookbuilt offerings experience negative changes in valuation immediately before the announcement of the SEO. However, after this the valuation remains relatively stable. Bought deals exhibit positive changes in valuation up to five days before the offering, with the positive trend continuing throughout the 45 days time period after the announcement. The valuation changes around the offer date for fully marketed offerings on the other hand is somewhat unclear. However, it can be seen that the trend before the announcement of the offer is positive, and becomes negative thereafter.

Figure 8: Valuation changes (CAR) around the announcement date

The table presents valuation changes (CAR) for each offer type around the announcement of the SEO. ABB refers to accelerated bookbuilt offerings, BD to bought deals, and FMO to fully marketed offerings. The horizontal axis represents the days before and after the announcement, with 0 being the announcement day.

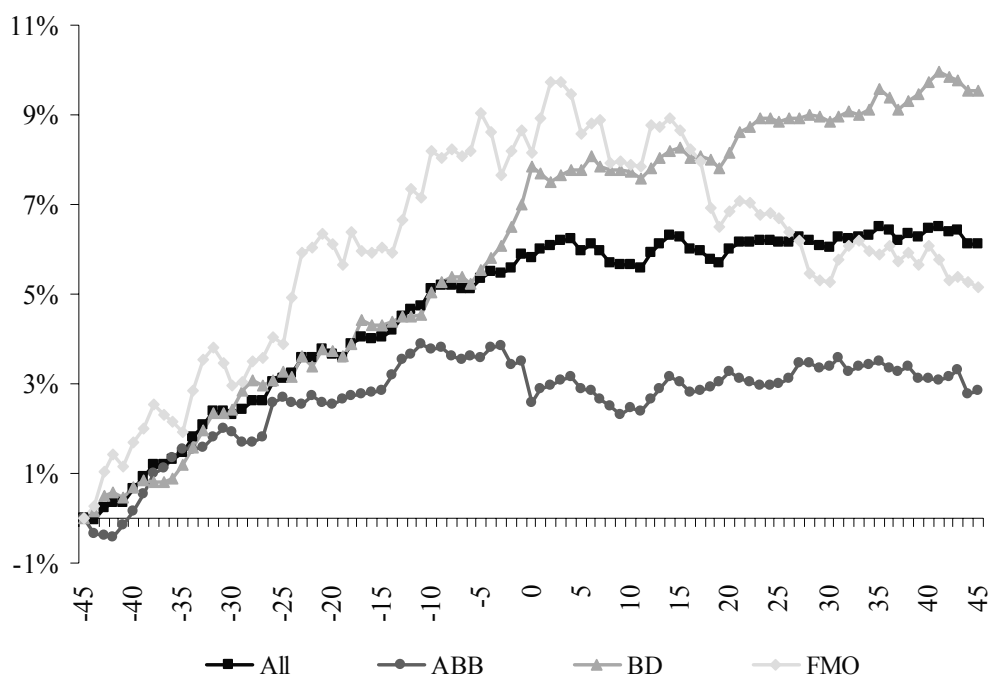


Table 11 presents statistical tests for the mean and median on sample subgroups. It can be seen that regarding the offer type, bought deals experience positive announcement returns which are statistically significant at the 1% level, while accelerated bookbuilt offerings exhibit negative announcement returns which are statistically significant at the 5% level. Fully marketed offerings on the other hand do not experience statistically significant announcement returns.

Moreover, it can be seen that bought deals have experienced announcement returns which are different from the subgroup formed from bought deals and fully marketed offerings. The difference in the means has been 1.94%, and the difference in the medians 1.64%, both statistically significant at the 1% level.

As to ownership characteristics, none of the formed subgroups based on above and below-median institutional ownership, ownership concentration; and above and below-median changes in these, experience statistically significant announcement returns. Moreover, there does not seem to be any difference between the subgroups either. The differences in the means and medians between the above and below-median subgroups are close to zero and not statistically significant.

Thus it can be said that the issue method has an effect on the announcement return up to certain extent, while ownership characteristics, or changes in ownership characteristics, do not affect the announcement return.

Table 11: Announcement effect for sample subgroups

The table presents the mean and median announcement CARs of the SEOs for the event window [-1,0] for sample subgroups based on issue method (panel A), pre-issue ownership characteristics (panel B), and changes in ownership characteristics resulting from the issue (panel C). ABB refers to accelerated bookbuilt offerings, BD to bought deals, and FMO to fully marketed offerings. For ownership characteristics, the 4th quartile has the most and the 1st quartile the least of the variable in question. The one-sided student t-test represents the statistical significance for the mean differing from zero for all columns except for the ones which measure difference. For the columns which measure difference, the one-sided student t-test represents the statistical significance for the means for the two subgroups in question differing from each other, whereas the Wilcoxon signed rank test represents the same for the medians. *** denotes significance at the 1% level, ** at the 5% level, and * at the 10% level.

Panel A: Issue method

		Difference (BD vs. others)	ABB	BD	FMO	ABB and FMO
Issue method	Mean	1.94%	-0.86%	1.33%	-0.02%	-0.61%
	Median	1.64%	-1.41%	0.61%	-0.08%	-1.03%
	One-sided student t-test p-value	<0.01 ***	0.05 **	0.01 **	0.49	0.08 *
	Wilcoxon signed rank test p-value	<0.01 ***				

Panel B: Pre-issue ownership characteristics

		Difference (above vs. below median)	Above median	Below median	4th quartile	3rd quartile	2nd quartile	1st quartile
Inst. ownership	Mean	-0.35%	0.05%	0.39%	-0.16%	0.26%	0.21%	0.58%
	Median	0.00%	-0.55%	-0.55%	-0.54%	-0.60%	-0.04%	-0.62%
	One-sided student t-test p-value	0.32	0.46	0.22	0.41	0.36	0.38	0.23
	Wilcoxon signed rank test p-value	0.84						
Ownership conc.	Mean	-0.35%	0.04%	0.40%	0.04%	0.05%	0.82%	-0.03%
	Median	0.26%	-0.35%	-0.61%	-0.45%	-0.28%	-0.54%	-0.79%
	One-sided student t-test p-value	0.31	0.46	0.23	0.48	0.47	0.17	0.48
	Wilcoxon signed rank test p-value	0.91						

Panel C: Changes in ownership characteristics

		Difference (above vs. below median)	Above median	Below median	4th quartile	3rd quartile	2nd quartile	1st quartile
Inst. ownership	Mean	-0.04%	0.20%	0.24%	0.26%	0.14%	-0.43%	0.91%
	Median	-0.05%	-0.58%	-0.53%	-0.45%	-0.69%	-0.62%	0.42%
	One-sided student t-test p-value	0.48	0.35	0.32	0.37	0.42	0.24	0.13
	Wilcoxon signed rank test p-value	0.92						
Ownership conc.	Mean	0.31%	0.38%	0.06%	0.95%	-0.19%	-0.11%	0.24%
	Median	0.10%	-0.48%	-0.59%	0.25%	-0.82%	-0.66%	-0.04%
	One-sided student t-test p-value	0.33	0.22	0.45	0.13	0.35	0.44	0.37
	Wilcoxon signed rank test p-value	0.65						

For a more thorough investigation of the announcement returns, regression analysis has been applied. Table 12 on the following page presents results from OLS regressions. From the models it can be seen that the issue being a bought deal has a positive effect on the announcement return. However, this result is significant at the 10% level in only two of four models in which the variable has been included. Moreover, it can be seen that the issue being a fully marketed offering does not have an impact on the announcement return.

From the models it can also be seen that pre-issue ownership characteristics do not have an effect on the announcement return, as was already noted in the mean and median tests. Moreover, it can be seen that decreasing institutional ownership has a positive effect on the announcement return. However, this result is not robust as it cannot be observed in the models which exclude the year 2000. Moreover, changes in ownership concentration do not seem to have a statistically significant on the announcement return

Out of the control variables, the six-month run-up preceding the issue has the strongest effect on the announcement return, with the influence being positive. In other words, companies which issue shares in times of high valuation face more positive announcement returns. However, in the models which exclude the year 2000 this effect is somewhat weaker. The other control variables do not exhibit a positive or negative effect on the announcement effect which would be consistent throughout the models.

The r-squared figures in the regressions range from 0.09 to 0.12. Thus they do not provided as good as fit as the regressions on the offer price discount, but are still of a relatively good level.

Table 12: OLS regressions on announcement effect

The table presents the results from the OLS regressions. The models labeled with an “a” represent the whole data sample, whereas the models labeled with a “b” represent the whole data sample excluding the year 2000. The dependent variable is the announcement CAR of the SEO for the event window [-1,0]. The independent variables are as follows: FMO is a dummy variable which takes the value of 1 if the offer is a fully marketed offer, and 0 otherwise. BD is a dummy variable, which takes the value of 1 if the offer is a bought deal, and 0 otherwise. PREINST is the fraction of shares held by institutional investors before the offer. PRECONC is the fraction of shares held by the ten largest shareholders before the offer. CHANGEINST is the change in institutional ownership measured as the %-point difference from before the offer to after the offer. CHANGECONC is the change in ownership concentration measured as the %-point difference from before the offer to after the offer. TAKEUP is the fraction of new shares subscribed in the offer by existing shareholders. 6MRUNUP is the cumulative index adjusted abnormal return during the six months before the announcement of the offering. TURNOVER is the average monthly trading volume divided by the amount of shares from the 12 months before the announcement of the offering. VOLA is the 6-month volatility of daily returns before the announcement of the offering. MB is the market-to-book ratio 5 days before the announcement of the offering. RELSIZE is the proceeds of the issue divided by the total market value 5 days before the announcement of the offering. MARKETCAP is the natural logarithm of the total market value of the issuing company 5 days before the announcement of the offer. EBITMARGIN is the EBIT (earnings before interest and taxes) margin of the issuing company in the year of the offer. *** denotes significance at the 1% level, ** at the 5% level, and * at the 10% level.

Model	(1a)			(1b)			(2a)			(2b)			(3a)			(3b)			(4a)			(4b)			(5a)			(5b)		
	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.
FMO	-0.01	-0.60		-0.01	-0.40		-0.01	-0.53		0.00	-0.21																			
BD	0.01	1.66	*	0.02	1.75		0.01	1.54		0.01	1.66	*																		
PREINST	0.00	-0.05		0.01	0.65								0.00	0.27		0.01	0.88		0.02	1.11		0.02	1.45							
PRECONC	0.05	0.89		0.05	0.80								0.04	0.65		0.04	0.68		-0.01	-0.86		-0.01	-0.61							
CHANGEINST	-0.12	-2.32	**	-0.09	-1.40								-0.12	-2.20	**	-0.08	-1.29					-0.12	-2.49	**	-0.09	-1.70	*			
CHANGECONC	0.12	1.83	*	0.08	1.107								0.11	1.63		0.07	1.00					0.07	1.97		0.04	0.92				
TAKEUP	-0.05	-0.91		-0.06	-0.95								-0.04	-0.68		-0.05	-0.79													
6MRUNUP	0.03	3.98	***	0.03	1.94	*	0.03	3.52	***	0.02	1.62		0.04	4.07	***	0.03	2.03	**	0.03	3.78	***	0.02	1.89	*	0.03	3.94	***	0.03	1.91	*
TURNOVER	0.01	1.57		0.01	1.98		0.01	1.72	*	0.01	2.32	**	0.01	1.65	*	0.01	2.05	**	0.01	1.65		0.01	2.21	**	0.01	1.76	*	0.01	2.25	**
VOLA	0.00	0.17		0.01	0.41		0.00	0.15		0.01	0.47		0.01	0.26		0.01	0.54		0.01	0.31		0.02	0.67		0.01	0.30		0.01	0.51	
MB	0.00	-1.31		0.00	-2.35	**	0.00	-1.15		0.00	-2.27	**	0.00	-1.07		0.00	-1.85	*	0.00	-0.98		0.00	-1.91	*	0.00	-1.02		0.00	-1.76	*
RELSIZE	0.03	1.52		0.02	0.91		0.03	1.60		0.02	0.86		0.04	2.15	**	0.03	1.56		0.04	2.35	**	0.03	1.59		0.04	2.29	**	0.03	1.66	
MARKETCAP	0.00	-1.55		0.00	-0.99		0.00	-2.24	**	0.00	-1.43		0.00	-1.47		0.00	-1.15		0.00	-1.53		0.00	-1.33		0.00	-1.87	*	0.00	-1.26	
EBITMARGIN	0.01	1.16		0.01	0.56		0.01	0.89		0.00	0.30		0.01	1.02		0.01	0.50		0.01	0.82		0.00	0.33		0.01	1.01		0.01	0.49	
Year dummies		yes			yes			yes			yes			yes			yes			yes			yes			yes			yes	
N		364			298			364			298			364			298			364			298			364			298	
R-squared		0.12			0.11			0.10			0.09			0.11			0.10			0.09			0.09			0.11			0.09	

6.3. Post-issue returns

This section of the study concentrates on analyzing the long-run buy-and-hold abnormal returns subsequent to the offer. Firstly, the returns of companies with different offer types are presented, followed by the returns of subgroups based on ownership characteristics, including post-issue characteristics and changes in ownership characteristics.

The figure below shows the post-issue buy-and-hold abnormal returns subsequent to the offer based on the offer type. It can be seen that issues carried out by an accelerated bookbuilt process have performed better relative to bought deals and fully marketed offerings. However, it should be noted that also accelerated bookbuilt offerings have underperformed relative to market indices.

From Figure 9 below it can be seen that companies carrying out bought deals and fully marketed offerings overperform in the first months after the issue, but gradually start underperforming. For companies carrying out accelerated bookbuilt offerings on the other hand the share price development is more stable – neither a sharp rise right after the issue nor strong underperformance in the longer run can be observed.

Figure 9: BHAR following the SEO for different issue types

The table presents the buy-and-hold abnormal returns up to 36 months subsequent to the SEO for each offer type. ABB refers to accelerated bookbuilt offerings, BD to bought deals, and FMO to fully marketed offerings. The horizontal axis represents the months after the offer. Country indices have been used as benchmarks.

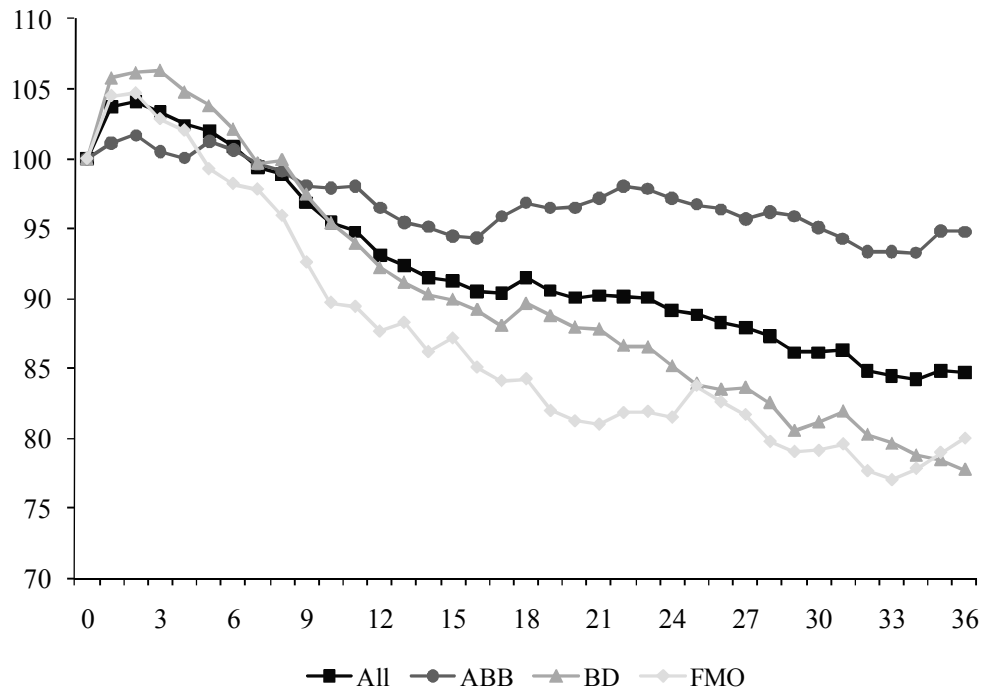


Figure 10 presents the post-issue buy-and-hold abnormal returns subsequent to the offer for subgroups based on post-issue institutional ownership. It can be seen that the quartile with the most institutional ownership has performed the best in the 36-month period following the issue. Also this subgroup has underperformed relative to market indices. The relationship between post-issue institutional ownership and returns does not seem to be straightforward however, as the quartile with the least institutional ownership has performed second to best during the time period. The in-between quartiles have performed clearly the worst.

The quartile with the most institutional holding is at its highest level relative to the other quartiles at approximately 24 months after the issue, but as the 36-month time interval approaches the difference to the other quartiles decreases. This indicates that institutional investors have an ability to exert positive influence into companies, but that after a certain time frame this becomes unnoticeable, possible due to the fact that ownership structures change in companies as time goes by.

The stock price performance of the quartile with most institutional ownership has been the most stable of the subgroups, neither experiencing a sharp rise right after the issue nor underperformance in the longer run to the same extent as the other quartiles. The quartile with the most institutional holding on the other hand experiences a relatively sharp rise in stock price immediately after the issue, but soon starts falling strongly.

Figure 10: BHAR following the SEO for quartiles based on post-issue institutional ownership

The table presents the buy-and-hold abnormal returns up to 36 months subsequent to the SEO for quartiles based on post-issue institutional ownership. The 4th quartile represents the quartile with the most post-issue institutional ownership, and the 1st quartile the quartile with the least. The horizontal axis represents the months after the offer. Country indices have been used as benchmarks.

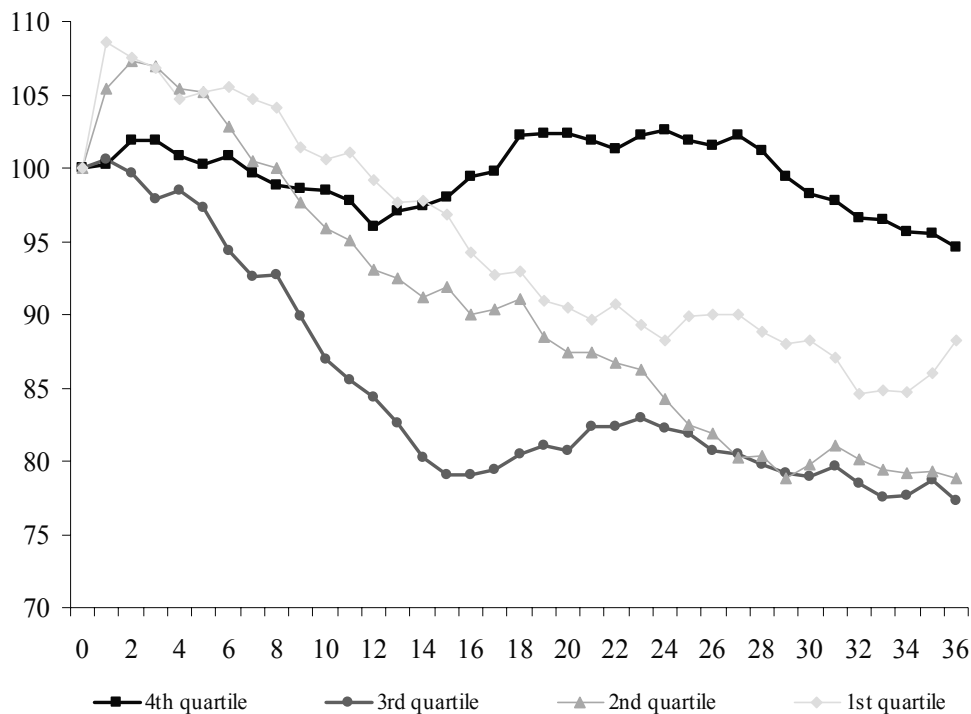


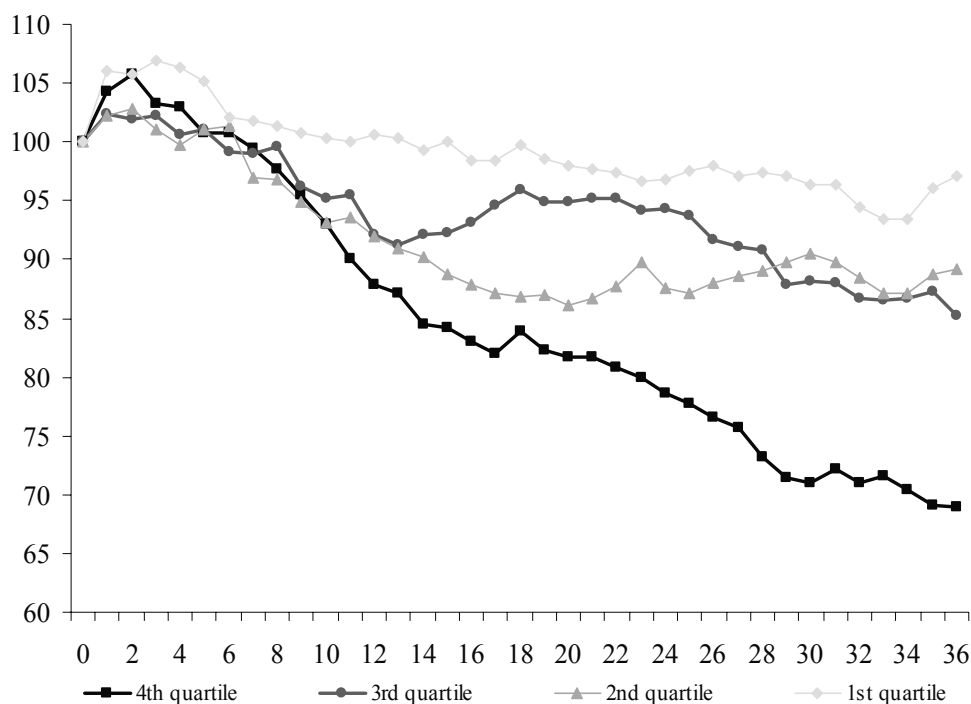
Figure 11 presents the post-issue buy-and-hold abnormal returns subsequent to the offer for subgroups based on post-issue ownership concentration. It can be seen that the quartile with the most ownership concentration has performed clearly the worst in the 36-month period following the issue. It should be noted again that all of the quartiles have underperformed to market indices. The quartile with the least ownership concentration has performed the best of the quartiles, with the in-between quartiles performing relatively similarly. This leads to the conclusion that ownership concentration destroys value.

The quartile with the least ownership concentration also experiences the highest rise right after the issue. However, this quartile does not start underperforming relative to the other

quartiles, like is the case with the subgroups based on offer type and post-issue institutional ownership.

Figure 11: BHAR following the SEO for quartiles based on post-issue ownership concentration

The table presents the buy-and-hold abnormal returns up to 36 months subsequent to the SEO for quartiles based on post-issue ownership concentration. The 4th quartile represents the quartile with the most post-issue ownership concentration, and the 1st quartile the quartile with the least. The horizontal axis represents the months after the offer. Country indices have been used as benchmarks.



Tables 13 and 14 present the results from statistical tests for 24 and 36-month buy-and-hold abnormal returns performed on the subgroups, including those based on the offer type, post-issue institutional ownership, post-issue ownership concentration, changes in institutional ownership, and changes in ownership concentration.

The tables show that the mean figures differ from the median figures somewhat, implying that there are high irregularity in the sample returns. For issue method, it can be seen that fully marketed offerings have underperformed relative to accelerated offers. However, this result is not statistically significant for neither the means nor the median. However, accelerated bookbuilt offerings have overperformed, when measured by means, relative to the other two offer type categories by 9.83% (significant at the 5% level) in the 24-month period and by 11.96% (significant at the 10% level) in the 36-month period following the offer. The median figures also provide statistically significant results.

For post-issue institutional ownership, it can be seen that the quartile with the most institutional ownership has overperformed, when measured by means, relative to the other three quartiles by 15.75% (significant at the 1% level) in the 24-month period and by 9.22% in the 36-month period following the offer. Moreover, when measured by medians, the respective figures are 24.49% (significant at the 1% level) and 17.58% (significant at the 5% level). Also here it can be seen that the positive effect of institutional ownership decreases as the 36-month time interval approaches.

For post-issue ownership concentration, it can be seen that the quartile with the least ownership concentration has overperformed, when measured by means, relative to the other three quartiles by 12.52% (significant at the 5% level) in the 24-month period and by 22.12% (significant at the 1% level) in the 36-month time period following the offer. Moreover, when measured by medians, the respective figures are 16.29% (significant at the 5% level) and 22.49% (significant at the 1% level).

Interestingly, changes in ownership concentration seem to work in the other direction – the subgroup with above-median increases in ownership concentration overperformed, when measured by means, relative to the subgroup with below-median increases in ownership concentration by 15.94% (significant at the 1% level) in the 24-month period and by 17.58% (significant at the 1% level) in the 36-month time period following the offer. Changes in institutional ownership however did not have an impact on the returns at a statistically significant level.

Table 13: 24-month buy-and-hold abnormal returns for sample subgroups

The table presents the mean and median 24-month buy-and-hold abnormal (BHAR) returns for sample subgroups based on issue method (panel A), pre-issue ownership characteristics (panel B), and changes in ownership characteristics resulting from the issue (panel C). Country indices are used as benchmarks. ABB refers to accelerated bookbuilt offerings, BD to bought deals, and FMO to fully marketed offerings. For ownership characteristics, the 4th quartile has the most and the 1st quartile the least of the variable in question. The one-sided student t-test represents the statistical significance for the mean differing from zero for all columns except for the ones which measure difference. For the columns which measure difference, the one-sided student t-test represents the statistical significance for the means for the two subgroups in question differing from each other, whereas the Wilcoxon signed rank test represents the same for the medians. *** denotes significance at the 1% level, ** at the 5% level, and * at the 10% level.

Panel A: Issue method

Issue method		Difference	Difference	ABB	BD	FMO	Accelerated	BD and FMO
		(FMO vs. accelerated)	(ABB vs. others)				(ABB and BD)	
	Mean	-9.24%	9.83%	0.08%	-8.22%	-13.45%	-4.21%	-9.75%
	Median	-11.80%	11.92%	-7.05%	-18.97%	-22.91%	-11.11%	-18.97%
	One-sided student t-test p-value	0.10	0.04 **	0.49	0.04 **	0.02 **	0.09 *	<0.01 ***
	Wilcoxon signed rank test p-value	0.20	0.08 *					

Panel B: Post-issue ownership characteristics

Inst. ownership		Difference	Difference	Above median	Below median	4th quartile	3rd quartile	2nd quartile	1st quartile	Quartiles 1-3
		(above vs. below median)	(4th quartile vs. others)							
	Mean	6.47%	15.75%	-2.60%	-9.07%	5.98%	-11.18%	-13.93%	-4.20%	-9.77%
	Median	10.83%	24.49%	-7.35%	-18.18%	4.90%	-22.69%	-20.08%	-16.35%	-19.59%
	One-sided student t-test p-value	0.14	<0.01 ***	0.26	0.01 **	0.12	0.03 **	<0.01 ***	0.27	<0.01 ***
	Wilcoxon signed rank test p-value	0.09 *	<0.01 ***							

Ownership conc.		Difference	Difference	Above median	Below median	4th quartile	3rd quartile	2nd quartile	1st quartile	Quartiles 2-4
		(above vs. below median)	(1st quartile vs. others)							
	Mean	-3.28%	12.52%	-7.47%	-4.19%	-14.71%	-0.24%	-11.91%	3.52%	-9.00%
	Median	-5.33%	16.24%	-16.19%	-10.86%	-27.19%	-11.06%	-17.09%	-0.81%	-17.05%
	One-sided student t-test p-value	0.28	0.03 **	0.04 **	0.14	<0.01 ***	0.48	<0.01 ***	0.27	<0.01 ***
	Wilcoxon signed rank test p-value	0.39	0.03 **							

Panel C: Changes in ownership characteristics

Inst. ownership		Difference	Above median	Below median	4th quartile	3rd quartile	2nd quartile	1st quartile
		(above vs. below median)						
	Mean	-0.41%	-6.04%	-5.63%	-3.81%	-8.27%	1.07%	-12.34%
	Median	-9.12%	-18.80%	-9.68%	-22.27%	-13.12%	-7.52%	-11.13%
	One-sided student t-test p-value	0.47	0.08 *	0.07 *	0.27	0.08	0.43	<0.01 ***
	Wilcoxon signed rank test p-value	0.08 *						

Ownership conc.		Difference	Above median	Below median	4th quartile	3rd quartile	2nd quartile	1st quartile
		(above vs. below median)						
	Mean	15.94%	2.14%	-13.80%	-2.56%	6.83%	-13.51%	-14.10%
	Median	14.64%	-4.64%	-19.28%	-9.41%	-0.64%	-15.71%	-23.03%
	One-sided student t-test p-value	<0.00 ***	0.30	<0.00 ***	0.33	0.13	<0.00 ***	<0.00 ***
	Wilcoxon signed rank test p-value	<0.00 ***						

Table 14: 36-month buy-and-hold abnormal returns for sample subgroups

The table presents the mean and median 36-month buy-and-hold abnormal (BHAR) returns for sample subgroups based on issue method (panel A), pre-issue ownership characteristics (panel B), and changes in ownership characteristics resulting from the issue (panel C). Country indices are used as benchmarks. ABB refers to accelerated bookbuilt offerings, BD to bought deals, and FMO to fully marketed offerings. For ownership characteristics, the 4th quartile has the most and the 1st quartile the least of the variable in question. The one-sided student t-test represents the statistical significance for the mean differing from zero for all columns except for the ones which measure difference. For the columns which measure difference, the one-sided student t-test represents the statistical significance for the means for the two subgroups in question differing from each other, whereas the Wilcoxon signed rank test represents the same for the medians. *** denotes significance at the 1% level, ** at the 5% level, and * at the 10% level.

Panel A: Issue method

Issue method	Difference	Difference	ABB	BD	FMO	Accelerated	BD and FMO
	(FMO vs. accelerated)	(ABB vs. others)				(ABB and BD)	
Mean	-8.95%	11.96%	1.40%	-9.49%	-13.17%	-4.23%	-10.56%
Median	-11.23%	18.44%	-10.41%	-28.97%	-27.92%	-16.70%	-28.85%
One-sided student t-test p-value	0.16	0.05 *	0.40	0.06 *	0.05 **	0.15	0.02 **
Wilcoxon signed rank test p-value	0.21	0.04 **					

Panel B: Post-issue ownership characteristics

Inst. ownership	Difference	Difference	Above median	Below median	4th quartile	3rd quartile	2nd quartile	1st quartile	Quartiles 1-3
	(above vs. below median)	(4th quartile vs. others)							
Mean	-0.05%	9.22%	-5.82%	-5.78%	1.12%	-12.76%	-12.83%	1.27%	-8.11%
Median	10.18%	17.58%	-16.38%	-26.56%	-8.71%	-26.29%	-23.61%	-28.75%	-26.29%
One-sided student t-test p-value	0.50	0.11	0.11	0.15	0.43	0.04 **	0.03 **	0.44	0.03 **
Wilcoxon signed rank test p-value	0.09 *	0.03 **							

Ownership conc.	Difference	Difference	Above median	Below median	4th quartile	3rd quartile	2nd quartile	1st quartile	Quartiles 2-4
	(above vs. below median)	(1st quartile vs. others)							
Mean	-12.70%	22.12%	-12.15%	0.55%	-17.11%	-7.19%	-9.70%	10.81%	-11.31%
Median	-15.91%	22.49%	-29.08%	-13.17%	-38.33%	-16.13%	-21.43%	-3.49%	-25.99%
One-sided student t-test p-value	0.04 **	<0.01 ***	0.01 **	0.46	0.02 **	0.14	0.06 *	0.09 *	<0.01 ***
Wilcoxon signed rank test p-value	0.03 **	<0.01 ***							

Panel C: Changes in ownership characteristics

Inst. ownership	Difference	Above median	Below median	4th quartile	3rd quartile	2nd quartile	1st quartile
	(above vs. below median)						
Mean	-0.78%	-6.19%	-5.41%	-8.26%	-4.12%	6.13%	-16.94%
Median	-10.70%	-26.64%	-15.94%	-25.08%	-28.97%	-9.99%	-24.01%
One-sided student t-test p-value	0.46	0.13	0.14	0.13	0.31	0.22	<0.01 ***
Wilcoxon signed rank test p-value	0.10						

Ownership conc.	Difference	Above median	Below median	4th quartile	3rd quartile	2nd quartile	1st quartile
	(above vs. below median)						
Mean	17.58%	2.99%	-14.59%	-2.84%	8.82%	-11.49%	-17.69%
Median	11.63%	-14.93%	-26.56%	-19.66%	-9.61%	-26.99%	-25.59%
One-sided student t-test p-value	<0.00 ***	0.30	<0.01 ***	0.36	0.14	0.05 **	<0.01 ***
Wilcoxon signed rank test p-value	0.02 **	0.13					

For a more thorough investigation of the buy-and-hold abnormal returns subsequent to the issue, regression analysis has been applied. In Tables 15 and 16 on the following pages the results from OLS regressions are presented, with the independent variables being the 24 and 36-month buy-and-hold abnormal returns.

The regressions show that the issue method does not have an effect on neither the 24 nor 36-month returns after controlling for firm characteristics. This indicates that the earlier evidence from the mean and median tests that accelerated bookbuilt offerings overperform relative to the other two offer type is a result of other firm characteristics and not actually the issue method.

Post-issue institutional ownership has an effect on 24-month returns at the 1% level. However, this phenomenon cannot be observed any longer with 36-month returns. This could be caused by the ownership changing over time or by the 36-month period simply including too much noise for the effect to be noticeable. The negative effect of post-issue ownership concentration however persists better and is also noticeable with 36-month returns, being significant at the 5% level in all models except for 4b, where it is significant at the 1% level. With 24-month returns, the negative effect is significant at the 5% level in all models. Changes around the issue in institutional ownership and ownership concentration do not have an effect on the returns in any of the models after controlling for firm characteristics.

Out of the control variables, especially the 6-month run-up preceding the issue, the market-to-book ratio and the profitability of the issuing company have an effect on returns. The r-squared values of the models are higher when the 24-months returns are under investigation, ranging between 0.22 and 0.26. The r-squared values for the models which investigate the 36-month returns range between 0.16 and 0.19, but nevertheless providing a relatively good fit.

Table 15: OLS regressions on 24-month post-issue BHAR

The table presents the results from the OLS regressions. The models labeled with an “a” represent the whole data sample, whereas the models labeled with a “b” represent the whole data sample excluding the year 2000. The dependent variable is the 24-month buy-and-hold abnormal returns following the SEO. Country indices are used as benchmarks. The independent variables are as follows: FMO is a dummy variable which takes the value of 1 if the offer is a fully marketed offer, and 0 otherwise. BD is a dummy variable, which takes the value of 1 if the offer is a bought deal, and 0 otherwise. POSTINST is the fraction of shares held by institutional investors after the offer. POSTCONC is the fraction of shares held by the ten largest shareholders after the offer. CHANGEINST is the change in institutional ownership measured as the %-point difference from before the offer to after the offer. CHANGECONC is the change in ownership concentration measured as the %-point difference from before the offer to after the offer. TAKEUP is the fraction of new shares subscribed in the offer by existing shareholders. 6MRUNUP is the cumulative index adjusted abnormal return during the six months before the announcement of the offering. TURNOVER is the average monthly trading volume divided by the amount of shares from the 12 months before the announcement of the offering. VOLA is the 6-month volatility of daily returns before the announcement of the offering. MB is the market-to-book ratio 5 days before the announcement of the offering. RELSIZE is the proceeds of the issue divided by the total market value 5 days before the announcement of the offering. MARKETCAP is the natural logarithm of the total market value of the issuing company 5 days before the announcement of the offer. EBITMARGIN is the EBIT (earnings before interest and taxes) margin of the issuing company in the year of the offer. *** denotes significance at the 1% level, ** at the 5% level, and * at the 10% level.

Model	(1a)			(1b)			(2a)			(2b)			(3a)			(3b)			(4a)			(4b)			(5a)			(5b)			
	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	
FMO	0.12	1.61		0.12	1.28		0.05	0.73		0.03	0.37																				
BD	0.05	0.84		0.01	0.09		0.05	0.74		0.00	-0.05																				
POSTINST	0.35	3.11	***	0.39	3.30	***							0.32	2.93	***	0.36	3.08	***	0.32	2.85	***	0.36	3.01	***							
POSTCONC	-0.82	-2.60	***	-0.74	-2.14	**							-0.77	-2.53	**	-0.66	-2.06	**	-0.26	-2.15	**	-0.25	-2.04	**							
CHANGEINST	-0.07	-0.22		0.06	0.19								-0.05	-0.16		0.01	0.04								-0.02	-0.08		0.04	0.11		
CHANGECONC	0.28	1.31		0.07	0.25								0.27	1.30		0.10	0.38								0.08	0.41		-0.08	-0.32		
TAKEUP	0.55	1.71	*	0.50	1.41								0.54	1.73	*	0.44	1.28														
6MRUNUP	0.27	4.10	***	0.43	4.69	***	0.25	3.78	***	0.42	4.75	***	0.28	4.24	***	0.43	4.92	***	0.28	4.24	***	0.44	5.00	***	0.26	3.90	***	0.42	4.81	***	
TURNOVER	0.08	2.67	***	0.08	2.65	***	0.09	3.20	***	0.09	3.18	***	0.08	2.74	***	0.08	2.68	***	0.07	2.59	***	0.08	2.58	**	0.09	3.20	***	0.09	3.20	***	
VOLA	-0.25	-2.04	**	-0.16	-1.02		-0.33	-2.70	***	-0.25	-1.62		-0.25	-2.04	**	-0.18	-1.11		-0.28	-2.30	**	-0.20	-1.31		-0.33	-2.65	***	-0.25	-1.60		
MB	-0.06	-5.78	***	-0.06	-4.66	***	-0.06	-5.57	***	-0.06	-4.21	***	-0.06	-5.86	***	-0.06	-4.90	***	-0.06	-5.92	***	-0.06	-4.88	***	-0.06	-5.66	***	-0.06	-4.46	***	
RELSIZE	-0.20	-1.74	*	-0.13	-1.05		-0.26	-2.25	**	-0.17	-1.31		-0.16	-1.55		-0.12	-1.10		-0.18	-1.83	*	-0.14	-1.27		-0.22	-2.19	**	-0.17	-1.51		
MARKETCAP	0.01	2.09	**	0.00	0.97		0.01	2.99	***	0.01	1.90	*	0.01	2.23	**	0.01	1.08		0.01	2.54	**	0.01	1.38		0.01	3.25	***	0.01	1.93	*	
EBITMARGIN	0.28	4.69	***	0.27	3.64	***	0.27	4.59	***	0.26	3.60	***	0.28	4.61	***	0.27	3.60	***	0.27	4.59	***	0.26	3.60	***	0.27	4.56	***	0.26	3.62	***	
Year dummies		yes			yes			yes			yes			yes			yes			yes			yes			yes			yes		
N		364			298			364			298			364			298			364			298			364			298		
R-squared		0.26			0.25			0.23			0.22			0.25			0.24			0.25			0.24			0.23			0.22		

Table 16: OLS regressions on 36-month post-issue BHAR

The table presents the results from the OLS regressions. The models labeled with an “a” represent the whole data sample, whereas the models labeled with a “b” represent the whole data sample excluding the year 2000. The dependent variable is the 36-month buy-and-hold abnormal returns following the SEO. Country indices are used as benchmarks. The independent variables are as follows: FMO is a dummy variable which takes the value of 1 if the offer is a fully marketed offer, and 0 otherwise. BD is a dummy variable, which takes the value of 1 if the offer is a bought deal, and 0 otherwise. POSTINST is the fraction of shares held by institutional investors after the offer. POSTCONC is the fraction of shares held by the ten largest shareholders after the offer. CHANGEINST is the change in institutional ownership measured as the %-point difference from before the offer to after the offer. CHANGECONC is the change in ownership concentration measured as the %-point difference from before the offer to after the offer. TAKEUP is the fraction of new shares subscribed in the offer by existing shareholders. 6MRUNUP is the cumulative index adjusted abnormal return during the six months before the announcement of the offering. TURNOVER is the average monthly trading volume divided by the amount of shares from the 12 months before the announcement of the offering. VOLA is the 6-month volatility of daily returns before the announcement of the offering. MB is the market-to-book ratio 5 days before the announcement of the offering. RELSIZE is the proceeds of the issue divided by the total market value 5 days before the announcement of the offering. MARKETCAP is the natural logarithm of the total market value of the issuing company 5 days before the announcement of the offer. EBITMARGIN is the EBIT (earnings before interest and taxes) margin of the issuing company in the year of the offer. *** denotes significance at the 1% level, ** at the 5% level, and * at the 10% level.

Model	(1a)			(1b)			(2a)			(2b)			(3a)			(3b)			(4a)			(4b)			(5a)			(5b)					
	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.	Coeff.	t-Stat.	Signif.			
FMO	0.10	1.05		0.07	0.54		0.04	0.40		-0.01	-0.08																						
BD	0.05	0.58		0.01	0.09		0.03	0.39		-0.01	-0.14																						
POSTINST	0.21	1.29		0.20	1.14								0.18	1.19		0.18	1.10		0.17	1.13		0.17	1.04										
POSTCONC	-0.89	-2.11	**	-0.76	-2.07	**							-0.84	-2.05	**	-0.72	-2.04		-0.36	-2.04	**	-0.32	-1.92	*									
CHANGEINST	0.05	0.12		0.17	0.34								0.06	0.16		0.14	0.30							0.06	0.16		0.14	0.29					
CHANGECONC	0.39	1.23		0.18	0.43								0.39	1.22		0.19	0.48							0.16	0.57		-0.01	-0.03					
TAKEUP	0.49	1.12		0.44	0.92								0.48	1.10		0.42	0.85																
6MRUNUP	0.26	3.22	***	0.50	4.20	***	0.25	3.00	***	0.50	4.46	***	0.26	3.26	***	0.50	4.30	***	0.26	3.27	***	0.51	4.47	***	0.25	3.01	***	0.50	4.29	***			
TURNOVER	0.05	1.15		0.06	1.36		0.06	1.43		0.06	1.59		0.05	1.18		0.06	1.37		0.04	1.08		0.05	1.29		0.06	1.43		0.06	1.59				
VOLA	-0.19	-1.26		-0.15	-0.82		-0.25	-1.71	*	-0.21	-1.14		-0.19	-1.27		-0.16	-0.87		-0.22	-1.50		-0.18	-1.01		-0.25	-1.67	*	-0.21	-1.14				
MB	-0.07	-4.90	***	-0.07	-4.63	***	-0.07	-4.89	***	-0.07	-4.42	***	-0.07	-4.93	***	-0.07	-4.69	***	-0.07	-4.99	***	-0.07	-4.65	***	-0.07	-4.98	***	-0.07	-4.98	***	-0.07	-4.64	***
RELSIZE	-0.22	-1.51		-0.14	-0.89		-0.29	-2.11	**	-0.18	-1.20		-0.18	-1.35		-0.13	-0.89		-0.20	-1.58		-0.15	-1.03		-0.27	-2.13	**	-0.20	-1.39				
MARKETCAP	0.01	1.93	*	0.01	1.13		0.01	1.66	*	0.00	0.93		0.01	2.03	***	0.01	1.17		0.01	2.19	**	0.01	1.32		0.01	1.81	*	0.00	0.94				
EBITMARGIN	0.32	4.32	***	0.29	3.33	***	0.30	4.23	***	0.28	3.31	***	0.31	4.32	***	0.29	3.32	***	0.31	4.38	***	0.29	3.42	***	0.30	4.24	***	0.28	3.27	***			
Year dummies		yes			yes			yes			yes			yes			yes			yes			yes			yes			yes				
N		364			298			364			298			364			298			364			298			364			298				
R-squared		0.18			0.19			0.16			0.17			0.17			0.18			0.17			0.18			0.16			0.17				

6.4. Choice of issue method

For an investigation of the choice of issue method, logit regression is applied. The regressions in Table 17 show that pre-issue institutional holding has a strong influence on the issue method – the more institutional holding there is higher likelihood the issue is an accelerated issue. This indicates that when a company has high institutional holding, the SEO does not need to be marketed to such a high extent because institutional investors are often more informed than the average investor, and therefore the issuing company is likely to choose an accelerated offer. This result is significant at the 1% level in all of the models, including the ones which exclude the year 2000. Pre-issue ownership concentration seems to increase the likelihood of a fully marketed offer. This result is significant at the 5% level in all models except for 2b, where it is significant at the 10% level. All in all, it can be said that this result is relatively robust.

Changes in institutional ownership and ownership concentration have a statistically significant effect on the choice of issue method in the “b” models, where the year 2000 is excluded. Increasing institutional ownership increases the likelihood of an accelerated offer, whereas increasing ownership concentration increases the likelihood of a fully marketed offer. However, in the “a” models where the year 2000 is included, these relationships cannot be found.

Out of the control variables, high market capitalisation of the issuing firm increases the likelihood of an accelerated offer, this result being significant at the 1% level in all models except for 1b, where it is significant at the 5% level. This can be explained by larger firms not requiring exhaustive marketing efforts, as it is likely that potential investors are relatively familiar with them to begin with. Moreover, as Bortolotti et al. state, accelerated offers are employed for shares of large and well known companies.

Table 17: Logit regressions on choice of issue method

The table presents the results from the logit regression. The models labeled with an “a” represent the whole data sample, whereas the models labeled with a “b” represent the whole data sample excluding the year 2000. The dependent variable is the issue method, which is a dichotomous variable for which fully marketed offerings takes a value of 1, and for accelerated issues, including accelerated bookbuilt offerings and bought deals, takes a value of 0. The independent variables are as follows: PREINST is the fraction of shares held by institutional investors before the offer. PRECONC is the fraction of shares held by the ten largest shareholders before the offer. CHANGEINST is the change in institutional ownership measured as the %-point difference from before the offer to after the offer. CHANGECONC is the change in ownership concentration measured as the %-point difference from before the offer to after the offer. TAKEUP is the fraction of new shares subscribed in the offer by existing shareholders. DEALIY is a dummy variable which takes a value of 1 if the issuing company has conducted an equity issue in the time period of one year before the offer, and 0 otherwise. 6MRUNUP is the cumulative index adjusted abnormal return during the six months before the announcement of the offering. TURNOVER is the average monthly trading volume divided by the amount of shares from the 12 months before the announcement of the offering. VOLA is the 6-month volatility of daily returns before the announcement of the offering. MB is the market-to-book ratio 5 days before the announcement of the offering. RELSIZE is the proceeds of the issue divided by the total market value 5 days before the announcement of the offering. MARKETCAP is the natural logarithm of the total market value of the issuing company 5 days before the announcement of the offer. EBITMARGIN is the EBIT (earnings before interest and taxes) margin of the issuing company in the year of the offer. *** denotes significance at the 1% level, ** at the 5% level, and * at the 10% level.

Model	Fully marketed offer = 1																		
	(1a)			(1b)			(2a)			(2b)			(3a)			(3b)			
	Coeff.	z-Stat.	Signif.	Coeff.	z-Stat.	Signif.	Coeff.	z-Stat.	Signif.	Coeff.	z-Stat.	Signif.	Coeff.	z-Stat.	Signif.	Coeff.	z-Stat.	Signif.	
PREINST	-3.53	-3.54	***	-3.82	-2.77	***	-3.04	-3.53	***	-2.72	2.79	***							
PRECONC	4.07	2.30	**	4.36	2.29	**	1.66	2.18	**	0.99	2.01	*							
CHANGEINST	-3.21	-1.36		-8.58	-3.41	***							0.41	0.20		-5.20	-2.34	**	
CHANGECONC	3.53	1.50		7.21	2.74	***							0.35	0.23		4.78	2.58	***	
TAKEUP	-2.29	-1.02		-2.74	-0.96														
DEALIY	-0.62	-1.59		-1.38	-1.75	*	-0.63	-1.65	*	-1.16	-1.64		-0.59	-1.61		-1.36	-1.82	*	
6MRUNUP	0.02	0.06		0.90	1.85	*	-0.03	-0.11		0.50	1.00		0.20	0.68		0.98	1.94	*	
TURNOVER	0.01	0.05		-0.05	-0.20		0.03	0.15		0.00	0.00		-0.09	-0.45		-0.14	-0.63		
VOLA	-0.65	-0.96		-1.16	-1.15		-0.60	-0.90		-0.68	-0.75		-0.01	-0.01		-0.45	-0.53		
MB	-0.05	-0.57		-0.13	-0.82		-0.03	-0.35		-0.10	-0.70		-0.07	-0.93		-0.20	-1.28		
RELSIZE	0.63	0.90		0.73	0.82		0.78	1.23		0.74	0.99		0.86	1.37		0.91	1.12		
MARKETCAP	-0.12	-3.69	***	-0.10	-2.28	**	-0.13	-4.13	***	-0.11	-2.70	***	-0.14	-5.34	***	-0.12	-3.86	***	
EBITMARGIN	0.16	0.35		0.22	0.39		0.08	0.19		-0.02	-0.03		0.19	0.44		0.23	0.41		
Year dummies		yes			yes			yes			yes			yes			yes		
N		364			298			364			298			364			298		
Pseudo R-squared		0.27			0.22			0.26			0.15			0.21			0.16		

6.5. Summary of results

Table 18 pools the empirical results of the thesis together. As to the hypotheses relating to the offer price discount, the key finding is that fully marketed offerings suffer to a lesser extent from the offer price discount than accelerated offers. As to the hypotheses relating to long-run post-issue returns, the results show that institutional ownership has a positive effect and ownership concentration a negative effect on firm value. As to the choice of issue method, it can be seen that companies with high pre-issue institutional ownership are more likely to choose an accelerated offer, whereas companies with high pre-issue ownership concentration are more likely to choose an accelerated offer.

The results regarding the offer price discount provide evidence at the 1% level that in fully marketed offerings the offer price is lower than in accelerated offers. Moreover, this result is prevalent also after excluding the year 2000, and can therefore be considered as robust. Ownership characteristics on the other hand do not seem to affect the offer price discount, unlike hypothesised. Also, changes in ownership characteristics resulting from the issue neither seem to affect the discount.

What comes to long-run returns subsequent to the SEO, the results show that institutional ownership has a strong and statistically positive effect on 24-month returns, but that on 36-month returns it does not have an effect. In the mean and median tests it was found that especially the quartile with the most institutional holding performs well subsequent to the offer, but that the relationship with the other three quartiles is less straightforward. Moreover, ownership concentration has a strong and statistically negative effect on long-run returns subsequent to the offer – this result prevailing also with 36-month returns in addition to 24-month returns and also after excluding the year 2000. However, changes in institutional ownership and ownership concentration do not seem to have an effect on long-run returns, unlike hypothesised. The offer method seemed to contribute to long-run returns in the mean and median tests to some extent, but after controlling for firms characteristics in the OLS regressions no evidence is found of this.

The choice of issue method seems to be affected by both pre-issue institutional ownership and pre-issue ownership concentration, like hypothesised. For the former, the results are significant at the 1% level and robust. For the former the results are significant at the 5% level and also robust.

Table 18: Summary of empirical results

The table pools together the empirical results of the thesis by each of studied hypothesis. Hypotheses 1-3 relate to the offer price discount, hypotheses 4-6 to long-run post-issue returns, and hypotheses 7-8 to the choice of issue method. The empirical findings rely mainly on OLS and logit regressions.

<u>Hypothesis</u>	<u>Empirical evidence</u>
Offer price discount	
H1a High pre-issue institutional ownership decreases the offer price discount	No evidence from OLS regressions.
H1b Increasing institutional ownership from the issue decreases the offer price discount	No evidence from OLS regressions.
H2a High pre-issue ownership concentration increases the offer price discount	No evidence from OLS regressions.
H2b Increasing ownership concentration from the issue increases the offer price discount	No evidence from OLS regressions.
H3 An accelerated offer increases the offer price discount	Evidence from OLS regression at the 1% level and robust also after excluding the year 2000.
Long-run returns	
H4a High post-issue institutional ownership increases long-run post-issue returns	Evidence from OLS regression at the 1% level for 24-month period and robust also after excluding the year 2000. However, no evidence for 36-month period.
H4b Increasing institutional ownership increases long-run post-issue returns	No evidence from OLS regressions.
H5a High post-issue ownership concentration decreases long-run post-issue returns	Evidence from OLS regression at the 5% level and robust also after excluding the year 2000.
H5b Increasing ownership concentration decreases long-run post-issue returns	No evidence from OLS regressions.
H6 An accelerated offer increases long-run post-issue returns	No evidence from OLS regressions.
Choice of issue method	
H7 High pre-issue institutional ownership increases the likelihood of an accelerated offer	Evidence from logit regression at the 1% level and robust also after excluding the year 2000.
H8 High pre-issue ownership concentration decreases the likelihood of an accelerated offer	Evidence from logit regression at the 5% level and robust also after excluding the year 2000.

7. Conclusion

SEOs have attracted wide attention in academic literature, even though not as high as IPOs. The thesis has been motivated by lacking literature regarding different public offer types (especially when compared to literature on rights versus public issues), which have only been studied in a few papers (e.g. Gao and Ritter, 2007; Bortolotti et al., 2007). Moreover, the limited number of studies regarding SEOs and ownership characteristics using European data has acted as a further catalyst for the chosen topic.

The purpose of this study has been to determine whether ownership characteristics, including institutional ownership and ownership concentration, in addition to the choice of issue method, play a role in the offer price discount and long-run post-issue returns. Also, the announcement effect has been studied, even though it has not been explicitly included in the hypotheses.

The results of the study show that the offer price discount in SEOs has been the highest for accelerated offers, including accelerated bookbuilt offerings and bought deals. The lower offer price discount for fully marketed offers can be observed from the mean and median tests in addition to the regressions (significant at the 1% level and robust also after excluding the year 2000). This finding supports the results from previous studies, including Rinne and Suominen (2009) and Huang and Zhang (2009). However, the thesis provides new evidence in the sense that it compares three public issue types taking place in Europe, whereas Rinne and Suominen (2009) study differences between rights and public offers (albeit in Europe), and whereas Huang and Zhang (2009) use SEO from the US and study the impact of the number of managing underwriters. On the other hand, the thesis contradicts the findings of Bortolotti et al. (2007), who find that accelerated offers in Europe exhibit less underpricing than non-accelerated offers. This can partly be explained by the classification that Bortolotti et al. (2007) use.

The lower discount for fully marketed offerings can be explained at least partly by the marketing conducted by investment banks in fully marketed offers. During the marketing period, investment bankers working on behalf of the issuing company have time to firstly promote the offer to investors, and to secondly gain information regarding the demand-level of the market. The first factors contributes to the issuing company not having to set the

discount at a high level, as investors will be more keen to purchase shares anyway after a period of marketing, promotion and hype-creation. The second factor contributes to the issuing company and its investment banks not having to set the discount at an unnecessarily high level to guarantee the success of the issue.

Ownership characteristics, or changes in them, on the other hand do not seem to affect the offer price discount. For example, Intintoli and Kahle (2010) find that ownership concentration increases the discount, whereas Chemmanur et al. (2009) find that larger institutional allocations are associated with smaller discounts. Both of the studies use data from the US. The fact that the thesis uses European data could provide an explanation to the ownership characteristics not showing an impact on the discount. Also, ownership structure seems to be linked to the discount indirectly through the issue method. High pre-issue institutional ownership is associated with accelerated offerings, which are shown to exhibit a higher discount, while high pre-issue ownership concentration is associated with fully marketed offerings, which are shown to exhibit a lower discount. This further explains why ownership characteristics do not directly seem to affect the discount.

The results also show that the announcement effect across different sub-groups does not differ significantly. The main finding as to the announcement return is that in the mean and median tests bought deals seem to exhibit more positive returns than the other two offer types studies, namely accelerated bookbuilt offerings and fully marketed offerings. However, the regressions show that after controlling for firm characteristics, the difference between the offer types is not significant. Moreover, the announcement effect cannot be said to be statistically significant but remains quite close to zero.

What come to post-issue returns, the results show that institutional ownership has a positive effect on long-run returns during a 24-month time period (significant at the 1% level and robust also after excluding the year 2000). This supports the findings of e.g. D'Mello et al. (2009), McConnell and Servaes (1990), Chemmanur et al. (2009), and Gao and Mahmudi (2008). This can be explained by the monitoring benefit that institutional investors bring to companies, and by these investors possessing better stock-picking ability than retail investors. However, this result is not observable anymore for a 36-month time period, which could be caused by changes in institutional holding during the period. Hence it would be interesting to conduct a study where changes in ownership characteristics during the post-issue time period would be accounted for, and not only the changes that result from the SEO (as this study has

done). This could be performed e.g. by re-balancing portfolios between chosen intervals according to changes in ownership characteristics.

The results also show that ownership concentration decreases long-run returns, supporting the findings of e.g. Kothare (1997), Amihud and Mendelson (1986), and Holmström and Tirole (1993). This result is significant at the 5% level and robust also after excluding the year 2000. The result can be explained by various reasons. First of all, ownership concentration reduces the extent to which the firm is followed by market participants, for example analysts. This reduces the amount of information that is available of the firm, leading to increasing information asymmetry and consequently lower chances that the average investor would invest in the company. Moreover, ownership concentration decreases the liquidity of the company, and consequently the attractiveness to investors. However, the results on ownership concentration remain even after controlling for liquidity (as measured by share turnover), which means that in this case the underperformance due to high ownership concentration is not merely a factor caused by low liquidity.

What comes to the choice of issue method, the results show that high pre-issue ownership increases the likelihood that the issuing firm chooses to conduct an accelerated offer. This result is significant at the 1% level and robust also after excluding the year 2000. The result can be interpreted as proof that firms with high institutional holding do not require a thorough marketing process, or in other words that institutions do not need to be attracted to invest with a high discount because of relatively low information asymmetry, as institutions possess more information before the offer than an average investor does. Also, as accelerated offers are often targeted at institutional investors, it seems natural that also pre-issue institutional ownership has been high to begin with. However, it should be noted that even though practitioners have been aware that accelerated deals are often targeted at institutional investors, an empirical treatment of pre-issue ownership characteristics has been lacking.

Moreover, high pre-issue ownership concentration increases the likelihood of a fully marketed process (significant at the 5% level and also robust after excluding the year 2000). This can be explained by a need for marketing in order to tempt potential investors in relatively illiquid stock. These results are novel in the sense that, to the best of my knowledge, there have not been empirical papers on the influence of ownership characteristics on the choice between accelerated versus fully marketed offerings in Europe.

Suggestions for further research include, for example, conducting the study with alternative benchmark indices. In this study country indices have been used. One could instead use e.g. size and book-to-market matched non-issuers when computing long-run abnormal returns, similar to the Fama-French three-factor model or the Fama-Macbeth model. Alternatively one could use the Carhart four-factor model, which further takes momentum in stock prices into account. Further suggestions for future research would include carrying out the study with a longer time period. In this study the period between the years 2000 and 2005 was chosen due to two reasons. Firstly, because long-run returns of up to three years were computed, the period had to end in 2005 (as the data collection period for the study began in early 2009). Secondly, the beginning point for the study was chosen to be the year 2000 because ownership data found from Thomson Financial before this is very limited (currently it is not as limited, but retrieval still requires a manual process). Moreover, one could choose to carry the study out in a different market place. The market used in this study was Europe because relatively few academic studies until now have been conducted in this market place, with the majority focusing on the United States. It would be interesting to compare the results between e.g. Europe, the US and Asia, especially because in Asia ownership characteristics in firms often deviate from characteristics in Europe and the US.

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9. Appendix

Table 19: Descriptive statistics of variables

ABB refers to accelerated bookbuilt offerings, BD to bought deals, and FMO to fully marketed offerings.

Variable		All	ABB	BD	FMO
Offer price discount	mean	8.31%	9.79%	8.36%	4.87%
	median	4.65%	4.55%	5.89%	3.57%
Announcement CAR	mean	0.22%	-0.86%	1.33%	-0.02%
	median	-0.55%	-1.41%	0.61%	-0.08%
Pre-issue institutional holding	mean	30.58%	33.27%	31.13%	23.17%
	median	24.20%	24.96%	27.74%	18.95%
Pre-issue ownership concentration	mean	45.37%	41.97%	44.00%	56.40%
	median	45.48%	40.92%	44.78%	58.00%
Change in institutional holding	mean	-0.34%	-0.94%	0.22%	-0.32%
	median	0.00%	-0.24%	0.17%	0.22%
Change in ownership concentration	mean	-3.41%	-4.00%	-2.12%	-5.16%
	median	-1.76%	-1.67%	-1.62%	-4.08%
Post-issue institutional holding	mean	30.18%	31.82%	31.66%	22.89%
	median	24.31%	23.36%	26.40%	17.90%
Post-issue ownership concentration	mean	41.96%	37.71%	42.34%	50.66%
	median	41.11%	34.61%	42.53%	51.97%
Takeup	mean	38.11%	34.76%	38.27%	45.31%
	median	37.84%	31.37%	39.00%	49.27%
24-month buy-and-hold abnormal return	mean	-5.83%	0.08%	-8.22%	-13.45%
	median	-13.74%	-7.05%	-18.97%	-22.91%
36-month buy-and-hold abnormal return	mean	-5.80%	1.40%	-9.49%	-13.17%
	median	-21.47%	-10.41%	-28.97%	-27.92%
6 month run-up	mean	22.90%	14.25%	25.71%	35.70%
	median	8.92%	2.98%	10.89%	16.11%
Deal value (EURm)	mean	277.13	449.01	64.98	401.52
	median	50.16	90.31	26.54	85.18
Market cap (EUR m)	mean	422.11	971.07	164.53	626.13
	median	353.24	806.09	132.67	576.80
Market-to-book	mean	2.80x	2.41x	2.99x	3.23x
	median	2.05x	2.06x	2.05x	2.05x
Relative issue size	mean	24.36%	17.32%	31.45%	23.12%
	median	13.91%	10.08%	19.08%	16.06%
Turnover	mean	0.67%	0.64%	0.72%	0.61%
	median	0.38%	0.38%	0.38%	0.38%
Volatility	mean	46.48%	41.21%	47.82%	55.20%
	median	39.39%	33.64%	39.39%	55.07%
EBIT margin	mean	-4.62%	4.27%	-12.37%	-5.96%
	median	5.95%	8.25%	5.71%	5.78%

Table 20: Correlation matrix of variables

The table presents the correlations and their t-values between variables. BHAR36 is the buy-and-hold abnormal return for a 36-month time period following the issue. BHAR24 is the buy-and-hold abnormal return for a 24-month time period following the issue. 6MRUNUP is the cumulative index adjusted abnormal return during the six months before the announcement of the offering. ABB represent accelerated bookbuilt offerings. BD represents bought deals. FMO represents fully marketed offerings. PRECONC is the fraction of shares held by the ten largest shareholders before the offer. PREINST is the fraction of shares held by institutional investors before the offer. DISCOUNT is the offer price discount in the offer. POSTCONC is the fraction of shares held by the ten largest shareholders after the offer. POSTINST is the fraction of shares held by institutional investors after the offer. CHANGECONC is the change in ownership concentration measured as the %-point difference from before the offer to after the offer. CHANGEINST is the change in institutional ownership measured as the %-point difference from before the offer to after the offer. DEAL1Y is a dummy variable which takes a value of 1 if the issuing company has conducted an equity issue in the time period of one year before the offer, and 0 otherwise. TAKEUP is the fraction of new shares subscribed in the offer by existing shareholders. TURNOVER is the average monthly trading volume divided by the amount of shares from the 12 months before the announcement of the offering. VOLA is the 6-month volatility of daily returns before the announcement of the offering. MB is the market-to-book ratio 5 days before the announcement of the offering. RELSIZE is the proceeds of the issue divided by the total market value 5 days before the announcement of the offering. MARKETCAP is the natural logarithm of the total market value of the issuing company 5 days before the announcement of the offer. EBITMARGIN is the EBIT (earnings before interest and taxes) margin of the issuing company in the year of the offer. ANNEFF is the announcement CAR of the SEO for the event window [-1,0].

Correlation t-Statistic	BHAR36	BHAR24	6MRUNUP	ABB	BD	FMO	PRECONC	PREINST	DISCOUNT	POSTCONC	POSTINST	CHANGECONC	CHANGEINST	DEALY	TAKEUP	TURNOVER	VOLA	MB	RELSIZE	MARKETCAP	EBITMARGIN	ANNEFF	
BHAR36	1.00 -----																						
BHAR24	0.83 28.58	1.00 -----																					
6MRUNUP	0.05 0.91	0.07 1.29	1.00 -----																				
ABB	0.08 1.60	0.09 1.70	-0.13 -2.53	1.00 -----																			
BD	-0.05 -0.87	-0.04 -0.72	0.05 0.86	-0.70 -18.69	1.00 -----																		
FMO	-0.05 -0.93	-0.06 -1.24	0.11 2.12	-0.38 -7.72	-0.40 -8.25	1.00 -----																	
PRECONC	-0.15 -2.82	-0.12 -2.27	0.07 1.28	-0.11 -2.18	-0.05 -0.93	0.21 4.08	1.00 -----																
PREINST	-0.02 -0.35	0.07 1.31	-0.14 -2.73	0.09 1.71	0.02 0.37	-0.14 -2.70	0.31 6.23	1.00 -----															
DISCOUNT	-0.01 -0.19	-0.04 -0.83	-0.10 -1.87	0.12 2.31	0.00 0.07	-0.16 -3.09	-0.05 -0.98	0.07 1.31	1.00 -----														
POSTCONC	-0.14 -2.62	-0.11 -2.06	0.02 0.29	-0.15 -2.97	0.01 0.28	0.18 3.47	0.78 23.93	0.22 4.24	-0.11 -2.06	1.00 -----													
POSTINST	0.00 0.01	0.09 1.73	-0.15 -2.83	0.06 1.12	0.06 1.07	-0.15 -2.85	0.23 4.44	0.90 38.93	0.04 0.80	0.31 6.18	1.00 -----												
CHANGECONC	0.04 0.71	0.03 0.64	-0.08 -1.54	-0.03 -0.66	0.08 1.51	-0.06 -1.11	-0.44 -9.26	-0.18 -3.48	-0.10 -1.84	0.20 3.98	0.08 1.43	1.00 -----											
CHANGEINST	0.05 0.89	0.04 0.74	0.04 0.75	-0.05 -1.04	0.05 1.02	0.00 0.02	-0.21 -4.07	-0.38 -7.84	-0.12 -2.27	0.15 2.79	0.04 0.76	0.55 12.65	1.00 -----										
DEALY	-0.02 -0.42	-0.01 -0.14	0.11 2.04	-0.10 -2.01	0.15 2.94	-0.06 -1.21	-0.15 -2.84	-0.15 -2.93	0.00 0.01	-0.12 -2.36	-0.16 -3.00	0.05 0.87	0.02 0.41	1.00 -----									
TAKEUP	-0.11 -2.06	-0.07 -1.32	0.04 0.81	-0.13 -2.51	0.01 0.12	0.16 3.08	0.81 26.39	0.23 4.41	-0.11 -2.12	0.94 51.21	0.28 5.60	0.07 1.33	0.09 1.64	-0.11 -2.11	1.00 -----								
TURNOVER	0.04 0.73	0.11 2.01	-0.04 -0.71	-0.03 -0.53	0.05 0.96	-0.03 -0.56	-0.07 -1.40	0.11 2.02	0.01 0.26	-0.07 -1.38	0.11 2.09	-0.01 -0.19	-0.04 -0.77	-0.08 -1.47	-0.13 -2.44	1.00 -----							
VOLA	-0.16 -3.04	-0.23 -4.46	0.35 7.15	-0.17 -3.32	0.05 0.88	0.16 3.11	0.09 1.73	-0.16 -3.17	0.11 2.06	0.02 0.42	-0.18 -3.53	-0.12 -2.33	-0.03 -0.65	0.10 1.93	-0.02 -0.36	0.04 0.77	1.00 -----						
MB	-0.23 -4.41	-0.25 -4.92	0.37 7.51	-0.13 -2.40	0.06 1.22	0.08 1.49	0.08 1.57	0.10 1.92	-0.07 -1.37	0.06 1.17	0.09 1.80	-0.03 -0.54	-0.01 -0.27	0.07 1.35	0.05 0.99	-0.05 -0.86	0.24 4.73	1.00 -----					
RELSIZE	-0.06 -1.23	-0.07 -1.43	-0.24 -4.61	-0.23 -4.48	0.24 4.80	-0.02 -0.44	0.00 -0.03	-0.05 -0.95	0.35 7.00	0.04 0.75	-0.04 -0.84	0.04 0.76	0.01 0.19	0.03 0.61	-0.03 -0.54	0.14 2.62	0.06 1.09	-0.32 -6.36	1.00 -----				
MARKETCAP	0.07 1.35	0.10 1.87	0.05 0.87	0.39 8.06	-0.47 -10.04	0.10 2.00	-0.08 -1.44	0.16 3.12	-0.10 -1.83	-0.14 -2.70	0.14 2.71	-0.09 -1.68	-0.07 -1.41	0.03 0.52	-0.09 -1.77	-0.04 -0.68	-0.13 -2.42	0.13 2.54	-0.55 -12.65	1.00 -----			
EBITMARGIN	0.22 4.36	0.27 5.28	-0.10 -1.85	0.17 3.22	-0.15 -2.97	-0.01 -0.27	0.04 0.86	0.02 0.32	-0.12 -2.36	0.07 1.31	0.07 1.28	0.02 0.40	0.09 1.79	0.04 0.76	0.09 1.77	-0.14 -2.68	-0.28 -5.64	-0.15 -2.84	-0.10 -1.94	0.23 4.46	1.00 -----		
ANNEFF	0.04 0.68	0.05 0.97	0.20 3.96	-0.13 -2.46	0.14 2.68	-0.02 -0.31	-0.01 -0.15	-0.01 -0.21	-0.02 -0.47	0.01 0.27	-0.05 -1.02	0.03 0.66	-0.06 -1.20	0.10 1.94	-0.01 -0.19	0.09 1.79	0.10 1.84	-0.01 -0.27	0.10 2.00	-0.14 -2.65	0.00 -0.03	1.00 -----	