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Why do companies go public at MTFs? An empirical analysis of the Swedish market

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Abstract

This thesis sets out to highlight the motivations to list at a multilateral trading facility rather than a regulated market. I use a sample of Swedish companies going public between 2007 and 2013 to document the difference in characteristics of the companies using regulated and unregulated markets. I find that companies using unregulated markets do so to finance growth opportunities to a higher degree than what is the case for companies listing at regulated markets. I also find that the cost of capital decreases more after the IPO of a company listing at an unregulated market. My results suggest that making public equity financing more available enables young companies to get the funding needed to invest in growth opportunities.

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1.0 Introduction

Raising capital through an initial public offering (IPO) is in most cases the largest equity issue a corporation will ever make. For the majority of companies this implies floating at a regulated market with a comprehensive rulebook and listing requirements. Most existing research is based on these regulations, and there are rarely any empirical evidence substantiating the argument. One of the exceptions, and probably the most cited empirical evidence, is made from a database of companies going public in Italy in the 80s and 90s (e.g., Pagano, Panetta, and Zingales (1998) and Carpenter and Rondi (2006)), and it only compares companies going public on the same exchange. One other exception is Aslan and Kumar (2011), who compare companies going public on the UK main market and the Alternative Investment Market (AIM) with a fairly recent data set (1996-2006). To broaden the existing empirical research, and to incorporate the regulatory changes made in the market I use a database of Swedish companies to pinpoint why companies choose to list at a non-regulated¹ market instead of a regulated market.

For companies not able to get listed, the closest thing has been floating at a non-exchange trading venue. With the establishment of such trading venues, we have seen multiple initiatives to introduce regulations to keep these markets liquid and safe in terms of investor protection. Examples of such initiatives have been the formalization of alternative trading systems (ATS) and the multilateral trading facilities (MTF) (Strumeyer & Swamy, 2017). The formalization has led to increased competition amongst exchanges and new ways for companies to obtain equity for the firm.

By listing on a regulated market, the companies commit to supply information to regulators and investors on a regular basis, which not only is time-consuming and costly, it can also disclose strategic information about the company (Tirole, 2006). The process of going public also implies undertaking substantial underwriting and legal fees. As most companies in Western Europe (except the UK) use a book

¹ I use the term “non-regulated”, “unregulated” and “MTF” interchangeably through the thesis to describe companies listing at multilateral trading facilities

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building method for the underwriting process (Ljungqvist, Jenkinson, & Wilhelm, 2003), the commission paid to investment bankers alone is often a spread of around 7% (Chen & Ritter, 2000).

Even though floating is a costly affair, there are several benefits of going public both in terms of financing and in terms of governance. On the financing side the company can tap into a new source of finance, diversify and facilitate an exit for the current owners. On the governance side going public induces a more dispersed ownership structure, leading to reduced monitoring, in contrast to having few large shareholders who tend to monitor excessively. Pagano and Röell (1998) argue that going public is positively correlated with the external funding required, stating dispersed ownership as one of the major drivers. By floating on an MTF the company has a less costly listing process and the reporting is less comprehensive. At the same time, the liquidity and transparency at these markets are often lower than on a regulated market, making the MTF less attractive for investors. With the lower monetary costs of listing, the trade-off seems to be the perceived difference in attractiveness for investors and the lower publicity that comes with listing at an MTF.

In this thesis, I compare the characteristics and behavior of companies listed on three Swedish MTFs against companies listed at regulated markets in Sweden to see if there are any significant differences that can explain why some companies choose to float at an MTF rather than on a regulated market. By doing so, I hope to capture important insights in the effects of the MTFs, and to add to the existing literature on the going-public decision in light of the difference in regulations between an MTF and a regulated market.

While I expected to find differences between the samples, my findings were more pronounced and more significant than I initially thought they would be. At the median, the companies listing at regulated markets are 27.5 times larger in terms of sales than companies listing at MTFs. Surprisingly, I find that most companies listing on MTFs have a high enough market capitalization to go public on a regulated market. However the median company is not profitable, nor do they

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have the same absolute size as companies listing at regulated markets. The difference in characteristics led me to intensify my efforts in finding the ex-post behavior of the firms to document the other reasons for companies to go public at MTFs. I find that companies listing at MTFs have a significantly higher investment rate after the IPO, suggesting that they use the new funding to finance growth opportunities. I also find that companies listing at MTFs increase their leverage somewhat more than companies listing at regulated markets and that their cost of capital significantly decreases after the IPO.

Overall, I find that the MTFs are functioning as a way for young and small companies to get funding for growth opportunities, and that the IPO leads to a lower cost of capital. This is in accordance with the MTFs mission of being a platform tailored for young and growing companies and with earlier findings by Carpenter and Rondi (2006) and Aslan and Kumar (2011).

The remainder of this report is organized as follows: Chapter 2 presents the problem formulation and the scope of the thesis. In chapter 3 I discuss some of the definitions and basic concepts of going public, and in chapter 4 I document some of the existing literature on the going-public decision. Chapter 5 presents my hypothesis and chapter 6 presents my model and the data used. In chapter 7 the regression results are discussed, and finally, chapter 8 concludes.

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2.0 Problem formulation

By combining the existing theories on IPOs and reasons to go public with empirical evidence from the MTF market, I hope to capture new insights in the effect of different regulations on the firms' characteristics and behavior. My goal for this thesis is to investigate how the motivations to go public change with the regulatory environment of the market. Not only is this important because we have seen an increase in the number of MTFs in the latest years, but it might also be helpful for the authorities implementing new regulations in the financial market.

The problem formulation chosen for this thesis is:

Why do companies go public at MTFs? An empirical analysis of the Swedish market

By comparing companies listed at MTFs with companies listed at regulated markets in terms of characteristics and behavior I hope to capture valuable information on whether existing theories of the going-public decision holds for companies floating at MTFs. As my results are based on quantitative firm characteristics and financial characteristics, this thesis will not be dealing with aspects of underpricing and qualitative research on the going-public decision.

3.0 Definitions and basic concepts

3.1 The IPO process

The process of going public is demanding both for the management and the underwriters in terms of efforts and time. The first step of the process is to make sure that the company satisfies the regulations imposed by the stock exchange in which they are looking to list. In the later years, the digitalization and the increasing competition between the exchanges have led to more mergers and forming of joint ventures to create larger and more liquid markets. These changes are especially pronounced in the European market where several exchanges are battling to become the dominant European trading platform. According to Jenkinson and Ljungqvist (2001) the effect of this is that the trading platforms are no longer bound by national boundaries. Rather, they are now defined by their

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rules and regulations and their liquidity. In addition to the increased competition and availability of trading platforms, many exchanges have created new markets aimed at young companies with a high growth potential. Some of the most known markets in this category are the Alternative Investment Market in the UK, the Neuer Markt in Germany and Nuovo Mercato in Italy. All the exchanges have less stringent entry requirements than the traditional markets in terms of historical track record and governance.

The next steps in the IPO process entail producing a prospectus and marketing for the upcoming listing – both important parts in getting the needed attention from investors. The final step of the process is the pricing and allocation which can be done in numerous ways, the most popular way being the book building method.

3.2 The Swedish equity market

Like most modern equity markets, the Swedish market consists of one main market and several smaller markets. The Swedish main market is called Nasdaq OMX Stockholm, and this is also considered the main security market in the Nordics. The costs and barriers of going public are the same in the Swedish market as in most other markets, but the reason for going public seems to be somewhat different than in the US market. In fact, Rydqvist and Högholm (1995) finds that the average firm in Sweden is old, and that they are taken public so that existing shareholders can liquidate their investment. This is inconsistent with the conventional wisdom that firms go public to finance growth measures (Bancel & Mittoo, 2009), but it is consistent with the findings of authors such as Pagano et al. (1998).

3.3 Multilateral trading facility

In general terms, multilateral trading facilities (MTFs) are considered to be more liberal than the standard market, and are intended for issuers that for some reason do not comply with the admission rules of the regulated market (Theiss, 2007). The predecessor of the MTF, the alternative trading system (ATS), was introduced by the U.S. Securities and Exchange Commission (SEC) in 1998 to protect investors to a greater extent than what had been the case for the non-regulated

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trading venues. Recognizing the need for a more investor friendly trading venue, the SEC imposed regulations on reporting and transparency to ensure that the ATS's were viable options to a regulated market. In 2004 the European equivalent of the ATS was introduced through the Markets in Financial Instruments Directive (MiFID). MiFID I introduced the regulatory framework for the multilateral trading facility. Taking the role of the ATS's, the MTFs are trading venues that can be operated by investment firms or a market operator, with the main difference from a regulated market being the more liberal regulations and listing requirements. With the introduction of MTFs the European companies gained access to new marketplaces which makes the decision to list no longer just a decision of *why* to go public, it is also a decision of *where* to go public in terms of marketplace.

3.4 Differences in regulations at MTFs and regulated markets

The rules and regulations for the different markets vary somewhat, but the MTFs tend to have less stringent listing requirements². Generally, the process of getting listed at an MTF is less demanding for the management and the reporting is less comprehensive than what is the case for the regulated markets. The main reason for a company to get listed at an MTF is, according to Nasdaq, that it enables the company to focus on their business and development while still taking advantage of all the positive aspects of being a listed company. Although this is conceptually true, the advantages are somewhat offset by the lower visibility and less standardized rules offered by listing on an MTF.

What makes MTFs attractive, especially for young and growing companies, is that they do not have to come up with the same amount of documentation, and at most MTFs the company will get an adviser to guide them through the listing process. Because of this, the management does not need the same expertise as they would if they were to list at a regulated market, and the company can save large sums on not having to publish a detailed prospectus. Aggarwal and Rivoli (1991) find that small-firm IPOs have a cost of around 40% of the gross proceeds, making IPOs on regulated markets an expensive form of financing. As Tirole (2006) lists

² See appendix 1 for a detailed overview of the rules and regulations of the Swedish exchanges

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supplying information as one of the major drivers of costs in an IPO, and Chen and Ritter (2000) find the average spread to be 7%, it is natural to believe that the cost of listing at an MTF is significantly lower than on a regulated market.

There are however downsides to going public at an MTF. One of the most pronounced reasons to use an MTF is also its biggest weakness; the less stringent listing requirements. Because the MiFID I does not give any clear directions as to what the formal listing requirements are, each exchange is fairly free to set their own requirements. This entails that no underwriters are required, and potential investors do not have the same standardized documentation that they would get from a prospectus of a firm listing at a regulated market. Bajo, Chemmanur, Simonyan, and Tehranian (2016) find that having a reputable underwriter significantly decreases underpricing and increases the presence of institutional investors and liquidity, thus the lack of underwriters might affect the pricing and the composition of the group of investors. The problem of investor composition is especially pronounced for the institutional investors as most MTFs fall outside of their investment mandate, deteriorating the quality of the group of investors. The companies listing at MTFs still must get formal approval by the Swedish Financial Supervisory Authority, but as the listing memorandums are not as detailed as the listing prospectuses used in the listing on regulated markets, the “quality stamp” that comes with listing is not the same for MTFs and regulated markets.

4.0 Theoretical foundation

4.1 The going-public decision

The advantages of going public are manifold. The literature used will be based around the main reasons for listing given by Tirole (2006):

New source of finance. One of the most obvious, and most cited (Pagano et al., 1998), reasons to float a company is to fund further growth. This advantage is also argued for by Ritter and Welch (2002), and both Bancel and Mittoo (2009) and Brau and Fawcett (2006) find that this is a significant motivation for going public. However, Röell (1996) argues that it is not always the case that the listing is done

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only to fund growth opportunities. Instead, she suggests that the proceeds might also be used to unlever the balance sheet and facilitate for taking on new long-term debt in the credit market.

Facilitating exit. By floating, the entrepreneur is able to diversify his portfolio by selling some of their equity stakes (Pagano, 1993). Black and Gilson (1998) also argue that going public enables large shareholders, like venture capitalists, to cash out.

Facilitate acquisitions. Related to the facilitation of exits and the disciplining of managers, an IPO can also set the firm up as an attractive acquisition target by attracting investors' attention. Brau, Francis, and Kohers (2003) argue that going public enable firms to use their shares as a currency to fuel growth to M&As, while Brau and Fawcett (2006) find that the main motivation for firms to go public is to facilitate acquisitions.

Objective measure of the company's assets. Selling shares of the company sets an objective measure of the company's assets. According to Tirole (2006), this measure can be used for managerial compensation purposes. Another feature of having a publicly observable share price is that the costs involved in the outsiders' evaluation will be reduced as unsophisticated investors are able to free ride on the information available (Chemmanur & Fulghieri, 1999).

Discipline managers. By having what Tirole (2006) identifies as a takeover threat, the entrepreneur will have an incentive to work harder³. The takeover threat arises from the fact that a floated company is more prone to hostile takeovers. Additionally, Pagano and Röell (1998) argue that going public might lead to a reduction in the monitoring of management because of a more dispersed ownership structure.

Enhance name recognition. The Nobel laureate in Economics, Robert C. Merton, argues that enhanced investor recognition increases firm value through a decrease in the cost of capital (Merton, 1987). Another feature of going public is that it provides a long term price signal to suppliers, workforce and customers (Röell, 1996). This finding is backed by Rydqvist and Högholm (1995), who find that

³ Bertrand and Mullainathan (2003) find that managers are less hard working if their company has a takeover protection.

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67% of their respondents state that making their product better known is a motive for going public.

Going public is not all benefits. There are also a wide range of costs involved in getting listed. The costs include easily quantifiable costs like *investment banking fees and underpricing* as well as the *costs of disclosure and costs of reporting*. Ritter (1987) finds that the average quantifiable costs total at 21.22% of the realized market value, and Chen and Ritter (2000) later found the average spread to be 7% for book-building methods. In the process of listing the firms also incur costs that are less quantifiable:

Supplying information. Tirole (2006) lists supplying information as one of the major drivers of costs in a listing. The cost stems from the possibility of revealing strategically important information, putting the company at a competitive disadvantage (Campbell, 1979). Following this, it is quite clear that companies operating in industries with a high degree of research and development, such as the high-tech industry, are less likely to go public. The rate of reporting and the level of detail and transparency drives up the transaction costs together with the likelihood of having to reveal strategically important secrets. Even though disclosing strategic information is considered a cost, transparency is not all negative for the company. Ang and Brau (2002) demonstrate that firms with a high degree of transparency pay less to go public than firms with a lower degree of transparency.

Information asymmetry. As noted by Chemmanur and Fulghieri (1999), information asymmetry is considered a cost of listing as it can lead to a discount in the market. The lemons problem, as made famous by Nobel laureate George Akerlof, is a great example of the possible effect of the different revision process prior to the IPO at the different markets. In his paper, Akerlof (1970) illustrates how, in this case, only “bad quality firms” would be willing to sell their shares at an average price. The cost of this adverse selection is even more pronounced when the company has low visibility and short or no track record which is often the case for companies listing at MTFs (Bancel & Mittoo, 2009).

Loss of control. The danger of loss of control and reduction in the freedom of decision-making are considered important costs in the IPO process, and are

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especially pronounced for family firms (Burkart, Panunzi, & Shleifer, 2003). According to Röell (1996), the reduction in the freedom of decision making was the reason why Virgin Air was taken private after only two years of being public.

5.0 Hypothesis

It has been proven that MTFs do contribute to the overall market quality (Riordan, Storkenmaier, & Wagener, 2011), and it seems like the formalization of the markets through the MiFID I has been a success. From the above discussion on the differences in listing requirements and existing theory I have set forth hypotheses based on expected firm characteristics and behavior. The characteristics will help document the motivation for going public while the behavioral hypotheses will help describe how the companies listing at MTFs behave before and after the listing.

Firm characteristics

Using the differences in listing requirements for the MTFs and the regulated markets, I have set forth the following hypotheses for the firm characteristics:

H1: Companies listing at MTFs do so because they do not fulfill the requirements to list at a regulated market

To list at a regulated market, the requirements for operating history and profitability are usually around three years. The formal listing requirements also include a minimum market value. MTFs on the other hand, being tailored for younger and smaller companies, do not have the same requirements for listing. The downside of listing at an MTF, as discussed in chapter 3.4, is less liquidity and less publicity and investment coverage, possibly affecting the pricing of the stocks. Because of these disadvantages, one would expect a firm that fulfills the listing requirements at a regulated market to use the opportunity to list at a main market.

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H2: Companies listing at MTFs are younger and smaller in absolute size than companies listing at a regulated market

MTFs are tailored for young small and mid-size companies in the sense that they facilitate raising capital without needing a long track record. For a growing company this means that they have an option to raise the needed capital from other sources than venture capitalists. Pagano et al. (1998) argues that the likelihood of going public increases with size and age because of adverse selection, and that IPOs are negatively correlated with the R&D intensity of an industry. With an MTF, firms have a certified advisor to help them through the listing, helping the management to get past the problem of adverse selection. The problem concerning R&D is also dampened by the less extensive demand for transparency. Another feature of the MTFs is that the market is, to some degree, aware that companies listing at these markets are riskier investment vehicles than those on most regulated markets. Pagano et al. (1998) also notes that the fixed costs of going public suggest that there should be a positive correlation between size and listing. This problem is mitigated by the less comprehensive listing process of the MTFs.

IPO characteristics

Together with my hypotheses on firm characteristics, the hypotheses on IPO characteristics will help document the motivation for going public. Carpenter and Rondi (2006) find clear differences between the financial characteristics and the characteristics of the IPO of small and large companies. Small companies are found to have higher leverage and to obtain substantially more of the proceeds from the listing, indicating that the IPO is used to finance growth opportunities. Furthermore, the regulations of MTFs enable the firms to have a smaller dispersion of the share ownership, and hence retain their control over the firm. Jensen and Meckling (1976) find the agency costs of equity and debt to be different. By selling a large portion of the company, the entrepreneurs' costs of any non-pecuniary benefits will go down as they no longer bear all the costs. These benefits can only be given if the shareholders accept it, hence it is a trade-off of the cost of non-pecuniary benefits versus control of the company.

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H3: IPOs done on MTFs are larger in relative size than IPOs done on regulated markets

According to Rydqvist and Högholm (1995) the average company going public in Sweden is large and old, and they do so to finance consumption or portfolio diversification. Assuming companies going public on MTFs are younger and smaller, and that they list to finance growth (see Carpenter and Rondi (2006) and Aslan and Kumar (2011)), this should affect the pricing of the company. More specifically, it should show up in the forecasted growth potential, *ceteris paribus*, leading to a higher valuation of the company (Titman & Martin, 2014).

H4: Companies listing at an MTF sell off a smaller part of the company's assets than companies listing at a regulated market

The cost of loss of control and freedom of action making as outlined by both Tirole (2006) and Röell (1996) can, by listing at an MTF, be smaller than on a regulated market. Because of the lower requirements for share ownership dispersion, I expect the entrepreneurs to make use of this regulatory benefit to keep what Hart (2001) defines as private benefits. My belief is that the listing will generate the same publicity and credibility among investors and creditors regardless of the entrepreneur selling off 10% or 25% of the company. Because of this the entrepreneur can reap most of the benefits listed in chapter 4.1, while at the same time mitigating some of the costs. Another interpretation of this hypothesis is that the entrepreneur is simply not able to raise the same amount of money, as the MTF is less liquid and less attractive for institutional investors.

Firm behavior

As listing on an MTF implies having the opportunity to have less comprehensive reporting and a smaller dispersion of the share ownership, one would expect the behavior of the companies ex-post to differ from the ones listing on a regulated market. The hypotheses below build on the argumentation that the companies listing on an MTF do so not as an incentive to exit, but rather to use the IPO as a means to finance further growth.

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H5: Companies listing at MTFs use more of the proceeds from the IPO to finance growth opportunities than companies listing at a regulated market

Following the argumentation of the hypothesized characteristics of companies listing at MTFs, I expect most companies to be small and in a growth stage. The findings of Aslan and Kumar (2011), Pagano et al. (1998) and Carpenter and Rondi (2006) support this, as it can be proven that growth is an important determinant of the decision to go public. Carpenter and Rondi also find that small companies use more of the proceeds to grow than larger companies. If the proceeds are used for growth to a greater extent in companies listed at MTFs, this might indicate that the main motivation for the entrepreneur to take the company public is not to see his own portfolio get diversified or put pressure on the management, but rather to fund growth opportunities.

H6: Companies listing at MTFs use the access to the equity market as a way to facilitate borrowing in the credit market to a larger extent than companies listing at regulated markets

Carpenter and Rondi (2006) find that small firms' indebtedness after the IPO increases. Their finding is no surprise as an IPO adds new equity and increases publicity and the perceived quality of the company, possibly prompting banks to up their willingness to lend. However, as previously discussed, there are differences in the transparency and reporting at the different markets, raising the question of the effect the IPO has on leverage and long term debt.

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6.0 Model

6.1 Sample selection

The sample used in the analysis is based on Swedish companies going public between 2007 and 2013⁴. The time-span for the regression is 5 years per company; two years before the IPO year, the IPO year, and two years after the IPO, hence the data set ranges from 2005 to 2015. The sample is based on the first public offering that the company made, and it does not include seasoned offerings. If the company changed the exchange in which it was listed during the 5 years, it is excluded from the sample.

After removing companies that delisted or changed exchange during the 5-year period and removing companies with missing information, the total sample consists of 190 companies as shown in table I. The subsamples used in the following will be: Regulated markets (Nasdaq OMX Stockholm and NGM Equity); 43 companies and MTFs (Nasdaq First North, NGM MTF and AktieTorget); 147 companies.

The listing details are obtained through the databases Zephyr and ORBIS, while the financial and accounting data are obtained through Bloomberg and ORBIS to get the most observations as possible from the sample.

⁴ See appendix A2 for the full list of included companies

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TABLE I

IPO sample grouped by market affiliation and IPO year

Nasdaq OMX Stockholm and Nordic Growth Market Equity (NGM Equity) represents the regulated markets, while Nasdaq First North, Nordic Growth Market MTF (NGM MTF) and AktieTorget represents the multilateral trading facilities.

Year of listing	2007	2008	2009	2010	2011	2012	2013	Total sample
Nasdaq OMX Stockholm	14	8	1	5	8	3	3	42
NGM Equity	-	1	-	-	-	-	-	1
Nasdaq First North	15	5	4	6	9	3	11	53
NGM MTF	1	1	-	-	2	-	-	4
AktieTorget	16	17	11	16	8	8	14	90
Total by year	46	32	16	27	27	14	28	190

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6.2 Characteristics of the IPO sample

From the results in table I, it becomes clear that most of the listings at MTFs happened in the year that the MTFs were established (2007), implying that there existed a built-up demand for this type of trading venue. Most of the subsample for the MTF listings comes from AktieTorget whereas most of the listings done on regulated markets are done on Nasdaq OMX Stockholm. Table II provides a set of summary statistics for the firms in the year of their IPO grouped by market affiliation. The first column displays statistics for the full sample of IPOs. Section I of the table provides information on the firm characteristics of the sample firms. As a general note we observe that the median company going public in Sweden in the sample period is 6 years of age, at par with Loughran and Ritter (2004) who report that the median age of firms going public has been stable at about 7 years since 1980. This is, however, in large contrast to the findings of Rydqvist and Högholm (1995) who report that the average company going public in Sweden in the period 1970-1991 is 38 years old⁵. The data also suggest that hypothesis H2 is in fact correct; companies listing at MTFs are indeed younger and smaller than companies listing at regulated markets. Age, number of employees, sales and assets are significantly different at the time of the IPO, confirming that companies listing at MTFs are different in size and age.

Section II of the table provides information about the financial characteristics of the firms. The median leverage seems to be in line with the findings of Pagano et al. (1998), and the debt to assets ratio is also the same as the one Rydqvist and Högholm (1995) find, suggesting that the financial characteristics of companies going public are somewhat stable across time and markets. From the Swedish IPOs, we see a tendency that companies listing at MTFs are less leveraged than what is the case for companies listing at regulated markets. In accordance with the findings of Carpenter and Rondi (2006) larger firms have a higher degree of long term debt than smaller firms.

⁵ The mean value for the sample from 2007-2013 is 13.5 years.

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TABLE II

Characteristics of the Swedish IPO sample grouped by market affiliation in the year of the IPO (median values)

Market capitalization is the company's market capitalization in the year of the IPO. *Leverage* is calculated using total short term and long term debt divided by market capital (total debt to market value). *Investment rate* is calculated by dividing fixed assets and long term investments by sales. *Gross proceeds* is defined as the offer price of the IPO multiplied with the number of shares offered in the IPO.

	IPO Sample	Regulated IPOs	MTF IPOs
N. firms	190	43	147
<i>I. Firm characteristics</i>			
Age	6	11	5 ^a
Employees	13	59	7 ^a
Sales (th USD)	706.35	10675.40	374.30 ^a
Total assets (th USD)	3984.45	54256.60	2589.30 ^a
Market capitalization (m USD)	28.41	150.70	9.34 ^a
<i>II. Financial characteristics</i>			
Leverage	0.1486	0.1904	0.1067
Debt / Assets	0.1674	0.2076	0.1326
Long term debt / Assets	0.08384	0.0909	0.0820
WACC	0.0656	0.0694	0.0627
<i>III. Operating characteristics</i>			
Return on assets	-0.1095	0.0555	-0.1782 ^a
Return on equity	-0.1750	0.1367	-0.3052 ^a
Investment rate	0.1835	0.1404	0.2481
<i>IV. Characteristics of the IPO</i>			
Gross proceeds / total assets	0.5540	0.3264	0.6960 ^c
Stake offered	0.2000	0.4785	0.1775 ^a

Notes: (a, b, c) means significant two-sample Wilcoxon rank-sum (Mann-Whitney) test of difference of medians at 0.01; 0.05 and 0.10 level, respectively.

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Section III exhibits operating characteristics on returns and investments for the firms going public. The companies listing at MTFs show clear signs of being less profitable than the companies listing at regulated markets. The companies listing at regulated markets exhibit more profitable operations, and their returns are similar to the sample used in Carpenter and Rondi (2006) and Pagano et al. (1998). The numbers lend support for hypothesis H1 as one of the listing requirements for the regulated markets is profitability. Supporting another hypothesis, H5, the companies listing at MTFs have a much higher investment rate in the year of the IPO, suggesting that they go public to obtain funds for growth.

Finally, section IV exhibits some of the characteristics of the IPO itself. There is a significant difference in the size of the IPOs conducted at the different markets. Relative to their size, the proceeds from IPOs for the MTF sample is close to 70 percent, whereas the number for the regulated sample is 32 percent. The results are clearly supporting hypothesis H3, that the relative size of the IPOs on MTFs is larger than on regulated markets. The stake offered in the IPOs is also significantly smaller in the MTF IPOs than the regulated IPOs. This confirms hypothesis H4, implying that the companies listing at MTFs take advantage of the possibility to sell of a smaller share of the company, or indeed that the entrepreneur is not able to raise more funds in the IPO.

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6.3 Methodology

To uncover the determinants of the decision to go public on an MTF I use the same approach as Pagano et al. (1998) and Carpenter and Rondi (2006) by comparing the ex-post and ex-ante behavior of the companies listing at the different markets. To investigate the firms' behavior, I employ a fixed-effects regression using dummy variables to account for the years prior to and after the IPO. The model is set up to test the effects of the decision to go public on a set of variables that include operating performance, financial characteristics and growth.

The model of the ex-post behavior takes the form of:

$$y_{it} = \sum_{j=0}^2 \beta_j IPO_{t-j} + f_i + \lambda_t + \varepsilon_{it}$$

Where i represents firms and t time. y_{it} represents the dependent variable and f_i and λ_t are firm and time dummies, respectively. IPO_{t-j} is a dummy variable that returns 1 if year $t - j$ was the year of the IPO. This also implies that in the year of the IPO, $IPO_t = 1$ and for $IPO_{t-1} = IPO_{t-2} = 0$. One year after the public offering the dummy variable will return $IPO_{t-1} = 1$ and so on. The lags of the IPO will help describe the ex-post behavior of the company. Table III reports the regressions' coefficients on the IPO and post-IPO years together with the adjusted R^2 .

To investigate the ex-ante behavior a similar model is set up with the following specification:

$$y_{it} = \alpha + \sum_{j=0}^2 \beta_j IPO_{t+j} + f_i + \lambda_t + \varepsilon_{it}$$

The model is set up in the same way as for the ex-post model, except that the IPO dummy takes the value 1 for the year preceding the IPO. The results from the regression can be found in table IV⁶.

⁶ This table can be found in the appendix (A3). The variables left out in table IV are omitted because of a lack of observations.

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One of the objections to this model is that some of the dependent variables might not only be affected by the decision to go public, but also by other variables. One such example is the investment rate that may depend also on lagged sales or other lagged variables. As Pagano et al. (1998) find the results of using lagged variables to be quantitatively similar to the numbers obtained through the regression described above, I will not include the use of lagged variables in my regressions.

6.4 Regression results

Table III reports the findings of the ex-post behavior of the companies going public. The most interesting findings are those concerning investments and the cost of capital after the IPO. Not surprisingly, the companies listing at MTFs seem to be investing more in the years after the IPO in terms of fixed assets and long term investments. This finding is in line with Carpenter and Rondi (2006) who find that smaller firms tend to use more of the IPO proceeds to finance growth. The same authors also find that larger firms obtain less of the proceeds from the IPO, suggesting that large-firm IPOs are done to facilitate an exit for existing shareholders rather than to finance growth. Companies listing at regulated markets seem to have a higher investment rate prior to listing, which is at par with the findings of Pagano et al. (1998), who find that IPO activity follows high investment and growth. It could also be a sign of a higher degree of what Degeorge and Zeckhauser (1993) define as performance manipulation, often known as “window dressing”, to boost performance before an IPO.

The growth rates of sales, assets and employees do not give the same one-sided support as the findings on investment rate does, but companies listing at MTFs appear to have higher growth in the year of the IPO and in year T+2. What causes the drop in T+1 is not known, but overall the accumulated growth seems to be greater post-IPO for the firms listing at MTFs.

One of the main reasons for going public as described earlier is to get access to a new source of finance, both in terms of equity and debt. Although not significant, I find that companies listing at MTFs tend to increase their indebtedness after the

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IPO, suggesting that the action of listing does facilitate borrowing in the credit market. Surprisingly, the bank loans relative to total assets seem to decrease in the years after the IPO, indicating that the increase in total debt is due to other sources of credit. Another finding is that firms listing at MTFs significantly lower their weighted average cost of capital (WACC) in the years after the IPO. The same is also true for companies listing at regulated markets, but the decrease is less pronounced and not significant. When testing the different parts of the WACC calculation I find that the effect of the IPO is a slight increase in the debt component, implying that, for the firms able to raise debt, the cost goes up after the IPO. This effect is more pronounced for the companies going public at MTFs. As the effect of improved and more frequent reporting should be a decrease in the cost of debt (Vander Bauwhede, De Meyere, & Van Cauwenberge, 2015), the increase has to be due to other circumstances. One economical reason for the raised costs might be the increase in debt the firm takes on after the IPO, as leverage is typically positively correlated with the marginal borrowing costs. Regarding the effect on the cost of equity after the IPO, both subsamples experience a decrease. As with the cost of debt, existing theory states that it should correlate with the information asymmetry (e.g., Levi and Zhang (2014)). This is the case for both subsamples, and as shown in table III the effect of the increase in the cost of debt is offset by the decrease in the cost of equity.

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TABLE III

Analysis of the ex-post behavior of Swedish firms going public

For each of the variables listed the estimation is based on the specification described in chapter 6.3. The table only reports the coefficients on the IPO and post-IPO dummy variables. The number of observations in each sample is reported under the definition of the samples. The sample size varies slightly because of data availability. The IPO sample is winsorized by 5% for all dependent variables to remove extreme values. *Investment rate* is calculated by dividing fixed assets and long term investments by sales. All *growth rates* are calculated as the change from the prior year. *Leverage* is calculated using total short term and long term debt divided by market capital (total debt to market value)⁷.

Dependent variable	Sample	Year 0	Year +1	Year +2	Adj-R ²
Investment rate	IPO sample	1.0769*	0.7424	0.8441*	0.5522
	163	(1.9488)	(1.4721)	(1.7748)	
	Regulated	-0.1532	-0.8338	0.1025	0.6563
	41	(-0.1699)	(-1.0604)	(0.1425)	
MTF		1.6806**	1.3982**	1.1133*	0.5119
	122	(2.3858)	(2.1773)	(1.8140)	
Growth rate of total assets	IPO sample	0.1528*	0.0194	0.1063**	0.0531
	179	(1.8604)	(0.3311)	(2.0379)	
	Regulated	0.0180	0.2006*	0.0893	0.1633
	43	(0.1142)	(1.8441)	(0.9709)	
MTF		0.1895*	-0.0446	0.1201*	0.0128
	136	(1.9347)	(-0.6400)	(1.8955)	

⁷ See Frank and Goyal (2009) for a thorough description of the most used definitions of leverage in the literature

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TABLE III

(Continued)

Dependent variable	Sample	Year 0	Year +1	Year +2	Adj-R ²
Growth rate of sales	IPO sample	0.1457	-0.0022	0.1653	0.0455
	172	(0.6934)	(-0.0159)	(1.2783)	
	Regulated	0.1509	-0.0736	-0.1324	0.0293
	43	(0.4868)	(-0.3306)	(-0.7002)	
MTF		0.1132	0.0068	0.2772*	0.0375
	129	(0.4164)	(0.0380)	(1.6639)	
Growth rate of employment	IPO sample	0.0999	-0.2700	0.0251	0.0830
	154	(1.5363)	(-0.5114)	(0.5660)	
	Regulated	0.0246	-0.0728	0.0048	0.3366
	43	(0.2723)	(-1.0858)	(0.0890)	
MTF		0.1232	-0.0371	0.0254	-0.0124
	111	(1.3985)	(-0.4999)	(0.4107)	
Leverage	IPO sample	-0.0421	0.0045	0.0251	0.5634
	170	(-0.7458)	(0.1004)	(0.6603)	
	Regulated	-0.0818	-0.0196	0.0123	0.6959
	41	(-1.0032)	(-0.2854)	(0.2159)	
MTF		-0.0240	0.0077	0.0248	0.4957
	129	(-0.3198)	(0.1316)	(0.4967)	
Long term debt / assets	IPO sample	0.0019	0.0031	-0.0039	0.5575
	178	(0.1762)	(0.3277)	(-0.4392)	
	Regulated	-0.0108	-0.0005	-0.0109	0.5255
	42	(-0.4571)	(-0.0249)	(-0.6041)	
MTF		0.0056	0.0050	-0.0003	0.5611
	136	(0.4626)	(0.4699)	(-0.0248)	

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TABLE III

(Continued)

Dependent variable	Sample	Year 0	Year +1	Year +2	Adj-R ²
Bank loan / assets	IPO sample	-0.0172	-0.0239	-0.0592***	0.5647
	63	(-0.6492)	(-0.6676)	(-2.9794)	
	Regulated	-0.0083	0.0010	-0.0484	0.4807
	26	(-0.2042)	(0.0286)	(-1.5782)	
	MTF	-0.0266	-0.0356	-0.0747***	0.0076
	37	(-0.7183)	(-1.0432)	(-2.7199)	
Return on assets	IPO sample	-0.0047	-0.0212	0.0181	0.6188
	165	(-0.1382)	(-0.8412)	(0.7896)	
	Regulated	0.0280	0.0193	0.0063	0.7589
	43	(0.7527)	(0.7608)	(0.2915)	
	MTF	-0.0083	-0.0406	0.0191	0.5180
	122	(-0.1818)	(-1.1809)	(0.5991)	
WACC	IPO sample	-0.0136***	-0.0109***	-0.0059**	0.3253
	178	(-4.4639)	(-4.0769)	(-2.3339)	
	Regulated	-0.0036	-0.0000	-0.0022	0.3447
	43	(-0.7482)	(-0.0027)	(-0.5907)	
	MTF	-0.0170***	-0.0143***	-0.0071**	0.3093
	135	(-4.4337)	(-4.2792)	(-2.2124)	

(***), (**), (*) coefficient significant different from 0 at the (1), (5), (10) percent level or less, respectively

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7.0 Discussion

In this part of the thesis I take another look at the hypotheses set forth in chapter 5 to base the discussion on the areas of focus in my research. My hypotheses were formed based on existing literature and the regulatory implications of the MTFs, as exemplified by FESCO (2000). Although my data material is only covering two years ex-post and ex-ante, there are findings that are clearly suggestive as to why companies choose to go public at MTFs.

The hypotheses based on firm characteristics were set up to test if the companies listed at MTFs because they did not have the track record or the size needed to list at a regulated market. Although this thesis only deals with the quantitative part of the listing requirements, the results in table III confirm that firms listing at MTFs are in fact a lot smaller and a little younger than companies listing at regulated markets. At the time of listing, the median MTF-listed company cannot fulfil the listing requirements in terms of profitability, and although this evidence alone is not enough to conclude that one of the motivations to use an MTF is because of the lack of access to regulated markets, it is suggestive. The difference in profitability in the year of the IPO is significant, with negative return on assets (ROA) and return on equity (ROE) for the companies going public at the MTFs.

The hypotheses on the characteristics of the IPO were inspired by the findings of Carpenter and Rondi (2006), who found significant differences in the IPOs of small and large companies. As the regulations enable companies listing at MTFs to sell off a smaller portion of the company, one would expect this to show in the stake offered in the IPO. The reason is that this would allow the entrepreneur to keep more of his or hers private benefits ((Hart, 2001) and (Jensen & Meckling, 1976)). I find that companies listing at MTFs, at the median, is selling off 17.75% of their company, a significant difference from the corresponding number for the companies listing at a regulated market (47.85%). Even though 17.75% is less than what is allowed at the regulated markets, the fact that the subsample of companies listing at regulated markets sold off such a big fraction contradicts that the entrepreneur sells of as little of the company as possible. One possible explanation for the difference is that firms listed at regulated markets often have

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investors that are interested in selling their shares, making the offered stake larger. One other explanation might be the interest generated around the IPO. As most institutional investors are either prohibited, through their investment mandate, or reluctant to invest in companies listing at MTFs, it might be that the entrepreneur is not able to sell of a larger share of the company.

I also find evidence that MTF-IPOs are larger in relative size. In fact, the gross proceeds to total assets are more than double the size of an IPO at a regulated market. This is contrary to the findings of Carpenter and Rondi (2006), and the samples are almost identical in the distribution of industries, making difference in industries an implausible explanation. One explanation for this difference could be the firms' maturity and stage in life cycle, suggesting that firms going public on regulated markets do so to get acquired (Zingales, 1995). If this is the case the price to assets would be lower than if they listed to obtain funds to grow, as it implies that the company has exploited all their growth opportunities. One last explanation might be that investors price the MTF-companies with higher forecasted earnings than what is the case for the companies listing at regulated markets. The life cycle explanation finds support in the paper of Pagano et al. (1998), while the latter explanation is backed by the research of Aslan and Kumar (2011) and Carpenter and Rondi (2006), as smaller companies are found to have a higher growth rate post-IPO than larger companies. To conclude on this matter one would need to have more data on the valuation of the companies which is outside of the scope of this thesis. I confine myself to simply note that there is a significant difference in the relative size of the IPOs conducted on the different markets.

The last two hypotheses, and in many ways, the most interesting part of the thesis are based on the expectations of the behavior of the companies after the IPO. Because of the simple listing process, I expected companies listing at MTFs to be similar to smaller companies going public in other markets (see Carpenter and Rondi (2006) and Aslan and Kumar (2011)). Carpenter and Rondi conclude that there are a dual class of IPOs, namely "new-style" firms and "old-style" firms. I expected my results to be that MTF-listing companies were found to be "New-

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style” firms – in contrast to “Old-style” firms that go public to enable their investors to diversify, which is what earlier research of the Swedish market has found to be the case (Rydqvist & Högholm, 1995). My findings in terms of leverage do show tendencies for the MTF-listed companies to have a higher increase in the leverage in the years after the IPO. This finding is not surprising as the companies’ public visibility increase and the information-related problems decrease, however I did expect the effect to be stronger than what is observed from the data.

Another effect that is significant and quite dramatical is the drop in the cost of capital for the firms going public at MTFs. All firms seem to experience a decrease in their cost of capital, but the effect is stronger for the MTF-listing firms. Considering the components of the WACC, I find that the effect of the IPO is that the cost of debt goes up, but that the cost of equity decreases to offset the increase in the cost of debt. Although the market conditions in Sweden have been favorable to borrowers during the period of my sample, my research shows that the cost of debt goes up after the IPO. The most likely reason seems to be that firms take on more debt after the IPO causing the marginal borrowing cost to increase. What is interesting to see is that the whole sample lowers their cost of equity, and that the decrease is larger in MTF-listed companies than on the companies listed at a regulated market. The finding is consistent with theories on transparency and disclosure, as listing usually entails greater reporting and transparency ((Botosan, 1997; Dutta & Nezlobin, 2017)). What is most remarkable is that the MTF-listing companies had a lower WACC in the IPO year (6.27% vs. 6.94%), while also having the largest decrease in the post-IPO years. The most intuitive explanation for this is the difference in leverage in the IPO year documented in table II. Generally, firms listing at regulated markets have a relatively higher amount of debt than MTF-listed companies.

I found the relative size of the IPOs at MTFs to be larger than on regulated markets, and the regression results in table III show what the proceeds are used for. The investment equation clearly shows a significant positive effect of the decision to go public. Not only do the MTF-companies invest at a higher rate,

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they also experience an increase in sales in the years following the IPO. While the regulated-sample exhibits larger investing expenditures prior to the IPO, they tend to spend less on investments after the IPO, and the growth rate of sales declines after the IPO. This is consistent with the theory of going public to enable investors to diversify (Chemmanur & Fulghieri, 1999; Pagano, 1993).

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8.0 Conclusion

This thesis sets out to add to the sparse literature of one of our newest additions to the capital markets, the multilateral trading facility. By design, the MTF is made to cater for smaller companies wishing to grow, possibly altering some of the existing reasons to go public. My literature review discusses some of the established reasons to go public at regulated markets together with the information asymmetry coherent in IPOs.

My statistical and econometrical analysis highlights the difference between the companies going public at MTFs and regulated markets to illustrate the effect of the difference in regulations on the two market places. My findings suggest that companies go public at MTFs to finance growth to a higher degree than what seems to be the case for the companies listing at regulated markets. The MTF-listing companies also spend much more on long term investments than the regulated-sample. These findings, although made on a small data set from one country, are significant and add empirical evidence to the effect of having less stringent listing requirements. In addition to this, the results also indicate that the cost of capital drops after the IPO, suggesting that the perceived transparency and implicated risk of investing in MTF-listed companies are not that different from investing in companies at a regulated market.

The motivation for writing this thesis was to explore whether the different regulations would have any effect on the motivations to list. My findings suggest that providing smaller, less profitable companies access to the capital market, gives the enterprises the means to grow at a faster pace than what would be the case had they not had the opportunity to list. Although my research would benefit from having input from both underpricing and a more qualitative approach to fully comprehend the reasons to go public at MTFs, I hope that my results can motivate further studies of the effects of MTFs on the overall quality of the capital markets.

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Appendix

A1: Listing requirements

	MTF		Regulated market	
	Aktietorget	Nordic MTF	Nasdaq Stockholm	Nordic Growth Market
Prospectus	Nasdaq First North Stockholm Only needed when securities are offered to the public	Listing memorandum	Must be prepared, published and approved	Must be prepared, published and approved
Examination	Examination by Certified Adviser (CA)	Adviser and legal examination	Legal examination	Legal examination
Approval	Examination by CA and Admission approval by the Stock Exchange	Approval (in cases where prospectus is needed) by the Swedish Financial Supervisory Authority	Listing approval by the Stock Exchange	Approval of prospectus by the Swedish Financial Supervisory Authority
Operating history	Not needed	Not needed	Sufficient operating history, including three annual accounts	Minimum two annual reports
Documented profitability	Not needed	Not needed	Demands on documented profitability or sufficient financial resources	
Shares	Sufficient number of shareholders and at least 10% of shares in public hands, or an assigned Liquidity Provider	Sufficient number of shareholders (minimum 300) and at least 10% of shares in public hands	Minimum 25% of shares in public hands	10% of shares in public hand. Minimum 300 shareholders each holding a minimum value equivalent value of 5000 SEK
Market value	No minimum market value	Minimum equity value of 5 M SEK and share capital of 500 T SEK	Minimum market value, 1 M EUR	
Administration	Administration of the company supported by the CA	minimum 4 members of the board including at least one representative independent from the company	Demands regarding the administration of the company	Board must have sufficient competence and experience
Corporate governance code	Not needed	Managing director and chairman need to undergo, AktieTorget's corporate training programme	Compliance with corporate governance code	
Certified adviser	CA required at all times		Not needed	
Source	http://business.nasdaq.com/list/listing-options/European-Markets/differences-admission-criteria/index.html	https://www.aktietorget.se/CompanyRegulations/ListingRequirements.aspx	http://business.nasdaq.com/list/listing-options/European-Markets/differences-admission-criteria/index.html	http://www.ngm.se/ngm_equity/noteringsprocessen-ngm-equity/?lang=en
Date visited	12.01.2017	12.01.2017	12.01.2017	12.01.2017

NB! Ved digital innlevering kan du ikke legge inn tekst her

A2: List of companies

No.	Company name	Ticker	Exchange	IPO year
1	24H MOVIES SWEDEN HOLDING AB	MAV	AT	2008
2	A1M PHARMA AB	A1M	AT	2013
3	ABELCO AB	ABE	AT	2011
4	ADOPERATOR AB	ADOP	AT	2010
5	ADTAIL AB	TAIL	AT	2009
6	AKTIEBOLAGET FASTATOR (PUBL)	ABFAST.B	NFN	2012
7	ALLTELE ALLMANNNA SVENSKA TELEFON AB	ATEL.A	NOS	2007
8	AMASTEN HOLDING AB	AMAST	NFN	2008
9	AMNODE AB	AMNO	AT	2008
10	ARC AROMA PURE AB	AAP.B	NFN	2013
11	ARCTIC GOLD AB (PUBL)	ARCT	NFN	2009
12	ARISE AB	ARISE	NOS	2010
13	AROCCELL AB (PUBL)	AROC	NFN	2011
14	AVEGA GROUP AB	AVEG.B	NOS	2007
15	AVTECH SWEDEN AB (PUBL)	AVT.B	NFN	2012
16	AXICHEM AB (PUBL)	AXIC.A	NFN	2011
17	BAHNHOF AB	BAHN.B	AT	2007
18	BESTIN PREPACKAGED SERVICE SOFTWARE AB	BEIN.B	AT	2008
19	BOTNIA EXPLORATION HOLDING AB (PUBL)	BOTX	AT	2009
20	BOULE DIAGNOSTICS AB	BOUL	NOS	2011
21	BRANDWORLD SVERIGE AB	BRAW	AT	2010
22	BRIGHTER AB (PUBL)	BRIG	NFN	2012
23	BRIOX AB	BRIX.MTF	NMTF	2011
24	BULTEN AB	BULTEN	NOS	2011
25	BYGGMAX GROUP AB	BMAX	NOS	2010
26	CATERING PLEASE I SKANDINAVIEN AB	CAPL	AT	2007
27	CEFOUR WINE & BEVERAGE PARTIHANDEL AB (PUBL)	CEFO.B	AT	2011
28	CELL IMPACT AB (PUBL)	CI.B	NFN	2013
29	CELLAVISION AB	CEVI	NOS	2007
30	CHALLENGER MOBILE AB	CHAL.B	AT	2010
31	CLINICAL LASERTHERMIA SYSTEMS AB	CLS.B	AT	2009
32	CLOETTA AB	CLA.B	NOS	2008
33	COMFORT WINDOW SYSTEM AB	CWS	AT	2009
34	COMMUNITY ENTERTAINMENT SVENSKA AKTIEBOLAG	CEAB	AT	2008
35	CONCENTRIC AB	COIC	NOS	2011
36	COPPERSTONE RESOURCES AB	COPP.B	NFN	2007
37	C-RAD AB	CRAD.B	NOS	2007
38	CREADES AB (PUBL)	CRED.A	NOS	2012
39	CROWN ENERGY AB	CRWN.MTF	NMTF	2011
40	CYBAERO AB	CBA	NFN	2007
41	DANNEMORA MINERAL AB	DMAB.B	NFN	2007
42	DEDICARE AB	DEDI	NOS	2011
43	DEFLAMO AB (PUBL)	DEFL.B	NFN	2008
44	DELARKA HOLDING AB (PUBL)	DELARK	NFN	2013
45	DEVICOM AB	DEVI	AT	2007
46	DGC ONE AB	DGC	NOS	2008
47	DIADROM HOLDING AB	DIAH	NFN	2007
48	DIAMYD MEDICAL AKTIEBOLAG	DMYD.B	NFN	2013
49	DIGNITANA AB	DIGN	NFN	2009
50	DUNI AB	DUNI	NOS	2007
51	EASYFILL AB	EASY.B	AT	2007
52	ECO BYGGOLIT AB	BLIT	AT	2011
53	ECOMB AB (PUBL)	ECOM	AT	2011
54	ECORUB AB	ECO.B	AT	2010
55	EKOMARINE AB	EKOM	AT	2010
56	ELLEN AB	ELN	NFN	2007
57	EMOTRA AB	EMOT	AT	2013
58	ENDOMINES AB	ENDO	NOS	2007
59	ENERGYO SOLUTIONS RUSSIA AB	EOS	NFN	2007
60	ENZYMATICA AB (PUBL)	ENZY	NFN	2011
61	EOLUS VIND AB	EOLU.B	NOS	2009
62	EPISURF MEDICAL AB	EPIS.B	NOS	2010
63	EQL PHARMA AB	EQL	AT	2013
64	ERIKSSON DEVELOPMENT AND INNOVATION COMPANY AB	EDIC.B	AT	2008
65	EUROCON CONSULTING AB (PUBL)	EURO	AT	2007

NB! Ved digital innlevering kan du ikke legge inn tekst her

66	EVERYSPORT MEDIA GROUP AB	EVERY.A	AT	2009
67	EWORX GROUP AB	EWRK	NOS	2008
68	EXINI DIAGNOSTICS AB	EXINI	AT	2009
69	FASTTV.NET AB	FATV	AT	2007
70	FDT SYSTEM HOLDING AB	FDT	AT	2012
71	FX INTERNATIONAL AB	FXI	AT	2011
72	G5 ENTERTAINMENT AB (PUBL)	G5EN	NOS	2008
73	GENESIS IT AB	GENE	AT	2010
74	GHP SPECIALTY CARE AB	GHP	NOS	2008
75	GIFTTODAY SWEDEN AB	GIFT	AT	2008
76	GLOBALFUN AB	GFUN	AT	2008
77	GOTLAND OIL AB	GOG	AT	2013
78	GULDADAM HOLDING AB	GULA	AT	2013
79	GULLBERG & JANSSON AB	GJAB	AT	2012
80	H1 COMMUNICATION AB	H1.B	AT	2008
81	HAMMARBY BANDY AB	HBV.B	AT	2008
82	HANSA MEDICAL AB	HMED	NOS	2007
83	HARTELEX AB	HLEX	AT	2010
84	HEDERA GROUP AB	HEGR	NFN	2013
85	HEXATRONIC GROUP AB	HTRO	NOS	2011
86	HEXPOL AB	HPOL.B	NOS	2008
87	HMS NETWORKS AB	HMS	NOS	2007
88	HOUSE OF FRIENDS AB	HOFF	NFN	2007
89	HUBBR AB	HUBR.B	NFN	2010
90	IMMUNICUM AKTIEBOLAG	IMMU	NFN	2013
91	INTERFOX RESOURCES AB	IFOX	AT	2008
92	JAMES CONCEPTS AB	JAME	AT	2007
93	JOJKA COMMUNICATIONS AB	JOJK	AT	2007
94	JOSAB INTERNATIONAL AB (PUBL)	JOSA	AT	2013
95	KANCERA AB	KAN	NFN	2011
96	KAROLINSKA DEVELOPMENT AB	KDEV	NOS	2011
97	KENTIMA HOLDING AB	KENH	NFN	2013
98	KOPY GOLDFIELDS AB	KOPY	NFN	2010
99	LOOMIS AB	LOOM.B	NOS	2008
100	LOVISAGRUVAN AB (PUBL)	LOVI	AT	2007
101	LUNCHEXPRESS I SVERIGE AB	LEXP.B	AT	2010
102	LYYN AB	LYYN	AT	2010
103	MABI RENT AB	MABI	AT	2010
104	MACKMYRA SVENSK WHISKY AB	MACK.B	NFN	2011
105	MEDFIELD DIAGNOSTICS AKTIEBOLAG	MEDF	AT	2012
106	MEDICA CLINICAL NORD HOLDING AB	MCNH MTF	NMTF	2007
107	MEDIRATT AB	MEDR.B	NFN	2011
108	METALLVARDEN I SVERIGE AB (PUBL)	METV.MTF	NMTF	2008
109	MICROPOS MEDICAL AB (PUBL)	MPOS	AT	2009
110	MICUS AB	MCUS	AT	2010
111	MINERAL INVEST INTERNATIONAL MII AB	MII	AT	2009
112	MISEN ENERGY AB	MISE	NFN	2007
113	MOBERG PHARMA AB	MOB	NOS	2011
114	MOBWATCHER AB	TINA	AT	2007
115	MQ HOLDING AB	MQ	NOS	2010
116	MR GREEN & CO AB (PUBL)	MRG	NOS	2013
117	MYSKOOP INTERNATIONAL AB	MYSC	AT	2008
118	MYTASTE AB	TASTE	NFN	2009
119	NC LAHEGA AB	NOCH	NFN	2013
120	NEDERMAN HOLDING AB	NMAN	NOS	2007
121	NET GAMING EUROPE AB	NETG	AT	2009
122	NETENT AB (PUBL)	NET.B	NOS	2007
123	NEUROVIVE PHARMACEUTICAL AB	NVP	NOS	2008
124	NEW EQUITY VENTURE INTERNATIONAL AB	NEVI.B	AT	2012
125	NEW NORDIC HEALTHBRANDS AB	NNH	NFN	2007
126	NEXAM CHEMICAL HOLDING AB (PUBL)	NEXAM	NFN	2013
127	NFO DRIVES AB	NFO	AT	2013
128	NORDIC FLANGES GROUP AB	NFAB	NFN	2007
129	NORDIC SERVICE PARTNERS HOLDING AB	NSP.B	NFN	2008
130	NORDIQ GOTEBOG AB	NDIQ	AT	2011

NB! Ved digital innlevering kan du ikke legge inn tekst her

131	NOVUS GROUP INTERNATIONAL AB	NOVU	AT	2007
132	OASMIA PHARMACEUTICAL AB	OASM	NOS	2007
133	ODD MOLLY INTERNATIONAL AB	ODD	NOS	2007
134	ODEN CONTROL AB	ODEN	AT	2013
135	ONLINE BRANDS NORDIC AB	OBAB	NFN	2007
136	OSCAR PROPERTIES HOLDING AB	OP	NOS	2013
137	PALLAS GROUP AB	PALS.B	NFN	2010
138	PARANS SOLAR LIGHTING AB (PUBL)	PARA	AT	2010
139	PETROTARG AB	PETR	NFN	2007
140	PHARMALUNDENSIS AB	PHAL	AT	2010
141	PLATZER FASTIGHETER HOLDING AB	PLAZ.B	NOS	2013
142	PLAYHIPPO AB	PLAY	AT	2012
143	PLEDPHARMA AB (PUBL)	PLED	NFN	2011
144	PRECOMP SOLUTIONS AB	PCOM.B	NFN	2007
145	PROCAST MEDIA AB	PROC	AT	2009
146	PROSTALUND AB	PLUN	AT	2013
147	QLIRO GROUP AB	QLRO	NOS	2010
148	RAILCARE GROUP AB	RAIL	AT	2007
149	RECYCTEC HOLDING AB	RECY.B	AT	2013
150	RESPIRATORIUS AB (PUBL)	RESP	AT	2012
151	RLS GLOBAL AB	RLS	AT	2012
152	ROBERT FRIMAN INTERNATIONAL AB	FRIM	NFN	2008
153	RUNAWARE AB	RWCA	AT	2008
154	SAFE AT SEA AB	SAFE	AT	2008
155	SCANDBOOK HOLDING AB	SBOK	NFN	2010
156	SENSEDETECT AKTIEBOLAG	SDET	AT	2009
157	SENZIME AB (PUBL.)	SEZI	AT	2008
158	SERSTECH AB	SERT	NFN	2013
159	SHARPVIEW AB	SHAW	NGME	2008
160	SIVERS IMA HOLDING AB	SIVE	AT	2011
161	SJR IN SCANDINAVIA AB	SJR.B	NFN	2007
162	SPAGO NANOMEDICAL AB	SPAG	AT	2012
163	SPORTAMORE AB	SPOR	NOS	2012
164	SPORTJOHAN AB	SJOH.B	AT	2010
165	STAR VAULT AB	STVA.B	AT	2007
166	STENDORREN FASTIGHETER AB	STEF.B	NFN	2011
167	SYNTHETICMR AB	SYNT	AT	2013
168	SYSTEMAIR AB	SYSR	NOS	2007
169	TARGETEVERYONE AB	TEONE	NFN	2010
170	TIGRAN TECHNOLOGIES AB	TIGR	AT	2008
171	TIKSPAC AB (PUBL)	TIKS	AT	2013
172	TOURN INTERNATIONAL AB (PUBL)	TOURN	AT	2013
173	TRANSFERATOR AB	TRAN.A	AT	2007
174	TRANSMODE HOLDING AB	TRMO	NOS	2011
175	TRUE HEADING AB (PUBL)	TRUE.B	AT	2010
176	VICTORIA PARK AB	VICP.A	NOS	2007
177	VIGMED HOLDING AB (PUBL)	VIG	NFN	2013
178	VINDICO GROUP AB	VSEC	AT	2011
179	VIVOLINE MEDICAL AB	VIVO	AT	2013
180	WATER JET SWEDEN AB	WJET	AT	2007
181	WESC AB	WESC	NFN	2008
182	WEST INTERNATIONAL AB	WINT	NFN	2007
183	WIFOG HOLDING AB	WIFOG	NFN	2009
184	WNTRESEARCH AB	WNT	AT	2010
185	WONDERFUL TIMES GROUP AB	WTG	AT	2008
186	XRF ANALYTICAL AB	XRF.B	AT	2007
187	XTRACOM CONSULTING GROUP AB	XCG.B	AT	2008
188	XVIVO PERFUSION AB	XVIVO	NOS	2012
189	ZETADISPLAY AB	ZETA	NFN	2011
190	ZINZINO AB	ZZ.B	NFN	2010

NB! Ved digital innlevering kan du ikke legge inn tekst her

A3: Ex-ante behavior

TABLE IV

Analysis of the ex-ante behavior of Swedish firms going public

For each of the variables listed the estimation is based on the specification described in chapter 6.3. The table only reports the coefficients on the IPO and post-IPO dummy variables. The number of observations in each sample is reported under the definition of the samples. The sample size varies slightly because of data availability. The IPO sample is winsorized by 5% for all dependent variables to remove extreme values. *Investment rate* is calculated by dividing fixed assets and long term investments by sales. All *growth rates* are calculated as the change from the prior year.

Dependent variable	Sample	Year -2	Year -1	Year 0	Adj-R ²
Investment rate	IPO sample	0,7644	0,1492	0,7399	0,5501
	163	(0,7719)	(0,1859)	(1,4023)	
	Regulated	1,3874	2,4860**	0,6168	0,6604
	41	(0,9111)	(1,9851)	(0,7112)	
MTF		0,5804	-0,9927	0,9212	0,5073
	122	(0,4555)	(-0,9665)	(1,3791)	
Growth rate of total assets	IPO sample	-0,3725***	-0,0710	0,0693	0,0592
	179	(-3,0311)	(-0,7066)	(0,8466)	
	Regulated	-0,2868	-0,2180	-0,1151	0,1595
	43	(-1,2303)	(-1,2704)	(-0,7277)	
MTF		-0,3737**	-0,0227	0,1241	0,0149
	136	(-2,5492)	(-0,1783)	(1,2704)	
Growth rate of sales	IPO sample	-0,2983	-0,3065	0,0322	0,0455
	172	(-0,9928)	(-1,1915)	(0,1537)	
	Regulated	-0,2157	-0,0026	0,1863	0,0279
	43	(-0,4485)	(-0,0070)	(0,6060)	
MTF		-0,2944	-0,3686	-0,0315	0,0340
	129	(-0,7763)	(-1,0900)	(-0,1154)	

NB! Ved digital innlevering kan du ikke legge inn tekst her

TABLE IV

(Continued)

Dependent variable	Sample	Year -2	Year -1	Year 0	Adj-R ²
Growth rate of employment	IPO sample	-0,0247	0,0851	0,1134*	0,0838
	154	(-0,2423)	(1,0141)	(1,7385)	
	Regulated	0,3005*	-0,0401	0,0494	0,3458
	43	(1,8747)	(-0,3819)	(0,5563)	
	MTF	-0,0466	0,1547	0,1470*	-0,0071
	111	(-0,3562)	(1,2814)	(1,6513)	

(***), (**), (*) coefficient significant different from 0 at the (1), (5), (10) percent level or less, respectively