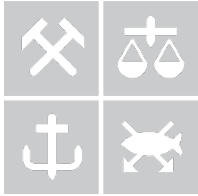


NHH

Norwegian School of Economics

Bergen, Autumn 2022



The Initial IPO Market Selection

An empirical study on firm-specific variables affecting the process and performance of IPOs listed on the Norwegian stock exchanges between 2007-2021

Knut Sunde Kleive and Stian Grieg Sæthre

Supervisor: Tore Leite

Master thesis, Economics and Business Administration Financial Economics

NORWEGIAN SCHOOL OF ECONOMICS

This thesis was written as a part of the Master of Science in Economics and Business Administration at NHH. Please note that neither the institution nor the examiners are responsible – through the approval of this thesis – for the theories and methods used, or results and conclusions drawn in this work.

Preface

This thesis represents the finalization of our Master of Science in Financial Economics at Norwegian School of Economics (NHH). The process of writing our master's thesis has provided us with many challenges and hurdles to overcome, but mostly it has been an enriching and educational experience.

The motivation behind choosing corporate finance and, more specifically, IPOs as a topic has been our general underlying interest combined with fulfilling and inspiring finance courses at NHH and first-hand encounters with IPOs through varying working experiences. In addition, the pulsating life of a stock market, combined with its brutal honesty and ability to enrich and destroy simultaneously, is genuinely fascinating. Hence, one might state that the topic rather chose us.

Lastly, gratitude towards certain individuals' crucial contributions to completing this thesis is called for. We want to thank everyone who has contributed insight into this fascinating topic, especially our supervisor Tore Leite. His support, feedback, and guidance have been crucial throughout the process of writing our thesis.

Norwegian School of Economics

Bergen, December 2022

Knut Sunde Kleive

Stian Grieg Sæthre

Abstract

This thesis studies the effects of firm-specific characteristics on initial marketplace choice and post-IPO performance for IPOs on the Norwegian stock exchanges from 2007 to 2021. From a tailored data set of 288 listings on Oslo Børs, Euronext Growth, and Euronext Expand, we confirm that firm-specific characteristics largely affect both marketplace choice and aftermarket performance.

There is extensive research on post-IPO performance, but the actual choice of marketplace is a substantially less researched topic. The combination of these two topics seems to be a somewhat unplowed field. Hence, this thesis seeks to contribute to expanding the research around the IPO process with a main focus on the initial marketplace selection.

We have formulated five hypotheses; three tackle the choice of marketplace in light of firm-specific characteristics, and the latter two explore how the companies have performed considering these characteristics and their initial market selection. We have used several control variables in our regressions to enhance the analysis.

The regression analysis shows that profitable firms prefer to list on the main market. PE/VC-backed firms do, however, not have a preferred marketplace to list on. The choice of marketplace does not affect long-run shareholder return. Nonetheless, PE/VC-backed firms have underperformed non-backed firms. We also find that the amount of capital raised affects the choice of marketplace.

Keywords: IPOs, Firm-specific characteristics, Euronext Growth, Euronext Expand, Oslo Børs, junior market, PE, VC

Table of content

1	Introduction	1
1.1	Interviews with Industry Players	4
1.2	Purpose	5
1.3	Limitations.....	6
1.4	Outline	7
2	Literature Review	8
2.1	The Issuer	8
2.2	Reasons for Going Public.....	9
2.3	Evidence of Long-run Performance	11
2.4	Theories of Long-run Performance	12
2.5	Market Selection.....	13
3	The Norwegian Stock Market	15
3.1	History	15
3.2	Current Structure	15
3.3	Listing Requirements	16
3.4	Admission Rules.....	18
3.5	Disclosure Requirements and Investor Protection.....	19
4	Hypothesis	20
4.1	Profitability.....	20
4.2	PE/VC Ownership	21
4.3	Capital Raised.....	22
4.4	Long-run IPO Performance	23
5	Methodology	24
5.1	Probit Regression Analysis.....	24
5.2	Evaluation of Regression Models.....	26
6	Data	27
6.1	Data Collection.....	27
6.2	Independent Variables	29
6.2.1	Profitability.....	29
6.2.2	PE/VC Ownership	29
6.2.3	Capital Raised.....	30
6.2.4	Long-run Return	30
6.3	Control Variables.....	31
6.3.1	Firm Size	31
6.3.2	Ownership Structure.....	32
6.3.3	Majority Owner	32

6.3.4 Industry.....	33
6.3.5 Hot Market Dummy	33
6.3.6 Seasonal Darkness	34
6.3.7 Company Age	35
7 Descriptive Statistics	36
7.1 Overview of the IPO Market	36
7.2 Overview of Independent Variables	38
7.3 Overview Control Variables	39
8 Empirical Analysis	41
8.1 Probit Regression Results.....	42
8.2 Independent Variables	44
8.2.1 Profitability.....	44
8.2.2 PE/VC Ownership	44
8.2.3 Capital Raised.....	45
8.2.4 Market Choice	45
8.3 Control Variables.....	46
9 Conclusion.....	49
9.1 Future Research.....	50
References	51
Appendix	56
A1 Linear Probability Model	56
A2 Correlation Matrix.....	58
A.3 Exclusion List.....	59

List of Tables

3.1: Listing Requirements	17
3.2: Listing Costs.....	18
7.1: Sample Descriptive Statistics	37
7.2: Differences in Independent Variables.....	38
7.3: Differences in Control Variables	39
8.1: Probit Regression Model.....	42
8.2: Marginal Effects Model.....	43
A1.1: Linear Probability Model.....	57
A2.1: Multicollinearity Test.....	58
.A3.1: Exclusion List.....	59

1 Introduction

The initial market selection for companies undergoing an initial public offering (IPO) is an important decision that can have significant implications for the success of the offering and the future performance of the company. With the recent IPO boom on Norwegian stock exchanges in mind, the opportunity to dig deeper into this fascinating topic was appealing. The continuous development of entrepreneurial finance has led to an increase in marketplaces with fewer and less strict requirements, so-called junior markets. This has led to an increased interest in understanding the factors that influence the selection of marketplace.

The emergence of junior markets has been studied by several. Bernstein (2020) points out that following the increased acknowledgment of entrepreneurial finance, financial policymakers have focused on creating new stock exchanges for younger and smaller firms. He argues that these junior markets, characterized by less strict listing requirements, enable the creation, financing, and retention of job-creating ventures. Especially the European Commission has been at the front end of this development, eager to strengthen the European IPO market (EU Listing Act, 2021). With the world-known success of second-tier markets like the renowned Nasdaq in New York, Shenzhen-based ChiNext market, and London's Alternative Investment Market, the rationale for such underwriting by the EU is understandable (Bernstein, 2020).

Junior markets are dedicated to nurturing younger firms until they get adequate to move to the main markets (Carpentier & Suret 2019). Presumably, the ultimate goal of junior markets is to transfer the best performers to the main markets (Carpentier, 2010). Bernstein et al. (2018) studied 285 stock exchanges in 115 countries and found that 77 junior stock exchanges in 48 countries were established from 1990 to 2013. Interestingly, the study did not find any evidence of a substitution effect following the establishment of junior exchanges. Their study found supporting evidence that junior markets cover a different portion of investors and firms.

Vismara et al. (2012) explain the motivation behind creating second-tier markets and explores why many have failed. They find that the average long-run performance of IPOs on second-tier markets is dramatically worse than for those on the main market. However, they argue that second-tier markets have allowed firms to raise funds both at the IPO and in follow-on offerings. Further, they question whether firms that choose to list on the junior market possess different characteristics than the ones that list on the main market.

This study regards market selection as an independent firm choice, similar to other corporate finance decisions. Within the listing requirements and the legal constraints, firms can choose where and if they want to list. Consequently, this paper seeks to determine the magnitude firm-specific characteristics have on the IPO process and the choice of listing place.

Within our sample, there is an observable trend that firms choose to list in the same period and on the same exchanges as their peers. This phenomenon is often referred to as clustering. The clustering of IPOs is a broadly researched topic. Ibbotson and Jaffe (1975), Ritter (1984, 1994), and Ibbotson et al. (1988) show that IPOs cluster in both time and industry. In addition, most IPO firms do not have an immediate need for outside funds to finance investments (Pagano et al. 1998). Consequently, the proceeds add to the firm's cash balances (Baker and Wurgler (2001)). In other words, firms prefer to list after observing unexpectedly high offer prices and do not use the proceeds toward investments. This evidence initially points to a behavioral explanation for IPO clustering – based on entrepreneurs trying to time the market to benefit from the temporary positive investor sentiment.

There are mainly two factors that drive our motivation to study the Norwegian stock market. Firstly, following the introduction of Euronext Expand in 2007 and Euronext Growth in 2016, there are now two Norwegian marketplaces where the listing requirements are significantly more lenient than those on the main exchange Oslo Børs. Hence, this creates a solid foundation for comparison and analysis. Secondly, the number of listings on the junior markets has far surpassed those on the main market. Indicating that both firms and investors have adopted the introduction of junior markets. These two factors combined do, in our view, both support and motivate the topic of this paper.

Where other research on this topic tends to focus on the differences between junior and main markets, we have chosen a slightly different approach. For the Norwegian stock market, and likely for others, there are large differences in listing requirements within the various marketplaces. Therefore, we believe one will obtain more nuanced results by differing solely between the listing requirements rather than the junior and main categories. Except for the classification as a fully regulated market, Euronext Expand has, in our view, more in common with Euronext Growth than with Oslo Børs. Consequently, this paper will treat Euronext Growth and Euronext Expand as junior markets, while Oslo Børs will represent the main market.

This study further investigates the initial market selection for IPOs, building on previous literature on the subject. We use probit analysis, marginal effect, and linear probability models to provide evidence of firm-specific characteristics affecting initial market selection. Over 339 firms have been listed on Norwegian stock exchanges during our selected timeframe. More than 60 % of the listings were on the junior markets. In line with the observations by Vismara et al. (2012), we found that firms that list on the main market tend to be older, larger, and more profitable than those of the junior markets. However, this contradicts some of the findings of Corwin & Harris (2001), who found no evidence that companies on the main market were older than those on the junior market. However, we found that profitability significantly impacted the initial market selection. This is in line with Baade-Mathiesen and Melnikova (2019), who found this true for the Swedish stock market. It also aligns with the findings of Doukas and Hoque (2016), who argue that the main and junior markets attract different kinds of firms based on firm-specific characteristics. We found, however, no evidence that any of the aforementioned characteristics had any impact on the stock return in the long run.

We also found that firms that list on the main market have significantly more total assets. Consistent with the findings of Albornoz and Pope (2004), who argue that smaller firms need to list on the junior markets as their shortcomings concerning funds make it difficult to meet the cost of underdoing an IPO on the main market. Subsequently, we find no evidence that PE/VC ownership significantly impacts the initial market selection. This aligns with the literature by Vismara et al. (2012), who found that this type of ownership did not impact the decision even when considering the high concentration in the technology sector. However, this contradicts the feedback from industry players that expressed a clear preference for the main market. However, we see a significant negative effect on PE/VC-backed firms and their long-run performance, suggesting that the stock return is higher for non-backed firms. This contradicts the study of both Levis (2011) and Bergström et al. (2006), who provided individual evidence that backed IPOs outperformed non-backed IPOs in the United Kingdom and France.

In contradiction to Baade-Mathiesen and Melnikova's (2019) study of the Swedish stock exchange, we found evidence that the total amount of capital raised significantly impacts the initial market selection. We believe that the differences in industry concentration and country-specific characteristics play a vital role in explaining the deviating observations. We also found that companies on the junior market tend to raise a higher proportion of capital relative to their initial total assets when compared to firms on the main market.

Our findings also contradict those of Vismara et al. (2012), who found evidence that companies on the junior market raised more capital, in absolute terms, than main market firms.

Conclusively, in contradiction to Vismara et al. (2012), we found no evidence that the initial market selection impacts long-run stock return. Thus, we found no evidence that the IPOs on Norwegian junior markets are underperforming relative to main market listings. This underlines the significance of analyzing the firm-specific qualities and characteristics and concludes that these are of greater importance when analyzing long-run stock returns than market selection.

1.1 Interviews with Industry Players

Whether an IPO could be regarded as an actual exit strategy or merely constitutes a financing round is a different discussion. However, we find it insightful to supplement the paper with insight from a few of Norway's dominant PE/VC players on IPOs. Insight from central stakeholders within the Norwegian financial markets often provides a different perspective than academic literature. After speaking to some of them, our impression is that their views and thoughts about taking a company public differ quite a lot. We challenged them on whether an IPO is an exit, if they actively consider the choice of marketplace when taking a portfolio company public, and their views regarding corporate governance on junior vs. main markets.

Investinor, a large state-owned Venture Capitalist with assets under management of NOK eight billion, expressed that they did not regard IPO as an exit strategy. To them, an IPO is merely a more extensive financing round (Loktu, 2022). This coincides with the feedback from Altor (Ramm, 2022), which states that an IPO is the first step in an exit. They often run a dual process where they explore both a public and a private option and choose the most lucrative one. Lately, that has often been the public option. Altor points to a much lower cost of capital (5-7%) in the stock market, compared to private equity, where the cost of capital often exceeds 20%, as one of the primary reasons why an IPO is lucrative. However, they highlight the presence of a lock-in effect when choosing an IPO. Hence, they often combine an IPO with a partial realization of their profits and argue that taking a company public is an attractive option if they want to both realize some of the investment and keep an interest in the company. Investinor and Altor comment that they take an active stand on the choice of marketplace.

Still, they both view the choice to have a limited impact on their corporate governance as they exercise this through representation on the company's board of directors and close dialog with management. Hence, in their view, disclosure requirements do not factor substantially into their initial market selection.

However, they argue that liquidity is an essential factor and state that there is a liquidity premium on the main market. Hence, the valuation should be higher on the junior markets. Nonetheless, a main market listing provides access to better liquidity and more professional and prominent investors and is usually the preferred choice (Ramm, 2022).

Lastly, many of the PE/VC players we spoke to commented that in a hot IPO market, the presence of especially junior markets makes for an additional competitor. As many companies eligible for a PE/VC investment instead choose to go public due to a substantially higher valuation. However, when the IPO markets cool off, the same marketplaces might serve as a feeder to PE/VC investors as many of the listed firms are eligible for a buyout. This underlines the dynamics of financial markets and the importance of having a broad spectrum of marketplaces and investors.

1.2 Purpose

Our study explores a tailored dataset of 288 IPOs on the Norwegian main market Oslo Stock Exchange and the junior markets Euronext Growth and Euronext Expand. In more detail, our study tackles the effect of ownership, profitability, and capital raised on the choice of marketplace and post-IPO performance. Our goal is to supplement the existing research on this topic by examining firm-specific factors. The main research question is: *What firm-specific variables affect the IPO process, choices, and performance of firms listed on the Norwegian stock exchanges between 2007-2021?*

1.3 Limitations

Where similar research on this topic often includes a section with sub-samples to deepen their analysis further, we have decided not to follow in that direction. The most common is to differentiate between eligible firms and those not eligible to list on the main market. Doing so makes sense because there often is a substantial difference in listing requirements between the main and the junior markets. However, after our initial data gathering, we encountered several cases where firms have received waivers or exceptions from the listing requirements of the main market. After investigating this further, we learned that roughly one-third of the main market IPOs in our sample had received a waiver. In other words, many companies listed on junior markets would likely be eligible for a waiver.

Consequently, we have chosen not to use a sub-sample as we view this might impose a bias in our analysis. We consider the choice and timing of undergoing an IPO as each individual firm's choice. In our view, firms considering an IPO could just as easily choose to wait. Our analysis shows that a large proportion of IPOs happens during hot market periods. This points to market sentiment as the primary driver for the initial IPO choice. We fear that by solely differing between eligible and non-eligible firms, one would fail to obtain the full effect of these conditions and miss out on all the firms that choose to take part in the extraordinary IPO sentiment. However, there are firms listed on the junior markets that might not be eligible for a waiver, and this should be kept in mind when reviewing the results.

Alternative funding platforms beyond financial markets have also emerged lately, with crowdfunding being the one that has gained the most traction. Assad (2016) points out that integrating technology into entrepreneurial initiatives has led to increased use of online communities to raise funds for ventures and projects. Through social media platforms, crowdfunding has provided an innovative, large-scale fundraising solution covering personal and professional initiatives. Although crowdfunding might have been a valid option for many companies in our dataset, the topic falls outside the scope of this paper. However, crowdfunding is nonetheless an increasingly relevant topic.

With the recent increased focus on diversity and women in leadership positions, we sincerely wanted to include this control variable in our analysis as we think this could give some insightful results. However, there were simply not enough female CEOs in our dataset to provide meaningful results, as the sample size was too small. With 15 years of data and hundreds of firms, one should think this would not be an issue, but that is unfortunately not the case. This is hence merely a sight of hearths from us, but let it be a reminder that the diversity challenge is far from resolved.

1.4 Outline

The remainder of the paper is structured as follows. Section 2 presents a review of existing literature on the selected topic of this paper. Next, section 3 explains the history and composition of the Norwegian stock market. Section 4 defines our hypothesis and the motivation behind these, and section 5 then presents the methodology we have applied to answer our hypothesis. Further, section 6 provides an overview of the data collection process and the reason behind our chosen variables. Section 7 then presents descriptive statistics of our variables. In section 8, empirical analysis, the regressions are portrayed with an associated discussion of the results. Lastly, in section 9, our conclusion and topic for further research are presented.

2 Literature Review

This section presents relevant literature concerning the issuer, the reasons for going public, long-run performance, and the initial market selection. Hence, we will discuss literature describing the choice of going public and the different reasons to select either a main market listing on Oslo Børs or a less stringent marketplace like Euronext Growth or Euronext Expand. Subsequently, we will present theories and literature describing post-IPO performance and market selection's impact on shareholders.

2.1 The Issuer

The issuer plays a crucial role during an initial public offering. The process begins with the issuer opening up the company to external capital by selling existing shares, often held by primary owners, or issuing new shares to secondary holders. In either case, the issuer is looking to achieve the highest possible valuation for the company and maximize the value of its shares. Grinblatt & Hwang (1989) & Welch (1989) state that IPOs and their issuers can be divided into two categories, high-quality and low-quality. This is based on the assumption that high-quality issuers have a great deal of information about future cash flows, allowing them to understand the company's current value clearly. In contrast, its low-quality counterpart is uncertain about the company's intrinsic value.

Both Palmiter (1999) and Welch (1989) argue that high-quality issuers will hesitate to provide the public with all the information regarding their perspective of present value and their expectation for future income. Additionally, Welch (1989) states that this leads to the information asymmetry problem, where a company withholds information to protect its competitive advantage over its peers.

2.2 Reasons for Going Public

There are several factors to consider when a company opens itself up to outside capital and new shareholders by going public. There is a wide range of reasons why companies choose to go public, and previous research has identified several common motivations, such as increasing publicity, improving share liquidity, and managing capital. Other reasons include allowing primary insiders to realize gains and funding financial innovation through research or acquisitions. However, the topic is widely debated, and different authors have identified various reasons for going public, highlighting that different stock exchanges and countries have unique cultures, rules, and sentiments.

Brau and Fawcett (2006) studied the American stock market, arguing that firms choose to go public as a strategic reputation-building move to facilitate and encourage future acquisitions. This is supported by the studies of Chemmanur and Fulghieri (1999), who state that being a part of a stock exchange offers additional accessibility to capital markets, making it easier to raise funds in the future. In contradiction to Brau and Fawcett (2006), Pagano (1998), argues that European companies, especially in Sweden, Spain, and Italy, go public to rebalance their accounts after a period of high investment and not to finance acquisitions or future growth. Demers & Lewellen (2003) adds to the arguments by Brau and Fawcett (2006) and suggests that companies may also go public for strategic reasons to receive increased publicity. This increase in visibility can attract new investors and qualified employees, providing additional advantages to the company.

Another common motivation for going public is for stakeholders to exit their position in the company (Zingales, 1995). They argue that this often leads to concealing strategies, such as information about insider exit, which in turn might send a negative sign to potential investors regarding the firm's future. This approach is prevalent for private equity- and venture capital-backed firms. Should we believe Brau (2003), there is often a strong incentive for doing so, both as a strategic exit and the asymmetrical advantage insiders have over the public. This is further elaborated by Loughran & Ritter (2002), who argues that the motivation for going public is for primary investors to free up capital to allocate into a more diversified portfolio.

There are, however, several downsides involved with going public. Smart & Zutter (2003) argues that one of the main risks involves that founders and existing shareholders can lose control of the company. The nature of publicly traded companies makes it so that existing shareholders might become subject to new shareholders' demands and expectations. Subsequently making it more challenging to pursue desired goals. In addition to risking losing control of the company, one must follow more strict requirements and control. This involves corporate governance, insider trading, environmental regulation, and consumer protection laws. Hence, the company faces increased commitment when fulfilling both the legal and moral requirements as well as the satisfaction of shareholders.

Loughran & Ritter (2002) presents a cost perspective as one of the downsides of going public. Firstly, direct costs are associated with using investment banks as underwrites, which come with a fee. Additionally, the company needs external expertise to facilitate a satisfactory prospectus and indirect cost related to meeting the increased requirements for financial reporting. However, Jenkinson & Ljungqvist (2001) argues that the positive implication the company faces exceeds the negative when going public and that the equity market is an effective place to obtain capital. However, there are many aspects to consider when deciding if a company should go public, and it is a subjective perception of whether the pros outweigh the cons.

The primary deviations between the exchanges are often found in the listing requirements. Companies that list on the main market are often required to have a higher market value, a more extensive accounting history, and follow more stringent financial reporting regulations. The initial motivation behind junior markets was to enable the same benefits, as the main market, for smaller and younger firms. Thereby making the process of raising external capital easier for firms that experience high growth but struggle to meet all the stringent requirements of the main market (Mendoza, 2011). Subsequently, the process is significantly less capital-dependent, comprehensible, and quicker than on the main market. The study by Granier et al. (2019) examines the functions of junior markets in Europe and Japan. Although the study does not directly address the firm's initial listing decisions, one interesting finding is that all the junior markets examined in the study have high secondary equity offering occurrence and low amounts of capital raised in the IPOs. This is in contrast to the findings of Vismara et al. (2012), who reported that junior market firms raise more money than main market firms.

2.3 Evidence of Long-run Performance

The performance of IPOs has been widely studied, both short and long-term. There are especially many studies concerning short-run performance, which revolves around underpricing. Subsequently, fewer studies touch on the subject of long-term performance. However, the literature suggests that most IPOs are underperforming in the long run. One of the earliest studies by Ritter (1991) provides evidence that 1526 IPOs listed on the American Stock Exchanges between 1975–84 underperformed, relative to a reference index compiled of industry peers, by 27.39% in a 3-year holding period. Ritter also re-did a similar study in collaboration with Welch in 2002 to determine if there were any differences when renewing the timeframe. The study provided evidence that US firms listed between 1980 and 2001, on average, underperformed by 23.4% compared to the market. This is further in line with the study of Espenlaub et al. (2000), who found evidence that IPOs underperform, regardless of index comparison for the UK Stock Exchange between 1985-1992.

Previous literature also suggests that the different marketplaces provide deviating aftermarket performance. There is a wide acceptance that post-IPO performance is considerably worse for junior market firms rather than main market firms. However, the junior markets are increasingly popular, and more firms prefer to list on the less stringent marketplace. Vismara et al. (2012) presented a study on European second-tier markets and found that the long-run performance was significantly weaker than for the main market. The average 3-year abnormal return was 12.3% for main market IPOs, whereas the junior markets averaged -19% for the same period. Similar observations were found in the United Kingdom, where the main market IPO's 3-year average abnormal return was 25.3 % and -27.5% for the Alternative Investment Market (AIM).

Consequently, one can argue that the marketplace should decrease in popularity. However, this is not the case. Doukas and Hoque (2016) and Vismara (2012) both identify an increasing trend for junior markets in the European stock market. It is unclear what the reason for the increased activity is. Nonetheless, academic research from Doukas and Hoque (2016) suggests that the fast processes and low capital expenditures associated with a junior market listing are one of the main reasons. However, they also surmise that other factors affect the initial choice of marketplace.

2.4 Theories of Long-run Performance

Several studies have attempted to identify the factors that can explain the long-term performance of initial public offerings. Ritter (1991) posits that issuers see a "window of opportunity" in that overly enthusiastic investors overestimate the growth potential of companies with poor track records, leading to higher valuations at the time of the IPO. However, Miller (1977) states that the fundamental belief among overzealous investors explains the aftermarket performance. Eckbo & Norli (2005) suggest that the individual liquidity of the shares can explain the long-run performance of IPOs. Ang, J and Boyer, C (2009) provided evidence that the maturity of the industry in which the issuer operates influences long-term performance. Espenlaub et al. (2000) further supported this and found that more mature industries underperformed compared to other industries.

Based on the assumption that IPO equities are highly liquid and display a significant share turnover liquidity, Eckbo & Norli (2005) suggest that lower systematic risk exposures may result from lessened liquidity risk of the IPO stocks. Subsequently, the study argues that moderated liquidity risk, at the cost of increased liquidity, may explain some of the weak aftermarket performance of IPOs. However, this contradicts the findings of both Fang et al. (2008) and Bjørnerund & Kristiansen (2019), who found evidence that more liquid stocks outperform illiquid stocks on the American- and Norwegian Stock Exchange.

Ritter (1991) explains the theory of "window of opportunity" as a situation where the company tries to time its IPO during a period with high market optimism. This allows the company to exploit market sentiment to its advantage, resulting in higher valuations at the time of the IPO. Ritter (1991) presents evidence that investors were willing to pay more for future growth in this type of market sentiment. The study further argues that IPOs do not underperform before deviating from the exaggerated expected growth. Miller (1977) argues that this phenomenon arises when there is a significant mismatch between the valuations of pessimistic and optimistic investors. However, the latter prevails, leading to an overvalued IPO. Similarly to Ritter (1991), he argues that as more information about the company and future cash flows arises, the previously optimistic investors see that their initial valuation was too high, leading to negative stock performance.

Ang & Boyer (2009) and Espenlaub et al. (2000) argue that industry plays an important role when looking at long-run performance for IPOs. Ang & Boyer (2009) found evidence that IPOs in newer industries outperform IPOs in well-established industries. Additionally, the study provided evidence that firms in newer industries are involved in fewer mergers, bankruptcies, and delistings than their counterparts in established industries. This is further supported by Espenlaub et al. (2000), who found evidence that traditional and more mature industries like oil and gas tend to underperform compared to younger industries.

2.5 Market Selection

Most stock exchanges consist of a main market and one or more less stringent marketplaces. Vismara et al. (2012) argue that the main market is superior to the junior markets on the aforementioned reasons for going public. A study by Corwin and Harris (2001) conveyed interest in the initial listing of IPOs in the United States between 1991-1996. During this study, the listing cost was the same between NYSE and Nasdaq, so this explanatory factor does not apply. Consequently, Corwin and Harris (2001) argue that the initial choice of marketplace must depend on different firm-specific characteristics. The study provided evidence of clustering in the IPO market, suggesting that firms will aim to list on the marketplace where their peers are already listed.

This was in line with their initial expectation and presented an explanation of the phenomenon as a strategic move by the companies to choose the marketplace that previously provided historical understanding and expertise in trading related stocks. Subsequently, the firm is reassured that its stock will be treated as one of its industry peers. The same authors provided a similar study in 2012 where they presented findings that suggest that delisting cost impacts the choice of marketplace. Their study found that smaller and riskier firms tend to list on the exchange with the lowest delisting cost, in this case, the junior market, NASDAQ. They reason that these types of firms have higher tendencies of financial difficulties, therefore taking the delisting cost into account when they make their initial choice of marketplace. This is in line with Vismara et al. (2012), who provided evidence that companies that list on the main market are larger and more profitable than those that list on the junior markets. The studies presented deviating results concerning the age of the companies that choose to list on the different exchanges. Corwin and Harris (2001) found no evidence that a firm's age affected the initial choice of marketplace. Vismara et al. (2012), on the other hand, suggest that main market listings tend to be older than those on the junior market. However, they also argue that when the companies in question were listed on seasoning markets, the age difference between the listings was significantly smaller between the two markets.

Doukas and Hoque (2016) used probit regression, in contrast to Vismara et al. (2012), who only presented differences in means and median, to provide evidence of each variable's effect on the probability of listing on the different marketplaces. The study concludes that the main and junior markets attract different kinds of firms based on firm-specific characteristics, like age, total assets, market value, and profitability level. However, they underline that the initial market selection is affected by different factors, both within and outside the model. They conclude that the initial market selection is not limited to listing requirements but is also based on firm-specific qualities and characteristics, along with the firm's financing and investment plans.

Vismara et al. (2012) also presented findings concerning the role of venture capitalists and private equity firms in the process of undergoing an IPO for one of their portfolio companies. They argue that even if PE/VC firms have a higher concentration in the technology sector, no evidence can prove that this type of ownership impacts an initial market selection. However, both Baker & Gompers (1999) and Megginson & Weiss (1991) argue that PE/VC-backed firms tend to have lower degrees of asymmetrical information than non-backed firms. This is believed to be a consequence of the increased quality perception by the public. This is primarily because PE/VC firms are typically more selective when choosing companies to invest in, and their involvement can be viewed as a symbol of future success. Consequently, the investors perceive these types of firms to be of higher quality, leading to reduced asymmetrical information. Levis (2011) performed a study on PE/VC-backed IPO performance in the United Kingdom. He found evidence that these types of ownership provided superior returns over non-backed IPOs. This is consistent with Bergström et al.'s (2006) findings on the Paris Stock Exchange.

Most IPO literature revolves around the motivation for the process, and only a few, like Doukas and Hoque (2016) & Vismara et al. (2012), touch on the subject of initial market selection. This thesis aims to supplement existing literature by looking at the Norwegian stock market from 2007-2021. This study will limit its scope to the Norwegian stock market. Consequently, removing any country-specific effect, like cultural differences, age of the junior market, regulations, and state of the economy, on the result often found in previous literature. Deviating from earlier studies on the Norwegian market, we have extended the dataset to consist of IPOs before the establishment of Euronext Growth in 2016. Based on our knowledge, we are the first to compile an extensive study on this subject.

3 The Norwegian Stock Market

In the following section, we will present the Norwegian stock market, as a thorough understanding of its structure is beneficial for a better understanding of the findings in this paper. We will present an overview of the listing requirements and costs before some light is shed on admission rules and shareholder protection.

3.1 History

Founded in 1818 and trading commencing in 1819, Oslo Børs is the symbol of over 200 years of regulated securities trading in Norway. Nicolai Andresen, a Norwegian merchant, and politician, took the initiative to form the exchange. He had seen the increased need for funding following Norway's independence. Initially, the exchange served as a liquidity source, but in 1881, Oslo Børs became a regulated stock exchange. The initial listing contained 23 stocks and 16 bonds (Kili, 1996). Oslo Børs was privatized in 2001, and in 2019 the Euronext Group bought the exchange, and Oslo Børs is now a part of Euronext's global operations (Sirnes, 2020).

3.2 Current Structure

Oslo Børs ASA is licensed to operate as a stock exchange by the Ministry of Finance and manage Oslo Børs and Euronext Expand as regulated markets and Euronext Growth as an MTF. Regulated under the Securities Trading Act (Securities Trading Act, chapter 13), different rules apply to the regulated markets and the MTF.

As of October 2022, 215 companies are listed on Oslo Børs. Generally, the motivation behind listing on the main exchange is typically greater visibility, more professionalism, and access to a more extensive and international investor constellation. In addition, being listed on the main market often implies better analyst coverage, which in turn gives greater exposure to investors and the public. Further, companies listed on the main exchange are usually included in fund indexes, which can help increase the demand for the stock and ownership spread. Lastly, as a consequence of the stricter listing requirements, a transfer from Euronext Growth and Expand serves as a quality stamp.

From 2007 until Euronext Growth was launched in 2016, Oslo Axess (now Euronext Expand) served as the only alternative for companies seeking a stepping-stone before listing on the main market. Following the introduction of Merkur Market (now Euronext Growth), the cannibalization effects on Euronext Expand have been substantial, and there are currently only 15 companies listed on Euronext Expand. As noted by Vismara (2012), a junior market is created to let companies grow until they are mature enough to transfer to the main market. Consequently, following its inception in 2016, there are currently 113 companies listed on Euronext Growth. Hence, Euronext Growth has arguably been a success, at least if measured in the number of listings. The Norwegian exchanges have a total of 343 listed companies. These companies range from small savings banks and start-up businesses to large global companies (Euronext, 2022).

3.3 Listing Requirements

Euronext Growth is primarily designed to offer small and medium-sized firms an alternative to the more stringent Oslo Børs. However, larger firms that want to increase the liquidity of their shares or want a market value without the commitment a listing on a regulated market entails are also welcome to list on Euronext Growth. Intending to facilitate a more straightforward listing process, the requirements on Euronext Growth are less comprehensive than the ones on Oslo Børs. Following Euronext's acquisition of Oslo Børs in 2019, Euronext's two-category market rules, harmonized and non-harmonized, now apply at Oslo Børs. These two differ in that the harmonized rules apply to all of Euronext's markets, while the non-harmonized rules are regarded as local and specific to each country's stock exchange (Euronext, 2020). The listing requirements for Euronext Growth, Euronext Expand, and Oslo Børs are illustrated in Table 3.1.

Table 3.1: Listing requirements Euronext Growth, Euronext Expand, Oslo Børs

	Euronext Growth	Euronext Expand	Oslo Børs
Former name	Merkur Market	Oslo Axess	Oslo Stock Exchange
Regulation	Multilateral trading system	Fully regulated in regards to EU requirements and norwegian securities law	Fully regulated in regards to EU requirements and norwegian securities law
Ownership spread	15 %	25 %	25 %
Accounting history	At least one financial report, annual or interim	At least one financial report, annual or interim	At least three years of accounting history
Liquidity	No requiriements	Sufficient liquidity for 12 months of operations	Sufficient liquidity for 12 months of operations
Duration of the recording process	1-2 weeks	4-8 weeks	4-8 weeks
Min Market Cap	0 MNOK	8 MNOK	300 MNOK
Min number of share owners	30	100	500
Accounting standard	GAAP,IFRS or any other recognized standard	IFRS	IFRS
Corporate governance	No requiriements	Required	Required

Table 3.1 shows a summary of the key distinctions between the listing requirements for the three marketplaces on the Norwegian Stock Exchange.

In addition to large differences in listing requirements between junior and main markets, there is also a significant discrepancy in the cost of being listed (Oslo Børs, 2022). Especially the fixed fee varies. The floating fee linked to market value is, however, relatively equal. Table 3.2 illustrates the differences in listing costs. It is worth mentioning that there are other costs associated with going public. These include both legal costs and the fee charged by the underwriters. These fees are often a portion of the issue size and naturally differ between companies. However, the typical IPO costs between 3-5% of the gross proceeds (Bellin and Thomson, 2020).

Table 3.2: Cost of being listed Euronext Growth, Euronext Expand & Oslo Børs (NOK)

	Euronext Growth	Euronext Expand	Oslo Børs
Fixed fee	23 700	542 500	608 600
Pr. mill MV	620	650	719
<i>Minimum</i>	<i>123 600</i>	<i>547 900</i>	<i>1 600 000</i>
<i>Maximum</i>	<i>950 000</i>	<i>1 450 000</i>	<i>1 337 900</i>

Table 3.2 shows a summary of the key distinctions between the listing cost for the three marketplaces on the Norwegian Stock Exchange.

3.4 Admission Rules

Admission rules aim to determine a minimum standard by which companies can trade on the market or, more precisely, be admitted to trading on the market. Following the Securities Trading Act section 9-26 (1), a manager of an MTF shall have the following:

Transparent and duly published rules on which financial instruments can be traded under the system and ensure access to sufficient publicly available information to enable users to make an informed investment judgment, taking into account the nature of the user and the type of financial instrument.

This translates into a "prospectus" for Oslo Børs and Euronext Expand and an "information document" for firms listing on Euronext Growth. The purpose of the prospectus and the information document is to provide some key information about the firm, hereunder, ownership structure, liability disclaimers, and key financials. In general, a prospectus is typically more extensive and time-consuming to produce.

3.5 Disclosure Requirements and Investor Protection

Companies listed on both Oslo Børs and Euronext Growth & Expand are subject to immediately disclosing information regarding changes in and to the company, such as dividends, mergers, and changes in share capital, among others. However, companies listed on Euronext Growth are, unlike Oslo Børs, not required to disclose issues such as new loans, guarantees, or collateral (Euronext, 2022).

The main issue when discussing degrees of investor protection is the disclosure requirements a company faces. This determines how much information companies are required to make available to the public. Another aspect in which Euronext Growth differs from Oslo Børs is in a potential takeover process, where the process is abundantly more unregulated. In contrast to Oslo Børs, there is no mandatory offer period, no approval process for the offer document, or no content requirement. There is neither a minimum nor maximum offer period. Hence, the regulatory differences between Euronext Growth and Oslo Børs are substantial, and they will likely appear more apparent in the case of, I.e., hostile takeovers (Arnkværn & Røsås, 2022).

4 Hypothesis

With reference to the theoretical and empirical framework presented in the previous sections, we view several hypotheses to be relevant to further exploit in this thesis. Hence, the following five hypotheses will be examined to answer the research question. Naturally, there has been similar research on this topic, but we believe our approach will provide meaningful and unique insight.

4.1 Profitability

There are undoubtedly many advantages to going public. However, the IPO process can be costly and comprehensive, and both Chen & Ritter (2000) and Jones & Stucke (2013) find that the typical U.S. underwriter charges 5% to 7% of the gross proceeds. Although Woo (1999) found the average listing cost in Australia to be smaller at around 3.5%, the costs still constitute a substantial portion of the gross proceeds.

Previous research has argued that the listing expenses on the main market are one primary reason for listing on the junior market (Vismara et al., 2012). In addition, Albornoz and Pope (2004) argue that smaller and less profitable firms list on the junior market as they struggle to meet the cost of undergoing a main market IPO. They further argue that both the cost of being listed and meeting the requirements of the main market are challenging for these types of firms. The picture is likely a bit more nuanced than this. Among others, investors at junior markets might be more inclined to invest in non-profitable firms, given their portfolio characteristics and risk profile. This coincides with the findings of Ritter (2018), who observed that more than 80% of American IPOs across all exchanges in 2018 involved non-profitable firms. This represents the highest proportion of non-profitable firms in the last fiscal year prior to listing since 1980, exceeding the dot-com bubble. However, the reasoning should not affect the findings. As identified in section 3.3 regarding listing requirements and costs, the complexity of listing on the main market is significantly higher than that for Euronext Expand and Growth. However, these are not quantifiable. Therefore, we base our hypothesis on profitability.

Hypothesis 1: *Profitable firms will favor listing on the Main Market.*

4.2 PE/VC Ownership

One of many appealing aspects of an IPO is how similar, yet so different, they are. Every IPO tells a story with differing histories, challenges, and ideas revolving around different people. Alavi and Pham (2008) find that differences in owners' incentives and bargaining power implied by their shareholdings pre-IPO substantially affect the listing process. Further, the ownership structure varies significantly, and we speculate that this matter impacts the IPO process and choice of market.

Historically, Norway has had a large proportion of family- and state-owned companies. Family Business Norway (2019) found that 149 of the 500 largest companies in Norway were family owned and that the total number of family-owned companies amounted to 80 000. Further, the Norwegian economic historian Einar Lie (2016) wrote the article "*Context and Contingency: Explaining State Ownership in Norway*," where he points out that the Norwegian state owns 35% of the total market cap at Oslo Børs. However, with the development of modern finance, we have seen substantial growth in other ownership structures, ranging from Private Equity and Venture Capitalists to specialized investment companies and funds.

In 2004, The Economist named private equity "*The New Kings of Capitalism*" (2004). Moreover, Baker & Gompers (1999) and Megginson & Weiss (1991) suggest that PE/VC-backed firms have a lower degree of asymmetric information following increased quality perception by the public. Clearly, the sources of capital change continuously, and we view this to be something that potentially has an impact on our findings. Dong et al. (2020) find that when a PE firm decides to go public with one of its portfolio companies, it rarely sells a large portion of its investment. Hence, they remain substantial shareholders in the company for an extended period. In addition, Leland and Pyle (1977) argue that PE firms typically monitor managers, hold governance rights, influence corporate decisions, and hold one or several board seats. PE firms manage their interests in the newly listed firms closely; therefore, the choice of marketplace should be of great importance. This coincides with feedback from Norwegian PE/VC players that express a preference for the main market. Given that the main market is more liquid, regulated, and transparent, PE/VC-backed firms should be more likely to list on these marketplaces as the framework is more tailored to manage their investments accordingly.

Consequently, we form the following hypotheses concerning the structure of ownership.

Hypothesis 2: *PE/VC-backed firms will prefer to list on the Main Market.*

4.3 Capital Raised

The motivation for going public differs in each case. However, Kim and Weisbach (2006) find that the three main motives for going public are financing investments, transferring wealth from new shareholders to existing shareholders, and increasing liquidity for both insiders and the firm. In addition, Chemmanur and Fulghieri (1999) further argue that an IPO also serves as a strategic move to expand the investor base and improve the firm's publicity. Academic literature does not fully distinguish between these explanations. However, despite different motives for going public, the main objection is usually to raise capital (Lazonick et al., 2017).

Fundamentally, one would assume that firms seeking to raise a substantial amount of money would prefer to list on the main market simply because this is a more liquid marketplace. This coincides with the findings of Subrahmanyam and Titman (1999), that point to liquidity as one of the primary factors affecting how much capital a firm can raise in an IPO. However, the observant eye might have noticed that major capital was also raised on the junior market. This is coherent with Vismara et al. (2012), who discovered junior markets could raise more capital than the main market.

Nonetheless, Granier et al. (2019) find junior markets more often associated with smaller capital raises, as liquidity might not be of that great importance in these cases. Subsequently, we form the following hypothesis:

Hypothesis 3: *Firms that aim to raise a substantial amount of equity will prefer to list on the main market.*

4.4 Long-run IPO Performance

This section might, at first glance, seem a little out of place, as performance is a post-IPO measure, and this paper revolves around pre-IPO characteristics as determinants for choices during the process of going public. However, given that we have such a comprehensive dataset with a broad spectrum of firm-specific variables, the opportunity to explore post-IPO performance in light of these variables was appealing. We now possess the opportunity to add to existing research by examining how pre-IPO characteristics affect the IPO process and how the firms have performed in the long term, both in light of characteristics and choice of marketplace. This should contribute to deepening the analysis further.

As one of the first to study long-term IPO performance, Ritter (1991) found substantial underperformance relative to comparable firms in the years following the listing. His findings of a long-term underperformance phenomenon have inspired many to research this topic, and the findings naturally reflect conflicting results. In addition, Loughran and Ritter (1995, 2000) document an apparent underperformance in the first five years after companies go public. Contrary to Ritter, da Silva Rosa et al. (2003), Goodacre et al. (2007), and Chi et al. (2010) present evidence that IPOs do not underperform the market in the long run. This is consistent with Levis (2011) and Bergström et al. (2006), who performed a study on PE/VC-backed IPO in the United Kingdom and France. They found evidence that these types of ownership outperformed non-backed IPOs. In addition, Vismara et al. (2012) presented findings regarding venture capitalists and private equity ownership. They argue that PE/VC ownership does not impact the initial market selection of firms going public.

Despite conflicting research results, most findings are in line with the ones of Ritter and reflect evidence of long-term IPO underperformance. With this in mind, we form the following two hypotheses covering IPO performance:

Hypothesis 4: *Firms that choose to list on the main market will outperform those who list on the junior market.*

Hypothesis 5: *PE/VC- backed firms will outperform non-backed firms.*

5 Methodology

The subsequent section will provide an overview of the selected models used to answer the research question. Our study aims to find evidence of whether the categorization of ownership, profitability, and capital raised affects the firm's initial decision regarding the choice of marketplace and how this has affected shareholders' return in the long run. Consequently, "Market selection" & "Positive return" is our dependent variable. Both dependent variables can only take two different values (Main Market = 1, and Junior Market listings will take the value = 0) and (1 = Positive return, a negative return will take the value = 0). We depend on probit regression and the linear probability model (LPM) in combination with marginal effects in the analysis, considering the binary characteristics of the dependent variables. Given changes in the independent variables, both regressions calculate the likelihood that the dependent variable, Y, would equal 1.

5.1 Probit Regression Analysis

Empirical articles suggest that firm characteristics affect pre-IPO choices and future stock prices (Kogan and Papanikolaou, 2013). The probit regression aims to maximize the possibility of observing the binary outcome of the dependent variable by utilizing selected relevant explanatory variables. The predicted probability is based on a non-linear maximum likelihood estimator, contrary to the more traditional standard OLS estimator. Thus, the interpretation of the output is based on whether the explanatory variables increase the probability of the observed outcome. The dependent variables can only take the binary variables 0 and 1. Consequently, this ensures that the calculated response probabilities are also bound to take the values 0 and 1.

However, the characteristics of the regressions, in combination with their non-linear function, complicate the interpretation. The coefficient can only give an indication of direction and a level of statistical significance that the relationship between the variables exists. Consequently, a study of marginal effects is conducted. This gives a deeper understanding of the change in the probability of the dependent variable as a consequence of the change in an independent variable.

The following formula gives the probit regressions model:

$$P(Y_i) = P(Y_i = 1|X_{1i}, \dots, X_{ni}) = \Phi(\beta_0 + \beta_1 X_{1i} + \dots + \beta_n X_{ni}) \quad (5.1)$$

Y represents the dependent variable in the formula, taking the binominal value of 1. X_j represents the independent variables, and Φ is the cumulative standard distribution and therefore represents a function for normal distribution. β_0 is the population coefficient, hence, illustrating the change in the probability that $Y_1 = 1$ is associated with a unit change in the independent variables X_j . Consequently, a positive coefficient represents an increase in probability, and a negative coefficient represents a decrease in probability.

Based on our selected variables in section 6, the probit regression used in the study looks like this:

$$P(\text{Main Market} = 1) = \Phi(\beta_0 + \beta_1 \text{PositiveEbitda dummy} + \beta_2 \text{PEVC dummy} + \beta_3 \text{Capital raised} + \beta_4 \text{LogAge} + \beta_5 \text{Hotmarket dummy} + \beta_6 \text{Seasonal dummy} + \beta_7 \text{Majoriy Owner dummy} + \beta_8 \text{LogTotalassets} + \beta_{9-18} \text{Industry dummies} + \beta_{19-25} \text{Ownership dummies}) \quad (5.2)$$

$$P(\text{Positive return} = 1) = \Phi(\beta_0 + \beta_1 \text{Market selection} + \beta_2 \text{PositiveEbitda dummy} + \beta_3 \text{PEVC dummy} + \beta_4 \text{Capital raised} + \beta_5 \text{LogAge} + \beta_6 \text{Hotmarket dummy} + \beta_7 \text{Seasonal dummy} + \beta_8 \text{Majoriy Owner dummy} + \beta_9 \text{LogTotalassets} + \beta_{10-19} \text{Industry dummies} + \beta_{20-26} \text{Ownership dummies}) \quad (5.3)$$

The probit regression model's dependent variable is either Market Selection or positive long-run return. For market selection, the value of 1 indicates a main market listing, in this case, Oslo Børs. For the positive long run, value 1 represents a positive return for shareholders. The strength of all the regressions is tested using chi-square and model accuracy. If the chi-square is significant, the regression accounts for more variation than one would expect to observe simply by chance. The model accuracy is based on the proposal from Gelman & Hill (2007), representing the percentage of correct predictions for models with binary outcomes.

5.2 Evaluation of Regression Models

Our regression models are evaluated primarily in terms of the significance of the calculated coefficients. The significance levels used throughout the study are $p \leq 0.01$, $p \leq 0.05$, and $p \leq 0.1$. The overall variation that can be attributed to independent values is calculated using adjusted R^2 , which quantifies how well the independent variables can account for the variance in the dependent variable. Subsequently, a higher adjusted R^2 signifies that the model captures more variation, whereas a lower value suggests that the regression only partially explains the variance. The regressions are assessed using chi-square.

A significant chi-square indicates that the estimated coefficients in the regressions are significantly different from zero. A significant F-statistic for the Linear probability model suggests that all coefficients differ from zero. To evaluate the performance of the probit model, we used, in line with the most common approach, McFadden R^2 , as Pseudo in the study. We also consider the percentage of correctly predicted classification, another assessment for this kind of evaluation, recommended by Gelman & Hill (2007).

6 Data

This section gives an insight into how we obtained our data and the steps included in this process. Subsequently, we present the variables used to answer the research question and the coherent hypothesis. We have divided our variables into independent and control variables. The independent variables are used to test our hypothesis, and the control variables are to avoid omitted variable bias and to provide a broader reference for comparison to similar research on this subject.

6.1 Data Collection

Our data sample consists of IPOs on Euronext Growth, Euronext Expand, and Oslo Børs from 2007 to 2021. The reason for choosing the selected period was based on two main aspects, we wanted a sufficiently large sample and captured different economic cycles. Our view is that the chosen period covers both hot and cold market conditions as well as the prelude and the actual financial crisis, the oil crisis of 2014, and the more recent Covid-19 pandemic, including some of the aftermath.

The process of gathering the data started by contacting several individuals in the listing department at Oslo Børs. To this date, they possess no suitable dataset with the required information to conduct our analysis. Consequently, the dataset is assembled manually during the fall of 2022. Most of the information was found by reading the annual reports before listing in combination with the obligatory prospectus or information document published in conjunction with the listing process. As a result of our broad time frame, some of the information from older listings was inadequate or unobtainable. Therefore, we have used other reliable sources such as news articles, yahoo finance, Bloomberg, and personal communication with companies to complete the dataset. The long-term stock return was conducted by using yahoo finance to find the stock price and manually adjusting for stock splits and dividends. NHH's Børsprosjekt was used to obtain daily stock prices for all the companies that delisted during our selected timeframe.

Further, some adjustments had to be made to make our sample suitable for analysis. IPOs with the following characteristics or deficiencies have been filtered out:

- IPOs with insufficient information, i.e., lack of annual reports, prospectus, stock exchange notices, or similar.
- Companies that during our period took part in a merger, fission, or other similar transactional change that made them inadequate for our analysis.
- Companies that were listed for less than 18 months.
- Dual listings where the company did not initially choose the Norwegian stock exchange.

Following our exclusion, based on the aforementioned criteria, we were left with 288 IPOs, constituting our dataset. The excluded companies are listed in appendix A.3, and the diligent reader will also find the basis for each company's exclusion.

During our timeframe, 339 companies have been listed on the Norwegian stock exchanges. Of these, 118 were listed on the main market, and 221 were listed on the junior markets. Eight IPOs were excluded due to a listing period of fewer than 18 months. This includes delisting, buy-outs, and bankruptcy. Two IPOs were excluded following extensive corporate restructuring after the listing. Another 16 IPOs were excluded as we could not find the relevant information in our selected sources. 15 IPOs that were a part of a merger in the first 18 months of trading are also excluded from the dataset. Lastly, seven IPOs are excluded as they are dual listings. Consequently, the total sample size consists of 288 companies, of which 98 are on the main market and 190 are on the junior markets.

6.2 Independent Variables

6.2.1 Profitability

In our first hypothesis, we challenge whether profitability influences the initial choice of marketplace. Profitability is an extensive term and can be measured in many ways, the most common being ROA, ROI, EBITDA, EBIT, and net profit. As we view it as the most relevant to use the firm's profitability from its core operations before its accounting and capital structure impact, EBITDA is our preferred measure of profitability. Adiloğlu (2017) argues that EBITDA is the best choice because it allows investors to focus solely on operating profitability. Further, he argues that EBITDA is the best profitability measure when comparing firms, I.e., across different industries. Hence, we obtain the financial statement for the last fiscal year before listing to test our first hypothesis. We use the available information for companies with scarce financial reports, often quarterly reports, before the listing. To differentiate between profitable and non-profitable firms, we create a dummy that indicates whether they are profitable. The reasoning behind dummy and not continuous variables is that with a continuous variable, very profitable firms could potentially compensate for less profitable firms and impose a bias on this independent variable.

6.2.2 PE/VC Ownership

The second hypothesis questions if there is a preferable difference between backed and non-backed firms in their initial market selection. To distinguish between these categories, we have classified backed firms as companies where Private Equity investors or Venture Capitalists own more than 10% of the outstanding shares. The rest of the firms are classified as non-backed, although they also might have strong and dominant professional investors in the shape of investment companies, institutions, or similar. The reasoning behind this variable is that PE/VC players often have a pre-determined exit for their investments and prefer marketplaces with the most liquidity. In addition, PE/VC-backed firms often represent a more active shareholder, and following the more stringent regulations on the main market, it might be easier to execute their preferred type of ownership given the framework of the main market.

6.2.3 Capital Raised

Our third hypothesis aims to test whether there is a relationship between capital raised and the choice of marketplace. To test this, we created a dummy for companies that raised more than 250 NOKm during their IPO. The hypothesis is angled towards the amount of capital firms seek to raise; however, we have chosen to use the actual amount raised in the dataset. In most cases, this difference is minor, but we view the actual amount as most representable for our analysis. Considering this in relation to firm size might be relevant, but we focus only on issue size in absolute terms.

6.2.4 Long-run Return

Hypothesis four and five tackles post-IPO performance and whether there is a difference between junior and main markets or whether backed IPOs outperform non-backed IPOs. The IPO return is calculated by comparing the issue price with the share price 18 months after listing using the following formula:

$$\begin{aligned} \text{Total stock return} &= \frac{(P_1 - P_0) + D}{P_0} \\ P_0 &= \text{Initial Stock Price at IPO} \\ P_1 &= \text{Ending Stock Price (18-month)} \\ D &= \text{Dividends} \end{aligned} \tag{6.1}$$

In order to facilitate our analysis, we have created a dummy variable for firms with positive long-term returns rather than using the actual percentage returns. This allows us to compare firms with positive and negative returns without being affected by the magnitude of the returns. The expectation is that firms that list on the main market will outperform those on the junior market and that firms backed by a PE/VC player will outperform those with other ownership structures.

6.3 Control Variables

6.3.1 Firm Size

Within empirical finance, firm size is commonly used as a fundamental firm characteristic. We argue that the size of a firm largely affects the choices in an IPO process. Larger firms typically have more complex financial structures, but they often have more financial flexibility to bear the cost of listing. Naturally, larger firms should prefer listing on the main market, and smaller firms should prefer to list on the junior or less regulated markets. This assumption coincides with the findings of Doukas and Hoque (2016). The reasoning behind this is that the listing requirements of the main market might be too complex for younger and smaller companies. Combined with the fact that these companies often have more inexperienced management, this could make a listing on a junior market more bearable and manageable. In addition, the minimum market capitalization requirements naturally prohibit some companies from listing on the main market. However, this requirement does not seem too rigid, as we have identified several companies that have received waivers from this requirement.

Firm size can be measured in several ways, and Li (2016) argues that the most popular methods are net assets (total assets minus total liabilities), enterprise value (market capitalization plus net debt), number of employees, and total assets. No specific measure exceeds the other, and the ideal choice is likely dependent on the company and or industry. Beatty & Ritter (1986) use offer size as a proxy for company size, but this might cause high multicollinearity between company valuation and capital raised. Dang et al. (2017) argue that different measures of firm size capture different aspects of the firms in question. For example, the number of employees might be a good measure for a firm where human capital is the primary resource. However, total assets are likely better if a firm's total resources are the preferred measurement. As our sample revolves around pre-IPO data and an estimate of pre-IPO market value is difficult to calculate precisely, we choose to use total assets as a measure of firm size.

6.3.2 Ownership Structure

To adjust for the effect of different ownership, we have divided our dataset into the following seven ownership categories: Private equity, Venture capital, Professional investors, Founder, Family owned, Institutional, and Industry player.

The ownership structure is based on the shareholder information from the prospectus. To satisfy the requirements for our categories, one does not have to be the majority owner. Still, one must be the leading shareholder or constellation of shareholders, and one must have ownership above 10%. In other words, a company with two institutional shareholders, each owning 5%, would be classified as an institutionally owned company. The reason behind the seven categories is that we view these to best represent the spread of ownership at the three exchanges. Consequently, we create dummies for each ownership category and run our regressions with and without the dummies to test whether the effects are across or within the categories.

6.3.3 Majority Owner

As an extension to the control variable with ownership structure, we also view it as sensible to control the degree of shareholding by the top shareholders. A natural assumption is that firms with majority shareholders will prefer to list on the less regulated market as a result of the free float requirements of the main exchange. Junior markets will make it easier for majority owners to retain a high ownership stake. This is in line with the findings of Granier et al. (2019) in their study of the UK and Japanese junior market. They find that ownership tends to be concentrated during the first years after listing before the ownership spread increases after five years. In addition to Alavi and Pham (2008), Michel et al. (2014) find a non-linear relation between the public float and post-IPO returns. Even when controlling for various firms' characteristics, they find that the best long-term performers are firms that either sell most of their stock in the IPO or very little. To adjust for majority owners, we create a dummy for firms where a single shareholder controls more than 50% of the outstanding shares.

6.3.4 Industry

The Norwegian stock exchange is dominated by some large industries and has a reputation for being heavily weighted against oil & gas, shipping, and seafood. Corwin and Harris' (2001) findings state that companies tend to list on the same marketplaces as their peers. This is referred to as industry clustering. Doukas and Hoque (2016) also found evidence of industry-fixed effects on junior markets. As we believe there is a presence of industry clustering on the Norwegian stock exchanges, we use the ICB ten sector classification to adjust for these effects.

Based on FTSE Russel's Industry Classification Benchmark (ICB), we have divided our IPOs into different industries. ICB is a comprehensive and transparent classification methodology carved from market trends and research (ICB, 2022). The classification system is widely adopted and recognized both within the financial sector and elsewhere. ICB utilizes the following 11 industries: 10 Technology, 15 Telecommunication, 20 Health Care, 30 Financials, 35 Real Estate, 40 Consumer Discretionary, 45 Consumer Staples, 50 Industrials, 55 Basic Materials, 60 Energy, and 65 Utilities.

ICB covers a broad range of industries, and within each industry, there are 20 supersectors, 45 sectors, and 173 subsectors. In other words, the classification goes way beyond the scope of this paper, and hence we will only use a simplified version of the ICB classification. As we view industry clustering as present in the Norwegian market, we view it as useful to control for this phenomenon by running our regression with dummies for each of the ICBs industries. We run our regression with and without the dummies to test whether the effects are across or within industries.

6.3.5 Hot Market Dummy

Hot and cold IPO markets are broadly researched, and many have tried to explain the reasoning behind this phenomenon. Adjusting for time effects is helpful in analysis like ours, following the varying market sentiment during the 15 years. Therefore, we have included a time dummy, which indicates whether an IPO was carried out in a hot IPO market.

Helwege (2004) studied IPOs over cycles during 1975-2000 and found that hot and cold IPO markets did not differ largely in the characteristics of the firms that went public, but the quality was noticeably different. Their results suggest that hot and cold markets are not driven mainly by managerial optimism, adverse selection costs, or technological innovations but merely reflect differences in investor optimism. Vismara et al. (2012) found evidence that junior markets are attractive in hot markets. However, the study also shows that activity in these markets drastically declines during cold markets.

We have identified 2007, 2020, and 2021 as hot IPO markets, while the remaining years are defined as periods of cold IPO markets. The most noticeable events in this period were the financial crisis and its aftermath, the oil crisis in 2014, and the more recent Covid-19 pandemic. Our definition of hot and cold markets is solely based on activity level. One could argue that the general state of the economy should be included when defining, but our view is that the number of IPOs per year provides us with the best indication of whether it was a hot or cold IPO market.

6.3.6 Seasonal Darkness

There is extensive research on the timing of an IPO, and Benninga (2004) finds that timing explains both the clustering of IPOs and IPO waves. Alti (2001) argues that a consequence of an IPO is that previously private information now becomes public, which leads other firms in the industry to go public, even though they do not have pressing capital needs.

Gori (2020) explores the relationship between seasonal darkness and IPOs. She finds empirical evidence that supports the assumption that seasonal darkness, when there is a lack of light (typical fall and winter months), has a positive impact on the initial returns of the IPOs during the period with seasonal darkness. Her paper examined the presence of a relationship between a natural phenomenon, the apparent shortening of days in autumn, and the return of companies listed during this period. As we undoubtedly can identify with the shortening of the days in autumn and winter, we divided our IPOs into binominal categories, summer and winter. Winter constitutes the first and fourth quarter, and the second and third quarter represent summer.

6.3.7 Company Age

Argumentatively, there is an established public perception that younger firms prefer to list on the less regulated markets. Putting the listing requirements aside, younger companies often have, as mentioned, more inexperienced management and might be attracted to the less regulated market simply due to the scope of a listing on the main market (Honjo, 2022). Carpentier and Suret (2019) argue that junior markets are dedicated to nurturing younger firms, and Vismara et al. (2016) findings from the four largest stock exchanges in Europe point to firm age as one of the characteristics that affect the initial market selection.

Corwin and Harris (2001) documented that firm-clustering refers to firms seeking to list on the same marketplaces as their peers. In relation to the assumptions of industry clustering on the Norwegian exchanges, the firms clustering, in this case, would imply that younger firms would prefer to list on the junior market. Further, there might also be evidence of investor clustering. This is implied by the fact that investors with similar preferences or mandates seek the same marketplaces. Conversely, investors with preferences for younger firms would then seek junior markets. Which then again would lead younger firms to list on the junior markets.

We define a firm's age as the number of years since the founding date or inception before the listing. We have not adjusted for which month the listing happened, but we have transformed the company age by taking the natural logarithm of it to avoid large outliers.

7 Descriptive Statistics

Before conducting our empirical analysis, we find it informative to present a descriptive overview of our dataset. In this section, we will present summary tables and descriptive statistics to evaluate the key differences between companies listed on the junior and main markets. This will provide useful context for our subsequent analysis.

7.1 Overview of the IPO Market

Table 7.1 offers an overview of the development of IPOs in our sample period. There are several interesting observations worth commenting on. First, one can notice a substantial decrease in the number of IPOs following the financial crisis in 2008, especially low in 2009, with only two listings across the different marketplaces. The low number of IPOs remained until 2014. From 2014-2019 one can see that the average number of IPOs normalized to a higher level than the prior period and sustained this level until the recent hot market in 2020-2021. The number of IPOs in the covid-hot market is also higher than in 2007. From 2007-2015 there is a clear indication that the main market was the most popular marketplace. This changed in 2016, the same year as the introduction of Euronext Growth, where the trend shifted towards favoring less stringent marketplaces. This shift has led to more listings on the junior markets for five consecutive years since 2017. Ritter & Welch (2002) state that firms go public due to a highly favorable market. The rapid recovery of the global stock markets after the covid-19 crash and record-low interest rates led to high demand for investment opportunities, especially for growth companies, explaining some of the reasons for the large volume in 2020-2021.

The main market firms have raised the most capital on average, which is not surprising as many of the companies that list on the less stringent marketplaces are smaller. Thus, not being able to raise the same amount of capital as larger firms. The average capital raised is 733 (NOKm) for a main market firm and 348 (NOKm) for the junior markets. However, one can argue that firms that list on the junior market and consequently have a less regulated listing process choose this path as a strategic move to retain control of the company. The requirement of more shareholders and ownership spread allows the company to sell fewer shares, and the current owner is not diluted as much as they would be if they were listed on Oslo Børs, which could explain some of the difference in capital raised.

In addition, capital raised in relation to total assets is substantially higher on the junior markets. This indicates that smaller firms are more likely to raise larger relative amounts on the junior markets than on the main market.

Table 7.1: Sample descriptive statistics

Year	Number of IPOs per year			Average capital raised (NOKm)			Average total assets (NOKm)		
	Main Market	Junior Market	Total	Main Market	Junior Market	Average	Main Market	Junior Market	Average
2007	22	20	42	740	260	550	5 160	614	2 227
2008	3	7	10	72	59	63	1 917	198	714
2009	0	2	2	-	391	391	-	2 831	3 416
2010	9	5	14	348	215	300	13 043	219	8 463
2011	3	7	10	1 432	730	941	3 035	1 483	1 950
2012	2	0	2	370	-	370	4 789	-	4 789
2013	7	3	10	771	60	558	4 470	164	3 104
2014	11	5	16	591	181	463	4 891	688	3 578
2015	6	3	9	303	97	234	13 214	902	9 110
2016	4	7	11	238	83	139	8 614	2 986	5 032
2017	7	7	14	1 291	333	812	16 998	2 597	9 798
2018	6	9	15	1 276	221	643	8 566	1 520	4 339
2019	6	8	14	373	465	425	4 680	6 157	5 313
2020	6	47	53	1 079	381	465	3 832	648	1 008
2021	6	60	66	906	388	442	6 199	1 071	1 538
Summary	98	190	288	733	348	453	6 930	1 225	4 290

Table 7.1 shows an overview of our data sample. The total sample of 288 IPOs consists of 98 listings on the main market and 190 listings on the junior market from 2007 to 2021. Each column represents different characteristics, including the number of listings, average capital raised, and average total assets, grouped by year. The main market is represented by Oslo Børs, while the junior market is represented by Euronext Growth and Euronext Expand.

Similar to capital raised, total assets are also higher for the main market firms. According to prior research, companies listed on the junior market tend to be smaller than those listed on the main market, proving that the Norwegian junior market has successfully attracted the intended companies. The years with average total assets deviating from the average for main market listings are 2010, 2015, and 2017. This is likely due to the high number of state-owned companies and large financial institutions like Statoil fuel & Retail and Gjensidige Forsikring listed in these years. There is also a clear ascending trend that junior market firms have increasing average assets in the selected timeframe. Thus, larger firms are leaning more toward the less stringent marketplaces.

7.2 Overview of Independent Variables

Table 7.2 shows descriptive statistics for the independent variables, separated into main and junior markets. Ownership, profitability, and return are dummy variables, and capital raised is displayed as a continuous variable.

The continuous variable shows that companies who list on the main market raise more capital than those who list on the junior market, which supports our third hypothesis. The difference in the mean is greater than the difference in the median, at least in absolute terms. However, the difference between the two measures can be caused by some companies raising very large or very low amounts of capital. The proportion of backed firms is higher on the main market, although the number of backed firms does not deviate much, which supports our second hypothesis. However, the observations are not that clear. Further, the concentration of companies with a positive EBITDA before the listing is larger on the main market, consistent with our first hypothesis. Lastly, the proportion of firms with a positive long-run return is higher on the main market. However, the difference is relatively small.

Table 7.2: Differences in independent variables

	<u>Oslo Børs</u>		<u>Euronext Growth & Expand</u>	
	Mean	Median	Mean	Median
Capital Raised				
<i>Capital raised</i>	733	308	335	150
Ownership	Number	Proportion	Number	Proportion
<i>Backed</i>	27	28 %	35	18 %
Profitability	Number	Proportion	Number	Proportion
<i>Positive EBITDA</i>	71	72 %	62	33 %
Return	Number	Proportion	Number	Proportion
<i>Positive return</i>	45	46 %	67	35 %

Table 7.2 reports differences in independent variables. **Capital Raised** are the funds raised from the most recent pre-issue private placement. **Backed** represents all firms that have >10% ownership by either a Private Equity or Venture Capital firm. **Positive EBITDA** is a dummy that takes the value of 1 if a firm has positive EBITDA the year prior to listing and the value of 0 if not. **Positive Return** is a dummy that takes the value of 1 if the firm have delivered positive return for shareholders in an 18-month period, and the value of 0 if the firm delivered negative return in the same period.

7.3 Overview Control Variables

Table 7.3: Differences in control variables

Company characteristics	<u>Oslo Børs</u>		<u>Euronext Growth & Expand</u>	
	Mean	Median	Mean	Median
<i>Age</i>	24	12	13	5
<i>Total assets</i>	6 015	1 670	1 685	351
Company characteristics	Number	Proportion	Number	Proportion
<i>Majority owner</i>	50	51 %	67	35 %
IPO timing	Number	Proportion	Number	Proportion
<i>Hot market</i>	34	18 %	127	67 %
<i>Winter</i>	50	51 %	91	48 %
<i>Summer</i>	48	49 %	99	52 %
Industry	Number	Proportion	Number	Proportion
<i>Technology</i>	7	7 %	18	9 %
<i>Telecommunication</i>	1	1 %	7	4 %
<i>Health Care</i>	4	4 %	18	9 %
<i>Financials</i>	9	9 %	16	8 %
<i>Real Estate</i>	3	3 %	7	4 %
<i>Consumer Discretionary</i>	8	8 %	11	6 %
<i>Consumer Staples</i>	6	6 %	25	13 %
<i>Industrials</i>	20	20 %	31	16 %
<i>Basic Materials</i>	4	4 %	11	6 %
<i>Energy</i>	31	32 %	31	16 %
<i>Utilities</i>	5	5 %	15	8 %
Ownership	Number	Proportion	Number	Proportion
<i>PE</i>	21	21 %	21	11 %
<i>VC</i>	6	6 %	14	7 %
<i>Professional Investor</i>	16	16 %	54	28 %
<i>Founder</i>	7	7 %	37	19 %
<i>Family</i>	11	11 %	9	5 %
<i>Institutional</i>	14	14 %	10	5 %
<i>Industry Player</i>	23	23 %	45	24 %

Table 7.3 reports the mean and median values for variables for both main market and junior market listings. **Age** reflects the number of years since establishment at the time of listing. **Total assets** are the amount of total assets found in the accounts, a year preceding listing. Ownership structure is considered as a “**Majority owner**” if >50% of the firm is controlled by one owner. **Hot market** is years with high number of IPOs, during the selected timeframe this indicates listing in 2007, 2020 & 2021. **Winter** represents listings in Q1 & Q4. **Summer** represents listings in Q2 & Q3. **Industry** is the industry classification of companies according to ICB Sectorial Classification. Ownership is categorized in seven different structural definitions. **PE** represents firms with Private equity ownership >10%. **VC** represents firms with Venture Capital ownership >10%. For **professional investor, Founder, Family, Institutional, and industry player** this represents ownership where the largest shareholder is one of the above.

Table 7.3 shows the company characteristics that were chosen as our control variables. The variables are displayed as mean and median for the continuous variables and as proportions for the dummy variables.

In line with previous research, firms that list on the junior market are younger than those listed on the main market, with a mean age of 13 years and a median age of 5 years. An even younger median indicates potential outliers that can skew the mean. This might be explained by, I.e., savings banks which typically have a long history with founding dates stated far back in time. Total assets for firms on the junior market indicate that these firms are not only younger but also smaller, with mean total assets of NOKm 1 685 and median total assets of NOKm 351.

In contradiction to our assumptions, firms that list on the main market have a higher proportion of majority owners. 51% of the firms listed on the main market have a majority owner. Next, the proportion of firms listed during the summer and winter half of the year is broadly equally distributed. However, the proportion of firms listed during a hot IPO market is substantially greater on the junior market at 67% compared to 18% on the main market. This is evidence of market sentiment being an important factor for listings on the junior market.

Consistent with previous research, there is evidence of industry clustering on both marketplaces, with energy and industrials being the dominant industries. Although the spread between industries is more equally distributed on the junior market, the signs of industry clustering are observable. Lastly, PE and industry players are the most dominant ownership types for the main market, and professional investors and industry players are most common on the junior market. This is in line with our assumption that PE/VC players seek more liquid markets. However, the VC share is higher on the junior markets, which contradicts our initial beliefs.

8 Empirical Analysis

This section will present our empirical analysis of which firm-specific characteristics affect the choice between the main market listing and the less stringent marketplaces. We will also present an analysis of whether the choice of marketplace has affected the long-run return for shareholders. The section is structured as follows: The probit regression shown in table 8.1 highlights the influence of the firm-specific characteristics on market choice. Due to the nature of probit regressions, the probit marginal effects are reported in table 8.2. The probit regression coefficient can only explain whether a relationship is negative or positive and significant. Lastly, the regression result will be analyzed based on the research question and the hypothesis in section 4.

8.1 Probit Regression Results

Table 8.1: Probit Regression Model

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Market selection				Positive return		
Market selection							0.179 (0.211)
Positive EBITDA	0.798*** (0.210)			0.866*** (0.216)	0.783*** (0.205)	0.294 (0.185)	0.261 (0.190)
PE/VC dummy		0.237 (0.307)		0.231 (0.321)	0.360 (0.301)	-0.684** (0.309)	-0.707** (0.311)
Capital raised			0.468** (0.199)	0.570*** (0.212)	0.555*** (0.202)	-0.182 (0.172)	-0.203 (0.175)
log (Age)	0.185** (0.088)	0.232*** (0.085)	0.269*** (0.088)	0.225** (0.092)	0.168** (0.084)	0.046 (0.078)	0.035 (0.079)
Hot market dummy	-0.845*** (0.199)	-0.857*** (0.193)	-0.945*** (0.201)	-0.961*** (0.210)	-0.917*** (0.200)	-0.599*** (0.173)	-0.559*** (0.180)
Seasonal dummy	0.267 (0.196)	0.200 (0.189)	0.189 (0.192)	0.265 (0.200)	0.277 (0.196)	0.048 (0.167)	0.039 (0.168)
Majority owner dummy	0.195 (0.213)	0.278 (0.206)	0.228 (0.209)	0.130 (0.217)	0.117 (0.207)	0.227 (0.186)	0.219 (0.186)
log (Total assets)	0.240*** (0.054)	0.260*** (0.054)	0.241*** (0.054)	0.221*** (0.055)	0.214*** (0.051)	-0.002 (0.040)	-0.011 (0.042)
Constant	-2.093*** (0.581)	-2.125*** (0.566)	-2.025*** (0.581)	-2.544*** (0.594)	-2.552*** (0.443)	-0.208 (0.464)	-0.196 (0.465)
Industry dummies	Yes	Yes	Yes	Yes	No	Yes	Yes
Ownership dummies	Yes	Yes	Yes	Yes	No	Yes	Yes
McFadden Pseudo-R ²	0.342	0.300	0.315	0.362	0.342	0.130	0.132
Model Accuracy	0.7911	0.7465	0.7997	0.8048	0.7911	0.7610	0.7513
Chi-square	15.37(5)***	8.6(5)*	9.22(5)**	19.47(8)***	68.4(8)***	11.3(7)**	10.9(8)**
Observations	288	288	288	288	288	288	288
Log Likelihood	-121.593	-129.227	-126.475	-117.862	-121.450	-167.392	-167.036
Akaike Inf. Crit.	289.186	302.454	298.949	283.723	270.900	382.785	384.072

Table 8.1 reports probit regression results for market choice, where initial market selection = 1 indicates a main market listing, and initial market selection = 0 indicates a junior market listing. The total sample of 288 IPOs consists of 98 listings on the main market and 190 listings on the junior market from 2007 to 2021. **Positive EBITDA** is a dummy that takes the value of 1 if a firm has positive EBITDA the year prior to listing and the value of 0 if not. **Backed** represents all firms that have >10% ownership by either a Private Equity or Venture Capital firm. **Capital Raised** are the funds raised from the most recent pre-issue private placement. **Age** reflects the number of years since establishment at the time of listing. **Hot market** is years with high number of IPOs, during the selected timeframe this indicates listing in 2007, 2020 & 2021. **Seasonal dummy** takes the value of 1 if the listing took place in Q1 & Q4 and the value of 0 if it takes place in Q2 & Q3. Ownership structure is considered as a “**Majority owner**” if >50% of the firm is controlled by one owner. **Total assets** are the amount of total assets found in the accounts, a year preceding listing. *, ** and *** represents statistical significance at a 10%, 5% and 1% level.

Table 8.1 summarizes our probit regression results. Regression (1-3) and (6-7) represents each hypothesis using the same control variables. Regression 4 is a probit regression where all independent variables are present, while regression 5 does not control for ownership and industry dummies. Table 8.2 is a summary of the marginal effects from the probit regressions. These are not controlled for ownership, or industry dummies, as this can lead to inconsistencies in the estimators (Beck, 2015).

Table 8.2: Marginal effects from probit regression

	Probit marginal effects (MM=1. JM= 0)					
	Market selection				Positive return	
	(1)	(2)	(3)	(4)	(5)	(6)
Market selection						0.031
<i>Positive EBITDA</i>	0.222***			0.259***	0.098	0.091
<i>PE/VC dummy</i>		0.165*		0.202*	-0.189**	-0.193**
<i>Capital raised</i>			0.148*	0.166*	-0.079	-0.083
<i>Positive long-run return</i>				0.027		
<i>log(Age)</i>	0.038	0.022*	0.075**	0.044	0.028	0.027
<i>Hot market dummy</i>	-0.248***	-0.271***	-0.281***	-0.277***	-0.226***	-0.219***
<i>Seasonal dummy</i>	0.081	0.049	0.049	0.059	0.11	0.009
<i>Majority owner dummy</i>	0.105	0.139*	0.121	0.092	0.049	0.046
<i>log (Total assets)</i>	0.075***	0.087***	0.077***	0.068***	-0.008	-0.011
<i>Industry dummies</i>	No	No	No	No	No	No
<i>Ownership dummies</i>	No	No	No	No	No	No

Table 8.2 reports the probit marginal effect model corresponding to the regression models in table 6. The dependent variable is initial market selection where the value = 1 indicates a main market listing, and initial market selection = 0 indicates a junior market listing (1-4). (5-6) has dependent variable Long-run return where the value = 1 indicates positive long run return, and the value of 0 represents negative long run return. **Positive EBITDA** is a dummy that takes the value of 1 if a firm has positive EBITDA the year prior to listing and the value of 0 if not. **Backed** represents all firms that have >10% ownership by either a Private Equity or Venture Capital firm. **Capital Raised** are the funds raised from the most recent pre-issue private placement. **Age** reflects the number of years since establishment at the time of listing. **Hot market** is years with high number of IPOs, during the selected timeframe this indicates listing in 2007, 2020 & 2021. **Seasonal dummy** takes the value of 1 if the listing took place in Q1 & Q4 and the value of 0 if it takes place in Q2 & Q3. Ownership structure is considered as a “**Majority owner**” if >50% of the firm is controlled by one owner. **Total assets** are the amount of total assets found in the accounts, a year preceding listing. *, ** and *** represents statistical significance at a 10%, 5% and 1% level.

8.2 Independent Variables

8.2.1 Profitability

The result from the regression model supports our hypothesis that firms with a positive EBITDA would prefer to list on the main market. The profitability dummies are positive and significant at a 1% significance level in all regressions concerning market choice. Furthermore, the profitability dummy is not significant when looking at long-run stock return in regressions 4 and 5. The output from the marginal effect suggests that companies with positive EBITDA have between 22.2 % - 25.9% higher likelihood of listing on the main market. This is in line with the argumentation in section 4.1 and the findings of Doukas and Hoque (2016), who state that less profitable firms will prefer to list on a less stringent marketplace. This is based on the assumption that less profitable firms will be more reluctant to allocate funds to meet the high requirements for a main market listing. Thus, unprofitable companies will list on the less expensive marketplace to retain capital. The regression output suggests that this also is evident in the Norwegian stock market, confirming our first hypothesis.

8.2.2 PE/VC Ownership

In our second hypothesis, we argue that companies with PE or VC ownership will prefer listing on the main market. The coefficient for the backed dummy is positive and insignificant in all regressions concerning the marketplace. This indicates that PE/VC firms do not have any specific market preference regarding listing in the Norwegian stock market, contradicting both Vismara et al. (2012) and the feedback from industry players like Altor and Investinor, which expressed a clear preference for the main market. Hence, we can reject the second hypothesis. However, the coefficient is negative and significant at the 5% significant level in the fourth regression. This regression is based on the hypothesis that PE/VC- backed firms will outperform non-backed firms. Based on the output, we can, in contradiction to both Levis (2011) and Bergström et al. (2006), reject the fifth hypothesis and conclude that backed firms will provide a lower return for shareholders than non-backed firms in the long run in the Norwegian stock market.

8.2.3 Capital Raised

The amount of capital the company raised seems essential in choosing which marketplace they choose to list on. Our third hypothesis is based on the assumption that companies that aim to raise a substantial amount of equity are more likely to list on the main market. The coefficient is positive and significant at a 5 % significant level. The coefficient becomes more significant when we include more independent variables, as shown in regression 5. This suggests that the amount of capital raised affects the choice of marketplace. The findings contradict those of Baade-Mathiesen and Melnikova (2019), which state that choice of marketplace is not affected by capital raised in the Swedish stock market. They argue that this might be because of Sweden's successful implementation of a highly liquid junior market. However, this is not the case for the Norwegian stock market, and one can argue that the significant levels of the regression suggest that the main market in Norway is more liquid than its junior counterparts. Our findings also contradict Vismara et al. (2012), who found that IPOs listed on the junior markets raised more capital than main market firms. The marginal effect indicates that firms that aim to raise more than 250 NOKm have a 14.8% - 16.6% higher probability of listing on the main market. Consequently, in line with Carnier (2019), we find evidence to support our fourth hypothesis and conclude that firms that aim to raise more capital will prefer the main market.

8.2.4 Market Choice

The fifth and last hypothesis argues that firms that list on the main market will outperform those on the junior market in the long run. Concentration on the main market suggests that the firms are more profitable, have more assets, and raise more capital. Based on these findings, one can argue that they should outperform the junior market in the long run. However, even if the regression output is positive, the significant levels suggest that the actual choice of marketplace does not affect the return for shareholders. This supports our assumption that the actual firm-specific characteristics have a higher impact on stock return than the choice of marketplace. Thus, contrary to the finding of Vismara et al. (2012), who provided evidence of underperformance on the junior markets, we find no evidence to support the hypothesis. Consequently, concluding that the marketplace does not affect long-run returns for shareholders.

8.3 Control Variables

The hot market dummy is negative and statistically significant at a 1% level for all regressions. The marginal effect suggests between 22.6% - 28.1% lower probability that a listing is on the main market during a hot market rather than in normal market conditions. Indicating that a large proportion of the IPOs are listed on the junior markets during this market sentiment. This is consistent with the findings of Vismara et al. (2012), who uncovered evidence that junior markets are attractive in hot markets. During the last hot market (2020-2021), a flood of new ESG companies was listed on the Norwegian stock exchanges. A large portion of these was on the junior market. The increased traction and media coverage of junior markets led to a clustering during the pandemic, as several start-ups and younger firms were strictly dependent on an injection of external capital (Summerfield, 2020). As most listings had their gross proceeds rapidly covered, more companies followed as they saw the high willingness in the capital markets. Consequently, the less stringent disclosure and listing requirements on the junior markets were more appealing as the process is both considerably faster and less costly.

The hot market dummy is also negative and significant for both regressions 6-7. This suggests that firms that list during a hot market have a higher probability of delivering negative returns for the shareholders in the long run. This is consistent with the findings of Ritter (1991) and Miller (1997), who state that the optimistic market segment led to overvalued IPOs. Thus, leading to underperformance as new information and expectations arise. During 2022 the valuation of IPOs from the hot market period has declined substantially, both in Norway and on other exchanges (Bloomberg, 2022).

The seasonal control variable is positive and not significant in any of our regressions. Hence, we cannot provide any evidence that any seasonal characteristics affect the choice of marketplace. Consequently, as we did not find statistical evidence on the effect on long-run profitability either, this contradicts the study of Gori (2020), who provided empirical evidence that suggests that seasonal darkness positively impacts the initial returns of IPOs.

Company age at the time of listing is significant at a 1% significant level for all regression on initial market choice. They are, however, not significant when looking at long-run returns. For the initial listing choice, age impacts where the company chooses to list. One can argue that this is a consequence of the requirement of more than three years of financial reports.

However, as discussed in section 1.3, over one-third of firms under three years are listed on the main market despite deviating from the aforementioned listing requirements. This suggests that companies younger than three years may choose to list on junior markets not out of necessity but by preference. This contradicts the study provided by Corwin and Harris (2001), who presented no evidence that younger companies are more likely to select Nasdaq over NYSE.

Based on the outcome, there is a clear indication that younger firms aim to list on the junior market and that the likelihood of a main market listing increases as time goes by. Our findings coincide with Doukas and Hoque (2016) and Vismara et al. (2012), who find age to impact the initial market choice. However, our findings contradict the ones of Baade-Mathiesen and Melnikova (2019), who found no evidence of firm age impacting the choice of marketplace in Sweden. However, we find no evidence that age has any impact on long-run shareholder returns. This is quite surprising as one could argue that older firms have a longer track record and lower risk associated with bankruptcy, reputation, and financial instability. On the other hand, the upside might be higher as younger firms have more potential for exponential growth and therefore provide abnormal returns for the shareholders. It is worth noticing that our sample consists, among others, of seven savings banks listed on Euronext Growth with an average age of 150 years. This might skew our results due to the large deviation from the mean and median. Nonetheless, the differences in mean and median between junior and main markets are still substantial, so the effect of these companies should be limited.

The majority owner dummy is positive and not significant in all regressions. This suggests that majority ownership does not impact the initial market selection or the long-run return of IPOs. Based on previous literature by Granier et al. (2019), most majority owners in the UK and Japan prefer to list on less stringent marketplaces, allowing them to maintain control of the company post-IPO. This is mainly because of the lower requirement for ownership spread. Smart & Zutter (2003) argues that this is one of the main risks when undergoing an IPO. Our results are, in our view, quite surprising as the argument of losing control seems to have no significant impact on the initial market selection for IPOs with majority owners on Norwegian stock exchanges. Further, Boubaker et al. (2021) found evidence that IPOs suffer when the firm structure allows for conflicting incentives between ownership and control rights of the dominant shareholders. Conclusively, the study suggests that higher cash flow rights, especially for majority owners, enhanced the long-run performance of IPOs.

The size coefficient regarding the amount of total assets before listing is positive and significant at a 5 % significant level, suggesting that larger companies are more likely to list on the main market. This is in line with the findings of Vismara et al. (2012) & Doukas and Hoque and can be linked to the argumentation in section 3.3, explained by the high requirements for listing and the associated obligatory disclosure and reporting needs. Many smaller firms are likely not ready for the required insight at this stage and the costs associated with being listed on the main market and therefore choose to list on the exchanges with less stringent requirements. This is further studied by Jenkinson & Ramadorai (2013), who presented evidence that smaller firms in the US & UK favor listings on exchanges with less stringent requirements.

To evaluate our model, we consider McFadden R^2 , percent accurately predicted, and chi-square statistics to assess the fit of the probit models. McFadden R^2 is between 0.290 and 0.348 for the regressions concerning market selection, which is considered high for a probit model and indicates an excellent fit. Subsequently, the results are lower for the regressions for long-run return, 0.125, respectively, for regressions 6 and 7. The chi-square statistic is also significant. Consequently, all coefficients deviate from zero. The model accuracy ranges between 74.65% and 80.46%, which is high, suggesting that our model is performing well.

9 Conclusion

With 288 IPOs from 2007 to 2021 spread across three exchanges, our goal was to determine which firm-specific characteristics impacted the firm's initial marketplace choice. Subsequently, we sought to identify how the same characteristics, in addition to the initial market selection, have affected the firm's return. In order to succeed with this, we formulated three hypotheses for characteristics affecting the listing process and two for post-IPO performance.

Our analysis shows that profitable firms prefer to list on the main market, which confirms our first hypothesis: *Profitable firms will favor listing on the Main Market*. This supports the assumption that less profitable firms might be more reluctant to allocate funds to meet the main market's stringent disclosure and listing requirements. Our results further indicate that PE/VC-backed firms do not have a preferred marketplace on which to list their portfolio companies. Hence, we find no evidence to support our second hypothesis: *PE/VC-backed firms will prefer to list on the Main Market*. However, based on the significant level of our results, we can reject the fifth hypothesis: *PE/VC-backed firms will outperform non-backed firms* and conclude that backed firms will provide a lower long-run return for shareholders.

In addition, we find evidence that suggests that the amount of capital raised affects the choice of marketplace. Hence, confirming our third hypothesis: *Firms that aim to raise a substantial amount of equity will prefer to list on the main market*. For our fourth hypothesis, we find no evidence to support that the choice of marketplace has any effects on long-run shareholder returns. Consequently, we reject our fourth hypothesis: *Firms that choose to list on the main market will outperform those who list on the junior market*. We view our findings to prove that the initial market selection is not solely determined by the listing requirements but merely a combination of firm-specific characteristics both within and outside our model. Conclusively, our evidence indicates that the actual firm-specific characteristics have a greater impact on stock return than the choice of marketplace. With this in mind, firm-specific characteristics should, in our view, be the primary focus for further analyses of IPOs.

9.1 Future Research

There is extensive research on the topic of IPOs, but considerably less on the topic of actual marketplace choice. However, our results show that the choice of marketplace is something that both firms and investors should pay attention to. This thesis has contributed to expanding the research on which firm characteristics affect the listing process and how these characteristics further affect the post-IPO return. By taking an active stand on the marketplace choice, firms are, to a larger degree, able to tailor their exposure to investors and peers. With evidence of both firm and investor clustering, firms targeting an IPO should be aware of this.

Where our study explicitly focuses on the Norwegian stock market, it would be interesting to explore how firm-specific characteristics affect the IPO process across Europe or within the Nordics. Further, given the constant development of ways a company can finance itself, it would be interesting to view how the development of, I.e., crowdfunding impacts junior markets and their role as a funding source. Another interesting topic is how the choice of underwriter affects the post-IPO performance of firms listed on the junior market. This has been studied for the main market, but there is not, to our knowledge, much research for junior markets. Another interesting topic is whether firms subject to numerous corporate actions should list on the main exchange or whether the junior market is sufficiently efficient to carry out these actions. In the extension of this, a study on how the differences in disclosure requirements affect the initial market selection, corporate events, and performance is an interesting angle to exploit further.

References

- Adilođlu, B., Vuran, B. (2017). *The importance of EBIT- EBITDA disclosure in annual reports*. International Journal of Social Sciences and Education Research Volume 3, Issue 2, 397 - 405
- Alavi, A., Pham, P.K. and Pham, T.M. (2008). *Pre-IPO ownership structure and its impact on the IPO process*, Journal of Banking and Finance, Vol.32, no.11, pp.2361-2375.
- Alti, A. (2001). *Clustering Patterns in Initial Public Offerings*. Available at SSRN: <https://ssrn.com/abstract=305156>
- Ang, J. & Boyer, C., (2009). *Performance Differences Between IPOs in New Industries and IPOs in Established Industries*. Managerial Finance, 35(7), pp. 606-623.
- Arnkværn, A. & Røsås, L., (2022). *Public takeover of companies listed on Euronext Growth*. Retrieved from: <https://www.thommessen.no/en/news/public-takeover-of-companies-listed-on-uronext-growth>
- Baade-Mathiesen, J. and Melnikova, K. (2019). *An empirical study of firm-specific characteristics that affect companies' choice of IPO market in Sweden*. Master's thesis, Norwegian School of Economics.
- Baker, M., and Gompers, P. (1999). *Executive ownership and control in newly public firms: The role of venture capitalists*. Retrieved from: SSRN: <http://ssrn.com/abstract=165173>
- Beatty, R. P., & Ritter, J. R. (1986). *Investment banking, reputation, and the underpricing of initial public offerings*. Journal of Financial Economics, 15(1-2), 213-232.
- Bellin, M. & Thomson, D. (2020). *Insight into the costs of going public*. Retrieved from: <https://www.pwc.com/us/en/services/consulting/deals/library/cost-of-an-ipo.html>
- Benninga, S., Helmantel, M. and Sarig, O. (2004). *The timing of initial public offerings*. Journal of Financial Economics, Volume, 75 (1), 115-132.
- Bergström, C., Nilsson, D., & Wahlberg, M. (2006). *Underpricing and long-run performance patterns of European private-equity-backed and non-private equity-backed IPOs*. The Journal of Private Equity, 16-47.
- Berk, J., & DeMarzo, P. (2020). *Corporate Finance*, Fifth Edition. Harlow, United Kingdom: Pearson Education Limited

- Bernstein, S., Dev, A. and Lerner, S. (2018). *The creation and evolution of entrepreneurial public markets*, Working Paper, Harvard University. 136 (2), 307-329.
- Bjørnerud, L. and Kristiansen, M. (2019). *Aftermarket Liquidity and Performance of Initial Public Offerings*. Master's thesis, Norwegian School of Economics.
- Boubaker, S, Cellier, A, Manita, R & Toumi, N (2021) *Ownership Structure and Long-Run Performance of French IPO Firms*. *Management International* Volume 24, Number 5, 2020, p. 135–152
- Brau, J. C., & Fawcett, S. E. (2006). *Initial Public Offerings: An Analysis on Theory and Practice*. *The Journal of Finance*, 56(1), 399-436.
- Carpentier, C., Suret, J. (2019). *On the performance of a stepping-stone market*, *Research in International Business and Finance*, Elsevier, vol. 50(C), pages 226- 239.
- Chemmanur, T. J. and Fulghieri, P. (1999). *A theory of the going-public decision*. *The Review of Financial Studies*, 12(2):249–279
- Chi, J., Wang, C. & Young, M., (2010). *Long-Run Outperformance of Chinese Initial Public Offerings*. *The Chinese economy*, pp. 62-88.
- Corwin, S.A., Harris, J.H. (2001). *The initial listing decisions of firms that go public*, *Financial Management*, Vol.30, no.1, pp.35–55.
- da Silva Rosa, R., Velayuthen, G. & Walter, T., (2003). *The sharemarket performance of Australian venture capital-backed and non-venture capital-backed IPOs*. *Pacific-Basin Finance Journal*, p. 197 – 218.
- Demers, E. & Lewellen, K. (2003). *The marketing role of IPOs: Evidence from internet stocks*. *Journal of Financial Economics*, 68(3): 413-437.
- Doukas, J., & Hoque, H., (2016). *Why firms favour the AIM when they can list on main market?*, *Journal of International Money and Finance*, Elsevier, vol. 60(C), pages 378-404.
- Driebusch, C & Farrell, M (2018) *IPO Market Has Never Been This Forgiving to Money-Losing Firms*. Retrieved from: <https://www.wsj.com/articles/red-ink-floods-ipo-market-1538388000>
- Eckbo, E. B., & Norli, Ø. (2005). *Liquidity risk, leverage and long-run IPO returns*. *Journal of Corporate Finance*, 11(1-2), 1-35.

- Espenlaub, S., et al. (2000). *Re-assessing the long-term underperformance of UK Initial Public Offerings*. *European Financial Management*: 319-342.
- Euronext, (2020) *Euronext regulated Markets*. Retrieved from: <https://www.euronext.com/en/regulation/euronext-regulated-markets>
- Euronext, (2022). *Equities*. Retrieved from: <https://live.euronext.com/nb/markets/oslo/equities/list>
- Fang, V. and Tice, S. (2008) *Stock Market Liquidity and Firm Performance*. Tulane University
- Gelman, A., & Hill, J. (2007). *Data analysis using regression and multilevel/hierarchical models*. Cambridge; New York: Cambridge University Press, 99.
- Goodacre, A., Ahmad-Zaluki, N. A. & Campbell, K., (2007). *The Long Run Share Price Performance of Malaysian Initial Public Offerings*. *Journal of Business Finance & Accounting*, p. 78–110.
- Gori, L., Teti, E., Loi, A. and Dallochio, M. (2020). *Seasonal darkness and IPO*. *Journal of Economic Behavior & Organization* Volume 178, October 2020, Pages 494-508
- Granier, C., Revest, V., and Sapio, A. (2019). *SMEs and junior stock markets: A comparison between European and Japanese markets*. *Journal of Innovation Economics & Management*, 29 (2):43–67.
- Helwege, J. and Liang, N. (2004). *Initial public offerings in hot and cold markets*. *The Journal of Financial and Quantitative Analysis*, 39 (3):541–569.
- Honjo, Y., Kurihara, K. (2022) *Graduation of initial public offering firms from junior stock markets: evidence from the Tokyo Stock Exchange*. *Small Bus Econ*. <https://doi.org/10.1007/s11187-022-00615-8>
- Ibbotson, R.G. and J.F. Jaffe (1975), “*Hot Issue*” *Markets*, *Journal of Finance* 30, 1027-42.
- Ibbotson, R.G., J.L. Sindelar, and J.R. Ritter (1988) *Initial Public Offerings*, *Journal of Applied Corporate Finance* 1, 37–45.
- ICB, (2022). *Industry Classification Benchmark (Equity)*. v4.1, Retrieved from: https://research.ftserussell.com/products/downloads/ICB_Rules_new.pdf
- Jenkinson, T. & Ljungqvist, A. (2001). *Going public: The theory and evidence on how companies raise equity finance*. 2nd Edn., USA, New York: Oxford University Press.

- Jenkinson, T. and Ramadorai, T. (2013). *Does one size fit all? The consequences of switching markets with different regulatory standards*. *European Financial Management*, 19(5):852–886.
- Jones, H., Stucke, R. (2013). *A Cheaper Way to Do IPOs*. November 2013 issue of *Harvard Business Review*
- Kili, T., (1996). *Aksjemarkedet i Norge 1880-1990*. Retrieved from: https://www.nb.no/items/URN:NBN:no-nb_digibok_2010101203047
- Kim, W., Weisbach, M., (2007). *Motivations for public equity offers: An international perspective*. *Journal of Financial Economics* Volume 87, Issue 2, February 2008, Pages 281-307
- Kogan, L. and Papanikolaou, D. (2013). *Firm Characteristics and Stock Returns: The Role of Investment-Specific Shocks*. *The Review of Financial Studies*, 26(11):2718–2759. Publisher: [Oxford University Press, Society for Financial Studies]
- Leland, H.E. and Pyle, D.H. (1977) *Informational Asymmetries, Financial Structure, and Financial Intermediation*. *Journal of Finance*, 32, 371-387.
- Levis, M. (2011). *The Performance of Private Equity-Backed IPOs*. *Financial Management*: 253-277.
- Li, Z., Dang, C. (2016). *Measuring firm size in empirical corporate finance*. *Journal of Banking & Finance* Volume 86, January 2018, Pages 159-176
- Loughran, T., & Ritter, J. R. (2002). *Why Don't Issuers Get Upset About Leaving Money on the Table in IPOs?* *The Review of Financial Studies*, 15(2), 413-444.
- Meggison, W. L., & Weiss, K. A. (1991). *Venture Capitalist Certification in Initial Public Offerings*. *Journal of Finance*, 46(3).
- Mendoza, J. M. (2011). *Securities regulation in low-tier listing venues: The rise of the alternative investment market*. *Fordham Journal of Corporate & Financial Law*, 13(2):257–328.
- Michel, A., Odeb, J. and Shaked, I. (2014). *Ownership structure and performance: Evidence from the public float in IPOs*. *Journal of Banking & Finance*, Volume 40, 54-61.
- Oslo Børs, (2022). *Avgifter Gjeldende for Utstedere*. Retrieved from: <https://www.euronext.com/sites/default/files/>
- Pagano, M., Panetta, F., Zingales, L. (1998). *Why do companies go public? An empirical analysis*. *Journal of Finance*, Vol.53, no.1, pp.27–64.

- Palmiter, A.R. (1999). *Toward disclosure choice in securities offerings*. Columbia Business Law Review, 1(1): 86-91.
- Posner, E. (2005). Sources of Institutional Change: *The Supranational Origins of Europe's New Stock Markets*. World Politics, 58(1), 1–40. <http://www.jstor.org/stable/40060123>
- Qi Dong, Myron B. Slovin, Marie E. Sushka, (2020). *Private equity exits after IPOs*. Journal of Corporate Finance, 64 (202).
- Ritter, J. and I. Welch (2002). *A Review of IPO Activity, Pricing, and Allocations*. The Journal of Finance: 1795-1828.
- Ritter, J. R., (1991). *The Long-Run Performance of Initial Public Offerings*. The journal of finance, pp. 3-27. The Economist, 2004.
- Sirnes, E., (2020). *Oslo Børs*. Retrieved from: https://snl.no/Oslo_B%C3%B8rs
- Smart, S.B. & Zutter, C.J. (2003). *Control as a motivation for underpricing: A comparison of dual and single-class IPOs*. Journal of Financial Economics, 69(1): 85-110.
- Vismara, S., Paleari, S., and Ritter, J. R. (2012). *Europe's second markets for small companies*. European Financial Management, 18(3):352–388.
- Welch, I. (1989). *Seasoned offerings, imitation costs, and the underpricing of initial public offerings*. The Journal of Finance, 44(5), 1415-1436.
- Wooldridge, J. (2016). *Introductory Econometrics*. South-Western College Publishing, 5th edition.

Appendix

A1 Linear Probability Model

A linear probability model (LPM) is a regression model with binary outcome variables. Where one or more of the explanatory variables are used to predict the outcome. Within the LPM, the response probability is linear in the parameters β_0 . Each of the β_{0j} coefficients measures change in the success probability when X_j changes, all else equal.

$$\Delta P(Y = 1|X) = \beta_j \Delta X_j \quad (\text{A1.1})$$

When estimating β_0 , the LPM uses Ordinary Least Square (OLS) estimator. The estimated equation then looks like the standard linear regression:

$$\hat{Y} = \hat{\beta}_0 + \hat{\beta}_1 X_1 + \dots + \hat{\beta}_k X_k \quad (\text{A1.2})$$

Here, \hat{Y} is the predicted probability of success. Next, $\hat{\beta}_0$ is predicted probability of success with each X_j is set to zero. The slope, represented by $\hat{\beta}_1$ measures the predicted change in the probability of success when X_1 increases by one unit. The results from LPM are presented in Table A.1.

Table A.1: Linear Probability Model

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Market selection				Positive return		
Market selection							0.056 (0.073)
Positive EBITDA	0.193*** (0.053)			0.214*** (0.054)	0.201*** (0.052)	0.099 (0.064)	0.087 (0.066)
PE/VC dummy		0.070 (0.086)		0.072 (0.084)	0.093 (0.079)	-0.209** (0.100)	-0.213** (0.100)
Capital raised			0.116** (0.052)	0.119** (0.050)	0.124** (0.049)	-0.058 (0.060)	-0.064 (0.060)
log (Age)	0.034 (0.020)	0.059** (0.023)	0.066*** (0.023)	0.051** (0.023)	0.044** (0.022)	0.020 (0.027)	0.017 (0.027)
Hot Market dummy	-0.210*** (0.049)	-0.239*** (0.052)	-0.252*** (0.052)	-0.228*** (0.051)	-0.223*** (0.049)	-0.204*** (0.060)	-0.191*** (0.062)
Seasonal dummy	0.072 (0.048)	0.061 (0.050)	0.053 (0.050)	0.059 (0.049)	0.055 (0.048)	0.018 (0.058)	0.014 (0.058)
Majority owner dummy	0.085* (0.050)	0.083 (0.055)	0.070 (0.054)	0.033 (0.054)	0.041 (0.052)	0.066 (0.064)	0.064 (0.064)
log (Total assets)	0.059*** (0.011)	0.061*** (0.012)	0.057*** (0.012)	0.050*** (0.012)	0.048*** (0.011)	-0.001 (0.014)	-0.004 (0.015)
Constant	-0.135 (0.085)	-0.015 (0.141)	0.027 (0.144)	-0.081 (0.137)	-0.106 (0.094)	0.427*** (0.163)	0.431*** (0.163)
F-statistic	20.87***	6.01***	6.04***	6.79***	11.87***	2.26***	2.17***
Observations	288	288	288	288	288	288	288
R ²	0.308	0.322	0.334	0.372	0.357	0.161	0.163
Adjusted R ²	0.294	0.268	0.279	0.317	0.326	0.088	0.086

Table A1 reports the linear probability model. The dependent variable is initial market selection where the value = 1 indicates a main market listing, and initial market selection = 0 indicates a junior market listing (1-4). (5-6) has dependent variable Long-run return where the value = 1 indicates positive long run return, and the value of 0 represents negative long run return. **Positive EBITDA** is a dummy that takes the value of 1 if a firm has positive EBITDA the year prior to listing and the value of 0 if not. **Backed** represents all firms that have >10% ownership by either a Private Equity or Venture Capital firm. **Capital Raised** are the funds raised from the most recent pre-issue private placement. **Age** reflects the number of years since establishment at the time of listing. **Hot market** is years with high number of IPOs, during the selected timeframe this indicates listing in 2007, 2020 & 2021. **Seasonal dummy** takes the value of 1 if the listing took place in Q1 & Q4 and the value of 0 if it takes place in Q2 & Q3. Ownership structure is considered as a “**Majority owner**” if >50% of the firm is controlled by one owner. **Total assets** are the amount of total assets found in the accounts, a year preceding listing. *, ** and *** represents statistical significance at a 10%, 5% and 1% level.

A2 Correlation Matrix

A correlation matrix of our independent variables is shown in Table A.2. A high correlation between independent variables may bring on multicollinearity. The model's predictive potential is decreased by multicollinearity, and its coefficients become less stable (Wooldridge, 2016). In previous literature, levels above 0.5 or below -0.5 have been used as an indication that there might be problems with multicollinearity. However, we found no evidence of this in our data sample, as all independent variables are strictly between 0.5 and -0.5.

Table A2: Multicollinearity Test

	<i>Positive Ebitda</i>	<i>PE/VC dummy</i>	<i>Capital Raised</i>	<i>Log (Age)</i>	<i>Hot market dummy</i>	<i>Seasonal dummy</i>	<i>Majority Owner dummy</i>	<i>Log (Total assets)</i>
<i>Positive EBITDA</i>	1							
<i>PE/VC dummy</i>	-0.109	1						
<i>Capital raised</i>	-0.073	0.078	1					
<i>log(Age)</i>	0.219	0.119	-0.092	1				
<i>Hot market dummy</i>	-0.119	0.035	0.149	-0.017	1			
<i>Seasonal dummy</i>	-0.028	0.067	0.022	0.171	0.034	1		
<i>Majority owner dummy</i>	0.197	-0.030	0.0471	0.028	0.131	0.0351	1	
<i>log(Total assets)</i>	0.231	0.051	0.0753	0.198	-0.146	-0.148	0.0514	1

Table A2 reveals the extent of multicollinearity among the variables we employed in our analysis. **Positive EBITDA** is a dummy that takes the value of 1 if a firm has positive EBITDA the year prior to listing and the value of 0 if not. **PE/VC dummy** represents all firms that have >10% ownership by either a Private Equity or Venture Capital firm. **Capital Raised** are the funds raised from the most recent pre-issue private placement. **Age** reflects the number of years since establishment at the time of listing. **Hot market** is years with high number of IPOs, during the selected timeframe this indicates listing in 2007, 2020 & 2021. **Seasonal dummy** takes the value of 1 if the listing took place in Q1 & Q4 and the value of 0 if it takes place in Q2 & Q3. Ownership structure is considered as a “**Majority owner**” if >50% of the firm is controlled by one owner. **Total assets** are the amount of total assets found in the accounts, a year preceding listing. *, ** and *** represents statistical significance at a 10%, 5% and 1% level.

A.3 Exclusion List

Table A.3: Exclusion List

Company	Reason for exclusion	Listing year
Ocean Team Power & Umbilical	Insufficient information	2007
APL	Insufficient information	2007
Nexus Floating Production	Insufficient information	2007
Klepp Sparebank	Merger with Jæren Sparebank	2007
Cecon	Insufficient information	2007
24 Seven Office	Insufficient information	2007
Gregoire	Buyout < 18 months	2007
Scandinavian Clinical Nutrition	Dual listing	2007
Sparebank1 Nøtterøy-Tønsberg	Merger	2007
Aker Exploration	Merger	2007
Lighthouse Caledonia	Insufficient information	2007
Exense	Bankrupt < 18 months	2007
Camposol Holding	Insufficient information	2008
BW Gas	Delisted < 18 months	2008
Prosafe Production	Insufficient information	2008
Remedial	Insufficient information	2008
Nordic Health	Corporate restructuring with Shine	2008
Golar LNG Energy	Insufficient information/ Restructuring	2009
Avocet Mining	Dual listing	2010
Dannemora Mineral	Dual listing	2010
Netconnect	Merger	2010
Shine	Corporate restructuring with Nordic Health	2010
Seawell	Merger	2010
Floatel International	Merger with Prosafe	2010
Nordic Financial	Insufficient information	2011
Crudecorp	Delisted < 18 months	2012
Veripos	Buyout < 18 months	2012
Bulk invest	Bankrupt < 18 months	2013
Sendex Pharmaceuticals	Delisted < 18 months	2014
African Petroleum Corporation	Reverse takeover/sidelisting	2014
Schibsted ser B	Listing of additional share class	2015
Solstad Offshore ser B	Listing of additional share class	2016
WR Entertainment	Insufficient information	2016
Sino Agro Food	Dual listing	2016
Oxy Group	Delisted < 18 months	2016
Black Sea Property	Insufficient information	2016
Songa Bulk	Merger with Star Bulk	2016
Kolibri Kapital	Insufficient information	2016
Evry	Merger with Tieto	2017
Sparebank1 Nordvestlandet	Merger	2017
Baltic Sea	Insufficient information	2017
J.P Kenny Petroleum	Suspended from Euronext Growth	2017
Lillestrøm Sparebank	Merger	2017
Star Bulk Carriers	Merger	2018
BRA bank	Merger	2018
Lavo TV	Insufficient information	2018
TargetEveryOne	Dual listing	2018
Surnadal Sparebank	Merger Sparebank1 NordMøre	2018
River Gaming	Insufficient information	2018
TietoEVERY	Merger	2019
Kalera	Merger (SPAC Agrico)	2020

Table A.3 shows the companies excluded from our dataset and the reason behind the exclusion.