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Why do companies switch listings?

Empirical evidence from operating performance of Swedish companies

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ABSTRACT

We analyse the factors behind the decision to switch from alternative markets to the main market and its effects for Swedish companies between 2000 and 2013. In doing this, we discover that the ex-ante probability of a listing switch increases with size, growth and industry valuation. The ex-post period is also studied to match cause with effect and we find a clear trend of decreasing profitability, in addition to controlling shareholders decreasing their ownership and increasing institutional ownership. The decision to switch is, according to our findings, based on both internal firm characteristics and external factors. Companies seem to switch listings to find relevant peers as they outgrow and outperform their industry counterparts on alternative markets, in addition to owners wishing to diversify their holdings with the benefit of better liquidity on the main market. Our results support the managerial timing hypothesis, confirm that adverse selection is an issue with listing switches and show that the broader economic purpose of alternative markets being growth markets might not always be fulfilled because of it.

Keywords: Stock Markets, Listing Switches, Alternative Exchanges, Firm Characteristics

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INTRODUCTION

In the past decades, less regulated stock markets have emerged in a number of countries around the globe. Nasdaq First North in the Nordics and the Baltics, Alternative Investment Market (AIM) in the United Kingdom and the Growth Enterprise Market (GEM) in Hong Kong are a few examples of this trend, materializing a flight from increased regulatory requirements for publicly listed companies. Looking back, progress in the area has mainly been aimed towards increasing the present level of regulation on existing, larger and more prestigious stock exchanges. One of the main reasons behind this has been to accommodate evolving investor preferences, which are characterized by increased demand for tighter regulatory practices as a reaction to large company scandals and frauds such as Enron and WorldCom, according to Ribstein (2005).

The United States spearheaded this progression with the Sarbanes-Oxley act in 2002, which set higher regulatory standards for all U.S public company boards, public accounting firms and management - thus exemplifying a worldwide increase in requirements of listed companies. What was not anticipated by US legislators was that not all investors, and in turn not all companies of varying sizes and industries, preferred tighter regulation due to the benefits to investor protection not outweighing the increased costs to the individual company. Doidge, Karolyi and Stulz (2009) further detail this choice as a tradeoff between the costs of improved investor protection against better financing opportunities which the company would expect at larger, more regulated exchanges. As a result, less regulated markets not only emerged, but thrived. AIM is the prime example, which has attracted over 1600 companies through IPO's, listing switches and cross listings since its emergence in 1995. Several of these have been US companies, further indicating that increased regulation was not in demand by all. This success in the UK has given rise to alternative markets in other countries to meet the needs of smaller companies not eligible for the main market. According to Vismara, Paleari and Ritter (2012) a total of eleven alternative markets entered into existence in the UK, Germany, France and Italy between 1995-2009. Of those eleven, five have survived, explained by the theory that such markets have been successful in hot periods, and has proceeded to collapse in cold ones. IPO activity in said period has been skewed to favour alternative markets in Europe, with around 2900 compared to 845 on the main markets. This trend is not exclusive to IPO's, as it is also evident with listing switches. Over the same period, Vismara et al (2012) documented 282 companies that switched down from the main market to AIM, compared to only 90 that switched up from the AIM.

The purpose of alternative markets are slightly ambiguous, as they do not only provide a less regulated environment to those who switch down from more regulated exchanges, but also enable companies to try life as public companies with less stringent requirements before graduating to the main market. For this reason, alternative markets are often labeled growth- or sequential markets,

thought to have the purpose of enabling companies to take a two-step approach to main market entry. Three main types of alternative markets has been identified by Vismara, Paleari and Ritter (2012): Sequential, Sectorial and Demand-side. Sequential provides means to finance growth and allows a company to be public without being under the full discipline of the main market. Sectorial only allows admission to companies in the intended sector. Demand-side are not officially regulated, meaning principal regulatory requirements for organised markets do not apply.

Our Swedish home market presents a particularly interesting environment for studying alternative markets and listing switches to the main market. In recent years, the Swedish market has seen significant activity in listing switches, while the main market IPO activity has stagnated - providing access to a sufficiently sized sample to study, and also raises the question of why this trend has taken place. In addition to this, the Swedish alternative markets First North, Aktietorget, NGM Equity and Nordic MTF use the same or highly similar technical trading systems. This allows for over-the-board comparisons between companies on different exchanges without contaminating the results with biases due to technical differences as a reason for the switch. For detailed review of the Swedish markets, see Table I in Section I. Sweden stands in contrast to the US, where differences in trading systems between Nasdaq and New York Stock Exchange have been cited as a beneficial reason to change listing location, depending on the size of the company according to Reinganum (1990). It should also be noted that a number of companies on the Swedish alternative exchanges have communicated that they are currently preparing to switch to the main market during 2014, indicating that the trend is continuing and further validates the relevance of the topic.

While the decision to switch down to a less regulated market can likely be explained by a cost- and benefit analysis depending on the level of regulation between markets, the decision to switch up is more clouded in mystery. Stated motivations of managers remain reasonably clear according to previous academic literature, such as seeking increased institutional ownership, better liquidity, transparency, more attention from media and investors in addition to gaining access to better capital markets. However, firm characteristics and how the operational performance is connected to the switch to the main market is still unexplored territory. The purpose of this thesis is to better understand the underlying reasons to why and when companies switch from alternative to main markets. Also, this could help investors predict which companies are likely to do so and how to interpret this decision. This boils down to the research question;

Why do companies switch from alternative markets to the main market?

We intend to answer this by studying both the ex-ante determinants and the ex-post characteristics of companies that switch. Ex-post studies have been done numerous times and, as discussed by Cowan,

Carter, Dark and Singh (1992), the usage of solely an ex-post data limits the possible interpretations. Therefore, we draw inspiration from a study of the IPO-decision by Pagano, Panetta and Zingales (1998). Using the same method, we perform ex-ante and ex-post tests to look for causes and effects of listing switches. In addition to this, we extend the thesis to study changes in ownership of controlling- and institutional shareholders. We aim to craft a coherent story explaining why companies switch listings, thereby discerning the underlying motivations. To the best of our knowledge, this is the first time these methods have been used to study listing switches.

Using a probability model, we find statistically significant ex-ante evidence that size is one of the most important factors in determining whether a company switches. In addition, growth and industry valuation are factors that also increase the probability of a switch occurring. Among the other significant factors in the test, higher leverage is the only one that implies a decreasing likelihood. Surprisingly, profitability has no explanatory power in our model. Somewhat contradictory, we also observe that the switching companies in most industries display a higher pre-switch profitability than their industry peers on alternative markets. When testing the ex-post effect on performance and capital structure, our main finding is a strong, statistically and economically significant decline in profitability in the years after the switch, consistent with previous research such as Papaioannou, Travlos and Viswanathan (2003). We thus conclude that companies likely do not switch in anticipation of future profit- or growth opportunities. Instead, we find it likely that companies time the switch to coincide with temporarily strong performance. Furthermore, the controlling shareholders before the switch significantly decrease their ownership fraction both in the time leading up to the switch and in the subsequent years, from approximately 54 percent to 40 percent on average. Institutional ownership also increases in the years surrounding the switch, from a median fraction of 12 percent one year before to 21 percent two years after. Although outside the scope of our thesis, we speculate that the large owner sell-offs could partially explain the previously documented post-switch negative stock price drift, as documented by Sanger and McConnell (1987).

Our findings suggest that companies switch from alternative markets after outgrowing peers, possibly following a performance peak, enabling owners to reduce their ownership with the benefit of higher trading liquidity on the main market. In addition, the switch allows the company to find more relevant peers and attract a higher degree of institutional ownership. Since profitability declines after the switch, we find support for the managerial timing hypothesis and the existence of an adverse selection issue. Owners selling shares both after announcement and ex-post, combined with our ex-ante evidence of valuation affecting the switch decision, also allows us to back up Zingales (1995) theory on value maximization. Increased institutional ownership points to the comparability of listing switches to index inclusion effect, an effect discussed by Elliott, Van Ness, Walker & Wan (2006), possibly driven by more favourable comparisons with companies on the main market. However, the

positive index inclusion effect is not observed on either operating- nor stock performance. According to Gillian and Starks (2003), the increase in institutional ownership points to a trading liquidity increase as well, since institutional investors do not invest in illiquid stocks.

On a broader scale, our study indicates that investors might benefit from taking a cautious approach to companies that switch to the main market, given that information asymmetry gives rise to managerial timing tendencies. Since well-documented positive announcement returns and negative post-switch drift exist, the market appears to systematically misinterpret the switch as a signal, and could thus benefit from increased understanding of the decision to switch and the motives behind it. Our study also highlights the need to understand how companies use signalling when on the alternative exchange and indicates that alternative markets do not always fulfill their purpose as growth markets. The purpose of growth markets is to enable a two-step approach to main market entry, as opposed to a direct main market IPO. If that purpose is to be fulfilled, the switching firms must be relevant peers to main market listed companies. Our study points to this not always being the case in Sweden, even if this is signalled ex-ante. Investors need to realise that a listing switch from alternative markets is not always a positive signal, as it can simply be driven by owner motivations to serve as means of an end - to cash out.

This study is organized as follows. In Section **I**, we describe the exchanges on the Swedish market. In Section **II**, we provide an overview of previous research on listing switches and related research. This is followed by Section **III**, where we describe and discuss the data used and how it was obtained. Section **IV**, outlines the methods and techniques used to analyse the data and relates them to methods used in previous studies. In Section **V**, we present regression outputs and analyse the result. In Section **VI**, we conclude our findings followed by Section **VII** where we discuss potential future research.

I - History and Description of Swedish Exchanges

I) *Nasdaq OMX Nordic List*

The Nordic List, consisting of Swedish, Danish and Finnish listed companies, has existed since October 2006. It is segmented by Large-, Mid- and Small Cap, depending on the firm's market capitalisation. Large Cap consists of companies with market capitalisations over €1bn, Mid Cap between €150m and €1bn, and Small Cap below €150m. When Nasdaq bought OMX, the Swedish stock market operator, in 2007 to form the Nasdaq OMX Group, the Stockholm Stock Exchange and Nordic List was included in the transaction, effectively putting it under control of Nasdaq. Before the introduction of the Nordic List, the Stockholm stock market consisted of the A-, OTC- and O-list, detailed below. Further, Nasdaq employs a dealer's market in which market participants

are buying and selling through a market maker, as opposed to each other directly. The system is managed through a telecommunications network, connecting sellers and buyers to market makers electronically. Currently, the Nordic List has the highest listing cost and yearly fee of the Swedish exchanges (Nasdaq OMX, 2014).

II) *A-list*

The A-list existed before the Nordic List and consisted of the largest listed companies in Sweden and had the highest regulatory requirements. It was further segmented by trading volume. Companies were required to have had primary operations of the present business for at least three years and be able to present and verify accounting documents for these years, to have documented profit earnings capacity, in addition to having a market value of at least SEK 300m and at least 2000 shareholders. Companies were also required to prepare a Stock Exchange listing prospectus, a requirement which was voided if the company previously had been listed on the OTC- or O-list for at least three years. Finally, a company would have to meet the requirements of the Stockholm Stock Exchange regarding the ability to provide information to the stock market, internal financial controls, management and composition of the board of directors. On top of this, an ownership structure where the general public held at least 25 percent of the equity ownership and 10 percent of voting rights was required (Nasdaq OMX, 2014).

III) *OTC-list*

Intended as the list for mid-sized companies that did not fulfil the regulatory criteria of the A-list, the OTC-list was positioned between the A- and O-list. Compared to the A-list, the OTC-list shared numerous requirements: at least three years of verifiable primary operations history, documented capacity to generate profits, being able to meet the Exchange requirements in regards to the ability to provide information to the stock market, financial controls, management and composition of the board of directors. In addition, companies were required to present a Stock Exchange listing prospectus and had to possess an ownership structure in which at least 25 percent of the equity and 10 percent of the votes were owned by the public. Unlike the A-list, only 500 shareholders and a market capitalisation of SEK 50m was required (Nasdaq OMX, 2014).

IV) *O-list*

The O-list had the lowest requirements for listing and was intended for smaller companies that did not fulfil the requirements of the OTC- and/or A-list. Companies were still required to meet demands regarding management, board of directors composition, financial controls and ability to provide information, in addition to preparing a Stock Exchange listing prospectus. Over 300 individual shareholders and an ownership structure under which 10 percent of the equity and 10 percent of the votes belonged to the general public were required, but the requirements regarding a

proven earnings capacity were not mandatory. Also worth noting is that the O-list was affected by different taxation rules for private investors regarding inheritance-, gift- and wealth tax, resulting in several large companies switching down from the A-list in the late 90s and early 00s (Nasdaq OMX, 2014).

V) *New Market*

The New Market (Nya Marknaden), since 2006 called First North, was founded by the Stockholm Stock Exchange in 1998. The designated growth market was advertised as an option for smaller companies that wished to benefit from being publicly traded without the costs associated with an extensive listing process. However, from a legal perspective, the companies on the New Market were considered as unlisted due to its status as a Multilateral Trading Facility (MTF). The reason for this was to enable companies to evade the rules regarding extensive provision of information to investors. Instead, the companies were under the supervision of a so called sponsor - a trading member of the Stockholm Stock Exchange, often one of the smaller sized brokerage firms. With a sponsor, the company could enter the New Market, to which the Stockholm Exchange provided the trading system and monitored the trading. The sponsor was under agreement with the Stockholm Exchange to ensure that said company fulfilled their limited requirements. Through the New Market, companies that were not ready for listing gained access to capital markets and obtained pricing of their equity. Over time, the market grew in popularity and consisted of over 30 companies in 2005 (Nasdaq OMX, 2014).

VI) *First North*

In 2006, OMX developed the New Market into First North, a concept which was first launched and tested in Denmark. Offering a range of new services and renaming sponsors Certified Advisors, the goal with First North was the same as the New Market, but with increased flexibility. Trading is done through the same system as OMX's regulated markets, meaning that all trading members of the Stockholm Stock Exchange have had access to First North since its inception.. Although requirements are not as strict as for listed companies, there are still several rules: At least 10 percent of shares must be in public ownership, companies must publish a prospectus to list, the agreement with the Certified Advisor must be maintained at all times, at the time of admission the price must be at least €0.5 per share and shares must be registered electronically. In addition to this, information disclosure rules are similar to the main market. First North has been successful in attracting listings and in early 2014, it consisted of around 120 companies (Nasdaq OMX, 2014).

VII) *Nordic Growth Market - NGM Equity and Nordic MTF*

The Nordic Growth Market consists of NGM Equity, Nordic Derivatives Exchange and Nordic MTF. NGM Equity is a regulated exchange, while Nordic MTF is NGM's First North equivalent.

NGM is under the ownership of Börse Stuttgart since November 2008 and has existed since 1993 under several different names, the most recent being Stockholm Börsinformation (SBI). For listing at NGM Equity, the following is required: A prospectus, presenting accounting documents, a documented earnings capacity and/or sufficient financial resources to maintain operations for 12 months after listing, at least 10 percent of the equity under public ownership and at least 300 shareholders. Furthermore, the board of directors, management, financial controls and the company's ability to provide information to the stock market must meet the demands of the NGM Equity Exchange. Regarding Nordic MTF, the listing rules and requirements are fewer and less demanding. Verifiable earnings capacity and/or a description of how financing will be acquired to maintain operations for 12 months following listing is required, as is that 10 percent of ownership must be public and the company must have at least 300 shareholders, in addition to meeting the demands of the NGM Exchange. Much like First North's Certified Advisors, NGM utilises so called Mentors who are responsible for the enforcement of said company's information providing procedures (NGM, 2014).

VIII) *Aktietorget*

Aktietorget was founded in 1997 after the exchange monopoly was repealed and is today classified as an MTF. It uses the same trading system as Nasdaq OMX and is designated as a sequential market with less stringent listing requirements than its competitors. Listing requirements can be summarized in three main points: Being able to provide financial information to investors, being able to provide accounting documents for the past two years or as long as the company has existed and being able to present them in a prospectus, in addition to having at least SEK 2m in equity and 200 shareholders after listing. Requirements on historical financial information can be voided if investors can be deemed to have enough information about the company to acquire an informed view. Also worth noting is that Aktietorget has been plagued throughout its existence by several corporate scandals involving companies traded on their exchange (Aktietorget, 2014).

Table I
Listing requirements and comparison of listing costs

Stock Exchange	Market Capitalization	Number of shareholders	Min. Public Ownership	Cost of listing, annual (initial) fee
OMX Nordic	EUR 1m	“Sufficient amount”	25%	N/A
A-list	SEK 300m	2000	25%	N/A
OTC-list	SEK 50m	500	25%	N/A
O-list		300	10%	192 000-3 000 000 (550 000)
First North / New Market		“Sufficient amount”	10%	200 000 (-)
NGM		300	10%	120 000 (100 000)
Aktietorget	SEK 2m	200		120 000 (35 000)

The table details the minimum demands as stated in the listing guidelines of the respective exchanges. The listing costs are from 2005 and denoted in SEK.

II - Previous Literature

Previous research has studied alternative markets and their purpose in general, as well as the effect that varying levels of regulation has had on their success and operations. Ying, Lewellen, Schlarbaum and Lease (1977) asserted, among other things, that one generally satisfied purpose of alternative markets is to facilitate the issuance of new equity by lowering the requirements imposed on listing companies. This is something that is in part confirmed by an older study by Goulet (1974) for market behaviour in general, who find a remarkably high occurrence of new equity issuances by recently listed companies. In relation to existing main markets, alternative markets seem to have bridged a lack of structure and met the demands of smaller companies in need of access to capital markets. Engel, Hayes and Wang (2004) strengthen this statement through their research on the effects of the Sarbanes-Oxley act by confirming that increased regulation seems to deter private firms from seeking financing in public equity markets.

Historically, IPO's on main markets have occurred predominantly more frequently than listing switches and thus the amount of research on the topic of IPO's is extensive. Academic research has studied firms that choose to go public from a variety of different perspectives in order to explain the determinants of such a significant decision over the course of the firms existence. One such study by Pagano et al (1998) examines the determinants of the decision to go public by comparing the ex-ante and ex-post characteristics of public and private Italian firms using a unique dataset provided by credit institutions. They find that the probability of an IPO increases with the size of the firm and the

corresponding industry market valuation, but more interestingly that public firms also seem to enjoy benefits such as a lower cost of credit. Such discoveries are relevant to our study, since the choice itself to go public and what determinants that choice is based on should be comparable to the decision to switch listing location. According to Zingales (1995), the IPO decision was considered a simple stage in the growth process of a company, but has since then become more complicated as several large US companies have gone private after long periods of public ownership. Consequently, not only the determinants behind the decision to go public should be similar to listing switches, but also the intended benefits. Holmström and Tirole (1993) list the following gains related to going public; Owner diversification, access to capital markets, reduced cost of capital, increased liquidity and outside monitoring to improve corporate governance.

Baker and Johnson (1990) find that the general motives behind the choice to list are both economic and noneconomic, and relates to factors such as prestige, visibility and liquidity. Literature on this subject has in many cases confirmed the perceived benefits. The empirical evidence of Baker, Powell and Weaver (1999) support the existence of changes in visibility of companies switching between US exchanges which, when connected to Merton (1987), asserts that public visibility can increase the market value of shares in imperfect markets, thus creating value through the listing switch. Kadlec and McConnell (1994) strengthen the argument, as they find that announcement returns are in fact associated with an increase in the number of registered shareholders and degree of institutional ownership, pointing to that investor recognition is a source of value from changing listing.

Sanger and McConnell (1986) shed light on the so called liquidity hypothesis - that improved liquidity provided by exchange trading stimulates demand and gives rise to permanent increases in stock price. Amihud and Mendelson (1986) take this a step further and find that the higher yields required on stocks with higher spreads gives firms incentives to increase the liquidity of their securities, supporting the decision to switch listing location in order to seek benefits in liquidity. However, it has been shown that this decision might not be applicable for all firms and that it is possible that it depends on the size of said company if not only the regulations differ, but also the trading system. Christie and Huang (1994) show persistent improvements in liquidity and reduction in trading costs for firms moving to the NYSE or AMEX from Nasdaq, while Clyde, Schultz and Zaman (1997) show that spreads doubled for a sample of companies between 1992 and 1995 switching from AMEX to Nasdaq, with spreads being a proxy for trading liquidity. Kedia and Panchapagesan (2011) find companies moving from Nasdaq to NYSE tend to issue more debt and equity, in addition to performing asset transactions, suggesting that the decision to change listing is can also be related to corporate objectives. When studying the differences between Nasdaq and NYSE, Reinganum (1990) concludes that for small, low-volume firms, the competitive dealer system employed by Nasdaq may offer the best liquidity. Cowan et al (1992) continue to build on this study of Nasdaq and NYSE,

focusing on companies choosing to stay on the less regulated Nasdaq exchange even when they are eligible for a listing switch. They conclude that companies seem to change listings if their liquidity is lower than what would be expected compared to their peers - indicating that liquidity can indeed affect the switching decision.

In one of their earlier studies, Sanger and McConnell (1984) discuss the signaling effects of a listing switch. Being accepted by an exchange with more stringent requirements is believed to be a signal of management's confidence in the company's future performance, which can translate into increased value for shareholders, a factor which they argue should be the ultimate goal of a listing switch. This notion on signalling is shared by Ying et al (1977), who argue that value can be created by emission of significant signals to the market. Not all motives may be in the best interests of shareholders though, as Van Horne (1970) notes that the prestige of listing at a more regulated market does not always translate into shareholder value. However, listing switches can be associated with problems, the first and foremost of them being related to the managerial timing hypothesis. The phenomenon involves managers of switching firms tending to change listing location after a period of unusually strong performance, which is then followed by an unavoidable drop as stock performance reverts and normalizes. Dharan and Ikenberry (1995) establish that the relation between poor post-listing stock return performance and managerial timing is connected and that the theory is most applicable to managers of small firms for whom the initial listing requirements pose a significant enough barrier to entry. For larger firms that are more widely held by institutional investors, no evidence of managerial timing or subpar post-listing stock return performance is found. Webb (1999) develops this research and confirms the existence of poor post-listing stock performance following strong announcement returns, while discovering that higher pre-listing stock return performance is associated with a worse post-listing decline.

This begs the question if this stock return trend persists through time, place and trading venue. Sanger and McConnell (1987) confirm that it is not due to time periods, outlier observations, original trading venue, characteristics of target trading venue or to post-listing corporate control events. Most of the discussed research has only been done with respect to the US, but Hwang and Jayaraman (1993) confirm the existence of similar trends on the Tokyo Stock Exchange, thus implying that this might not be a US-specific issue. Outside the US and Japan, research on the topic is significantly more scarce. Jenkinson and Ramadorai (2013) have studied the topic in the UK by looking at switches between the London Stock Exchange and the AIM who share the same trading systems but differ in regulatory requirements. They find that switching to a more regulated market is met with positive announcement returns, in line with expectations, thus implying this is likely a global phenomenon. However, trends in operating performance are found to be more ambiguous, except for a strong growth in assets in the years around the switch. Conversely, firms switching to a less regulated market

show negative announcement stock returns, which is followed by positive long-term abnormal returns. They also find some improvements in operating performance among companies switching to the less regulated market, possibly driving the long-term share performance, and conclude that alternative markets such as the AIM might be a suitable environment for smaller companies.

While researchers have examined the effects of listing switches on stock performance, few published articles connect listing switches to operating performance. Papaioannou et al (2003) bridge this lack of research by examining the operating performance of US-based firms that switch from less to more regulated exchanges between 1978 and 1996. They find that firms that decide to switch listings tend to experience deteriorating operating performance in post-listing years, which they argue is associated with the switch itself and not contaminated by other explaining factors, such as industry downturn cycles. Furthermore, they argue in favor of the managerial timing hypothesis and conclude that it is similar to the way that managers have been shown to opportunistically time important corporate decisions such as IPOs, equity issues, debt issues and share repurchases. While this could help explain negative post-switch stock performance, their results show low statistical significance except for a subset of smaller companies switching from the Nasdaq to AMEX. In a later article, Papaioannou, Travlos and Viswanathan (2009) conclude that the majority of research on the subject has reported evidence that managers time various corporate decisions, but that they have more reason to use the listing change to generate positive investor reactions, instead of engaging in opportunistic behaviour such as timing. They conclude, much like Dharam and Ikenberry (1995), that the motive of timing is most relevant for firms that are narrowly eligible for listing.

Though the vast majority of research on the topic is US-based, the case in Europe is of interest due to the popularity of alternative markets and their relative successes. As previously mentioned, Vismara et al (2012) find that that more UK companies switched down to the less regulated AIM than up to the more regulated main market. The smaller Swedish market, our chosen market to study, stands in contrast to this as transfers from the less regulated to the main exchange appears to be much more frequent in relative terms.

Given the well-developed Swedish market, which has several alternative exchanges, research conducted on the Swedish market on the topic of listing switches is limited or non-existent. A Master's thesis from the Royal Institute of Technology in Stockholm by Toll and Gustafsson (2011) examines listing switches on the Swedish market between 2000 and 2010 and find evidence which supports previous academic findings of pre-switching stock price overperformance and post-switching underperformance, one year before and after. Similar results are found in a Bachelor's thesis by Wange and Wikman (2011). Together, these studies strongly suggests that the Swedish market displays similar characteristics to foreign markets in terms of stock performance around listing

switches. The limited research is somewhat surprising, since Sweden provides a suitable market for comparisons across different alternative markets due to the technological similarities between market.

The Swedish market should also be suitable for tests of ownership changes in relation to listing switches, given the tradition of strong institutional ownership in the country, as described by Hogfeldt (2005). While previous studies, such as Dharan and Ikenberry (1995), has linked institutional ownership and listing switches ex-post, this connection has not been extensively researched. We believe they are connectable mainly in two aspects: through the indexing- and demand effect. The existence of the latter was confirmed by Chang and Hong (2012), who state that stock prices can be materially influenced by local supply and demand. This could help explaining listing switches, as the change of trading location and increase in institutional investor attention can affect demand similarly. Also relatable is Hong and Kacperczyk's (2009) study of tobacco- and gambling firms, which showed that if institutional owners shun a stock for any reason, there is a significant negative price effect on the stock compared to its peers. Thus, a higher degree on institutional ownership should be desirable in general, and be more probable to be found at the main market than at an alternative exchange.¹ Much like an indexing effect, described by Elliott et al (2006) as a positive price reaction due to being included in a stock index, a listing switch could incur the same effect by moving to an exchange where peers are more alike.

In combination with the ongoing trends of listing switches versus main market IPO's - we ultimately find it an interesting opportunity to study the listing switch decision and its determinants in more detail than has previously been done.

III - Data

I) Data Collection and Sources

The data used is collected from a number of sources, including various stock exchanges and the Swedish House of Finance, in addition to several public and limited-access databases. To the extent of our knowledge, there exists no established, comprehensive, error-free database that documents the listing switches of Swedish companies between different exchanges, in particular for those originating on the alternative exchanges. Because of this, we combine different sources of data and then semi-manually construct a dataset documenting the Swedish companies that have been listed on the alternative exchanges over the chosen sample period.

Information on historical listing switches, new listings and delistings is collected from the websites and personnel of the Swedish stock exchanges in order to identify all companies that have been listed

¹ Investment policies of funds (Fondbestämmelser) usually state that the fund may only invest in stocks on regulated markets, thus excluding the unregulated alternative markets.

on any of the alternative exchanges. The information is cross-referenced, allowing us to track the movements of individual companies as they transition between markets through listing switches. To further verify the historical listings, we cross-reference information with the official tax records of the Swedish Tax Authority, which also tracks the corporate actions of most public companies.

Wharton Research Data Service (WRDS) Compustat database provides the main portion of our accounting data for the sample companies, obtained using ISIN identification codes from the above-described combined dataset. Compustat contains 99 000 securities over the globe with annual company data dating back to 1950, and quarterly to 1962. Despite its impressive scope, Compustat is not able to provide accounting data for all companies needed - forcing us to complement the dataset with missing data using three additional sources; first, Thomson Reuters Datastream, second Bloomberg and third the Swedish House of Finance-provided Finbas, the latter of which we accessed indirectly through queries. Datastream consists of 75 000 active securities and 30 000 inactive ones, covering 175 countries with 50 years of historical data while Bloomberg has similar scope with comprehensive coverage of 45 000 companies worldwide. Finbas is a Swedish database with coverage of daily price data, corporate actions and business fundamentals from all Nordic stock exchanges, MTF- and OTC markets, updated quarterly. The valuation data for a number of Swedish MSCI-indices for different industries (based on GICS-codes, see Section IV, Method) is also drawn from Bloomberg. We also collect data from SIS Ägarservice to perform the extension test of differences in controlling ownership before and after the listing switch for a subsample of firms in the treatment group.²

Finally, errors and missing values that were consistent over all databases in our dataset were corrected manually with public data found outside the scope of the above mentioned databases - more specifically annual reports gathered from the websites of the individual companies and various press releases from the respective exchanges.

II) Dataset

Using the above-described combined historical dataset, we identify a raw sample of 483 companies that are, or have been, listed on the alternative exchanges during any time period between 1997 and 2013. We limit the sample period for the treatment group to the years between 2000 and 2013, thus excluding any switches taking place between 1997 and 1999.

The reasons behind this decision are numerous. First, the sample size decreases dramatically due to lack of reliable data being available that far back for many smaller companies. Thus, it would prevent

² Although most companies also report an overview of the largest shareholders in their annual reports, such information is less reliable for our purposes since they usually report the end of the year ownership structure and often list broker institutes rather than the identity of the actual owners.

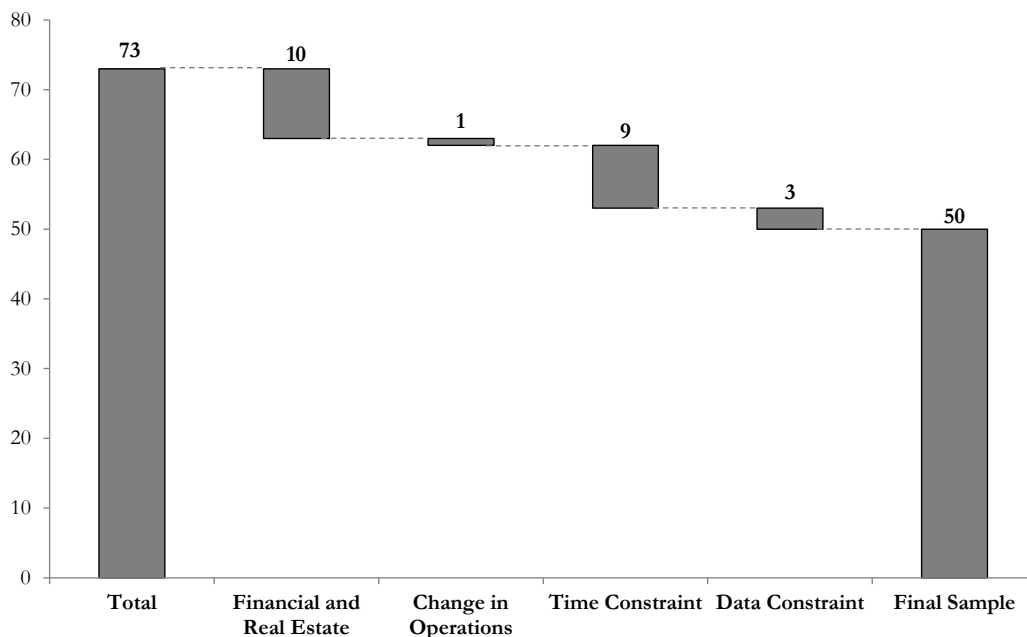
meaningful and significant comparisons between the treatment- and control group. Second, and perhaps more importantly, the alternative markets we study could not be considered to have reached a desired level of maturity by this time. To put the information in perspective, 1997 was the year when Aktietorget first came into existence. A large number of the observations from those early years were also companies on the SBI-list, which were then penny stocks - stocks traded unofficially, representing lower quality companies in general. As we did not wish for these stocks to contaminate the remainder of the dataset, the time constraint is implemented to ensure the quality of the data. As the alternative exchanges have become more mature with time, they have grown considerably. With the increase in number of listed companies in the subsequent years, we gain access to much larger quantities of significant accounting data.

On the topic of data availability, it is important to note that the historical records of smaller and often delisted companies on the alternative exchanges are less available when compared to main-market listed companies, especially in the international databases. In particular, this applies to companies that were public only for shorter periods of time. It is not uncommon that data is unavailable for the fiscal year in which the company is delisted since no year-end financial statements were ever published. The same applies to companies that have been acquired and subsequently delisted.

III) Treatment Group

We identify a raw treatment group of 73 firms that have switched to the O-, A- or the Nordic-list from one of the alternative exchanges between 2000 and 2013, constituting our raw treatment sample. We drop 10 firms due to being financial-, investment- or real-estate companies, which is consistent with established academic practices for the relevant studies in Section II, Previous Research. Furthermore, we closely examine if the listing switch coincided with a major business overhaul and/or if the company switched industry, and subsequently drop one company. The reasoning behind this is to ensure comparability between ex-ante and ex-post data. Next, we screen the remaining companies in order to find those that had been listed for less than one year on any of the alternative exchanges before switching to the main market. With no historical data from their stay at an alternative market, we cannot study ex-ante their decision to switch. By doing this, we drop an additional 9 companies from the treatment sample. Finally, we drop three companies where reliable data is unavailable. This results in a final treatment sample of 50 companies that have transferred to the main market from an alternative exchange. *Graph I* below shows an overview of the treatment sample progression from raw to finalized.

Graph I
Screening of the Treatment Group



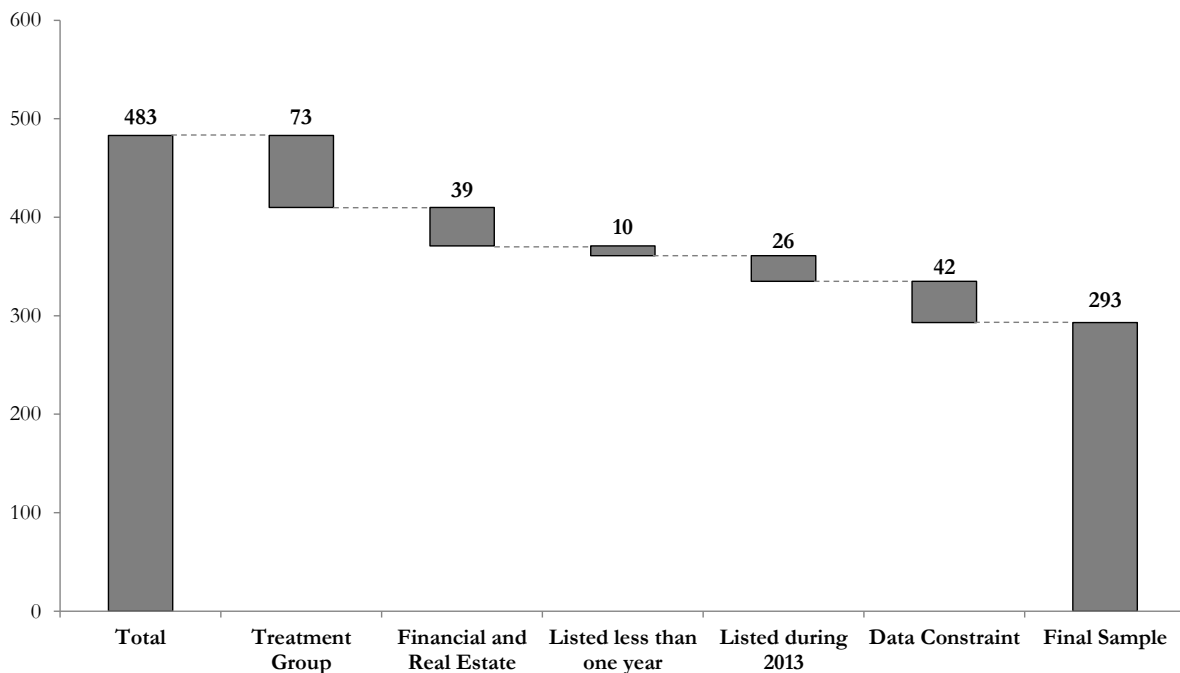
Screening process of the treatment group of companies. The initial sample in represents all listing switches to the main market between the years 2000 and 2013.

Finally, we collect ownership data from SIS Ägarservice for a subsample of the final treatment group. Because of database limitations, we are able to obtain usable data for 31 companies, which primarily excludes foreign companies, secondary listings and delisted companies.

IV) Control Group

The raw Control group is drawn straight from the raw sample of 483 firms detailed above. First, the raw treatment sample, consisting of 73 companies, is dropped. After that, 39 financial-, investment- and real estate companies are dropped. Following this, 10 companies are removed due to being listed for less than a year meaning insufficient data is available. With the same rationale, 26 companies listed during or after year 2013 is removed due to the resulting lack of at least two years of data at the time of writing. Finally, we drop 42 companies due to data constraints. This results in a final screened control sample of 293 companies that currently are, or have been, listed on the Swedish alternative exchanges but have not switched to the main market. *Graph II* gives an oversight of the described screening process.

Graph II
Screening of the Control Group



Screening process of the control group of companies. The initial sample in represents all identified companies listed on the Swedish alternative exchanges between the years 1997 and 2013.

V) Summary Statistics

In the tables below, we present descriptive summary statistics on the final samples after screening and data adjustments, presented as the whole sample, the control- and the treatment group. In total, the final sample contains over 2500 firm-years of data. **Sales** represents turnover expressed in millions of SEK. **Sales Growth** is annual change in sales. **Sales Logarithm** is the natural logarithm of sales. **Total Assets** and **Book value of Equity** are expressed in millions of SEK. **Debt** represents total interest-bearing debt, both long- and short term, expressed in millions of SEK. **EBITDA**, **EBIT** and **Net Income** are expressed in millions of SEK. **Taxes paid** is taxes divided by EBIT. **Leverage** is interest bearing debt divided by the sum of interest bearing debt and the book value of equity. **Cash** is cash and cash equivalents divided by total assets. **ROA** is EBITDA divided by the previous year's closing value of total assets.³ **ROE** is similarly calculated using EBITDA over the previous year's book value of equity. **ROS** is EBITDA divided by sales, representing the EBITDA-margin of the company. **Capex** is investments in fixed assets, defined as property, plant and equipment (PPE), divided by the previous year's closing value of fixed assets. Due to inconsistencies between different data sources, we are unable to obtain corresponding data for investments in intangible assets and total intangible assets. Values for **P/S**, **MTB** (P/B) and **P/E** represent the yearly valuation ratios for

³ Another common calculation of Return on Assets is EBIT divided by the average of the previous and the current years' closing balances of total assets. We choose to use EBITDA to improve comparability between firms, and we use only the closing balance of assets to be consistent in method with Pagano et al (1998). EBITDA also functions as a serviceable proxy for cash flows.

GICS level-1 (2 figures) MSCI industry indices consisting of companies trading on the Swedish main market. The ratios are price to sales, market to book (price to book) and price to earnings. **Time listed** is the number of years that companies in the sample have been listed on both an alternative exchange and/or the main market. For companies that are still active, we measure the time listed until the end of the first quarter of 2014. **Time listed before switch** is the time in years that companies in the treatment sample have been listed on one or several alternative exchanges before transferring to the main market, ignoring switches between them.

Table III
Summary statistics for the whole sample

Variables	Mean	Median	Std Dev.	Min.	Max.	Obs.
Sales (MSEK)	282,3	36,3	1386,3	-0,9	24400,5	2523
Sales Growth	0,35	0,13	0,85	-1	2,96	2042
Sales Logarithm	3,48	3,75	2,39	-7,47	10,10	2366
Total Assets (MSEK)	383,5	51,1	2211,4	0,1	38971,2	2523
Book value of Equity (MSEK)	216,0	22,6	1439,0	-82,8	23580,5	2523
Debt (MSEK)	68,6	1,0	563,0	0,0	14580,6	2523
EBITDA (MSEK)	29,7	-1,0	269,8	-630,5	4963,1	2523
EBIT (MSEK)	13,4	-2,3	192,5	-755,9	3617,5	2523
Taxes paid	0,11	0,00	0,19	0	1,00	2521
Net Income (MSEK)	-1,2	-2,3	195,0	-6314,6	2728,6	2444
Leverage - D/(D+E)	0,18	0,05	0,25	0	1,00	2523
Cash	0,21	0,12	0,22	0	1,00	2520
ROA	-0,13	-0,03	0,51	-2,36	5,00	2180
ROE	-0,30	-0,12	1,00	-2,76	4,04	2129
ROS (Ebitda/Sales)	-0,68	-0,02	1,41	-4,23	2,00	2367
Capex - CAPEX/PPE	0,70	0,26	1,12	-1,00	4,49	2095
P/S ratio	1,6	1,3	1,1	0,5	7,6	2495
MTB (P/B) ratio	3,7	3,0	4,0	0,7	40,4	2497
P/E ratio	20,5	18,4	11,8	2,8	94,3	2523
Time listed	8,7	7,8	4,0	1,1	18,0	2523
Time listed before switch (Treatment group)	4,4	3,6	3,3	0,9	13,3	471

The table details the screened and adjusted final data sample. Differences in observations are mainly due to missing data or ratios being calculated with the previous year's closing value.

Table IV
Summary statistics for the Treatment Group (All Years)

Variables	Mean	Median	Std Dev.	Min.	Max.	Obs.
Sales (MSEK)	1052,7	208,5	3053,8	0	24400,5	471
Sales Growth	0,43	0,19	0,80	-1	2,96	396
Sales Logarithm	5,18	5,45	2,15	-2,76	10,10	446
Total Assets (MSEK)	1564,3	225,9	4923,0	3,0	38971,2	471
Book value of Equity (MSEK)	912,1	111,7	3224,6	-12,6	23580,5	471
Debt (MSEK)	290,0	4,4	1273,4	0,0	14580,6	471
EBITDA (MSEK)	163,8	14,2	601,8	-630,5	4963,1	471
EBIT (MSEK)	96,0	4,4	428,4	-753,8	3617,5	471
Taxes paid	0,16	0,07	0,20	0	1,00	471
Net Income (MSEK)	29,6	2,5	431,8	-6314,6	2728,6	453
Leverage - D/(D+E)	0,15	0,05	0,20	0	0,97	471
Cash	0,22	0,16	0,20	0	0,91	470
ROA	0,04	0,09	0,38	-2,36	1,83	421
ROE	0,00	0,06	0,71	-2,76	4,04	408
ROS (Ebitda/Sales)	-0,27	0,06	1,08	-4,23	0,80	446
Capex - CAPEX/PPE	0,81	0,39	1,15	-0,61	4,49	415
P/S ratio	1,8	1,3	1,3	0,5	6,9	471
MTB (P/B) ratio	4,1	3,0	4,7	0,7	40,4	465
P/E ratio	21,7	19,1	13,9	2,8	86,6	471
Time listed	10,5	9,8	3,8	2,0	18,0	471
Time listed before switch (Treatment group)	4,4	3,6	3,3	0,9	13,3	471

The table details the screened and adjusted final data sample for the treatment group of companies. Differences in observations are mainly due to missing data or ratios being calculated with the previous year's closing value.

Table V
Summary statistics for the Treatment Group at the year of the switch

Variables	Mean	Median	Std Dev.	Min.	Max.	Obs.
Sales (MSEK)	690,5	287,8	1613,2	0	10929,0	50
Sales Growth	0,73	0,40	0,88	-0,52	2,96	47
Sales Logarithm	5,37	5,68	1,92	-2,76	9,30	49
Total Assets (MSEK)	942,2	278,1	1622,2	73,1	7338,2	50
Book value of Equity (MSEK)	523,1	137,6	899,0	27,4	4185,3	50
Debt (MSEK)	174,0	7,3	457,9	0	2293,0	50
EBITDA (MSEK)	64,7	22,3	208,5	-446,7	817,0	50
EBIT (MSEK)	13,7	14,2	153,6	-578,7	447,3	50
Taxes paid	0,16	0,18	0,18	0	1,00	50
Net Income (MSEK)	1,1	16,1	140,8	-591,3	289,0	48
Leverage - D/(D+E)	0,15	0,06	0,20	0	0,69	50
Cash	0,20	0,17	0,15	0,01	0,52	50
ROA	-0,02	0,10	0,50	-2,05	0,87	50
ROE	-0,10	0,08	0,71	-2,76	0,92	48
ROS (Ebitda/Sales)	-0,33	0,06	1,19	-4,23	0,71	48
Capex - CAPEX/PPE	1,03	0,34	1,36	0	4,49	49
P/S ratio	1,9	1,2	1,3	0,5	5,4	50
MTB (P/B) ratio	4,7	3,3	6,0	0,7	40,4	50
P/E ratio	22,9	19,0	14,7	6,4	77,5	49
Time listed	9,2	8,2	3,8	2,0	18,0	50
Time listed before switch (Treatment group)	4,1	3,2	2,9	0,9	13,3	50

The table details the screened and adjusted final data sample for the treatment group in the year of the switch to the main market. Differences in observations are mainly due to missing data or ratios calculated with the previous year's closing value.

Table VI
Summary statistics for the Control Group

Variables	Mean	Median	Std Dev.	Min.	Max.	Obs.
Sales (MSEK)	105,5	25,6	242,1	-0,9	2962,1	2052
Sales Growth	0,33	0,11	0,86	-1,00	2,96	1646
Sales Logarithm	3,08	3,45	2,26	-7,47	7,99	1920
Total Assets (MSEK)	112,5	37,9	256,1	0,1	3638,7	2052
Book value of Equity (MSEK)	56,2	17,4	163,1	-82,8	3383,1	2052
Debt (MSEK)	17,7	0,9	65,4	0	954,4	2052
EBITDA (MSEK)	-1,1	-1,6	38,1	-594,2	443,8	2052
EBIT (MSEK)	-5,6	-2,8	39,6	-755,9	396,0	2052
Taxes paid	0,10	0,00	0,19	0	1	2050
Net Income (MSEK)	-8,2	-2,9	63,7	-1369,6	1391,0	1991
Leverage - D/(D+E)	0,18	0,06	0,26	0	1	2052
Cash	0,20	0,12	0,23	0	1	2050
ROA	-0,17	-0,06	0,52	-2,36	5,00	1759
ROE	-0,38	-0,20	1,04	-2,76	4,04	1721
ROS (Ebitda/Sales)	-0,77	-0,05	1,46	-4,23	2,00	1921
Capex - CAPEX/PPE	0,68	0,24	1,11	-1,00	4,49	1680
P/S ratio	1,5	1,2	1,0	0,5	7,6	2024
MTB (P/B) ratio	3,6	3,0	3,8	0,7	40,4	2032
P/E ratio	20,3	18,4	11,2	2,8	94,3	2052
Time listed	8,2	7,4	3,9	1,1	16,8	2052

The table details the screened and adjusted final data sample for the control group of companies. Differences in observations are mainly due to missing data or ratios being calculated with the previous year's closing value.

VI) Comments and Discussion on the Dataset

Overall, we believe the quality of the combined dataset to be high. This is mainly due to the manual completion which was done to correct for missing values even though multiple sources were combined. However, we see the need to bring up a few minor discussion points, detailed below.

Survivorship Bias

Several of the observations that have been removed in the screening process are related to companies where data for some reason has been unavailable, where listing periods have been short or where the company has been swiftly delisted. This could potentially imply the existence of survivorship bias in the final dataset since companies in the control group that have not switched listings and still remain on the alternative exchanges might not be fully representative of companies that fail to migrate to the main market and overstate the average performance of the control sample.

Nevertheless, by carefully tracking down and manually screening each company, we have constructed a dataset that gives us an accurate representation of the historical compositions of each list. Furthermore, our control sample contains accounting data for delisted firms. Through this, we have controlled for survivorship bias to the best of our abilities, by including non-surviving firms where data can be found - thus we are not inadvertently overlooking non-survivors. Doing so could lead to skewing our performance measures upwards, according to Brown et al (1992).

Previous or continued trading on unofficial markets

A number of companies that have been delisted from the established alternative exchanges continue to be traded unofficially or on minor OTC-markets such as Alternativa Aktiemarknaden.⁴ Similarly, it is not uncommon practice for companies to be traded unofficially through broker houses prior to listing on an alternative exchange. Given that these markets are even less regulated than the alternative markets we study and suffer from even poorer transparency than the most newly started alternative market, we argue that such companies should be considered as not yet listed for the purpose of this study. This approach is consistent with Pagano et al (1998), who consider the IPO listing at the Milan Stock Exchange as the first day of being public, despite if said company has previously existed on a minor stock exchange.

Change in Operations

Unlike on the main market, where regulations are more stringent and companies are more mature in general, it is not uncommon for companies on the alternative exchanges to over time completely change their business model, direction and focus.⁵ What this means from a qualitative standpoint is that the ISIN-code for subsequent years is attached to incomparable operational data. We have, to the best of our abilities, examined the sample to remove companies or observations where we find or suspect such events may have taken place. The official records of the Swedish Tax Authority were used as the ultimate decider when analysing such situations, as we have to assume they have the most accurate data, being a government organ.

IV - Method

I) Introduction

In this section, we outline the methods used to process the data sample to make it less noisy and more suitable for testing, as well as describing the methods used in the main analysis. Processing the data is done by, for example, removing extreme outliers and by dividing the companies into industries allowing for more relevant comparisons between the treatment- and control group. The main inspiration for the ex-ante and ex-post test methods is Pagano et al. (1998). Our motivation behind this choice is that the decision to go public and the decision to switch to the main market should be done with similar intents and purposes. Both require a decision by the board, and exposes the company to higher regulatory requirements, a broader investor community and a more liquid market. Being a well-known and frequently cited paper, the method has also been adapted by other, for

⁴ More info at www.alternativa.se

⁵ For example, a company can be acquired by another party in a reverse takeover with the new company intending to take over the original company's stock market listing place - as was the case with the airline company Fly Me Europe, which was previously Array Printers, a technology company.

example Fischer (2000) who study determinants of tech-IPO's on Germany's alternative market Neuer Markt.

Listing switches and IPO's also bear close resemblance in signalling effects. The choice itself might be founded in different determinants, but the chosen method should still be applicable even if said determinants and variables are different. Other sources of inspiration include Cowan et al (1992), Papaioannou et al (2003), Vismara et al (2012) in addition to Jenkinson and Ramadorai (2013), who all study listing switches and alternative markets, thereby providing us with more topic-specific insight.

II) *Data Processing*

Switches Between Alternative Exchanges

The Swedish market today provides companies that are not ready to list on the main market with four options of listing location - Aktietorget, NGM, Nordic MTF or First North. Before the change to the Nordic List, the O-list was also a viable alternative for smaller companies, although being significantly more expensive (See *Table I*) and requiring a more demanding listing process. Each of these markets have pros and cons in areas such as cost, speed of the listing process, analyst coverage, prestige and liquidity. Consequently, several companies in the sample have switched between different alternative markets before eventually delisting or transferring to the main market.

In theory, it would be possible to perform tests focused on companies that switch between alternative markets. However, we argue that this would probably reveal few interesting academic insights due to them being relatively similar and that accounting data on such companies would likely be too noisy to achieve significant results. Even if we believe that there are differences, perceived benefits between the alternative exchanges can safely be assumed to have a lower aggregate value when compared to benefits between alternative and main markets - further speaking for ignoring such switches. This builds on the reasoning of Baker and Johnson (1990), who studied manager motivations behind listing switches. Using this rationale, mainly attributable to the similarities, we treat the alternative exchanges as equals when the listing switch is studied. For the purpose of this thesis we also consider NGM Equity, which is actually a regulated exchange, to be equal to First North and Aktietorget. Reasons for this are mainly due to their comparative size, number of listed companies, trading liquidity and visibility.

Data adjustments

Compared to studies that focus on IPO's, which generally include mature companies, there is need to make adjustments to the raw data to improve relevancy. When comparing Pagano et al (1998) to our data, we find that the Pagano paper in general contains data of higher quality firms, i.e. firms with higher profitability in comparison. When studied, as described in the coming section, such firms likely

do not yield as extreme results as with lower-quality counterparts. With extreme outliers, the need arises for us, as it did for Papaioannou et al (2003), to adjust the data. Barber and Lyon (1996) also influenced us on this topic, as they did for Papaioannou et al (2003).

Many companies in the sample display consistent operational losses and sometimes have limited or no revenue, meaning conventional measurement ratios risk taking on extreme values.⁶ To prevent such extreme outliers adversely affecting results, we therefore winsorise operating performance measures at the first, fifth or tenth percentile where appropriate. Certain variables are also capped to relevant levels, consistent with Pagano et al (1998), for example leverage which should take on values between zero and one. The adjusted data sample is displayed in the summary statistics and is used consistently throughout tests with no further adjustments. Overall, we argue that the adjustments result in a data sample that more accurately reflects the sample's actual operational performance.

Furthermore, the raw dataset obtained from various sources sometimes contain accounting data for years in which the company was not yet listed, which is argued by Pagano et al (1998) to possibly contain relevant ex ante-information. In our case, we would argue that the small size and volatile performance of the typical firm in our sample, in comparison to firms listing on the main market, contains less explanatory information and are instead more likely to produce extreme outliers. We find it more probable that these companies are in an earlier growth phase in the time period leading up to the listing, thus with high performance volatility. Because of this, observations from years more than one year before the listing year are dropped, as are any observations after the year of delisting. Thus, it better reflects the public information available to actual investors.

Industry Codes

To control for industry, we segment each company in the sample using a standardized industry code, of which there exists several different systems. Our choice is the GICS Global Industry Classification Standard, which divides companies into 10 main sectors consisting of a two-digit code, with sub-industry groups represented by two to six additional digits.⁷ GICS codes are retrieved from Compustat and manually complemented for missing observations.⁸ To achieve a usable distribution of industry groups as comparative measurements, we redistribute firms to appropriate sectors where applicable.⁹ Similarly, Cowan et al (1992) use industry matching and mentions issues relating to

⁶ For example, a fast-growing company with SEK 1m in sales and a negative EBITDA of SEK 10m that grows sales to SEK 5m would display a ROS of negative 1000 percent and a sales growth of 500 percent. Mathematically, such high growth levels are unlikely to persist over time. The effect is similar with ROA and other profitability measures.

⁷ For example, a company developing computer software would be in the Information Technology sector (45) and further in the Software & Services Industry group - resulting in a GICS level 2-code of 4510.

⁸ Nasdaq OMX used CIGS until 2012 before switching to the ICB Company Classification Standard. Bloomberg has maintained GICS-segmented index data throughout 2013.

⁹ For example, three companies in the control sample in Automobiles and Components (2510) - which contains no respective treatment sample company, was changed to Capital Goods (2010).

industry groups without a significant number of companies. For a detailed list of distributions among industry groups, see *Appendix Table II*.

Listing Switch Eligibility

When further examining the data, it becomes clear that some companies on the alternative exchanges were never likely to reach main market listing eligibility during their lifetime. In line with the reasoning of Pagano et al (1998), Cowan et al (1992), Kedia and Panchapagesan (2011) and other studies, we find it necessary to impose a control for whether or not companies qualify for switching.

However, implementing a listing switch eligibility constraint for the Swedish market presents difficulties. On the US markets, such as NYSE, listing requirements regarding accounting data is clear cut. Swedish markets, as described in Section I, have a more subjective approach to requirements, using expressions such as *sufficient amount of shareholders* and *proven earnings capability*. Because of this, using similar methods to Pagano et al (1998) rather than Cowan et al (1992) becomes prudent. However, *proven earnings capability* is problematic to screen for since companies with negative EBITDA have switched to the main market in the past. Such companies could be prospecting-, technology- or pharmaceutical research companies with considerable assets and future earnings potential. Following this logic, we argue that a sufficient size can be a proxy for earnings capability and in turn for eligibility. This also applies a degree of control for size in the tests. Furthermore, data on the number of shareholders has been unavailable for a majority of the sample, preventing us from screening on that criteria.

We therefore propose an eligibility constraint based on the balance of total assets of companies that switched to the main market. Using the summary statistics in Section III (*Table V*), we set the constraint to a minimal total assets of SEK 40m. While the actual minimum value was 73, this figure represents closing balance of the year for companies that plausibly has had access to better capital markets up to a year. With this in mind, we decrease the limit, in order for it to better reflect reality.¹⁰ Changing this figure mainly results in large losses in the number of observations, rather meaningful changes in results. Furthermore, we believe that imposing overly stringent constraints would exclude the realistic chance that even a poorly performing firm can turn around following a commercial breakthrough.

¹⁰ Additionally, the minimum balance of assets for companies in the treatment group one year before year of the switch is only SEK 14 m. Assuming that companies decide to initiate the switching process one year in advance, our chosen constraint should be appropriate.

III) Test Methods

Probability of Switching Listing - the Ex-ante Test

Our first test intends to evaluate if specific variables or factors can have an impact on the decision of some firms to switch to the main exchange, while other firms that seem comparable choose to remain on the alternative exchanges. Following the methods of Pagano et al (1998), an ex-ante test is constructed to examine the impact of different variables on the probability of firms switching to the main market, using a statistical probability model. The probability model is used to estimate the marginal effect of a change in a specific variable, holding all other variables constant, in our case at their median values. The following equation (1) describes the generic probability function:

$$\Pr(Y_{it} = 1 | X_{1,it}, \dots, X_{n,it}; \beta_0, \dots, \beta_n) = F(\beta_0 + \sum_{n=1}^n \beta_n X_{n,it})$$

and the marginal probability effect (2) of a change in a variable:

$$\frac{\Delta \Pr(Y_{it} = 1 | X_{1,it}, \dots, X_{n,it}; \beta_0, \dots, \beta_n)}{\Delta X_{n,it}} = \beta_n F(\beta_0 + \sum_{n=1}^n \beta_n X_{n,it})$$

We use cross-sectional time series data and the probit regression model described above, where the dependent variable switch has a binary outcome of one if company *i* switches to the main market in year *t*. After a company has switched to the main market, the company is excluded from the sample. The following probit regression model (3) is estimated for use in the ex-ante test and calculates a predicted probability of switching based on our predictors using an iterative maximum likelihood estimation procedure:

$$\Pr(\text{Switch}_{it} = 1) = F(\beta_0 + \beta_1 \text{sales_log}_{it} + \beta_2 \text{salesgrowth}_{it} + \beta_3 \text{capex_ppe}_{it} + \beta_4 \text{ROA}_{it} + \beta_5 \text{leverage}_{it} + \beta_6 \text{MTB}_{it} + \beta_7 \text{PS}_{it})$$

F is the cumulative distribution function of the standard normal distribution. **Sales_log** is the lagged logarithm of sales. The logarithm is used to control for the fact that sales can be of exponential nature, and varies greatly in absolute numbers. **Salesgrowth** is the annual growth in revenue. **Capex_ppe** is the lagged annual capital expenditure cash flow on fixed assets divided by the previous year's closing balance of fixed assets. **ROA** is the lagged return on assets. **Leverage** is calculated as the lagged value of interest-bearing debt divided by interest-bearing debt plus book value of equity. **MTB** is the market to book-ratio, the market value of the firm divided by the book value for the GICS-sector for each company and respective year. **PS** is the price to sales-ratio for the GICS-sector, also for each respective company and year.

We see no point in matching companies for size or industry in the ex-ante test, as we test size by proxy of **sales_log** and since industry is controlled for through the valuation multiples that are related to the corresponding industries. This is also consistent with Pagano et al (1998). As previously discussed, some degree of size-control is enabled when applying an eligibility constraint.

The ex-ante test is performed in two variations; one unconstrained and one constrained. The unconstrained uses the entire data sample of valid observations, while the constrained is conditional on the listing eligibility constraint described in subsection **II**, Data Processing, in order to exclude firms that are unlikely to be qualified for listing on the main market. Results are displayed in *Table IX* and *Table X* and shows the estimated coefficients from probit model (1), which indicate an increase or decrease in the predicted probability, and the marginal effects on the probability of a listing switch calculated using model (2).

Discussion and expectations

While the purpose of the method is to explain a choice that is similar in intrinsic nature to the going-public decision studied in Pagano et al (1998), there will undoubtedly be differences. Since we are studying listing switches, our data contain companies that might be at a different stage in their life cycle. In turn, we expect this to change which variables will be determinants in the listing switch decision, compared to the characteristics that determine the probability of going public. As such, which variables this applies to and how they could impact our results are discussed in this subsection.

It can be hypothesized that profitability will have weak explanatory power for listing switches in Sweden, since not all companies switching to the main exchange are profitable ex-ante. We expect this hypothesis to be more likely to hold true for the unrestricted test. To exemplify this; companies involved in oil prospecting, natural resources mining, or in pharmaceutical research and development usually display significant losses in the years leading up an eventual operational breakthrough. Such companies might have used alternative markets to build investor attention and attract initial external financing. These companies are less likely to be present on a larger scale in the sample used in Pagano et al (1998), as their summary statistics show that their profitability averages are significantly higher than ours. Naturally, there are competing theories on the subject of profitability and switching listings, and the decision depends on the perceived benefits of performing the switch. If a company believes it will not reach enough new investors at the main market and thus increase the liquidity of its trading, it might remain on the alternative market for a long period. This holds true even if the company is more profitable than its peers, which could also distort the explanatory power of various profitability measures. Reinganum (1990) found that this was the case for small firms at Nasdaq, when studying switches to NYSE. In the constrained test, we expect profitability to be more significant due to the

exclusion of smaller companies that might be of lesser quality - thus increasing the average profitability and increasing the similarities between our sample and the one of Pagano et al (1998).

We do however expect profitability to positively affect probability of a switch, despite the above voiced concerns. This expectation is mostly substantiated by the probable existence of the managerial timing hypothesis, as firm managers are anticipated to exploit the window of opportunity. We believe that this theory is connectable to our valuation measures as well. As managers can be thought to time their corporate decisions related to firm performance, they can also do so in response to how the industry is being valued. Given an unusually high valuation, stock options of such managers would be worth more, adding incentives. Owners would also be affected by this and thus push for capturing as much value as possible, in line with Zingales (1995). Capturing this value may not be possible at the alternative market, where trading liquidity is lower, meaning better capital markets are needed.

It is plausible to expect that growth in sales and size of sales should be positively correlated to the probability of a switch to the main market. Mueller (1972) concludes that managers do not maximize stockholder welfare, but instead pursue growth maximization strategies - which would most likely explain why sales growth would be correlated with a switch. A switch would serve as a natural step in the right direction of a company promoting growth. Investments, measured in the ex-ante test as capital expenditure, can also be related to growth stimulation, or serve as a proxy for a growing firm. In addition to this, listing switches have been shown to not always be in the best interests of shareholders, as they commonly lead to a negative stock price drifts, cementing the growth versus profitability prioritising. Additionally, considering size and growth, we expect that as companies outgrow peers on alternative markets, it will be desirable to switch listings to the main market where they are compared to more relevant peers.

Regarding leverage, theories and literature are fragmented. On one hand, we would expect leverage to follow the same pattern as in Pagano et al (1988) and increase the probability of a listing switch. With high leverage should come the wish to rebalance the capital structure, which should be easier done at a more liquid capital market, creating demand for performing a switch. On the other, both leverage and investments could possibly be negatively connected to the switching decision, due to the relationship between growing firms and underinvestment, as put forth by Giannetti (2003) and Lang et al (1986). This could be the case if growth increases the probability, while both leverage and investments leads to decreased probability.

Finally, should the ex-ante test reveal no significant results, we must conclude that the decision to switch cannot be determined by differences in firm characteristics between the studied companies. It could then be hypothesised that other factors, for example managerial preferences, which we are

unable to test for, better explain why firms switch from alternative exchanges to the main market. Below, we summarize our ex-ante variable hypotheses and their relevant theoretical background.

Table VII
Expectations and Theory – Ex-ante Test

Hypothesis	Variables	Expectations and Theory	Literature
1	Sales (size), Salesgrowth	Probability of switch increases. Firm becomes too big, switches in order to achieve increased investor attention and to find relevant peers. Switching to promote and sustain current growth (instead of shareholder value), in addition to seeking a more prestigious list.	Elliott et al (2006) Merton (1987) Mueller (1972) Van Horne (1970) Baker/Johnson (1990)
2	ROA	Profitability should increase the probability of a listing switch, related to the managerial timing theory. Average firm quality could lower explanatory power.	Dharan/Ikenberry (1995) Webb (1999) Sanger/McConnell (1987) Hwang/Jayaraman (1993)
3	Investments	Higher tangible investments should increase probability, in accordance with the theory on managerial prestige. As mentioned below (5), could decrease the probability as well, based on theories on growing firms and underinvestment.	Mueller (1972) Pagano et al (1998)
5	Leverage	Growth opportunities can be negatively correlated with leverage, as growth firms might be subject to underinvestment. If the theory on growth is correct, we expect increased leverage to imply a reduced probability of switching. Consequently, if the theory of growth is incorrect, we expect leverage to increase the probability on account of rebalancing the capital structure ex-post after raising debt ex-ante.	Giannetti (2003) Kim/Sorensen (1986) Lang et al (1996) Myers/Majluf (1977) Pagano et al (1998)
6	MTB/PS	Higher industry market valuation should increase the probability of a listing switch. Relates mainly to owners wishing to value maximize once reaching a better capital market, and theories on managerial timing.	Zingales (1995)

Consequences and effects of a Listing Switch - the Ex-post Test

Following the ex-ante test, the purpose of the ex-post test is to look for additional evidence in support of different theories by examining ex-post performance of companies that switch listings in comparison to firms that did not. As such, an ex-post test should complement the previous test by bringing actual effects that may or may not have been entirely anticipated ex-ante into the fold. Similarly to the previous test, we adapt the methods of Pagano et al (1998) using a similar regression, denoted by y_{it} .

We apply a fixed-effects OLS regression to our cross-sectional time series data. Firm fixed-effects allows us to control for unobservable time-invariant unique differences in individual characteristics between the firms, such as cultural differences, that may influence results. We also include time-fixed effects to control for time effects that may have an impact on the outcome. As argued by Pagano et al (1998), using fixed-effects allows a company in the treatment group to act as a control company for itself after the switch has taken place. The equation (4) below details the full regression:

$$y_{it} = \alpha + \sum_{j=0}^3 \beta_j SW_{t-j} + \beta_4 SW_{t-n} + \sum_{j=0}^3 \omega_j OK_{t-n} + u_i + d_t + \epsilon_{it}$$

where y_{it} is the variable tested to be affected by the listing switch. SW_{t-j} denotes the dummies that are equal to one if the year $t-j$ is the switch year, i.e. equal to one in the year of the switch and the three subsequent years. SW_{t-n} is equal to one in all years more than three years after the switch took place. OK_{t-n} represents dummy variables that take the value one for any company in the sample that fulfills our listing switch criteria in a specific year, or one to three years before. The variable u_i represents firm-fixed effects and d_t are year dummies representing time-fixed effects. The error term is denoted by ϵ_{it} .

As previously discussed, we suspect that the noisiness of the raw data could negatively impact findings. In an attempt to counter this we winsorize and cap variables to reduce extreme outliers.¹¹ We also use heteroskedastic robust standard errors. With the ex-post test, we notice two main sample selection issues. Only companies meeting listing requirements can transfer to the main market through a listing switch, which could be the source of autocorrelation. We therefore run regressions both with and without the dummy variables OK_{t-n} that proxy listing eligibility in an attempt to capture the effect of companies that are more likely than others to switch. Afterwards, differences between the two versions in coefficient sign, magnitude and significance are studied. We choose not to size- and industry-match the sample for these regressions. The reason for this is twofold: First, we lack enough relevant peers for this to be done consistently across industries (See *Appendix Table II*). Second, it would be inconsistent with the method used by Pagano et al (1998).

Discussion and expectations

We believe this method, as with the ex-ante test, is as appropriate and applicable for listing switches as it is for IPO's. Although we use a similar number of treatment companies as Pagano et al (1998)¹², (50 vs 69) our control sample is smaller, which might conceal the true effect of the switch. Regardless,

¹¹ See subsection **II** Data Processing, Data Adjustments

¹² Our final sample contains 50 companies while the sample of Pagano et al (1998) is 69 companies.

we expect to find sufficient explanatory power in the SW_{t-j} dummies that can be related to the previously described theories on listing switches.

As discussed in Section **II**, several papers have studied opportunistic timing (Dharan & Ikenberry (1995), Webb (1999), Sanger & McConnell (1987)) in conjunction with important company events, such as listing switches, that coincide with performance peaks. If this is present in our data, we should observe a negative effect from the post-switch year dummies on the variable **ROA**. We also include **Net** (Net margin) and **ROE** as additional measures of profitability. A negative coefficient could hypothetically be attributed to normalising performance following inflated and/or manipulated earnings leading up to the switch - more commonly known as window dressing. Pagano et al (1998) speculate that the permanent (shown by **SW_{t-n}**) decline in profitability of a firm that goes from private to public might be due to imposed accounting changes. More specifically, public companies tend to overstate the value of their assets to inflate their valuation while private firms do the opposite to avoid additional taxation. We argue that this reasoning is applicable to listing switches as well, since the level of regulation and monitoring increases with the move to the main market.

Typical market failures such as adverse selection and moral hazard are also worth discussing. The risk of adverse selection in different forms is potentially an issue - but would have to be assumed to be smaller than for IPO's. In this case, the transition is smaller - from private status to being public with more regulation, implying a lower possibility of an information gap. Instinctively, we believe that moral hazard likely holds less explanatory power since a listing switch does not necessarily coincide with the sale of shares as in an IPO. However, we have not found any literature to confirm this, but we believe that it is both probable and plausible to assume.

Regarding the variable **capex**, Pagano et al (1998) find a negative coefficient for most variables related to investments. They find a permanent decline in investments in the years following the IPO, with these negative effects still remaining after including other variables in the regression. Potentially, investments might decrease ex-post if the company's decision to switch follows a period of high investment during their time on the alternative exchange. Capital raised from going public on such markets could have been used to finance investments, which in turn leads to growth and profitability used to time a switch to the main market. Hence, a negative ex-post effect would be in line with most previous research, should it be predated by ex-ante investments. Conversely, a positive effect might suggest that companies migrate to the main market to take advantage of better external or internal financing opportunities. This could possibly be following a period of underinvestment while listed on alternative markets - thus indicating another motivation behind the switch.

Leverage, defined as interest-bearing debt divided by capital, allows us to observe whether the switch to the main market is associated with a subsequent change in the overall capital structure. Rajan and Zingales (1995) suggest a negative correlation between leverage and profitability, indicating that a permanent negative effect on profitability might also be associated by a permanent increase in leverage in the years after the switch, and vice versa. Related to the capital structure, we also test if **cash** as a fraction of total assets changes in the years after the switch. The main reasoning behind including this variable is to test our hypothesis regarding overall better monitoring and governance at the main exchange, which would aid in asserting other theories. Given better monitoring, the balance sheet should become more efficient and thus cash should be reduced to what's needed in order to run operations, without abundance, according to Dittmar, Mahrt-Smith and Servaes (2003).

Ex-ante Profitability

Following the ex-post test we further examine profitability in the ex-ante period with the purpose of closer examining managerial timing. Similar to Jenkinson and Ramadorai (2013), we also perform a basic analysis of the median profitability of the treatment group companies in the two years before and after the switch.

Since comparing the treatment sample with the entire control sample might not take into account the intrinsic differences that exist between industries, it is also important to benchmark companies with relevant industry peers. Taking inspiration from the methods of Cowan et al (1992), we match companies on a GICS level 2-basis and perform statistical difference tests. More specifically, we use a paired-difference t-test and the Wilcoxon rank-sum (Mann-Whitney) test to statistically compare the mean and median profitability of companies in the treatment and the control group. Although some industries contain an unsatisfactory number of observations when using four-digit GICS-codes, we argue that using two-digit codes would have a too large negative impact on the relevancy of the comparison.¹³ This has the implication that a few industries cannot be tested due to a lack in number of treatment sample observations. We also wish to highlight that our comprehensive data sample allows us to perform these tests using only ex-ante data for the treatment group. This is done by excluding all post-switch yearly observations. Thus, we avoid biasing the results in favor of the treatment sample whose overall profitability is higher than for the control group, as seen in *Table IV* and *Table VI*.

We expect the results of these tests to offer some evidence of the managerial timing hypothesis existing among companies in respect to listing switches, as has been suggested in some previous

¹³ For example, 3510, Health Care Equipment & Services, and 3520, Pharmaceuticals & Biotechnology, are different since the latter group tends to display major losses during the research phase.

Second, we expect institutional owners to increase their ownership stake after the listing switch takes place. The switch should imply increased investor attention, generating demand from institutional owners, as described by Chang and Hong (2012). In addition to this, the index inclusion effect observed by Elliott et al (2006) could also affect the level of institutional ownership, as we believe listing switches trigger a similar effect. Through signalling and finding relevant peers at the main exchange, investors should react positively to a change to a more regulated market, increasing institutional ownership.

We examine the data while making one minor assumption due to data limitations - that the switch is not associated with a significant issuing of new common or voting equity that would have to be adjusted for. Thus, we assume that any eventual new equity issuances are distributed with a proportional allocation such that the fraction held controlling shareholders does not change if such an event occurs.

V - Results & Analysis

I) General Characteristics

Before performing the ex-ante and ex-post tests, we begin by further examining the collected and sorted data in order to compare general characteristics between companies that successfully migrate to the main market and those that remain in the control group.

As expected, the average quality of companies that list and remain on the alternative exchanges is poor. Here, quality is defined as overall stability and profitability of said company. The median firm in the control group is relatively small with sales of SEK 25.6m and has a balance sheet of SEK 37.9m. Furthermore, it displays negative return on assets of 6 percent, negative EBITDA margins of 5 percent and does not pay taxes. Equity is the main source of financing rather than interest-bearing debt. In our screened sample, the median control firm has been listed for 7.4 years. In comparison, the median company in the treatment group at the year of the listing switch is larger with sales of SEK 287.8m and total assets of SEK 278.1m. As can be expected, it displays both positive return on assets of 10 percent and positive EBITDA margins of 6 percent, while having been listed for 8.2 years, of which 3.2 years has been on alternative exchanges.

Between the individual alternative markets, there is a significant difference in the number of companies that migrates from them to the main market, as can be seen in the *Appendix Table I*. Few companies have migrated directly from Aktietorget or Nordic MTF to the main market, in

comparison to the number of direct switches from First North or NGM.¹⁴ First North has the highest number of firms that have eventually migrated to the main market. This could likely be positively influenced by ownership ties to the main market through Nasdaq OMX, who would be in a position to influence or incentivise the decision to switch. One could make an educated guess that this could be used as a proxy of overall quality on an exchange in Sweden, i.e. a larger number of firms migrating to the main market should signify a higher overall quality for that exchange. Consequently, high quality firms seem to list at exchanges where the opportunity to later switch up is the best, indicating the existence of a signalling effect connected to the choice of alternative market.

We also observe that many companies switch between the different alternative exchanges. Of the identified raw sample of 483 companies, 17 percent have been listed on more than one alternative exchange. This points to the fact that the Swedish environment for growing firms in need of access to capital markets is indeed well-developed, where firms can choose the alternative market that best suits its preferences. The total number of listings we have identified on each exchange is displayed in *Table VIII* below. From a quantitative standpoint, First North and Aktietorget have been most successful in attracting companies, with roughly 220 listings each.

Table VIII
Number of listings per exchange

Exchange	Listings
First North	220
Aktietorget	219
NGM Equity / SBI	81
NGM MTF	49
Total	569

This table details the total number of listings identified on each alternative exchange in the raw sample of 483 companies listed between years 1997 and 2013.

One additional point of interest is that a number of companies, which were among the first ones to list on their respective alternative exchanges following their creation, are still listed there as of year 2014. We are of the belief that this strongly indicates that alternative exchanges satisfy the needs of some companies that reasonably would not be publicly traded if alternative markets did not exist. Most probably, this is due to the costs of listing requirements outweighing potential benefits. Cowan et al (1992) also confirm that smaller firms can enjoy better liquidity on smaller, less regulated markets. In part, this could be explained by some companies attracting more attention than they would at a larger market, where they would be drowned in the noise made from larger players. Although this is not the focus of our thesis, we believe that this further supports previous research such as Ying et al

¹⁴ For example, the first company to change from Aktietorget to the main market was Vitec Software Group in 2011. Before the creation of the Nordic List, only one company had switched to the O-list from Aktietorget.

(1977), in addition to Jenkinson and Ramadorai (2013), who argue that the existence of alternative markets fulfills a purpose as a cross between being private and being public on the main market, thus offering access to capital markets without imposing the full costs of a main market IPO.

II) *Ex-ante Test*

With the goal of determining if the listing switch decision can be explained by firm performance, we estimate a probit model in two variations, for which we report the respective maximum probability estimates with corresponding standard errors. The constrained model includes the previously described listing eligibility constraint, thus excluding observations of company-years that does not satisfy our minimum criteria. For this reason, the summary statistics in *Table X* differ slightly from those in *Table IX* and in the summary statistics in Section III.

Table IX
Ex-ante probability test - Without eligibility constraint

Variables	Coef	Effect of deviation with remaining variables at median		Variables	
		+/- 1 unit	+/- 1 sd	Median	Std Dev
Sales	0,3245 ***	0,011	0,026	3,678	2,130
<i>Std. Err</i>	<i>(0,0876)</i>				
Sales growth	0,4571 ***	0,016	0,013	0,122	0,790
<i>Std. Err</i>	<i>(0,1206)</i>				
ROA	0,0146	0,001	0,000	-0,036	0,493
<i>Std. Err</i>	<i>(0,1527)</i>				
Leverage	-0,8565 ***	-0,033	-0,007	0,064	0,248
<i>Std. Err</i>	<i>-(0,8565)</i>				
Capex	0,1198 *	0,004	0,005	0,277	1,104
<i>Std. Err</i>	<i>(0,0672)</i>				
Market to Book	-0,0066	0,000	-0,001	2,940	3,982
<i>Std. Err</i>	<i>(0,0155)</i>				
Price/Sales	0,1879 ***	0,007	0,006	1,230	0,913
<i>Std. Err</i>	<i>(0,0685)</i>				
No. of observations	1447				
LR Chi ²	46,02				
Prob > Chi ²	0,000				
Pseudo-R ²	0,196				

*The regression is estimated using a probability model for a company switching to the main market with no constraints applied on the sample. Sales, sales growth, ROA, leverage and capex are lagged variables. The two middle columns display the change in probability of a listing switch from a unit- or standard deviation change in a variable with all other variables held at their median values. The rightmost columns display the median values of the sample used. Robust standard errors are reported in brackets. The number of observations differ from the summary statistics mainly due to lagged values. The constant term is unreported. *** denotes a significance level of 1 percent, ** denotes a significance level of 5 percent and * denotes a significance level of 10 percent.*

Regarding the explanatory power of the ex-ante test itself, we note that we can reject the hypothesis that all coefficients are equal to zero at the one percent significance level. The test does have limited explanatory power, as shown by pseudo-R2 statistic. However, compared to the ex-ante model of Pagano et al (1998), the test from which we draw inspiration, our test is stronger and shows better

goodness of fit. To test the reliability and robustness of the model, we run several different variations (unreported) of lagged and unlagged variables, as well as trying different combinations of variables. We also re-run the probit model holding variables at mean values instead of median values. We also test including year dummies. Despite these changes, we only obtain minor differences in results with unchanged coefficient signs, magnitudes and significance levels.

As discussed in section **IV**, Method, the effects estimated by the model refer to the increase or decrease in the probability of a switch from a change in a variable, holding all other variables constant at the median value. Although the magnitude of the effects may seem minor, they are quantitatively similar to those estimated by Pagano et al (1998). We argue that this helps validate the use of the method for studying listing switches, and speaks for the relevancy of the results.

In accordance with our hypothesis, size is a highly statistically significant factor in the probability of a company deciding to switch listings. Significant at the one percent level and proxied by the logarithm of total sales; the larger the company, the bigger the probability of a listing switch. A one unit increase in sales is found to correspond to a 1.1 percent probability increase of switching, while a one standard deviation increases the probability by 2.6 percent. We believe the likely underlying cause behind the increased probability is comparable to an indexing effect, as described by Elliott et al (2006). Basically, it suggests that a firm can draw significant advantages from being compared to relevant peers. Finding such peers for a company on alternative exchanges once it grows past a certain point can prove difficult, which could be a strong determinant in explaining the listing switch decision. The more the firm grows, the more likely it is to become too large, in relation to its' industry peers on the same exchange. Connected to this is the demand effect - that if a company manages to attain enough investor attention then demand for the stock will increase, according to Merton (1987). This is thought to substantiate into an increase in stock performance, and while stock price movements are not the focus of this paper, it can definitely be considered an underlying motivation for such a corporate decision as a listing switch.

Similarly, sales growth also shows a strong positive relation to the switching decision. On a one percent significance level, we find that if sales growth increases by one unit, the probability of a switch increases by 1.6 percent. Respectively, if growth boosts by one standard deviation, the probability climbs to 1.3 percent. These results are consistent with our hypotheses and is highly consistent with previous research on listing switches and managerial motives in general. Mueller (1972) stated that managers often do not have the shareholders best interests at heart, favouring growth instead of maximizing shareholder value. Prestige is largely related to this, as managers have been shown to prioritise both the prestige of running a large company and being listed on the exchange with the image of being more prestigious - even if this does not translate into shareholder value,

according to Van Horne (1970). Baker and Johnson (1990) confirms prestige as a motive for American managers. We are more inclined to believe that company size is important, rather than prestige, due to differences in corporate culture between Sweden and the US, where the studies mentioned were conducted. Given the scope and focus of our thesis, this is difficult to confirm but it provides interesting food for thought. For example, Schneider (1988) speculates that egalitarianism and tax structures have made lower profiles more desirable among managers in Sweden, speaking against factors such as prestige.

In addition to size and sales growth, we find that one of the most significant factor in determining the probability of a switch is the industry market valuation. Industry valuation, measured by the price to sales-ratio, shows that if said industry is valued higher, the probability of a switch increases. While the effect is not as strong as for size, a single unit increase in the ratio (roughly corresponding to one standard deviation) results in a 0.7 percent increase in the probability of a switch. Expanding on the research of Zingales (1995), we believe this is mainly due to owners wishing to value maximize and capture the opportunity provided. It is not far fetched to assume that companies could want access to more liquid capital markets in hot periods. Somewhat surprisingly, the valuation ratio market to book shows no significance and a small coefficient compared to the price to sales-ratio. We re-run regressions with these variables on stand-alone basis and in various combinations with no difference in results. The same applies when using the price to earnings-ratio. As previously discussed, this could be due to a majority of the companies in our sample not being profitable which implies a highly volatile book value of equity, which in turn could potentially make market to book a less relevant valuation ratio. We chose to include market to book in the regression to highlight this. Additionally, it is reasonable to assume that growing companies to a high extent are valued on future sales. Regardless of this, our results point towards valuation as an important factor in the decision to switch. This is consistent with previous research on corporate actions and timing, such as Loughran and Ritter (1995) and Spiess and Affleck-Graves (1995). With access to detailed valuation data for each company, it would have been interesting to further study this and measure in each period if a certain company is over- or undervalued and how this relates to the switch decision.

Leverage also has significant explanatory power, although not as strong as size. Statistically significant at the one percent level, leverage is the sole variable with high explanatory power and significance that appears to negatively affects the probability of a switch. A one standard deviation increase in leverage decreases the probability of a switch by 0.7 percent, implying that firms with a higher degree of equity financing are more likely to switch to the main market. Furthermore, with increasing ex-ante investments the probability increases by 0.4 percent for a one unit (i.e. investing an equal amount to the previous year's PPE-balance) increase and with 0.5 percent for one standard deviation increase. However, this effect is only significant at the ten percent level.

With both the sales growth and investment variables proven to be in line with expectations and statistically significant, it is plausible to assume that the hypothesis regarding managerial growth promotion and prestige carries some truth. The investments coefficient is however relatively low in comparison to other significant variables - which makes us believe there might still be an underinvestment pattern among growth firms, as argued by Giannetti (2003). Underinvestment is relative, and for the theory to be correct it does not necessarily mean that the coefficient has to take on a negative figure. It does shed some light on the comparison to Pagano et al (1998), who find that access to better capital markets is predated by investments and thus implies that the switch is done in order to balance the accounts. Quite surprisingly to us, the coefficients of leverage and investments do not follow the same pattern as we had expected. Instead, increased leverage lowers the probability of switching. After a thorough analysis of the dataset we argue that in the Swedish market, high leverage on alternative markets could be a form of signal, indicating lower quality firms which are improbable to migrate to the main market. Theoretically, the negative effect of leverage could also be related to debt overhang, making a switch to the main market in order to find more capital unlikely.

Profitability is found to be neither statistically significant nor to have a large coefficient compared to the other variables in the ex-ante test.¹⁵ There could be several potential reasons for this. First, high pre-switch profitability might not necessarily be an important factor in the decision to switch. This would potentially suggest that small, profitable firms tend to stay on the alternative exchanges where they enjoy a higher degree of visibility in comparison to poorly-performing but equally-sized peers. Second, the statistical effect could be lost since we are unable to distinguish poorly performing companies in the control group ex-ante from seemingly poorly-performing companies in the treatment group that go on reach profitability in the years after the switch. We are hence unable to confirm the existence of managerial timing ex-ante, as discussed by Dharan and Ikenberry (1995) among others, in terms of profitability using this specific test.

¹⁵ The variable remains statistically insignificant even after excluding industries where large negative returns are most common.

Table X
Ex-ante probability test - With eligibility constraint

Variables	Coef	Effect of deviation with remaining variables at median		Variables	
		+/- 1 unit	+/- 1 sd	Median	Std Dev
Sales	0,2428 ***	0,019	0,033	4,553	1,695
<i>Std. Err</i>	(0,0590)				
Sales growth	0,4172 ***	0,034	0,024	0,136	0,729
<i>Std. Err</i>	(0,1049)				
ROA	-0,0329	-0,003	-0,001	0,043	0,419
<i>Std. Err</i>	(0,1559)				
Leverage	-0,8806 **	-0,074	-0,018	0,092	0,252
<i>Std. Err</i>	-(0,8806)				
Capex	0,1035	0,008	0,009	0,357	1,103
<i>Std. Err</i>	(0,0637)				
Market to Book	-0,0065	-0,001	-0,002	3,040	4,294
<i>Std. Err</i>	(0,0164)				
Price/Sales	0,1863 ***	0,015	0,013	1,220	0,894
<i>Std. Err</i>	(0,0721)				
No. of observations	839				
LR Chi ²	44,16				
Prob > Chi ²	0,000				
Pseudo-R ²	0,126				

*The regression is estimated using a probability model for a company switching to the main market with constraints applied on the sample. Sales, sales growth, ROA, leverage and capex are lagged variables. The two middle columns display the change in probability of a listing switch from a unit- or standard deviation change in a variable with all other variables held at their median values. The rightmost columns display the median values of the sample used. Robust standard errors are reported in brackets. The number of observations differ from the summary statistics mainly due to lagged values. The constant term is unreported. *** denotes a significance level of 1 percent, ** denotes a significance level of 5 percent and * denotes a significance level of 10 percent.*

Next, when the listing eligibility constraint is applied, we see goodness of fit decline down to similar levels as seen in Pagano et al (1998). However, imposing any constraints on the sample tends to result in dropping a large amount of observations. In this case, we lose 42 percent of the sample used in the unconstrained test. The hypothesis that the coefficient of all variables are equal to zero can still be rejected at a one percent significance level, similar to the unconstrained test.

Medians for all operational variables are higher than in the unconstrained ex-ante test - which is easily explained by the sample now consisting of observations from larger and better performing firms, i.e. firms that should have a higher probability of switching. Looking into changes in the coefficients, we can see a slight increase in the magnitude effect for the statistically significant variables. With the constraint applied, size, sales growth and the price to sales-ratio are still significant at the one percent level, while leverage decreases in significance to five percent and capex is no longer significant. Profitability continues to be associated with low explanatory power and thus provides no significant information. We also note that the variable for the market to book-ratio now assumes a negative coefficient sign, further indicating low relevancy as a determinant for this particular sample.

Size, sales growth, leverage and valuation are still the strongest factors with significant explanatory power for both the unconstrained and the constrained test. With this, we argue that both real, internal firm characteristics and external factors play some part in explaining the decision to switch listings. Which one is the most important - internal variables such as size, growth or capital structure, or external ones like market valuation, is difficult to determine ex-ante with our dataset and without additional evidence from ex-post information on the same factors. Ex-ante causes need to be matched with ex-post consequences in order for us to be able to draw substantiated conclusions. The valuation factor, linked to Zingales (1995) theory on owner value maximizing, needs to be matched with ex-post change in controlling ownership in order to discover if owners actually do disperse their ownership and take advantage of the attractive industry valuation. This would indicate that the listing switch is likely done in order to access larger, more liquid capital markets to cash out their ownership stake, which might not be possible at the alternative market due to limited trading liquidity and investor community. The same reasoning can be applied to the other discussed variables, by combining ex-ante and ex-post results. Following this logic, we report and discuss the ex-post test next, also followed by a test of the change in controlling- and the institutional ownership surrounding the switch.

III) *Ex-post Test*

We examine the consequences of the listing switch using a fixed-effects OLS regression, run both with and without including the effect of the listing eligibility constraints. The results of the regressions are displayed in *Table XI* below.

Table XI
Ex-post test

Variable	Constraints	N	Year					R ²	Adj R ²	P-value
			t = 0	t = +1	t = +2	t = +3	t >3			
ROA	w/o	2180	-0,0714	-0,1034 **	-0,1499 **	-0,1698 **	-0,1939 ***	0,0629	0,0538	0,0114
<i>Std. Dev</i>			(0,0560)	(0,0508)	(0,0579)	(0,0704)	(0,0726)			
ROA	w/	2180	-0,0777	-0,1028 *	-0,1436 **	-0,1617 **	-0,1784 **	0,0712	0,0604	0,0168
<i>Std. Dev</i>			(0,0591)	(0,0530)	(0,0594)	(0,0714)	(0,0719)			
ROE	w/o	2129	-0,1960 **	-0,2644 ***	-0,4088 ***	-0,4158 ***	-0,2804 *	0,0311	0,0214	0,0011
<i>Std. Dev</i>			(0,0974)	(0,0922)	(0,1107)	(0,1269)	(0,1584)			
ROE	w/	2129	-0,2069 **	-0,2580 ***	-0,4036 ***	-0,4009 ***	-0,2586 *	0,0364	0,0249	0,0014
<i>Std. Dev</i>			(0,0987)	(0,0936)	(0,1139)	(0,1282)	(0,1563)			
ROS	w/o	2367	-0,0285	-0,0796	-0,1552	-0,1466	-0,0071	0,0609	0,0521	0,5462
<i>Std. Dev</i>			(0,1401)	(0,1493)	(0,1453)	(0,1572)	(0,2174)			
ROS	w/	2367	0,0305	0,0072	-0,0749	-0,0715	0,0374	0,0657	0,0553	0,9176
<i>Std. Dev</i>			(0,1378)	(0,1511)	(0,1485)	(0,1586)	(0,2197)			
Net Margin	w/o	2293	0,0408	-0,2155	-0,1711	-0,2083	0,1093	0,0461	0,0369	0,9814
<i>Std. Dev</i>			(0,1683)	(0,1797)	(0,1686)	(0,2166)	(0,2751)			
Net Margin	w/	2293	0,1079	-0,1057	-0,0650	-0,1038	0,1850	0,0527	0,0418	0,5673
<i>Std. Dev</i>			(0,1676)	(0,1854)	(0,1754)	(0,2207)	(0,2761)			
Capex	w/o	2095	-0,0039	-0,1142	-0,1857	-0,2218	0,1237	0,0864	0,0771	0,8628
<i>Std. Dev</i>			(0,2320)	(0,2412)	(0,1835)	(0,1893)	(0,2614)			
Capex	w/	2095	0,1099	0,0467	-0,0585	-0,1043	0,1669	0,1106	0,0998	0,6635
<i>Std. Dev</i>			(0,2296)	(0,2454)	(0,1858)	(0,1864)	(0,2582)			
Leverage	w/o	2523	0,0190	0,0367	0,0249	0,0546	0,0465	0,0259	0,0173	0,2351
<i>Std. Dev</i>			(0,0206)	(0,0287)	(0,0295)	(0,0351)	(0,0357)			
Leverage	w/	2523	0,0067	0,0267	0,0180	0,0500	0,0497	0,0311	0,0210	0,1403
<i>Std. Dev</i>			(0,0215)	(0,0300)	(0,0310)	(0,0354)	(0,0359)			
Cash	w/o	2520	-0,0376 *	-0,0049	-0,0309	-0,0588 *	-0,0367	0,0521	0,0438	0,2856
<i>Std. Dev</i>			(0,0204)	(0,0363)	(0,0306)	(0,0317)	(0,0419)			
Cash	w/	2520	-0,0319	0,0026	-0,0240	-0,0525 *	-0,0328	0,0541	0,0442	0,2028
<i>Std. Dev</i>			(0,0203)	(0,0362)	(0,0305)	(0,0312)	(0,0413)			
Sales growth	w/o	2042	0,0239	-0,1697	-0,3164 **	-0,1744	-0,1638	0,0722	0,0626	0,1956
<i>Std. Dev</i>			(0,1406)	(0,1693)	(0,1553)	(0,1740)	(0,1575)			
Sales growth	w/	2042	0,1339	-0,0425	-0,2224	-0,0962	-0,1510	0,1070	0,0960	0,5265
<i>Std. Dev</i>			(0,1356)	(0,1688)	(0,1530)	(0,1716)	(0,1489)			

*The table reports the coefficients of the dummies for the years after the listing switch, for a number of tested variables using a firm- and time fixed effects regression. Coefficients for time effect dummies are unreported. Numbers reported in brackets are robust standard errors. The upper output (w/o) reports the output of the unconstrained version of the regression model. The lower output (w/) reports the output of the constrained version of the regression model. The rightmost column displays the p-value of a test that the combined (sum) effect of the reported coefficients is equal to zero. The differences in observations between regressions are mainly due to missing data for some companies and years. *** Denotes a significance level of 1 percent, ** denotes a significance level of 5 percent and * denotes a significance level of 10 percent.*

Overall, we observe that the average explanatory power and significance of the ex-post test is lower than its counterpart in Pagano et al (1998), where they determine ex-post effects of IPO's using the same method. This is also in contrast to the relatively strong explanatory power of ex-ante test. Regardless, we see no reason why the method should not be applicable to study the ex-post effects of listing switches. Of the tested variables, only one of those referring to profitability are consistently significant over the whole testing period. These also exhibit low p-values for the test that their combined effect is different from zero, indicating we are observing a relevant ex-post effect on operational performance after the switch. Similarly, Pagano et al (1998) find no statistical significance for most of the variables they examine.

Although the screened and adjusted data sample is highly relevant and robust, it is likely that coefficient magnitudes are affected by the low average firm quality on alternative exchanges. As previously discussed, our control sample consists of many small companies that can experience strong growth during limited time periods, as well as large losses in relation to sales. The treatment group on the other hand contains somewhat more stable companies, which tend to experience fewer sizeable spikes in performance. This could potentially explain the lacking explanatory power for some variables. Despite a number of variables showing a weak ex-post effect, we believe that the overall ex-post test reveals interesting evidence that helps explain the switching decision.

Profitability

The coefficients for profitability, measured by ROA and ROE, are both consistently negative with high statistical significance. For both the unconstrained and constrained versions of the regression, the two variables reveal a strong and significant negative profitability drift. Similar to the results of Pagano et al (1998), we observe an increasing negative effect in the year of the switch and the subsequent three years. For example, two years after the switch, we observe a negative effect on ROA of approximately 14 percent for both versions of the regression, significant at the five percent level. For ROE in the same period, we observe a negative effect of around 40 percent, significant at the one percent level. Said effects also appears to persist long-term, as indicated by the dummy equal to one for all years more than three years after the switch. Results can also be compared to Mikkelsen et al (1997) who document pre-IPO overperformance and post-IPO decline in return on assets. The magnitude of results are larger than we initially expected, which we argue can be attributed to the inherent noisiness of the data sample of the companies.¹⁶ Regardless of this, it appears that we can observe a significant ex-post decline in profitability and we would argue that this adds to the evidence in favor of the managerial timing hypothesis, as described by Webb (1999) and others. We reason that if companies instead decided to switch to the main market in anticipation of improving operational

¹⁶ The coefficient magnitudes, significance levels and signs persist after excluding industries where large negative returns are most common.

performance, we should have been able to observe at least some measurable degree of positive effects in those variables for the post-switch years.

The regressions on ROS and Net Margin have a low explanatory power and do not show any degree of significance over time. This was somewhat expected and we are of the belief that these variables are not as suitable as indicators of profitability for our sample. If there is any takeaway to point out at all, we note that the signs are negative in one through three years after the switch. As can also be expected, coefficients in the unconstrained tests are somewhat larger, roughly twice as large, likely since the constraints control for some of the outliers in the sample with large negative values for those variables. Long-term, the coefficient sign reverses, likely reflecting that companies which survive for more than three years post-switch reasonably are profitable.

Growth

The variable has a large negative coefficient sign, which is consistent for all years across both tests except for the listing switch year in both versions. Since the effect appears large, perhaps even unreasonably so in economic terms, we should be cautious of taking it for granted. The only significant effect, at the five percent level, is visible in the second year after the switch in the unconstrained version. It suggests a yearly average negative sales growth of approximately 33 percent. However, as p-values are large we cannot reject the hypothesis that the combined effect is different from zero.

We include growth as a variable ex-post in order to find evidence that the listing switch is done in anticipation of maximizing future growth. In other words, if the timing is chosen to coincide with future growth opportunities that require a better capital market to finance them, either through equity issuances that would have been impossible to perform at the liquidity level of the previous market, or through credit lines that were previously unavailable. As seen above, profitability is more convincingly negative ex-post, as has been suggested in other studies, for example Papaioannou et al (2003). We hypothesise that this could be a result of the switch taking place to maximize the ability to take advantage of growth opportunities, and that profitability suffers because of it. Mueller (1972) presented theories suggesting that managers prioritise growth over shareholder wealth, which we also relates to our ex-ante hypothesis regarding growth. Our ex-ante test itself provided evidence that size and growth were significant factors that increased the probability of the switching decision. However, if we correctly assume that the coefficient sign for growth is negative post-switch, we find no evidence to further support the claim. Instead, the evidence would again be in line with the timing hypothesis as a potential explanation for the switch, as we would not assume such a company to strongly grow ex-post, having peaked beforehand.

Investments, Leverage and Cash

Investments display an alternating coefficient sign in the short-term and a positive one long-term, the latter consistent for both the unconstrained and constrained regressions. The coefficients show no statistical significance and we can draw no meaningful conclusion from them. However, as previously discussed and because of data availability, the variable only reflects investments in tangible assets and not intangibles. Potentially, this means that the coefficient is understated since a number of companies invest more in intangible assets than tangible, both ex-ante and ex-post. Since we are unable to further examine this aspect, this would be an interesting topic for future research.

Leverage also displays a generally low explanatory power and is not significant in any of the years, although the p-value of the constrained regression is almost significant at the ten percent level. We also note that all coefficients are consistently positive and similar in magnitude, possibly implying that firms in the treatment group increase leverage post-switch. Assuming that we observe an actual ex-post increase in leverage, this would be consistent with results from the ex-ante test, which showed a lower probability of a switch with high leverage. An ex-post increase suggests that switching firms rely more on debt financing after reaching the main market.

If the assumption on leverage is correct, a coherent story emerges explaining how and why companies move from alternative markets in respect to leverage and capital structure. Our results then suggest that companies rely less on debt financing while on alternative markets and more when on the main market, possibly after gaining access to better credit lines supported by increased monitoring. Companies might also be open to approach a more efficient capital structure post-switch, including higher amounts of debt, as suggested by Modigliani and Miller (1958). To fully confirm this, equity- and debt-issuance behaviour of the treatment group would need to be further studied. Speculatively, leverage can still be a signal of lower relative quality ex-post. Ex-ante, these companies performed well compared to their peers and had little leverage. Once on the main market, the timing issue causes performance to normalise and leverage increases. If this is the case, the theory of leverage as a signal of lower relative quality still holds for the ex-post period.

Cash, as a fraction of assets, is somewhat surprisingly consistent in sign and magnitude over time and also displays some significance in the third year after the switch in both the unconstrained and constrained versions. The consistency in the coefficients suggests that cash on the balance sheet appears to decrease both in the years after the switch and long-term, by approximately three percent. We view these results as a potential indicator of better monitoring on the main market, manifested in the form of a more efficient balance sheet.

IV) *Ex-ante Profitability*

Following the ex-post test, we further examine the profitability of companies in the treatment group to look for complementary evidence to the results of the ex-post test, which showed a statistically significant decline. Our intention is to study potential overperformance before the switch. We do this by comparing the ex-ante profitability of the treatment group to companies in the control group in the same GICS-industry, which we argue increases the relevancy of the comparison and helps us control for intrinsic differences in profitability across industries. Results are displayed in *Table XII*.

Table XII
Ex-ante industry ROA difference between the treatment and control group

Industry	GICS	Obs N	Treatment			Control			Median Diff.	Paired t-test	Wilcox. MW test
			Median	Mean	N	Median	Mean	N			
Energy	1010	102	0,034	0,034	25	-0,071	-0,063	77	0,105	1,001	-2.820 ***
Materials	1510	127	-0,059	0,010	14	-0,113	-0,194	113	0,054	2,640 **	-2.240 **
Capital goods	2010	274	-0,060	-0,095	28	-0,075	-0,187	246	0,015	1,719 *	-0.473
Commercial & Professional Services	2020	123	0,184	0,180	15	0,083	0,107	108	0,100	2,047 **	-2.172 **
Transportation	2030	44	-0,263	-0,222	3	0,057	-0,127	41	-0,320	-0,656	1.467
Consumer Durables & Apparel	2520	44	0,449	0,682	8	-0,011	-0,054	36	0,460	3,807 ***	-4.047 ***
Hotels, Restaurants & Leisure	2530	95	0,216	0,216	7	0,094	0,087	88	0,122	2,236 *	-1.937 *
Media	2540	-	-	-	-	0,008	-	-	-	-	-
Retailing	2550	97	0,112	-0,039	14	-0,038	-0,126	83	0,150	0,465	-2.838 ***
Food, Beverage & Tobacco	3020	86	0,009	0,015	8	0,025	-0,126	78	-0,016	2,439 **	0.074
Health Care Equipment & Services	3510	196	0,130	0,132	7	-0,215	-0,370	189	0,346	8,477 ***	-3.864 ***
Pharmaceuticals & Biotechnology	3520	140	-0,059	-0,135	19	-0,338	-0,381	121	0,280	3,180 ***	-2.029 **
Software & Services	4510	324	0,145	0,006	60	-0,011	-0,094	264	0,156	1,094	-2.751 ***
Technology Hardware & Equipment	4520	171	-0,451	-0,451	2	-0,169	-0,298	169	-0,282	-0,892	1.049
Telecommunications Services	5010	40	0,153	-0,054	3	-0,189	-0,395	37	0,342	1,301	-0.796
Utilities	5510	-	-	-	-	0,041	-	-	-	-	-

*The table compares the ex-ante ROA of the treatment group to the control group. The paired t-test column reports the t-statistic of the two-tailed paired-t-test which tests the null hypothesis that the difference of the means of the treatment and the control group is equal to zero. The Wilcox. MW-test column reports the z-statistic of a Wilcoxon Mann-Whitney test that the median difference between the treatment and the control group is different from zero. The Median Diff. column shows the manually calculated difference between the median ROA of the treatment and the control group. The number of observations used in the tests are reported in the N columns. *** denotes a significance level of 1 percent, ** denotes a significance level of 5 percent and * denotes a significance level of 10 percent.*

The results suggest that companies that switch listings have a statistically significant higher profitability than industry peers in the years leading up to the switch. It should however be noted that while using only ex-ante data for the treatment group greatly increases the relevancy of the comparison, it also reduces the number of firm-year observations for some industries. Naturally, some industries lack treatment companies altogether, or contain few treatment group observations. Nevertheless, the overall results of the performed tests seem to confirm that the listing switchers generally outperform peers on the alternative exchanges ex-ante.

Displayed in *Appendix Graph I*, we also graph the median ROA for all companies in the treatment group two years before and after the switch. Although the test is basic in nature and unlikely to represent the absolute truth for all companies, we observe that profitability of the group increases before the switch and reaches its highest point in the fiscal year of the switch, followed by a negative

drift. Jenkinson and Ramadorai (2013), using a similar-sized sample, find a fairly similar trend of spiking performance before the switch for companies that switched up from the AIM. Results are also consistent with Papaioannou et al (2003) who find partial evidence that switching companies self-select the timing of the switch, along with ex-post negative operating performance.

When combining the results of the ex-post test with these results, we find it both probable and plausible to assume that at least some degree of managerial timing appears to exist among Swedish companies that switch from alternative markets to the main market. Profitability appears to reverse - or at least decline - after outperforming industry peers ex-ante. With our dataset, we are unable to determine if this depends on temporary earnings increases or earnings manipulation, but considering that there is at least a certain degree of monitoring on alternative markets, we are inclined to argue that capitalising on a performance spike is a more probable explanation. Relating this to Pagano et al (1998), we also find it likely that there exists potential adverse selection issues for companies that switch listings, for example in the form of information asymmetries between managers and the Swedish market, where the market does not anticipate that the strong performance is temporary.

V) Institutional Ownership

In *Table XIII* below, we display the results of the extension test of changes in controlling- and institutional ownership before and after the switch.

Table XIII
Change in ownership of largest owners and institutions

Variable	Ownership			Change in ownership between periods		
	Before switch	At switch	After switch	t-1 and t	t and t+2	t-1 and t+2
Capital held by largest owners						
<i>Mean</i>	53,9 ***	54,4 ***	40,4			
<i>Median</i>	56,3	55,3	42,1			
<i>Std. Dev.</i>	(16,6)	(18,2)	(19,3)			
Change in capital held by largest owners						
<i>Mean</i>				-4,7 **	-13,9 ***	-16,6 ***
<i>Median</i>				-2,4	-11,5	-13,5
<i>Std. Dev.</i>				(9,5)	(11,0)	(11,1)
Capital held by institutions						
<i>Mean</i>	16,4 ***	17,7 ***	23,0			
<i>Median</i>	11,9	13,5	21,0			
<i>Std. Dev.</i>	(15,7)	(13,2)	(11,7)			
Change in capital held by institutions						
<i>Mean</i>				2,0 **	5,3 ***	7,4 ***
<i>Median</i>				1,2	4,7	8,0
<i>Std. Dev.</i>				(4,5)	(10,2)	(10,9)
Number of observations	22	31	31	22	31	22

“Before switch” refers to one year before the date of the switch (*t-1*) to the main market. *“At switch”* refers to the period just before the switch took place (*t*), and *“After switch”* refers to two years after the switch, or the most recent observation available (*t+2*). The leftmost columns report the fraction of the capital owned by the controlling shareholders and institutional owners at time *t-1* or *t* (depending on data availability), and their respective fractions at time *t+2*. Significance tests are performed to check that the fractions at times *t-1* and *t* are statistically different from the fraction at time *t+2*. The rightmost columns report the differences in ownership between the three periods and are tested to be statistically different from zero. The differences in observations are due to SIS Ågarservice missing data for *t-1* for some companies. *** denotes a significance level of 1 percent, ** denotes a significance level of 5 percent and * denotes a significance level of 10 percent.

As seen in the table above, we find strong and significant evidence for both theories discussed in Section IV. First, we see a decrease in the controlling owners fraction, both in the period leading up to the switch with 4.7 percentage points, and in the period after with 13.9. This is in line with our expectations after researching the stock performance patterns of listing switches. We find it highly likely that owners would unload a fraction of their holdings when prices are high due to the announcement effect, and then proceed to sell a larger fraction over time at the main market when able to do so. Considering the stock performance pattern shown for example in Dharan and Ikenberry (1995), this is the tactic we would employ as owners if our goal was value maximizing, in accordance with Zingales (1995) theory. The optimal strategy would be to sell all shares at announcement, but as previously discussed, this would often not be an option on alternative exchanges due to lacking trading liquidity. Large sell-offs would likely also act as an adverse signal to new investors.

Second, the institutional ownership fraction does increase in both the ex-ante (2 percentage points) and ex-post (5.3 percentage points) periods, for a total of 7.4. While we can not discern exactly what this depends on with our data, we would argue that the ex-ante increase is most likely attributable to increased investor attention and demand due to the announcement, combined with the company signalling high quality through the listing switch decision¹⁷, as described by Baker and Johnson (1990). The ex-post increase is more sizeable and while it is also connectable to the above mentioned theories on attention, demand and signalling, it might also be due to the company now being favourably compared to more relevant peers and the result might be similar in nature to the index inclusion effect. Chang, Hong and Liskovich (2013) study the relation of indexing to institutional ownership and liquidity. They find that addition to an index leads to a small increase in institutional ownership and a significant increase in trading liquidity - which correlates with the previously discussed theories and motivations behind the listing switch. On a side note, results can also be compared to Jenkinson and Ramadorai (2013) who observe a small decline in the mean ownership fraction of the largest individual shareholders and an equally small increase in institutional ownership for companies that switch from the AIM to the main market, although during a shorter period before and after the switch.

Conclusively, we hypothesise that the significant reduction of holdings by controlling owners after the switch could help explain the post-switch drift in stock performance, as reported by Hwang and Jayaraman (1993) for the Japanese market, among others. However, it gives limited insight in the negative operational drift. On the other hand, we argue it does confirm the ex-ante theory regarding valuation in our sample, i.e. that the switch in part can be explained by owners wishing to divest their

¹⁷ Investment policies of some funds also state that the fund may invest in stocks subject for trading on a regulated exchange within one year (Lannebo, 2013).

holdings, and seemingly time this decision to coincide with a high industry valuation. In accordance with previous research, this is made possible through increased investor attention and demand when on the main market, which is indicated by the increase in post-switch institutional ownership.

VI - Conclusion and Implications

In our study, we set out to gain a better understanding of why companies on alternative exchanges switch to the main market. Previous research is limited and neither academics nor investors seem to understand or anticipate the full effects of the listing switch. We find strong ex-ante evidence of firm characteristics being able to explain the listing switch decision. This holds particularly true for size, valuation and growth, which all increase the probability of a listing switch. Leverage is the only studied variable that decreases the probability, and profitability appears to have no significant explanatory power. Overall, the ex-ante evidence suggests that firms switch after outgrowing peers on alternative markets and that owners might time this with high industry valuation and peaking performance. Ex-post, we show that profitability declines sharply. Meanwhile, switching companies appear to be more profitable ex-ante than industry peers but do not seem to switch in anticipation of future growth opportunities. This suggests that managerial timing, as discussed by Dharan and Ikenberry (1995), is a relevant factor. Furthermore, it shows that adverse selection seems to be more of an issue with listing switches than we previously expected, and that the prestige of the main market (Baker and Johnson, 1990) in addition to running a larger company might be more important to managers than shareholder value. Partial evidence also points to better monitoring and more efficient capital structures post-switch in form of higher leverage and lower amounts of cash (Dittmar et al, 2003), even if it is fully possible that leverage is a signal of low quality both ex-ante and ex-post in our sample. Pre-switch controlling owners are shown to significantly decrease their ownership while institutional ownership increases post-switch. This points to owners value maximizing (Zingales, 1995) by timing the switch and in turn selling shares both ex-ante and ex-post. The increase in institutional ownership can be connected to theories on index inclusion effects (Elliott et al, 2006) and linked to the ex-ante determinant factor size - that firms switch to find peers to be favourably compared with.

In conclusion, our study suggests a potential explanation for why companies switch listings. As companies outgrow and outperform their peers, two motives distinguish themselves: First, owners wishing to diversify holdings but being unable to do so. Second, the company seeking more relevant peers to be compared to. Taking advantage of temporary strong performance and a favorable industry valuation, the decision to switch could be motivated by owners seeking access to a more liquid capital market. This stands in contrast to the expectation of the switch coinciding with future growth- and profit opportunities, as can be assumed by investors. Hence the decision to switch is,

according to our evidence, based on both internal firm characteristics like operational performance and ownership, as well as external factors such as valuation and liquidity.

Ultimately, investors need to better understand the listing switch decision, both with regards to its long-term effects and the motivations behind it. Previous research suggests that the market systematically misinterprets the intended effects of the switching decision. We are of the belief that this misinterpretation and the adverse selection problem linked to it can in part explain the trend towards more regulation on the main market. Sarbanes-Oxley pushed the cost/benefit-analysis of higher regulation into the light, while making it evident that with more regulation comes costs, but not necessarily benefits. As Engel et al (2004) concluded, increased disclosure requirements often cause costs to dwarf benefits for smaller firms and force them towards higher-cost sources of capital. If this is indeed the unintended consequences, we argue that this trend of increased regulation is misguided.

Instead, focus should be on interpreting the listing switch determinants and motivations. In the process, additional insight into the current role of alternative markets can be obtained. As we see it, after conducting this study, their purpose in Sweden is mainly to be growth markets where an attractive tradeoff between the cost/benefit of being public can be achieved. Eventually, companies are expected to graduate to the main market as legitimate peers. As evident by lacking ex-post stock- and operating performance, the latter part of this purpose is not always fulfilled, even if this is signalled ex-ante. That purpose instead becomes means to an end for controlling shareholders - their chance to cash out through a combination of attractive pricing, more attention and better liquidity at the main market. As Gillian and Starks (2003) stated, liquidity correlates with institutional ownership as liquidity is a condition for them to invest in the first place. While the institutional holdings increase, we do not observe the expected positive index inclusion effect on performance - leading us to speculate that the increase is mainly due to demand generation through more investor attention. Thus, the importance of understanding why and when companies perform listing switches and how these signal quality, in addition to how owners and managers may have incentive to capture the window of opportunity, becomes crucial to invest successfully in these companies. If properly understood and interpreted, then perhaps the adverse selection problem can be avoided.

VII - Future Research

With limited research conducted on the topic of listing switches in general, we believe that the global investment community could see practical benefits from increased understanding of listing switches. Since the market for new company listings on the Swedish alternative exchanges is currently booming, and several ongoing listing switch processes are currently underway, it would be interesting to return to the subject in a few years time and perform similar tests in order to confirm hypotheses and theories with the benefit of additional observations and a longer time frame. In addition to further examining the probability of switches as regulation changes over time, tests on controlling- and institutional ownership would be of particular interest. Given additional data, we suggest studying the topic from the perspective of the institutional owners or to conduct a more qualitative study focusing on the controlling owners in companies that switch to the main market. Regardless of focal point, we eagerly encourage additional research on the topic.

REFERENCES

D) Academic Papers

- Amihud, Yakov, Haim Mendelson (1986). Asset pricing and the bid-ask spread, *Journal of Financial Economics* 17.2, 223-249.
- Baker, H Kent, Martha Johnson (1990). A survey of management views on exchange listing, *Quarterly Journal of Business and Economics* 3-20.
- Baker, H Kent, Gary E Powell and Daniel G Weaver (1999). Listing changes and visibility gains, *Quarterly Journal of Business and Economics* 46-63.
- Barber, Brad M, John D Lyon (1996). Detecting abnormal operating performance: The empirical power and specification of test statistics. *Journal of Financial Economics* 41.3, 359-399.
- Brown, Stephen J, W Goetzmann, RG Ibbotson and SA Ross (1992). Survivorship bias in performance studies, *Review of Financial Studies* 5.4, 553-580.
- Chang, Yen-Cheng, Harrison Hong (2012). Rules and regression discontinuities in asset markets, *National Bureau of Economic Research. Available at SSRN 1918594*.
- Chang, Yen-Cheng, Harrison Hong and Inessa Liskovich (2013). Regression Discontinuity and the Price Effects of Stock Market Indexing, *National Bureau of Economic Research*.
- Christie, William G, and Roger D Huang (1994). Market structures and liquidity: A transactions data study of exchange listings, *Journal of Financial Intermediation* 3 no. 3, 300-326.
- Clyde, Paul, Paul Schultz, and Mir Zaman, (1997). Trading costs and exchange delisting: The case of firms that voluntarily move from the American Stock Exchange to the Nasdaq, *The Journal of Finance* 52 no. 5, 2103-2112.
- Cowan, Arnold R, Richard B Carter, Frederick H Dark, and Ajai K Singh (1992). Explaining the NYSE listing choices of Nasdaq firms, *Financial Management* 73-86.
- Dittmar, Amy, Jan Mahrt-Smith, and Henri Servaes (2003). International corporate governance and corporate cash holdings, *Journal of Financial and Quantitative Analysis* 38 no. 01, 111-133.
- Dharan, Bala G, David L Ikenberry (1995). The Long-Run Negative Drift of Post-Listing Stock Returns, *The Journal of Finance* 50.5, 1547-1574.
- Doidge, Craig, Andrew G Karolyi, and René M Stulz (2009). Has New York become less competitive than London in global markets? Evaluating foreign listing choices over time, *Journal of Financial Economics* 91 no. 3, 253-277.
- Elliott, William B, Bonnie F Van Ness, Mark D Walker and Richard S Wan (2006). What drives the S&P 500 inclusion effect? An analytical survey, *Financial Management* 35.4, 31-48.
- Engel, Ellen, Rachel M Hayes, and Xue Wang (2007). The Sarbanes–Oxley Act and firms' going-private decisions, *Journal of Accounting and Economics* 44 no. 1, 116-145.
- Fischer, Christoph (2000). Why do companies go public? Empirical evidence from Germany's Neuer Markt, *Munich School of Management, Munich, Germany*.

- Giannetti, Mariassunta (2003). Do better institutions mitigate agency problems? Evidence from corporate finance choices, *Journal of Financial and Quantitative Analysis* 38.1, 185-212.
- Gillian, Stuart L, Laura T Starks (2003). Corporate governance, corporate ownership, and the role of institutional investors: A global perspective, *Journal of Applied Finance* 13.2, 4-22.
- Goulet, Waldemar M (1974). Price changes, managerial actions and insider trading at the time of listing, *Financial Management*, 30-36.
- Hong, Harrison, Marcin Kacperczyk (2009). The price of sin: The effects of social norms on markets. *Journal of Financial Economics* 93.1, 15-36.
- Hogfeldt, Peter (2005). The history and politics of corporate ownership in Sweden. In: *A history of corporate governance around the world: Family business groups to professional managers*, University of Chicago Press, 517-580.
- Holmström, Bengt, Jean Tirole (1993). Market liquidity and performance monitoring, *Journal of Political Economy* 101.4, 678.
- Hwang, Chuan-Yang, Narayanan Jayaraman (1993). The post-listing puzzle: evidence from Tokyo Stock Exchange listing, *Pacific-Basin Finance Journal* 1.2, 111-126.
- Jenkinson, Tim, Tarun Ramadorai (2013). Does One Size Fit All? The Consequences of Switching Markets with Different Regulatory Standards, *European Financial Management* 19 no. 5, 852-886.
- Kim, Wi Saeng, Eric H Sorensen (1986). Evidence on the impact of the agency costs of debt on corporate debt policy, *Journal of Financial and Quantitative Analysis* 21.02, 131-144.
- Kadlec, Gregory B, John J McConnell (1994). The effect of market segmentation and illiquidity on asset prices: Evidence from exchange listings, *The Journal of Finance* 49.2, 611-636.
- Kedia, Simi, Venkatesh Panchapagesan (2011). Why do only some Nasdaq firms switch to the NYSE? Evidence from corporate transactions, *Journal of Financial Markets* 14 no. 1, 109-126.
- Lang, Larry, Eli Ofek, and René M Stulz (1996). Leverage, investment, and firm growth, *Journal of Financial Economics* 40.1, 3-29.
- Loughran, Tim, Jay R Ritter (1995). The new issues puzzle, *The Journal of Finance* 50 no. 1, 23-51.
- Merton, Robert C (1987). A simple model of capital market equilibrium with incomplete information, *The Journal of Finance* 42.3, 483-510.
- Mikkelson, Wayne H, Megan M Partch, and Kshitij Shah (1997). Ownership and operating performance of companies that go public, *Journal of Financial Economics* 44 no. 3, 281-307.
- Modigliani, Franco, Merton H Miller (1958). The cost of capital, corporation finance and the theory of investment, *The American Economic Review*, 261-297.
- Mueller, Dennis C (1972). A life cycle theory of the firm, *The Journal of Industrial Economics*, 199-219.
- Myers, Stewart C, Nicholas S Majluf (1984). Corporate financing and investment decisions when firms have information that investors do not have, *Journal of Financial Economics* 13.2, 187-221.
- Pagano, Marco, Fabio Panetta, and Luigi Zingales (1998). Why do companies go public? An empirical analysis, *The Journal of Finance* 53.1, 27-64.

- Papaioannou, George J, Nickolaos G Travlos, and K G Viswanathan (2003). The operating performance of firms that switch their stock listings, *Journal of Financial Research* 26 no. 4, 469-486.
- Papaioannou, George J, Nickolaos G Travlos, and K G Viswanathan (2009). Visibility effects and timing in stock listing changes: Evidence from operating performance, *The Quarterly Review of Economics and Finance* 49 no. 2, 357-377.
- Rajan, Raghuram G, Luigi Zingales (1995). What do we know about capital structure? Some evidence from international data, *The Journal of Finance* 50.5, 1421-1460.
- Reinganum, Marc R (1990). Market microstructure and asset pricing: An empirical investigation of NYSE and Nasdaq securities, *Journal of Financial Economics* 28.1, 127-147.
- Ribstein, Larry E (2005). Sarbanes-Oxley after three years, *University of Illinois Legal Working Paper Series* 30.
- Sanger, Gary C, John J McConnell (1984). A trading strategy for new listings on the NYSE, *Financial Analysts Journal* 34-38.
- Sanger, Gary C, John J McConnell (1986). Stock exchange listings, firm value, and security market efficiency: The impact of Nasdaq, *Journal of Financial and Quantitative Analysis* 21.01, 1-25.
- Sanger, Gary C, John J McConnell (1987). The Puzzle in Post-Listing Common Stock Returns, *The Journal of Finance* 42.1, 119-140.
- Schneider, Susan C (1988). National vs. corporate culture: Implications for human resource management, *Human Resource Management* 27.2, 231-246.
- Spiess, D Katherine, John Affleck-Graves (1995). Underperformance in long-run stock returns following seasoned equity offerings, *Journal of Financial Economics* 38 no. 3, 243-267.
- Toll, Gustaf, Philip Gustafsson (2011). Steget in i börsens finrum: Så påverkas marknadsvärdet och likviditeten för bolag som väljer att byta noteringsplatsplats från alternativa handelsplatser till Stockholmsbörsen, Master Thesis, *Royal Institute of Technology*, Stockholm, Sweden.
- Van Horne, James (1970). New listings and their price behavior, *The Journal of Finance* 25.4, 783-794.
- Vismara, Silvio, Stefano Paleari, and Jay R Ritter (2012). Europe's second markets for small companies, *European Financial Management* 18.3, 352-388.
- Wange, Erik, Tor Wikman (2011). Bära eller brista-byte av noteringslista?: Nya resultat från svenska aktiemarknaden, Bachelor Thesis, *Uppsala University*, Uppsala, Sweden.
- Webb, Gwendolyn P (1999). Evidence of managerial timing: The case of exchange listings, *Journal of Financial Research* 22.3, 247-63.
- Ying, Louis KW, Wilbur G Lewellen, Gary G Schlarbaum, and Ronald C Lease (1977). Stock exchange listings and securities returns, *Journal of Financial and Quantitative Analysis* 12.03, 415-432.
- Zingales, Luigi (1995). Insider ownership and the decision to go public, *The Review of Economic Studies* 62.3, 425-448.

II) Websites and digital assets

Alternativa Aktiemarknaden (2014). Alternativa's History, Available from: <http://alternativa.se/om-oss/om-alternativa/alternativas-historia.aspx> [17 March 2014].

Aktietorget (2014). About Aktietorget, Available from: <http://www.aktietorget.se> [12 February 2014].

Investopedia (2013). The NYSE and Nasdaq: How they work, Available from: <http://www.investopedia.com> [14 March 2014].

MSCI (2014). GICS Overview, Available from: <http://www.msci.com/products/indexes/sector/gics/> [13 March 2014].

Nasdaq OMX Nordic (2014). Digital Assets, Available from: <http://www.nasdaqomxnordic.com/> [25 March 2014].

Nordic Growth Market (2014). Rules and Regulations, Available from: <http://www.ngm.se/regler/?lang=en> [15 February 2014].

Lannebo Fonder (2013). Investment Policy Lannebo Sverige Flexibel, Available from: <http://www.lannebofonder.se> [April, 2014].

III) Databases

Bloomberg Terminal (2014). Accessed via Swedish House of Finance: March-May, 2014.

Finbas (2014). Accessed via Swedish House of Finance: February-May, 2014.

Thomson Reuters DataStream (2014). Version 5.1, Accessed via Stockholm School of Economics: February-May, 2014.

SIS Ägarservice (2014). Accessed via Stockholm School of Economics: March-May, 2014.

Standard & Poor's Compustat (2014). Accessed via Wharton Research Data Services: February-May, 2014.

APPENDIX

Appendix Table I
Treatment Group - Raw sample

Company name	First day of listing on an alternative exchange	Switch from	First day of trading on the main market	Reason for exclusion
Neurovive Pharmaceutical AB	2008-10-03	Aktietorget	2013-04-10	
Tethys Oil AB	2004-04-06	First North	2013-05-02	
Opus Group AB	2006-04-18	First North	2013-07-02	
Creades AB	2012-02-22	First North	2013-11-06	Financial Company
Victoria Park AB	2007-11-14	First North	2013-12-09	Real Estate Company
Seamless Distribution AB	2006-05-30	First North	2012-06-13	
Arcam AB	2000-07-03	NGM	2012-06-18	
Endomines AB	2007-06-19	First North	2012-11-07	
Shelton Petroleum AB	2008-10-01	NGM	2012-11-19	
BlackPearl Resources Inc.	2007-06-20	First North	2012-11-05	
Vitec Software Group AB	1998-03-28	Aktietorget	2011-07-04	
Micro Systemation AB	1999-12-01	NGM	2011-12-27	
FormPipe Software AB	2005-01-19	First North	2010-01-19	
eWork Scandinavia AB	2008-05-22	First North	2010-02-18	
CellaVision AB	2007-05-28	First North	2010-05-31	
NAXS Nordic Access Buyout Fund AB	2007-05-14	First North	2010-06-07	Financial company
Odd Molly International AB	2007-06-18	First North	2010-06-21	
Oasmia Pharmaceutical AB	2005-12-30	NGM	2010-06-24	
Trigon Agri A/S	2007-05-18	First North	2010-12-08	
Avega Group AB	2007-11-01	First North	2010-12-16	
Net Entertainment AB	2007-04-05	NGM	2009-01-13	
Cloetta AB	2008-12-08	First North	2009-02-16	Too short time listed
Electra Gruppen AB	2006-05-04	First North	2009-06-01	
Alltele AB	2007-03-01	First North	2009-06-15	
Black Earth Farming Ltd	2007-12-28	First North	2009-06-22	
Corem Property Group AB	2007-11-28	NGM	2009-06-24	Change in operations
Nordic Service Partners Holding AB	2006-05-02	First North	2008-01-15	
Morphic Technologies AB	2004-09-01	First North	2008-04-03	
Swedol AB	2006-06-12	First North	2008-12-06	
ITAB Shop Concept AB	2004-05-28	First North	2008-07-08	
Nordic Mines AB	2006-12-15	First North	2008-07-18	
Tanganyika Oil Company Ltd	2003-12-12	First North	2007-02-14	
NovaCast Technologies AB	1997-03-26	NGM	2007-04-11	
Björn Borg AB	2004-12-20	First North	2007-05-07	
West Siberian Resources Ltd	2000-12-27	First North	2007-05-23	

Appendix Table I (cont.)
Treatment Group - Raw sample

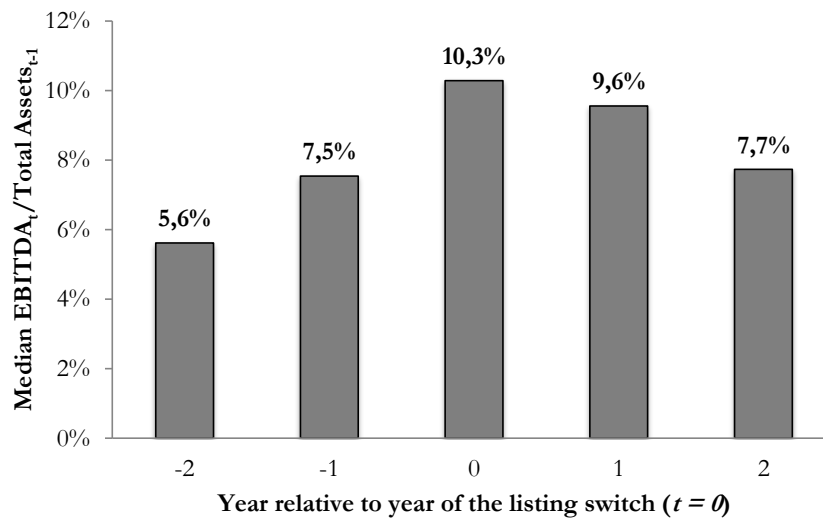
Sagax AB	1999-04-06	First North	2007-10-08	Real Estate Company
PA Resources AB	2001-07-02	NGM	2006-06-19	
Svithoid Tankers AB	2004-07-01	Aktietorget	2006-07-13	
AarhusKarlshamn AB	2005-09-29	First North	2006-09-11	
Uniflex AB	2004-11-19	First North	2006-11-01	
Melker Schörling AB	2006-09-05	First North	2006-12-06	Financial Company
Rejlerkoncernen AB	2003-05-08	NGM	2006-12-18	
Connecta AB	2004-04-29	Nya Marknaden	2005-05-30	
Netonnet AB	2000-06-15	Nya Marknaden	2004-05-25	
Ainax AB	2004-06-08	Nya Marknaden	2004-12-01	Financial Company
Probi AB	1998-12-16	NGM	2004-12-02	
Lundin Mining Corporation	2003-12-12	Nya Marknaden	2004-12-03	
Lundin Petroleum AB	2001-09-06	Nya Marknaden	2003-10-02	Data constraint
HQ Fonder AB	2001-05-14	Nya Marknaden	2002-06-25	Financial Company
Sign On i Stockholm AB	2000-06-05	Nya Marknaden	2002-06-27	Data constraint
Active Capital AB	2002-07-22	Nya Marknaden	2002-11-05	Financial Company
Diffchamb AB	1996-07-05	NGM	2001-11-19	
Aspiro AB	2000-05-09	Nya Marknaden	2001-06-06	
Academedi AB	1998-06-18	NGM	2001-06-27	Data constraint
Fingerprint Cards AB	1998-06-23	Nya Marknaden	2000-04-19	
TeleTrade Financial Services AB	1999-12-16	Nya Marknaden	2000-04-19	Financial Company
Kipling Holding AB	1998-07-03	Nya Marknaden	2000-05-19	
Traction AB	1997-07-03	NGM	2000-05-23	Financial Company
Glocalnet AB	2000-03-08	Nya Marknaden	2000-06-05	Too short time listed
C Technologies AB	2000-03-15	Nya Marknaden	2000-06-16	Too short time listed
Novestra AB	2000-04-25	Nya Marknaden	2000-06-21	Too short time listed
Feelgood Svenska AB	1997-05-12	NGM	2000-06-02	
Riddarhyttan Resources AB	1997-05-30	NGM	2000-06-08	
Cherryföretagen AB	1996-03-25	NGM	2000-06-08	
Thalamus Networks AB	2000-07-06	Nya Marknaden	2000-09-04	Too short time listed
Mogul.com Group AB	1997-07-14	Nya Marknaden	2000-09-11	
Friluftsbolaget Ekelund & Sagner AB	1999-11-26	Nya Marknaden	2000-10-02	
Precise Biometrics AB	1999-12-13	NGM	2000-10-03	Too short time listed
Dial NXT Group AB	2000-03-17	Nya Marknaden	2000-12-06	Too short time listed
Utfors AB	2000-04-25	Nya Marknaden	2000-12-11	Too short time listed
Daydream Software AB	1997-01-17	Nya Marknaden	2000-12-19	
Vision Park Entertainment AB	1997-09-24	NGM	2000-06-07	
Medi Team Dentalutveckling i Göteborg AB	1998-01-28	Nya Marknaden	1998-06-03	Too short time listed

Appendix Table II
Number of companies per industry in the final sample

GICS (4)	Industry	Total	Treatment	GICS (2)	Sector	Total	Treatment
1010	Energy	19	6	10	Energy	19	6
1510	Materials	25	4	15	Materials	25	4
2010	Capital goods	43	4	20	Industrials	71	8
2020	Commercial & Professional Services	21	3	25	Consumer Discretionary	65	8
2030	Transportation	7	1	30	Consumer Staples	15	3
2520	Consumer Durables & Apparel	10	2	35	Health Care	53	6
2530	Hotels, Restaurants & Leisure	15	2	45	Information Technology	83	14
2540	Media	18	0	50	Telecommunication Services	8	1
2550	Retailing	22	4	55	Utilities	4	0
3020	Food, Beverage & Tobacco	15	3				
3510	Health Care Equipment & Services	30	2				
3520	Pharmaceuticals & Biotechnology	23	4				
4510	Software & Services	59	13				
4520	Technology Hardware & Equipment	24	1				
5010	Telecommunications Services	8	1				
5510	Utilities	4	0				
<i>Count:</i>		343	50			343	50

The table reports the distribution of the companies in the final sample and in the treatment group per industry.

Appendix Graph I
Median Treatment group ROA surrounding the listing switch



Observations

Year relative to the switch	t - 2	t - 1	t	t + 1	t + 2
Number of observations	40	50	50	41	36

The graph displays the median Return on Assets, calculated as EBITDA over the previous year's closing balance of total assets, for companies in the treatment group in the years surrounding the listing switch. $t=0$ is the fiscal year in which the switch took place. The number of yearly observations used in the calculations are displayed in the table.