Going Private: Factors and the Lifecycle of Companies

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Lucia Ehn

from

Altishofen (Luzern)

Approved on the application of

Prof. Dr. Andreas Grüner

and

Prof. Dr. Dr. h.c. Klaus Spremann

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St. Gallen, November 2, 2015

The President:

Prof. Dr. Thomas Bieger

To my parents

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List of abbreviations

&	and
%	percent
Σ	sum
α	alpha
AAR	average abnormal return
ADR	American depositary receipt
AMEX	Amercican stock exchange
β	beta
Big 4	Four biggest auditors including Deloitte, KPMG, EY and PWC
capex	capital expenditures
CAR	cumulative abnormal return
CEO	chief executive officer
cf.	confer / compare
CF	cash flow
CFO	chief financial officer
corp gov	corporate governance
CRSP	Center for research in security prices (database)
dec	december
ε	epsilon
e.g.	for example
et al.	et alii / et aliae / and other
exp	exponent
FCF	free cash flow
FCFF	free cash flow to the firm

H	hypothesis
IPO	initial public offering
λ	lambda
LBO	leverage buyout
ln	natural logarithm
M&A	mergers and acquisitions
marketcap	market capitalization
M/B	market-to-book ratio
MBO	management buyout
N	number
NASDAQ	National association of securities dealers automated quotations
NOA	net operating assets
NPV	net present value
NYSE	New York stock exchange
OTC	over the counter
PC	personal computer
P/E	price-to-earnings ratio
pe	price-to-earnings ratio
P/B	price-to-book ratio
pb	price-to-book ratio
pp.	page
R&D	research and development
R^2	coefficient of determination R squared
RE	retained earnings
REIT	real estate investment trust

roa	return on assets
SEC	U.S. securities and exchange commission
SOX	Sarbanes-Oxley Act
TA	total assets
TE	total equity
tlta	total leverage to total assets
UK	United Kingdom
U.S.	United States
USA	United States of America
vol.	volume

Abstract

This thesis investigates two topics concerning a firm's voluntary delisting from the public stock market: Characteristics of a going private firm and lifecycle effects on the delisting decision. The first study explores theories of voluntary market withdrawal and presents historical empirical evidence. Additional findings on financial implications of going private transactions are presented. The second study identifies going private candidates during their public life, firstly with focus on the information content of post-IPO data, secondly with focus on the period shortly before delisting and this only with focus on the survivability over the public life. The analysis is conducted as means analysis, which is applied to voluntary going private firms and staying public firms based on corporate fundamentals, perception and corporate governance factors. Our results suggest that firms, which withdraw from the public capital market, have less visibility to investors and show weaker corporate governance. The observed differences to firms, which remain listed persist from the time of the IPO up until delisting, hence over the complete public life. The findings imply that investors who are able to recognize future going private firms may earn excess returns when the firms withdraw by a share buyback program. The third study examines different stages in the corporate lifecycle and its relation to a voluntary delisting. In order to map a firm's lifecycle, retained earnings to total assets are analysed as proxy for corporate lifecycle. The empirical findings imply that firms, which are young and in the growth stage of their corporate lifecycle are more likely to go private exhibiting tendencies to be perceived as an acquisition target. Contrary, older firms, which can depend on internal financing act like a bidder in a concentrating market and therefore remain in the public capital market. Results from the empirical parts confirm earlier theoretical work about firm characteristics and firm perception and add insight into the impact of corporate governance strength. Also, the results provide evidence on the identification of going private candidates by highlighting persistent differences to continuously listed firms from the date of the IPO to the delisting date and point out the importance of lifecycle stages.

Abstract (German)

Diese Dissertationschrift befasst sich mit zwei Aspekten von freiwilligen Börsenrückzügen: (1) Charakteristika von Unternehmen, welche die Börsennotierung aufgeben sowie (2) dem Einfluss des Lebenszyklusabschnitts auf die Rückzugsentscheidung. Die erste Studie befasst sich mit Theorien zu freiwilligen Börsenrückzügen und präsentiert ebenso vorangehende empirische Ergebnisse. Der Fokus der zweiten Studie liegt auf der Identifikation von Rückzugskandidaten während der Zeit der Börsennotierung. Die Studie untersucht die Abweichung zur Kontrollgruppe, die keinen Börsenrückzug vollzieht. Sie stützt sich dabei auf Fundamental-, Wahrnehmungs- als auch Corporate Governance-Faktoren. Die Resultate zeigen, dass Unternehmen, die sich von der Börse zurückziehen, von Investoren weniger wahrgenommen wurden und über eine weniger ausgeprägte Corporate Governance verfügten. Die Abweichungen zur Kontrollgruppe bestehen bereits im Zeitpunkt des Börsengangs und bleiben über die Zeit der Börsennotierung bis zum Rückzug bestehen. Die Ergebnisse implizieren, dass Investoren, die einen zukünftigen Börsenrückzug erkennen, von abnormalen Renditen profitieren können, wenn ein Rückzug durch ein Aktienrückkaufsprogramm eingeleitet wird. Eine dritte Studie analysiert verschiedene Abschnitte des Unternehmenslebenszyklus und deren Wirkung auf ein Börsenrückzugsvorhaben. Um den Lebenszyklus abzubilden und Rückschlüsse auf einen freiwilligen Börsenrückzug ziehen zu können, wird die Höhe der einbehaltenen Gewinne im Verhältnis zum Gesamtvermögen der Unternehmung analysiert. Die Resultate zeigen, dass sich jüngere Unternehmen eher freiwillig von der Börse zurückziehen als ältere Unternehmen. Die Ergebnisse der Dissertation bestätigen Resultate früherer Untersuchungen hinsichtlich der Unternehmenscharakteristika und Fundamentaldaten von Unternehmen, welche freiwillig auf eine weitere Notierung verzichten, und weisen darauf hin, dass ebenso Wahrnehmungsfaktoren sowie der Ausprägung der Corporate Governance eine zentrale Rolle zukommt. Zusätzlich konnte gezeigt werden, dass Unterschiede zwischen Charakteristika von Unternehmen, welche sich von der Börse zurückziehen, und solchen, welche eine Notierung beibehalten, vom Börsengang bis zum Rückzug bestehen bleiben und durch den Lebenszyklusabschnitt beeinflusst werden.

1 Introduction

The decision of a publicly traded company to delist from the stock exchange is a remarkable step in the lifecycle albeit attracting less attention than its initial public offering years or decades earlier. However, with no less implications and consequences for investors and the company alike. To leave the public capital market was recently decided by the German cutlery producer WMF, which announced that KKR, a private equity company, will squeeze out shareholders and take the company private after a rigorous cost cutting program did not support the share price. Dell, a major player in the U.S. PC maker sector, started its delisting in October 2013 as its founder and CEO Michael Dell wants to overhaul the company's core business to a computer service provider detached from the pressure of the public market participants. As it can be seen from those two examples, drivers of the going private decision can be localized in different aspects of a company. Therefore, it is crucial to understand which factors influence a voluntary delisting and the importance of the withdrawal in the context of the corporate lifecycle.

The going private topic is not a new phenomenon. Especially in the 80s delistings were popular among companies. The reasons for such a step were different at that time compared to later decades. The possibility to reorganize a company while it is private and to bring it back to the stock exchange with a higher value after the restructuring was the main reason for taking companies private during these years. In the 90s, a going private wave reached the market again. This time, it was due to the positive development of the economy and due to no need for financing via the public capital market for some companies. (Gleason, Payne & Wiggenhorn, 2007)

Today, turbulent developments on the financial markets and increased accounting standards by SOX on the U.S. public capital market make the step into privacy a lucrative choice for public companies. As there is not a lot of empirical evidence about this issue and the topic enjoys even additional attention not only from companies' but also from investors' side, it is the motivation of the author to provide further research

findings, which may supplement the knowledge of researchers and practitioners and ease their decisions.

The contribution of the thesis lies not only in the confirmation of going private characteristics analyzed in previous studies, but mainly in the analysis of further factors which explain this phenomenon. On the one hand, fundamental factors like e.g. size or free cash flow to the firm were confirmed as significant in accordance with previous studies. On the other hand, the thesis extends for corporate governance factors in the second paper. Three factors *cfosox*, *opininon* and *accruals*[1] have been analyzed representing corporate governance. I assume that firms with low corporate governance are more likely to go private, as they do not meet the expectations of investors on the public capital market in this point. I find significant influence of *opinion* and *accruals*[2] on the going private decision. In the third paper, the thesis extends the view on going privates when considering lifecycle stages. I introduce retained earnings to total assets as proxy for lifecycle stage. Owen and Yawson (2010) have used this approach of estimating lifecycle stages in their analysis of M&A. The usage of this approach for the going private phenomenon is new and contributes to the current state of research. I find that lifecycle has a significant influence on the going private decision and that companies go private in the early stage of their lifecycle.

During the past years not only public offerings but also increased number of going private decisions of companies were observed on global capital markets. Such a decision to leave the public capital market might be driven by many reasons. While observing the life of a company, after a couple of successful years, financial capital is needed in order to grow further. Having reached an adequate size, companies may put trust in a going public step[3] to achieve such a growth goal and raise equity capital. After the collected capital is invested, companies most often stay public. Just few of

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1 *cfosox* is a binary variable set to one if the certification document fully complies with SEC requirements and is signed by the CFO, *opinion* is a binary variable set to one if the auditor opinion is non-qualified, *accruals* is the accruals ratio measured as aggregate accruals based on net operating assets.

2 I measure accruals with the NOA approach using data from balance sheets due to data availability. Collins and Hribar (2002) criticise this approach and prefer the calculation based on cash flow. Mainly small companies go private and there is almost no historical data from their cash flow statements.

3 The going public decision is discussed e.g. by Zingales (1995).

them decide to leave the public capital market voluntarily and become private again[4]. In other cases, companies are forced to delist, because they don't meet the minimum requirements of a stock exchange any more or go bankrupt[5]. Different definitions apply to the term going private, among them one of the first by DeAngelo, DeAngelo & Rice (1984), which focus on management buyouts whereas this definition is a too narrow one as it only includes a company if public shareholders were replaced by the management. A second limited definition is by Ernst and Haecker (2007) and Burghof and Schilling (2003), who define going private as a result of the acquisition of a public by private company. Richard and Weinheimer (2002) broaden the focus, calling going private a transaction, which takes a publicly traded company private but still can be traded on non-public markets. This dissertation however, refers to delistings on a voluntary basis of any nature[6]. It follows the definition of Beck and Stinn (2002) who assume all companies, which change voluntarily from public to private ownership and are not traded on any capital market[7] are a going private. Relevant part of this definition is that the company traded on the stock exchange disappears voluntarily and the public cannot trade its shares any more.

The main advantage of this definition is the relatively high number of going private cases. There are even broader definitions of going private as mentioned before by e.g. Ernst and Haecker (2007). They not only assume voluntary, but all delistings to any reason. Such a wide definition may lead to difficulties while interpreting results as also negative delisting reasons are part of the analysis. Therefore, I use the tighter definition of solely voluntary delistings. My sample construction follows the design of Mehran and Peristiani (2010). According to them, the voluntary decision for the step into privacy is what these companies have in common, regardless if the transaction was e.g. a MBO or a buyout by a single large investor. Still, criticism could arise, as

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4 According to Block (2004) about 20-30% of companies decide for a going private following his definition.
5 Being forced to delist due to negative reasons is not a part of this research project.
6 MBO, M&A transaction or simple delisting.
7 Same definition is used by Eisele, Götz & Walter (2003) and Moehrle (2006).

they might be differences in the particular voluntary reasons as well as in the type of transaction.

Difference in characteristics of going private companies depending on their buyout transaction type (private equity, single large investor or e.g. MBO) has not been analyzed yet. Previous studies always only focused on one transaction type or they analyzed all types of transactions. They clustered their sample in a different manner and so did e.g. Bharath and Dittmar (2009) focus only on private equity buyouts. DeAngelo et al. (1984) focused only on MBOs. Different definitions used by authors in previous studies as well as the different time periods analyzed make it complicated to compare their results. Some studies however analyzed the performance after a going private. Some of them again differentiate by the type of the buyout. So did it Smith (1990) while analyzing the operating performance of 58 MBOs between 1977 and 1984. Weir, Jones & Wright (2008) analyzed 122 public to private transaction in UK from 1998 to 2004 without differentiating the transaction type. Cohn, Mills & Towery (2014) analyzed the performance of companies, which went private by looking at their corporate tax return data. They also focus on all delistings and do not differentiate between voluntary or forced ones.

In order to find out which companies went private voluntarily, in both empirical papers of this thesis (chapter 3 and 4) I use the same selection process. The higher amount of IPOs in the second empirical paper (chapter 4) is only due to the extended time period analyzed (starting 1990 resp. 1985 until 2013). I collect all IPOs from major US stock exchanges and extract REITs, penny stock IPOs, ADRs and financial institutions. The CRSP database provides the information if a company is still publicly traded. If a company is not traded any more, CRSP can further provide the information if a delisting was voluntary or not. In my analysis, I only include voluntary delistings. The first empirical paper (chapter 3) examines 1’184 IPOs of which 188 are going privates. The second empirical paper (chapter 4) examines 1’501 IPOs of which 201 are going privates.

Early theoretical models, which describe motives to voluntarily leave the public capital, mainly relate the step into privacy to a company's capital structure and its financial benefits described by Modigliani and Miller (1963). For example, Amihud and Mendelson (1988) highlight that lower liquidity increases to cost of publicly raised capital. In connection with capital structure, principal agent theory (Jensen and Meckling, 1976) is the framework for the free cash flow (FCF) hypothesis, which states that the remainder of cash flows after financing all positive NPV projects is free to distribute among principals (shareholders) and agents (management). Hence, as Jensen (1986) states it, principals seek to reduce asymmetric information regarding allocation of FCF by going private. Other prominent theories about motives for a going private are concerned with the ownership structure (Schwichtenberg, 2003), which influence share price negatively if there is a major shareholder reducing a stock's liquidity. Additionally, capital markets participants' perception of a company's success is a driving factor if the perceived financial success is lower than the fundamentals (Mehran and Peristiani, 2010). Hence, not only the valuation such as the development of the market-to-book ratio affects the decision to stay or leave, also the visibility of the company (Ernst and Haecker, 2007) and attention from research analysts (Bharath and Dittmar, 2009) is a contributing factor. On one hand, these theories imply that smaller companies are less visible and in correspondence with Schwichtenberg (2003) companies with less free float might be neglected. On the other hand, low institutional ownership and low coverage constrains liquidity.

A step beyond testing for static factors influencing the going private decision, is analyzing the various stages during corporate lifecycle and the likelihood of delisting in connection with fundamentals. Earlier studies of Greiner (1972) and Miller and Friesen (1984) stress the importance of time-varying firm characteristics in the context of organizational theory. Owen and Yawson (2010) divided M&A bidder companies among three phases of their quotation life: old, mature and young and relate each stage to different levels of retained earnings in order to proxy for a company's dependency on external capital and self-financing ability. Hence, significant explanatory power is not only derived from internal factors driving the public capital market withdrawal, but also to potentially isolate a point in time when companies are prone to delist.

Despite the intensified empirical research to verify before-mentioned theories between 1984 and 2005 for the U.S. market, no clear cut regarding motives could be made. Therefore, it is a primary motivation to derive findings on firm characteristics, which can help investors to identify going private candidates. The starting point for this analysis is therefore, to identify firm specific characteristics with regard to fundamentals, corporate governance and firm visibility based on a comprehensive examination of existing literature on going private motives. However, in order to present the full picture of voluntary delisting, it is necessary to reflect on exogenous factors besides endogenous drivers such as fundamentals or lifecycle considerations. One of those external factors only partially analyzed by earlier research projects (e.g. Gleason et al., 2007) is passage of the Sarbanes-Oxley Act (SOX) in 2002.

The aftermath of tech bubble crisis in 2000 and bankruptcy cases of e.g. Enron and Worldcom (Leuz, 2007) have forced law makers and regulators to increase the transparency requirements. For U.S. listed firms, SOX was initiated in order to avoid such negative cases in future. The act passed in 2002 and due to it, staying public became more expensive (Gleason et al., 2007). Because of the new accounting and transparency requirements, which have to be fulfilled by every company publicly listed on the U.S. capital market, especially the companies of smaller size are more heavily hit by these increased costs of being public (Chaplinsky and Ramchand, 2012). These transparency requirements combined with the recent turbulences on the financial market might have made the step back into privacy an actual issue in many public companies.

Still, the going private topic is not that much explored as the IPO topic is. Due to the fact, that only a small number of companies decide to leave the public capital market, also the empirical research about this topic is limited.

1.1 Research ideas

Although this research emphasizes the identification of internal and external factors, which affect or accelerate the step into privacy as well as under the consideration of lifecycle aspects, it is important to have a clear picture of theories of a voluntary delisting. The breakdown of theories among individual factors should help investors to

identify important firm characteristics from the vast amount provided by publicly traded companies' reporting files.

Therefore, the first research topic provides a literature synopsis focused on characteristics of firms which voluntarily decide to leave the public market, e.g. for positive reasons as well as on bid premiums and abnormal returns identified with the going private announcement. In order to narrow the focus on voluntary delistings, in a first step, different definitions of going private will be presented. With regard to motives and besides traditional considerations whether to go private, which foremost are driven by asymmetric information and coherently the allocation of funds between principal and agents, also recent motives which can be subsumed under visibility are presented. Furthermore, results on financial aspects of going private transactions should be presented in order to give insight into the perception of a voluntary delisting by market participants and the consequences on returns.

What is the current state of research on the voluntary going private topic?

Which areas within the going private topic have been emphasized?

What is known about the going private phenomenon until today and which further research can be done in this field?

The second topic is concerned with the specific identification of firm characteristics, which makes it possible for investors to recognize delisting candidates. The research is motivated by the findings of Maupin, Bidwell and Ortegren (1984) which examine cash flow ratios, P/B ratio, the dividend yield as well as the concentration of ownership as explanatory factors. Especially cash flow considerations in the context of agency theory came into focus with studies provided by Lehn and Pulson (1989) and Kieschnick (1989). Recent studies acknowledge the importance of corporate governance for the financial success of a company. However, corporate governance was mainly tested as a return driver for post-IPO price developments. Krishnan, Ivanov, Masulis and Singh (2011) found evidence for positively influenced post-IPO firm performance by higher levels of corporate governance. A firm's reputation significantly contributes to corporate governance and hence, Krishnan et al. (2011) showed that reputation offers various stakeholders valuable information for their

decisions. Supporting evidence for this finding comes also from Bell, Moore and Filatotchev (2012). However, only small number of studies exists on the sophistication of corporate governance and voluntary delistings. Weir and Laing (2002) argue that corporate governance mechanisms may reduce the extent of the agency costs. Therefore, they imply that companies which went private have ineffective corporate governance mechanisms. Their research focused mostly on CEO characteristics as proxies. Taking into account the findings on traditional mostly fundamental factors and corporate governance factors affecting the going private decision, the question arises at which point in time these characteristics would signal a likely delisting and disclose a candidate. To give further insight into this question, selected factors should not only be tested shortly before a going private as existing analyses showed it, characteristics rather should be examined over corporate lifecycle and in order to complete the lifecycle consideration with a starting point at the time of the IPO. This leads to the following research questions:

Which fundamental factors characterize a going private company?

Is a company with weaker corporate governance more likely to go private?

Is a company with less perceptibility more likely to go private?

Is the period shortly before a going private announcement the only time when going candidates can be identified, e.g. when data contains valuable information?

Which factors accelerate the going private decision?

Given the previous questions about reference points to identify likely delisting, an ensuing question is to address the corporate lifecycle directly by testing indications of the firm stage when it voluntarily leaves the public market and vice versa, the impact of lifecycle stage on the going private decision. Owen and Yawson (2010) apply a proportion of retained earnings to equity as a proxy for lifecycle stage based on the work of DeAngelo, DeAngelo, and Stulz (2006) and Grabowksi and Mueller (1975) which outline that the retained earnings to equity ratio is a measure of dependency on external financing, hence firms which show a high ratio are either mature or obtain less investment opportunities. However, the study of Owen and Yawson (2010) analyzes the lifecycle effect for the bidder in an M&A transaction. To my best knowledge, no

research before related the ratio of retained earnings to equity as a variable for lifecycle stage with the going private topic. The following research question applies:

Has the corporate lifecycle an influence on the going private probability?

Which lifecycle stage is the one in which companies most likely decide to leave the public capital market?

Which factors characterize a going private company in this particular lifecycle stage?

The following table summarizes the idea of this dissertation. Divided into three papers, each focuses on the going private phenomenon from a different point of view. The first paper surveys theoretical and empirical research about this topic. The focus lies on the synopsis of studies, which analyzed the characteristics of going private companies. (The paper also addresses other relevant topics like the motives for going private as well as abnormal returns gained by investors during the transaction.) The aim is to describe the current state of research and define areas, which can be analyzed in future. The second paper builds up on the findings of the first paper and retests fundamental variables as well as new perceptibility and corporate governance variables as going private characteristics. In line with the current research, in not only analyzes the time shortly before the going private, but the whole public life of a company. The third paper goes even a step further. It searches for the lifecycle stage in which a company typically goes private. This question is answered by researchers only for M&A companies. The application on going privates is new.

To summarize, this dissertation investigates the factors characterizing a voluntary going private company at different points in time during it quoted life, such as at the IPO date, before delisting and over the period of public listing. Furthermore, insight is given in the corporate lifecycle and its potential effect on the going private decision. To provide answers to the research questions an empirical analysis is composed on the U.S. stock market from 1985/1990 respectively to 2013.

Table 1: Thesis structure

	Paper	Research idea	Methodology	Data sample
1. Literature review	Leaving the public capital market : A literature survey on the going private decision	Analysis of the current stage of theoretical and empirical research with focus on motives of going privates.	Literature analysis	-
2. Factors	Factors accelerating the going private decision – A hazard model approach	Characterization of companies which voluntary went private. Use of new variables from perceptibility and corporate governance field in the analysis. Analysis during different stages in the company lifecycle: at the IPO, shortly before delisting and during the public life period.	Duration analysis Logit regressions Cox Hazard Model	1'184 IPOs from 1990 to 2013 on major US stock exchanges whereof 188 companies went private.
3. Lifecycle	The firm lifecycle as a determinant of going private decisions	Analysis of the impact of corporate lifecycle and its stages (young, mature, old) on the going private likelihood. Studies exist about the impact of lifecycle on M&A activity; analysis for going privates is new and contributes to current state of research.	Logit regressions	1'501 IPOs from 1985 to 2013 on major US stock exchanges whereof 201 companies went private.

1.2 Course of the analysis

This dissertation is structured in four parts. The first part summarizes the current state of research on the voluntary going private topic and presents in detail on the subjects of delisting motives. The second part focuses on the identification of going private candidates over their public life. The third part highlights the corporate lifecycle and the different states of a company's life with respect to the likelihood of voluntary market withdrawal. The fourth and last part summarizes and concludes the overall findings.

With the first part, the theoretical review should give a framework for the later following empirical work by presenting studies conducted in the field voluntary delisting. A literature synopsis is provided on the going private topic, giving insight about this less covered – in contrast to the IPO – phenomenon. The synopsis includes not only previous theoretical work but also presents empirical evidence on the motives driving the voluntary delisting. Furthermore, studies which emphasize investors' financial implications of engaging in going private transactions and transactions triggered by the withdrawal. However, the empirical analysis starts with the second part.

The second part brings the focus to going private firms' characteristics with the intention to identify going private candidates during their public life, earliest with their IPO. For this analysis selected factors are tested with differences in means analysis for a group of voluntary going private companies and stay public companies in order to identify significant variations between the two groups with regard to firm characteristics. In order to complete the core analysis of this sub-research topic, two logit regressions are conducted. The first logit regression is applied at the date of the respective IPO, the second at the date of delisting to test the information of a potential future going private contained in the data at the beginning and at the end of the public life. In order to introduce the corporate lifecycle theory into the analysis a Cox proportional hazard model of the instantaneous probability of voluntary delisting is applied. The model of Cox is a methodological approach which allows identifying explanatory variables on longevity or entity. The results show that companies which

decide on a public market withdrawal differ widely from those which stay public when it comes to perception of those firms and their visibility as well as with regard to corporate governance. The difference in the mentioned variable groups exists already at the time of the IPO and during the whole public lifecycle. Investors who are able to recognize future going private companies may earn higher returns when these companies are buying their shares back, making them a lucrative investment.

The third part of the analysis continues with examination of the lifecycle, however from the perspective of the development from a young firm with high growth to a mature player. In order to account for these different stages, a proxy for corporate lifecycle is introduced in the form of retained earnings to total equity and to total assets respectively. The first logit regression model is applied in order to examine if corporate lifecycle has an influence on the going private probability. The second model focuses on lifecycle stages and allows analyzing in which stage of a firm's lifecycle the highest likelihood for a voluntary delisting occurs. Further, corporate governance factors are included in the model in order to prove its robustness. The results show that corporate lifecycle plays a significant role when companies decide to leave the public capital market. The results further suggest that firms in young stage of their corporate lifecycle are more likely to decide for a voluntary going private. The results are robust also when including corporate governance variables into the analysis.

The dissertation concludes with a summary of all findings.

References

Amihud, Y., & Mendelson, H. (1988). Liquidity and Asset Prices: Financial Management Implications. Financial Management. Vol. 17, 5.15.

Beck, R., & Stinn, D. (2002). Börsenrückzugs-Gesellschaften in Deutschland. Coroprate Finance biz, 4(11), 653-660.

Bell, R. G., Moore, C. & Filatotchev, I. (2012). Strategic and institutional effects on foreign IPO performance: Examining the impact of country of origin, corporate governance, and host country effects. Journal of Business Venturing, 27(2), 197-216.

Bharath, S. T., & Dittmar, A. K. (2009). Why Do Firms Use Private Equity to Opt Out of Public Markets? Review of Financial Studies, 23, 1771-1818.

Block, S. B. (2004). The Latest Movement to Going Private: An Empirical Study. Journal of Applied Finance, 1, 36-44.

Burghof, H-P., & Schilling, D. (2003). Going Private als Corporate Governance-Transaktion. Betriebswirtschaftliche Forschung und Praxis, Vol. 55(2), 117-136.

Chaplinsky, S., & Ramchand, L. (2012). What drives delistings of foreign firms from U.S. Exchanges? Journal of International Financial Markets, Institutions & Money, 22(2012), 1126-1148.

Cohn, J. B., Mills, L. F., & Towery, E. M. (2014). The Evolution of Capital Structure and Operating Performance After Leveraged Buyouts: Evidence from U.S. Corporate Tax Returns. Journal of Financial Economics, 111(2), 469-494.

Collins, P., & Hribar, D. W. (2002). Errors in Estimating Accruals: Implications for Empirical Researcch. Journal of Accounting Research, 40, 105-134.

DeAngelo, H., DeAngelo, L., & Rice, E. M. (1984). Going Private: Minority Freezouts and Stockholder Wealth. Journal of Law and Economics, 27(2), 367-401.

DeAngelo, H., DeAngelo, L., Stulz, R., 2006. Dividend policy and the earned/contributed capital mix: a test of the life-cycle theory, Journal of Financial Economics, 81, 227-254.

Eisele, F., Götz, A., & Walter, A. (2003). Going Private-Transaktionen am deutschen Kapitalmarkt - Eine empirische Bestandsaufnahme. Finanz Betrieb, 5(12), 839-850.

Ernst, D., & Haecker, J. (2007). Applied International Corporate Finance. München: Verlag Franz Vahlen.

Gleason, K., Payne, B., & Wiggenhorn, J. (2007). An Empirical Investigation of Going Private Decisions of U.S. Firms. Journal of Economics and Finance, 31(2), 207-218.

Greiner, L. (1972). Evolution and revolution as organizations grow. Harvard Business Review, Vol. 50, 37-46.

Jensen, M. C. (1986). Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. American Economic Review, 76(2), 323-339.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. Journal of Financial Economics, 3(4), 305-360.

Kieschnick, R. L. (1989). Management Buyouts of Public Coroprations: An Analysis of Prior Characteristics. In Y. Amihud, Leveraged management buyouts: causes and consequences (pp. 35-70). Homewood: Dow Jones-Irwin.

Krishnan, C., Ivanov, V., Masulis, R. and Singh, A. (2011). Venture Capital Reputation, Post-IPO Performance and Corporate Governance. Journal of Financial and Quantitative Analysis, 46(5), 1295-1333.

Lehn, K., & Poulsen, A. (1989). Free Cash Flow and Stockholder Gains in Going Private Transactions. The Journal of Finance, 44(3), 771-787.

Leuz, C. (2007). Was the Sarbanes-Oxley Act of 2002 really this costly? A discussion of evidence from event returns and going-private decisions. Journal of Accounting and Economics, 44, 146-165.

Maupin, R. J., Bidwell, C. M., & Ortegren, A. K. (1984). An Empirical Investigation of the Characteristics of Publicly-Quoted Corporations which Change to Closely-Held Ownership through Management Buyouts. Journal of Business Finance & Accounting, 11(4), 435-450.

Mehran, H., & Peristiani, S. (2010). Financial Visibility and the Decision to Go Private. The Review of Financial Studies, 23(2), 519-547.

Miller, D., & Friesen, P. H. (1984). A Longitudinal Study of the Corporate Life Cycle. Management Science, Vol. 30(10), 1161-1183.

Modigliani, F., & Miller, M. (1963). Corporate income taxes and the cost of capital: A correction. American Economic Review, 53, 433-443.

Moehrle, C. (2006). Delisting - Kapitalmarktrechtliche, gesellschaftliche und umstrukturierungsrechtliche Aspekte. Dissertation, Zürich.

Owen, S., & Yawson, A. (2010). Corporate life cycle and M&A activity. Journal of Banking and Finance, Vol. 34, 427-440.

Richard, J., & Weinheimer, S. (2002). Handbuch Going Private. Heidelberg: Verlag Recht und Wirtschaft GmbH.

Schwichtenberg, J. (2003). Going private und Freezouts: der Rückzug von der Börse und der Ausschluss von Minderheitsaktionären nach deutschem und US-amerikanischem Recht. Hamburg: Kovac.

Smith, A. J. (1990). Corporate Ownership Structure and Performance: The Case of Management Buyouts. Journal of Financial Economics, Vol. 27(1), 143-164.

Weir, C., Jones, P., & Wright, M. (2008). Public to private transactions, private equity and performance in the UK: An empirical analysis of the impact of going private. *Private Equity and Performance in the UK: An Empirical Analysis of the Impact of Going Private.*

Weir, C. & Laing, D. (2002). Going Private Transactions and Corporate Governance in the UK. Available at SSRN: http://ssrn.com/abstract=345820.

Zingales, L. (1995). Insider ownership and the decision to go public. Review of Economic Studies, 62, 425-448.

2 Leaving the public capital market: A literature survey on the going private decision[8]

The going private decision is less examined in the corporate finance literature compared to the IPO topic, although it is of similar importance in a company's life. This part surveys previous theoretical and empirical studies discussing the going private decision. Deeper insights are provided about reasons which motivate companies to leave the public capital market. The role of regulatory changes like the passage of Sarbanes-Oxley Act in 2002 and their implications for the decision making process of U.S. listed companies concerning staying public or going private are addressed. A literature synopsis is provided about different aspects within the delisting topic. Literature about abnormal returns during the announcement of a going private transaction, bid premiums paid to investors as well as characteristics of companies which typically decide for privacy is reviewed. The current stage of research is analyzed in order to develop further relevant exploration areas within the going private topic. This paper also explains investors' incentives. A precise recognition of potential going private companies on the public capital market allows shareholders to collect not only abnormal returns, but also bid premiums and enable them to increase their earnings within a short period of time. Additionally, also companies profit from knowledge about going privates. Being aware of the large costs, they can avoid unnecessary expenses of their public-to-private-and-back cycles.

[8] Ehn Lucia (2014): Leaving the public capital market: A literature survey about the going private decision. The paper has been accepted for review at the European Scientific Journal. The paper has been presented at the 1st International Conference on Social Sciences and Humanities (Gaborone, June 2014).

2.1 Introduction

A publicly linked company may decide to leave the public capital market during its lifecycle. Since the 1960s corporate lifecycle models have been applied in the literature (Owen and Yawson, 2010). Models of Greiner (1972), Adizes (1979) or Miller and Friesen (1984) have been widely used. Miller and Friesen (1984) e.g. divide a firm's life into five stages and distinguish between the birth, growth, maturity, revival and decline stage. Based on their empirical research the firms in different stages vary in structure, strategy and decision making. According to Jain and Kini (1999), who focused their research on initial public offerings (IPO) within the lifecycle context, IPO represents the first significant stage in the evolution of company's public life. The going public step occurs during the growth phase of a company and allows private firms with growth prospects to finance their investments.

Maug (2001) explains the IPO decision within the lifecycle context as a decision of the optimal ownership structure. According to him, as the ownership structure changes over the lifecycle of a firm, insiders decide for a going public step when they lost their comparative advantage in gathering information about firm's growth prospects over firm's outsiders. Other reasons for a going public step have been analyzed by Shah and Thakor (1988) or Pagano (1993) who see advantages in diversification of risk, when companies decide for a public life. Pagano et al. (1998) argue with reduced overmonitoring and Zingales (1995) argues with a higher valuation of a company after the public step. Overall, a lot of research has been conducted about the going public step of companies.

According to Gompers (1995), after becoming public, firms have to choose for each stage of their lifecycle if they remain public or go private. Gill and Walz (2012) found out that firms which decide to go private were younger at the time of their IPO[9]. The query of Luetolf and Neumann (2004) about the reasons which account for the going private decision enclosed the high regulation and transparency standards as the main motive for such a step.

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[9] Going private firms with a mean of 11.63 years (median: 7 years) compared to the control group with a mean of 18.89 years (median: 9 years).

Despite its importance in the lifecycle of a firm, the decision to leave the public capital market is not extensively studied in the literature in contrary to the research about the going public decision. According to Djama et al. (2012) conditions under which a firm exits the public market as well as its rationales for this move need to be examined. They call voluntary delistings "going private transactions" and focus their analysis on incentives and financial characteristics of these firms. But the step into privacy is not always a voluntary one. Due to poor performance or violation of listing requirements, firms are often forced to leave the public capital market[10].

Being public means having access to capital. Consequently, a company which is publicly traded should be liquid and fairly valued. If a company is able to finance its further growth with own cash flows[11] or a large shareholder is willing to provide funds, then public capital sourcing might become too expensive. Combined with e.g. undervaluation[12] through the market or low share liquidity[13], incentives for a step into privacy may increase.

When observing all public to private transactions on the US market without distinguishing their specific incentives, a first era during 1980s and a second one during the 2000s can be recognized. In the first era mostly depressed companies were taken private in order to increase their profitability. In the new era companies rather tried to avoid the short term pressure of pubic capital markets as well as the costs of being public. (Schneider and Valenti, 2010)

The passage of Sarbanes-Oxley Act (SOX) in 2002 in the U.S. increased additionally the cost of being public and is seen as an additional driving factor for the going private decision[14]. The increased disclosure and corporate governance requirements made firms questioning their value of remaining public. The study by Marosi and Massoud (2007) showed increasing number of firms deregistering from the public capital market in the post-SOX era. The firms were mostly characterized by undervaluation and low

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10 Nasdaq boot 85 companies and NYSE 54 companies for failing to meet stock exchange requirements in 2008 (Plourd, 2009).
11 Free Cash Flow Hypothesis by Jensen (1986).
12 Kim and Lyn (1991).
13 Boot et al. (2008).
14 E.g. Marosi and Massoud (2007) or Leuz at al. (2007).

growth opportunities. The costs and burdens after the adoption of SOX affected particularly firms of smaller size measured by market capitalization. Leuz et al. (2007) as well as Becker and Pollet (2008) could empirically prove their size hypothesis.

The aim of this study is to provide insights about the going private phenomenon. A survey of both, theoretical and empirical literature is given in order to highlight different reasons and motives of firms for their step into privacy. A further objective is to review studies which examined the characteristics of firms which decide to leave the public capital market and to provide a synthesis of the current stage of research. Lastly, impact on investors by going private transactions is highlighted.

The literature survey is organized as follows. Firstly, an extensive analysis of previous studies is provided. It focuses foremost on motives of going private decisions. Then, a large amount of empirical findings from previous going private transactions is presented. Besides findings about characteristics of going private companies, findings about premiums paid to investors at going private transactions are summarized. Secondly, insights and implications from the examined previous studies are given. The paper results in a synthesis of the literature with respect to information needed by investors.

2.2 Literature survey

2.2.1 Analysis of previous studies

DeAngelo et al. (1984) provide one of the first definitions of going private. But due to their research focusing on MBOs, their definition is not widely applicable as it describes going privates as a replacing of all public shareholders by the management group.

There are diverse recent definitions of going private which can be found in the literature. So do Ernst and Haecker (2007) define a going private as a decision of a company not to participate at the public capital market any more. When it comes to acquisitions, they subsume into their definition just those transactions as a going private, where a public company was acquired by a private company. A very similar

definition is presented by Burghof and Schilling (2003), who require that the acquirer must strictly be a private company.

A broader definition of going private is used by Richard and Weinheimer (2002) who define going private as all transactions which transfer a publicly traded company into a private company, and which still can be traded on non-public markets[15]. Their going private definition includes also a transfer of company divisions, which are taken out of the concern.

Beck and Stinn (2002) define a going private as a transaction in which a publicly traded company is transferred into a private one and not traded on any capital market any more. The equity capital is transferred to one or to a few of shareholders. Further, an acquisition or a merger with a public company is not seen as a going private. The delisting has to be voluntary and not enforced by failure or liquidation. This definition of going private is also used in the studies of Eisele et al. (2003) or Moehrle (2006).

2.2.1.1 *Motives of going private decisions*

A decision between going private or staying public is complex, because mostly a combination of several factors leads to the final step.

The main theories, which address the staying public or going private decision, are from Brealey, Leland & Pyle (1977) and Jensen (1986). According to Becker and Pollet (2008) these two theories describe the tradeoff between the risk sharing benefits of being public and agency problems reduction when being private. Brealey et al. (1977) see the benefits of public ownership in the shared risk among many owners. Because owners are risk-averse, they want to reduce their risk, e.g. in terms of bankruptcy costs. Cost of risk is higher when a company is private, therefore public ownership is preferred according the theory of Brealey et al. (1977). According to them, when a company is private, its investment policy changes and valuable investment opportunities are missed. In contrary, Jensen (1986)[16] prefers the private ownership

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15 OTC.

16 See also Fama and Jensen (1983) and Kaplan (1989).

due to better control of agency problems. Agency theory of Jensen and Meckling (1976) explains the interaction between principals and agents. These two might have different future goals for a company as well as different attitude towards risk. Managers prefer to dispose of large amount of resources, which leads to problems between them and the owners. Jensen (1986) suggests high leverage in order to reduce agency costs and this can be achieved through a going private.

2.2.1.1.1 Traditional considerations

Agency considerations

Based on the Agency Theory (Jensen and Meckling (1976)), Jensen (1986) developed the FCF hypothesis, which he sees as a possible explanation for the going private decision of companies. Free cash flow is defined as the cash flow, which remains, after having financed all investment projects with a positive net present value and for which there is no current use in the company and therefore managers further control it. This made the free cash flow problem to an agency problem as the principals and the agents have mostly different ideas for the usage of it. Jensen (1986) explains that the management may e.g. want to keep the control about the free cash flow, seeing it as a resource and lead therefore to an inefficient usage of it. In contrary, principals would wish to profit from the free cash flow paid out as dividends.

Principals see in a going private step the possibility to decrease the agency costs, which have occurred due to different interests of principals and agents.

Liquidity considerations

Being public is according to Zingales (1995) only beneficial for companies, if their market price and therefore their value, established at the IPO, holds. As trading on stock exchanges is cheaper than bilateral trades, it is the increasing trading volume, which is providing liquidity. Amihud and Mendelson (1988) showed in their research the importance of liquidity for public firms. Lower liquidity might increase the cost of capital on the public market for such companies, following the theory of Modigliani and Miller (1963), who showed that the lower cost of capital the market is offering, the greater the incentive of companies to be publicly traded. When appropriate liquidity is not given any more, companies may decide for a step into privacy.

Ownership considerations

Companies with a low free float are considered to be a special case when the reasons for a going private are discussed. According to Schwichtenberg (2003), companies with a major shareholder are very often affected by low share liquidity and undervaluation. Often, the major shareholder wishes higher freedom when taking decisions or wishes to profit more. With his large stake, a going private step is easier as not many shares are in the free float.

Undervaluation considerations

Due to e.g. less lucrative industry, public companies might have a poor stock price performance and be therefore undervalued. Suffering under a low market valuation, forces companies into privacy, even if the performance of the company is good, often even better than the one of the competitors (Mehran and Peristiani, 2010). The development of the market-to-book ratio is a possible factor, which might be observed in order to recognize undervaluation on the public capital market.

2.2.1.1.2 Modern considerations

Visibility considerations

Ernst and Haecker (2007) advance a view that small companies are not getting enough attention from the investors on the public market and therefore being public has no sense for them. They also add that bigger companies with a low free float are affected by a scant attention as well. The visibility hypothesis of Mehran and Peristiani (2010) which also corresponds with the opinion of Bharath and Dittmar (2010) states that low analyst coverage and low institutional ownership lead to low share liquidity and make a company invisible. According to Modigliani and Miller (1963), low cost of capital increases the wish to become public. As the reverse must be also truth, low liquidity, which occurred due to low visibility makes a staying public too expensive.

Growth considerations

It is the growth stage of a company's lifecycle when it might decide for a step into the public capital market. Companies in this stage have according to Kim and Weisbach (2005) large opportunities for investments and only a limited access to other financing

alternatives due to high leverage, so they decide to go public. Based on this finding, it can be concluded that firms in a later lifecycle stage (maturity) with less growth and less investment opportunities may decide for a going private step with a higher probability.

Takeover considerations

Grupp (1995) states another important reason for a going private decision. Being a public company with a high free float makes it possible to become a victim of an unfriendly takeover. If it is such a case, companies, in order to protect themselves, decide often for a going private step with the aim to preserve their independence.

2.2.1.1.3 Considerations related to SOX

Cost of being public considerations

Raffel (2003) discusses a further reason for a going private decision. For him, investor and public relations costs as well as other costs connected with the being public are mostly so high, that it makes no sense for a company to stay public. Schwichtenberg (2003) adds that mainly small size companies are affected by these high costs. Additionally, the passage of SOX increased those costs on the U.S. market significantly (Leuz, 2007).

2.2.1.2 ***Findings in empirical studies***

2.2.1.2.1 Findings about abnormal returns and premiums paid

DeAngelo et al. (1984) and Denis (1992) conducted an important study analyzing the returns after a going private announcement on the U.S. capital market. DeAngelo et al. (1984) were analyzing 72 going private transaction between 1973 and 1980 and observed an abnormal return of 22.27%. In their study they also examined the contrary step, when a company announced that a going private decision was taken back. In such a case, DeAngelo et al. (1984) could observe a negative abnormal return of -8.88%. Denis (1992) was observing 192 transactions between the years 1980 and 1987. He found an abnormal return of 12.01%.

Lehn and Poulsen (1989) could observe an abnormal return of 16.30% between the years 1983 and 1986. Easterwood et al. (1994) conducted a study with 184 going private companies during ten years and observed an abnormal return of 16.10%. They calculated also the cumulated abnormal returns and differed between going private announcements with just one or multiple bidders. In the first case they could observe a CAR of 26.1% and in the second case one of 43.7%. Another large study is from Carow and Roden (1997) who examined 88 companies and showed an abnormal return of 17%. The following tables present the most important studies about observed abnormal returns after the announcement of a going private transaction at different public capital markets.

Table 2: Literature synopsis on AAR

Publication year	Author(s)	Observation period	Transactions	AAR	Country
1984	DeAngelo et al.	1973-1980	72	22.3%	US
1987	Maupin	1972-1984	97	21.8%	US
1987	Torabzadeh & Bertin	1982-1985	48	18.6%	US
1988	Lehn & Poulsen	1980-1984	92	13.9%	US
1989	Amihud	1983-1986	15	19.6%	US
1989	Lehn & Poulsen	1980-1987	244	16.3%	US
1989	Marais et al.	1974-1985	80	13.0%	US
1991	Solvin et al.	1980-1988	128	17.4%	US
1992	Denis	1980-1987	192	12.0%	US
1992	Frankfurter & Gunay	1979-1984	110	17.2%	US
1992	Lee	1973-1989	118	14.9%	US
1992	Lee et al.	1983-19898	58	10.4%	US
1993	Torabzadeh & Bertin	1982-1987	43	18.1%	US
1993	Travlos & Bertin	1975-1983	56	16.2%	US
1997	Carow & Roden	1981-1990	88	17.0%	US
1997	MacKinlay	1991-1995	37	18.6%	US
2006	Eisele & Walter	1995-2002	37	13.7%	DE
2007	Andres et al.	1997-2005	115	12.8%	EU
2007	Renneboog et al.	1997-2003	177	22.7%	UK
2009	Altintig et al.	1989-1998	29	1.2%	TR
2011	Geranio & Zanotti	2005-2006	106	6.1%	EU

Table 3: Literature synopsis on CAR

Publication year	Author(s)	Observation period	Transactions	CAR	Window
1984	DeAngelo et al.	1973-1980	72	28.5%	[-40/+40]
1987	Torabzadeh & Bertin	1982-1985	48	23.3%	[-330/+120]
1988	Lehn & Poulsen	1980-1984	92	20.1%	[-20/+20]
1989	Kaplan	1980-1986	25	42.3%	[-60/*]
1989	Lehn & Poulsen	1980-1987	244	20.5%	[-20/+20]
1992	Denis	1980-1987	192	22.3%	[-40/+40]
1993	Torabzadeh & Bertin	1982-1987	43	22.6%	[-360/+60]
1993	Travlos & Cornett	1975-1983	56	17.6%	[-15/+15]
1993	Warga & Welch	1985-1989	16	36.3%	[-30/+60]
1994	Easterwood et al.	1978-1988	184	26.1%	[-20/0]
1997	Carow & Roden	1981-1990	88	23.2%	[-20/*]
2006	Eisele & Walter	1995-2002	37	24.8%	[-20/+20]
2007	Andres et al.	1997-2005	115	24.2%	[-30/+30]
2007	Renneboog et al.	1997-2003	177	27.4%	[-40/+40]
2010	Baran & King	1981-2006	182	21.5%	[-30/+30]
2010	Billett et al.	1980-1990	195	28.7%	[-60/+3]
2011	Geranio & Zanotti	2000-2005	106	18.8%	[-30/+30]

Some researchers were analyzing the premiums mostly on the U.S. market. Often the higher the stake of a shareholder, the higher the premium paid. This fact is often impossible to proof empirically, because the exact premium is almost ever confidential. In contrary, the average premium paid to shareholders can be calculated.

The first study examining premiums was conducted by DeAngelo et al. (1984). Their observation of 57 completed transactions showed a premium of 56.3%. The findings of Amihud (1989) comparing to the results of DeAngelo et al. (1984) are lower, with a calculated premium of 31.1%. A synopsis of studies about the bid premiums is provided in table below.

Table 4: Literature synopsis on bid premiums

Publication year	Author(s)	Observation period	Transactions	Market	Bid premium	Window
1984	DeAngelo et al.	1973-1980	57	US	56.3%	40
1985	Lowenstein	1979-1984	28	US	56.0%	30
1988	Lehn & Poulsen	1980-1984	72	US	41.0%	20
1989	Amihud	1983-1986	15	US	31.1%	20
1989	Kaplan	1980-1986	76	US	42.3%	60
1989	Lehn & Poulsen	1980-1987	257	US	36.1%	20
1993	Harlow & Howe	1980-1989	121	US	44.9%	20
1993	Kaplan & Stein	1980-1989	124	US	43.0%	40
1993	Travlos & Cornett	1975-1983	56	US	41.9%	30
1997	Carow & Roden	1981-1990	88	US	46.4%	20
2005	Weir et al.	1998-2000	95	UK	44.9%	30
2007	Renneboog et al.	1997-2003	177	UK	41.0%	20
2011	Geranio & Zanotti	2000-2005	106	EU	21.2%	30

2.2.1.2.2 Findings about firm characteristics

The gain of abnormal returns and bid premiums on going private transactions is lucrative for investors. Having recognized this fact, it became relevant for investors to identify potential going private companies on the public capital market and to purchase their shares in order to take advantage of those possible gains. Researchers started to focus on studies which would characterize typical going private companies and distinguishing them from those, which are staying public. A more accurate characterization increases the probability of a correct prediction and is therefore worthwhile for investors.

The first study with the aim to characterize going private companies was conducted by Maupin et al. (1984) for the U.S. market. The authors were examining cash flow ratios, P/B ratio, the dividend yield as well as the concentration of ownership. All tested factors in their study had a significant influence on the going private decision. The relationship was proved to be positive between all factors tested with the only exception of the P/B ratio. The results showed that this relationship is negative; the lower the P/B ratio the higher the probability of a going private. This study was repeated by Maupin (1987) and extended by two factors, P/E ratio and the book to initial cost of assets ratio. The results showed that the retested factors of the previous study as well as the two new factors had all a significant influence on the going private decision.

A large and relevant study was conducted by Lehn and Poulsen (1989). Their study was based on the free cash flow (FCF) hypothesis of Jensen (1986), which expects companies with large FCF compared to equity to go private. Also included in their study were the factors equity, tax payments and sales growth. The FCF hypothesis of Jensen (1986) was confirmed by Lehn and Poulsen (1989). At the same time another large study about going privates was conducted by Kieschnick (1989). Also his study was focused on the U.S. market and the factors he examined were e.g. interest expense, growth, FCF or management ownership. His findings were contrary to those of Lehn and Poulsen (1989) as Kieschnick (1989) could not find any evidence for the FCF hypothesis of Jensen (1986).

A study focusing on the ownership structure was conducted by Lowenstein (1986). In his paper, Lowenstein (1986) examined only MBOs, as his hypothesis was that companies leaving the public capital market as an MBO are having larger stakes in manager hands. He found evidence for this hypothesis and also showed that companies leaving the public capital market and significantly smaller than those which do not decide for such a step.

Loh (1992) focused on financial characteristics as possible factors to distinguish from staying public companies. Among others he tested the profitability of the company, its capital structure, the turnover and FCF. He could confirm the findings of Lehn and Poulsen (1989) and found evidence for the FCF hypothesis. Other factors were not significant for the going private decision. Another study which was examining the FCF hypothesis focused only on LBOs and was conducted by Opler and Titman (1993). The authors could proof that the hypothesis holds by testing Tobin's Q and the FCF level. Companies with a low Tobin's Q and relatively high cash flow, characterized by authors as those with unfavorable investment opportunities, are more likely to leave the public capital market.

The FCF hypothesis formulated by Jensen (1986) remained the base for almost all studies also in the nineties. Carow and Roden (1997) found also support for this hypothesis in their paper, testing the high level of FCF, the low Tobin's Q[17], but the focus of their study was on stock price reactions as already presented in the previous subchapter. Not only the FCF topic, but also some of the researchers remained stable and examined the going private phenomenon in various studies. Such an example is Kieschnick (1998) who conducted his second own study nine years after the first one. In his second study, he is using the data sample of Lehn and Poulsen (1989), but changing their sampling scheme. His new study supports the findings of his first study and rejects the findings of Lehn and Poulsen (1989). Kieschnick (1998) couldn't find any evidence for neither the growth rate nor the level of FCF as significant factors influencing the going private decision. No evidence was found also for the size of the company and the tax payments.

[17] Tobin (1969).

Table 5: Literature synopsis on characteristics

Year	Author(s)	Observation p	Transactions	Market	Tested factors	Main findings
1984	**Maupin et al.**	1972-1983	63	US	- Ownership - CF ratios - P/B ratio - Dividend yield	- All factors have a positive significant influence on the going private decision apart of P/B ratio, which has a negative one.
1986	**Lowenstein**	1979-1984	28	US	- Size - Ownership of management	- Evidence for both factors was proven.
1987	**Maupin**	1972-1984	54	US	- Ownership - CF ratios - P/E ratio - P/B ratio - Book value of assets to original costs - Dividend yield	- Same findings like in Maupin et al. (1984) were shown by Maupin (1987). - P/E ratio and the book values of assets to original costs had also a significant influence.
1989	**Kieschnick**	1981-1986	102	US	- FCF (Jensen, 1986) - Ownership of management - Growth expectations - Interest expense - Depreciation expense	- Kieschnick was the first researcher who rejected the FCF hypothesis of Jensen (1986).
1989	**Lehn & Poulsen**	1980-1987	244	US	- FCF (Jensen, 1986) - Size (equity) - CF/equity - Sales growth - Tax expense	- Evidence for the FCF hypothesis was found. - Also CF/equity is a significant factor, for all others no evidence was found.
1992	**Loh**	1986-1988	45	US	- FCF (Jensen, 1986) - Liquidity ratio - Profitability ratio - Turnover - Capital structure	- Loh confirmed findings of Lehn & Poulsen (1989).
1993	**Opler & Titman**	1980-1990	180	US	- FCF (Jensen, 1986) - R&D expenses - Diversification - Tobin's Q - Liquidity - Operating income / assets	- Evidence for Jensen's hypothesis was found. - No evidence was found for R&D costs, representing financial distress costs.
1994	**Servaes**	1987-1992	99	US	- Capital expenditures	- No evidence for higher capital expenditures.
1998	**Kieschnick**	1980-1987	244	US	- FCF (Jensen, 1986) - Size (equity) - CF/equity - Sales growth - Tax expense	- Also in his second study, where Kieschnick used the database of Lehn & Poulsen (1989), the FCF hypothesis had to be rejected.
1999	**Halpern et al.**	1981-1986	126	US	- FCF (Jensen, 1986) - Tax expense - Ownership of management - Stock performance - Investment expenditures	- FCF hypothesis had to be rejected. - Investment expenditures, stock performance and managerial ownership had singnificant incfluence on the decision.
2002	**Beck & Stinn**	1995-2000	22	DE	- FCF (Jensen, 1986) - Stock performance - Free float - Size - Growth expectations - P/E ratio - P/B ratio - Ownership structure	- Growth expectations, percentage of free float, P/E ratio and the ownership structure measured in number of shareholders have negatively correlated with the going private decision.
2002	**Kosedag & Lane**	1980-1996	21	US	- FCF (Jensen, 1986) - Tax expense - Sales growth	- No evidence for FCF hypothesis was found. - Tax expense measured as tax savings was significant.
2005	**Evans et al.**	1990-1999	80	AUS	- FCF (Jensen, 1986) - Growth - Leverage - Liquidity - R&D expense - Ownership of management	- In Australia the FCF hypothesis of Jensen had to be rejected. - Further, the companies have high liquidity, low growth rates and low R&D expenses.

Year	Author(s)	Observation p	Transactions	Market	Tested factors	Main findings
2007	**Gleason et al.**	1998-2003	221	US	- Size - Growth expectations - Profitability - Leverage - Earnings predictability - Liquidity - Financial distress costs	- Firms going private are smaller, with higher liquidity, more leverage, lower profitability and high growth expectations. The last finding was surprising.
2008	**Boot et al.**	1999-2004	154	US	- Stock performance - Stock liquidity - Public market investor participation	- Lower stock price performance and its high volatility is more likely to go private.

Kieschnick was also a co-author in a study examining another large sample of companies going from public to private. It was the study of Halpern et al. (1999), in which a large amount of possible characteristics of going private companies was again tested. Consistent with previous findings of Kieschnick (1989 & 1998), no evidence was found for the level of FCF. Significant evidence however was showed for investment expenditures, stock performance and managerial stock ownership. The statistical evidence for the last factor is consistent with findings of Lowenstein (1986).

The table above presents a synopsis of studies examining characteristics of companies which went private.

2.2.1.2.3 Other relevant findings

The passage of Sarbanes-Oxley Act (SOX) in 2002 increased accounting standards for U.S. publicly listed companies. As staying public became even more expensive, some companies decided to leave the market. Engel et al. (2007) connected in their study the two topics SOX and the going private decision. They were analyzing U.S. companies between the years 1998 and 2005. Their focus was on the frequency of such transactions after the passage of SOX. Their empirical analysis showed that the frequency of going private transactions clearly increased after SOX. Gleason et al. (2007) were analyzing different reasons which might motivate companies to go private. To analyze the higher cost of being public as a possible motivation, they divided their sample of firms into two groups which went private prior and following to SOX. They results show, that the major motivation for companies which went private after the passage of SOX were clearly the higher cost of being public in contrary to other reasons which were dominant prior to SOX.

Only few studies focused on the entire public lifecycle when they were explaining the going private decision. The study of Mehran and Peristiani (2010) focuses on the

visibility aspect of companies which decide to go private despite being solid competitors to their peers. They adapt the entire public life view and examine with an extended, dynamic hazard model three visibility aspects, analyst coverage, institutional ownership and stock turnover as possible factors explaining the going private decision over the company's public life. Their results show, that firms with declining analyst coverage, falling institutional ownership as well as low stock turnover go more likely private and decide for such a step sooner. A study focusing on costs and benefits of being public as reasons for delisting was conducted by Bharath and Dittmar (2010). Similarly to Mehran and Peristiani (2010), they observe a company during its whole public life and identify e.g. low analyst coverage and low institutional ownership as reasons influencing the going private decision.

2.2.2 Insights and implications from previous research

Various factors play a role when it comes to the decision whether to leave the public capital market or not. The current state of research offers stakeholders a large amount of explanations of this phenomenon, but still a lot concerning this step stays unexplored.

2.2.2.1 *Synthesis and future trend*

Companies which are leaving the public capital market can be divided into two main groups, those which are going private voluntary and those which are forced to leave the public capital market, because they are not fulfilling the listing requirements. Empirical research presented above mostly focused on companies which left voluntarily. When a company is not in a financial distress and its expectations about the own condition after the going private step are optimistic (e.g. reduction of agency costs[18]), then an increase in value of the company can be expected.

Burnett (2012) points out that companies which decide for a voluntary step into privacy mostly focus on long-term goals. The going private decision is so, among

[18] Jensen (1986).

others, explained through avoidance of the short-term orientation of public capital markets. So may even companies with a strong stock price performance decide to leave voluntary. Additionally, reporting requirements as well as arising registration and compliance fees at the stock exchange increase the motivation to leave the market. Empirical studies focusing on the influence of SOX[19] have proven a post-SOX boom of going private transactions.

Various studies exist about the characteristics of going private companies shortly before they announce their decision to leave the public capital market. Further studies exist about abnormal returns which can be observed during the announcement of a going private. Researchers were also examining premiums paid to investors. In many cases, largest shareholders receive even a higher premium which is not made public and therefore no empirical evidence exists.

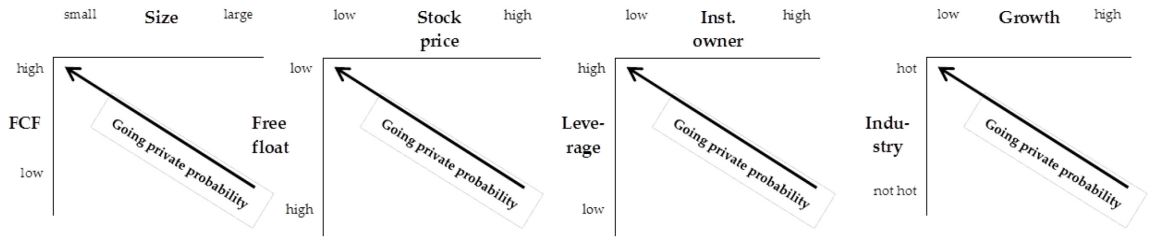
Characteristics of going private companies which have often been proven having a significant influence on the decision to leave the public capital market are summarized in the below table:

Table 6: Typical characteristics of going private companies

Company	**Share**	**Ownership**	**Industry**
Small size e.g. Gleason et al. (2007)	Low stock price (undervaluation) e.g. Boot et al. (2008)	Major shareholder e.g. Schwichtenberg (2003)	Low industry hotness e.g. Mehran and Peristiani (2010)
High FCF e.g. Lehn and Poulsen (1989)	Low free float e.g. Beck and Stinn (2002)	Low institutional ownership e.g. Bharath and Dittmar (2010)	Low growth opportunities e.g. Gleason et al. (2007)
Low Tobin's Q e.g. Carow and Roden (1997)	Low share liquidity e.g. Amihud and Mendelson (1988)	High leverage e.g. Gleason et al. (2007)	
	High stock price volatility e.g. Boot et al. (2008)		
	Low analyst coverage e.g. Bharath and Dittmar (2010)		

[19] See subchapter 2.2.1.2.3.

The probability of a going private transaction arises when the significant factors increase. The following four diagrams[20] show exemplary how the going private probability can be understood:



Following key findings could be derived from previous going private literature:

Table 7: Key findings on going privates

Going private and market behavior	
Findings:	After the announcement abnormal returns rise and bid premiums are offered to shareholders.
Comments:	Empirical research could partly explain the magnitude of abnormal returns and bid premiums. They are both positive in the majority of cases and can be earned by shareholders.
Going private and motives	
Findings:	Traditional motives like high free cash flow, low analyst coverage and regulatory aspects (SOX) support a going private decision.
Comments:	It is not only one reason, but a combination of different motives which increases the probability of a step into privacy.
Going private and company	
Findings:	Financial characteristics of a firm are possible explanatory variables of its going private decision.
Comments:	Small size measured by market capitalization, high free cash flow and low Tobin's Q have often been successfully tested as factors significantly explaining the going private decision.
Going private and shares	
Findings:	The value and the trading volume of firms' shares have an influence of the going private decision.
Comments:	Low free flow, low share liquidity, high price volatility and low stock performance (undervaluation) increase the probability of a going private.

[20] The display format of these diagrams is inspired by Thomée (2009), who analysed motives for going privates in Germany and Switzerland.

Going private and ownership	
Findings:	Ownership structure might accelerate and simplify a going private decision.
Comments:	Low institutional ownership and thus a large amount of noise traders might increase the wish for privacy. An existence of a major shareholder might ease the step.
Going private and industry	
Findings:	The industry in which a company is operating might influence the going private probability.
Comments:	Unattractive industry might be less appreciated by investors and lead to undervaluation. Additionally, some industries may offer low growth opportunities for companies (e.g. due to technological limits).

Some recent studies about going privates adapted their focus compared to the traditional ones which have been conducted mostly in the 80s and 90s. So have e.g. Mehran and Peristiani (2010) explained the going private step in a new aspect, seeing the main reason in the visibility of companies. They were not only arguing with the small market capitalization of the company, but also with low interest of investors, who just simply do not see the company, because it is e.g. insufficiently covered by analysts. Future research should therefore focus on visibility from diverse perspectives as it might lead to a better explanation of the going private phenomenon.

As there is not one main specific reason why a company decides to voluntarily leave the public capital market, measures are necessary in order to expand these decisions. As far as a statistical analysis allows, reasons for such a decision might be examined using moderating factors. Moderator variables affect and alter the effect of an independent variable on a dependent variable. Including moderator variables would hence increase the chance to explain the combination of reasons which lead to a going private decision.

Further research is also needed within the lifecycle context. Just a few studies[21] examine the characteristics of going private companies during their whole public lifecycle and not only at the time of the announcement of the going private decision. Characterization of companies only shortly before the time of the announcement of the going private intention decreases the chance to find explanations for such a step and

[21] E.g. Mehran and Peristiani (2010).

therefore decreases the chance for investors to recognize such companies the earliest possible. Including the whole public lifecycle[22] into the analysis would allow a more precise definition of companies which typically go private. Then, not only could the time shortly before the announcement, but also company's situation already at the time of the IPO as well as financial results and other information from the whole public life become part of the analysis.

There is also a lack of satisfactory explanations about the impact of private equity on the going private decision. This might be firstly due to the fact that only few data is available about private equity investments and secondly because this form of financing occurred mostly during the very last years.

Extensions of going private research could also include aspects of behavioral finance. It might be especially the investor sentiment[23], driven by small investors, which could lead to new findings about the going private phenomenon. Public companies with no or few institutional investors are exposed to noise traders who don't act rationally and their buy or sell decisions are not based on fundamental or technical data. This uncertainty component might become too exhausting for some companies and consequently they might decide to delist.

Next to delisting reasons and to companies' characteristics, other fields within the going private topic might also expand the scope of research. Especially legal issues and different techniques how to take a company private in different countries is of high relevance for practitioners.

Future going private transactions will bring more evidence and clarity and allow investors to understand them better. This because with an increasing number of going private cases in the future, a more precise statistical differentiation of companies will be possible. Thus, a quantitative analysis of transactions within one industry will allow drawing additional conclusions about the going private phenomenon.

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22 Due to data availability only the public lifecycle can be examined. Even more precise results might be expected if the whole company lifecycle, private and public, could be examined.

23 Introduced by Lee et al. (1992).

2.2.2.2 *Incentives for investors*

For investors, going private transactions are interesting due to mainly two reasons. The first reason lies in abnormal returns, which are observed around the announcement of the transaction and can be earned by investors. The second reason is the bid premium paid to investors when one shareholder is purchasing the stakes to be able to accomplish the going private transaction.

Due to these two opportunities of earning large premiums in a short term compared to other investments, going private transactions are of special interest for investors. Following the assumption markets are semi-efficient, it is the incentive of every investor to recognize potential going private companies the earliest and the most precise possible.

Companies which might decide for a step into privacy are of interest for both small and large investors, because also the small ones are able to earn abnormal returns as well as bid premiums. Therefore, an investor tries to gain as much information as possible in order to recognize such companies with the highest certainty at the earliest possible point in time and overtake other investors. The earlier an investor can buy before rumors about a possible announcement of a going private transaction occur on the market, the better for him.

The incentive for large investors might be even bigger. Owning a larger stake of the company provides with a superior negotiating position, when selling block holdings. In addition to the regular bid premium paid to all investors, large shareholders might bargain a surplus.

Burnett (2012) is addressing the question about the sources of value in going private transactions. He finds a possible explanation in the transfer of wealth from other stakeholders to shareholders. According to him are ex-ante bondholders adversely affected by a companies' decision to delist from public capital market and they might lose out. After the going private step, a company might decide for riskier projects or e.g. to pay out higher dividends. This would change the situation of bondholders for the worse.

Masulis et al. (2009) share a contrary opinion about the influence on bondholders after a going private transaction. They follow Jensen (1986) who observed reductions in

agency costs after the step into privacy. According to them, this reduction can offset the worse situation of bondholders after a going private and then improve their position. The situation of shareholders is improved as well; they also profit from an agency costs reduction.

Consequently, companies which might decide for a step into privacy should receive a high attention from investors. If potential investors become shareholders before the announcement of such a transaction, they are not only able to earn abnormal returns, but also a bid premium. The larger their stake, the stronger is their negotiating power and accordingly, their possibility to increase their bid premium. Based on these facts, the major goal of research about going privates should focus on a precise characterization and subsequent recognition of such companies on the public capital market and so ease the decision making process of investors.

2.3 Conclusion

The aim of this survey was to provide deeper insights about the going private decision of public companies. First, the question about the reasons and motives for the privacy phenomenon was addressed. A variety of different kind of incitements was presented and explained. Second, this study was exploring chances for investors which occur on the capital market when the company they are invested in decides for a going private. Empirical papers were summarized which showed investors are not only able to profit from abnormal returns, but also may earn bid premiums when a company is buying its shares back. Third, this survey showed how to recognize potential going private companies on the public capital market. A large amount of previous empirical findings was analyzed and merged in a synopsis. Last, possible future research fields within the going private topic were presented and the need for further research was justified by presenting the specific investors' incentives.

Companies' considerations whether to go private or not were divided into three categories. Traditional considerations include high agency costs due to a large amount of free cash flow and different opinions of its use. Also liquidity, ownership and undervaluation considerations have postponed the going private decision. Recent

motives include low visibility on the capital market, low growth opportunities as well as takeover considerations.

This survey is presenting results of all important empirical studies which were exploring the going private phenomenon from different point of views. Also summarized is empirical evidence about abnormal returns occurring at the transaction announcement and about bid premiums which are offered to shareholders in order to make them sell their stakes. Further discussed are studies which allow potential investors to recognize potential going private companies. Companies characterized by e.g. small size, high free cash flow, with a major shareholder, low growth opportunities, low share liquidity or low analyst coverage are more likely to go private.

Only a few studies include the whole public lifecycle and not only the time shortly before the announcement of the going private transaction into their empirical analysis. In order to be able to identify potential going private companies even more precise, future research areas are seen within the lifecycle context as well as in identifying further attributes which might characterize these companies. An early recognition allows investors to earn high returns within a short period of time and on the opposite side it forces companies to always reconsider the value of their costly public-to-private-and-back cycles.

References

Adizes, I. (1979). Organisational passages: Diagnosing and treating life-cycle problems in organizations. Organizational Dynamics, Vol. 8, 3-25.

Altintig, A. Z., Arin, P. K., Feess, E., & Schumacher, C. (2009). You are one of us now! How do Share Price of Rivals React to Privatization? The Journal of Industrial Economics, 57(2), 265-293.

Amihud, Y. (1989). Leveraged Management Buyouts and Shareholders' Wealth. In Y. Amihud, Leveraged management buyouts: causes and consequences (pp. 3-34). Homewood: Dow Jones-Irwin.

Amihud, Y., & Mendelson, H. (1988). Liquidity and Asset Prices: Financial Management Implications. Financial Management. Vol. 17, 5.15.

Andres, C., Betzer, A., & Weir, C. (2007). Shareholder wealth gains through better corporate governance - The case of European LBO-transactions. Financial Markets and Portfolio Management, 21(4), 403-424.

Baran, L. C., & King, T.-H. D. (2010). Going private transactions, bondholder returns, and wealth effects. Journal of Banking and Finance, 34(8), 1856-1872.

Beck, R., & Stinn, D. (2002). Börsenrückzugs-Gesellschaften in Deutschland. Coroprate Finance biz, 4(11), 653-660.

Becker, B., & Pollet, J. (2008). The decision to go private. Working paper. www.essec-private-equity.com/.

Bharath, S. T., & Dittmar, A. K. (2010). Why Do Firms Use Private Equity to Opt Out of Public Markets? Review of Financial Studies, 23, 1771-1818.

Billett, M. T., Jiang, Z., & Lie, E. (2010). The effect of change-in-control covenants on takeovers: Evidence from leveraged buyouts. Journal of Corporate Finance, 16(1), 1-15.

Boot, A. W., Gopalan, R., & Thakor, A. V. (2008). Market Liquidity, Investor Participation, and Managerial Autonomy: Why Do Firms Go Private? The Journal of Finance, 63(4), 2013-2059.

Brealey, R., Leland, H. E., & Pyle, D. H. (1977). Informational Assymetries, Financial Structure, and Financial Intermediation. Journal of Finance, 32(2), 371-387.

Burghof, H-P., & Schilling, D. (2003). Going Private als Corporate Governance-Transaktion. Betriebswirtschaftliche Forschung und Praxis, Vol. 55(2), 117-136.

Burnett, K.M. (2012). A Review of the Legal and Financial Implications of Going Private: What Shareholders, Boards, and Employees of Public Companies Need to Know. Available at SSRN: http://ssrn.com/abstract=2100585.

Carow, K. A., & Roden, D. M. (1997). Determinants of the Stock Price Reaction to Leveraged Buyouts. Journal of Economics and Finance, 21(3), 49-59.

DeAngelo, H., DeAngelo, L., & Rice, E. M. (1984). Going Private: Minority Freezouts and Stockholder Wealth. Journal of Law and Economics, 27(2), 367-401.

Denis, D. J. (1992). Corporate Investment Decisions and Corporate Control: Evidence from Going-Private Transactions. Financial Management, 21(3), 80-94.

Djama, C., Martinez, I., & Serve, S. (2012). What do we know about delistings? A survey of the literature. Comptabilités et innovation, Grenoble: France.

Easterwood, J. C., Singer, R. F., Seth, A., & Lang, D. F. (1994). Controlling the Conflict of Interest in Management Buyouts. Review of Economics & Statistics, 76(3), 512-522.

Eisele, F., & Walter, A. (2006). Kursreaktionen auf die Ankündigung von Going Private-Transaktionen am deutschen Kapitalmarkt. Zeitschrift für betriebswirtschaftliche Forschung, 58, 337-362.

Eisele, F., Götz, A., & Walter, A. (2003). Going Private-Transaktionen am deutschen Kapitalmarkt - Eine empirische Bestandsaufnahme. Finanz Betrieb, 5(12), 839-850.

Engel, E., Hayes, R.M., & Wang, X. (2007). The Sarbanes-Oxley Act and firms' going-private decisions. Journal of Accounting and Economics, Vol. 44, 116-145.

Ernst, D., & Haecker, J. (2007). Applied International Corporate Finance. München: Verlag Franz Vahlen.

Evans, J., Poa, M., & Rath, S. (2005). The Financial and Governance Characteristics of Australian Companies Going Private. International Journal of Business Studies, Vol. 13, 1-24.

Fama, E. F., & Jensen, M. C. (1983). Separation of Ownership and Control. Journal of Law and Economics, 301-325.

Frankfurter, G. M., & Gunay, E. (1992). Management Buy-Outs: The Sources and Sharing of Wealth Between Insiders and Outside Shareholders. Quarterly Review of Economics and Finance, 32(3), 82-95.

Geranio, M., & Zanotti, G. (2011). Equity Markets Do Not Fit All: an Analysis of Public-to-Private Deals in Continental Europe. European Financial Management, Forthcoming 2011.

Gill, A., & Walz, U. (2012). Going Public – Going Private: The Case of VC-Backed Firms. Available at SSRN: http://ssrn.com/abstract=1998281 or http://dx.doi.org/10.2139/ssrn.1998281.

Gleason, K., Payne, B., & Wiggenhorn, J. (2007). An Empirical Investigation of Going Private Decisions of U.S. Firms. Journal of Economics and Finance, 31(2), 207-218.

Gompers, P.A. (1995). Optimal Investment, Monitoring, and the Staging of Venture Capital. Journal of Finance, Vol. 50, 1461-1489.

Greiner, L. (1972). Evolution and revolution as organizations grow. Harvard Business Review, Vol. 50, 37-46.

Grupp, A. (1995). Börseneintritt und Börsenaustritt. Individuelle und institutionelle Interessen. Dissertation, Universität Hohenheim. Sternenfels / Berlin: Verlag Wissenschaft & Praxis.

Halpern, P., Kieschnick, R., & Rotenberg, W. (1999). On the Heterogenity of Leveraged Going Private Transactions. The Review of Financial Studies, 12(2), 281-309.

Harlow, W. V., & Howe, J. S. (1993). Leveraged Buyouts and Insider Nontrading. The Journal of the Financial Management Association, 22(1), 109-118.

Jain, B. A., & Kini, O. (1999). The Life Cycle of Initial Public Offering Firms. Journal of Business Finance and Accounting, 26(9&10), 1281-1307.

Jensen, M. C. (1986). Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. American Economic Review, 76(2), 323-339.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. Journal of Financial Economics, 3(4), 305-360.

Kaplan, S. (1989). The Effects of Management Buyouts on Operating Performance and Value. Journal of Financial Economics, 24(2), 217-254.

Kaplan, S. N., & Stein, J. C. (1993). The Evolution of Buyout Pricing and Financial Structure in the 1980s. Quarterly Journal of Economics, 108(2), 313-357.

Kieschnick, R. L. (1989). Management Buyouts of Public Coroprations: An Analysis of Prior Characteristics. In Y. Amihud, Leveraged management buyouts: causes and consequences (pp. 35-70). Homewood: Dow Jones-Irwin.

Kieschnick, R. L. (1998). Free Cash Flow and Stockholder Gains in Going Private Transactions Revisited. Journal of Business Finance & Accounting, 25(1), 187-202.

Kim, W., & Weisbach, M. S. (2005). Do Firms Go Public to Raise Capital?. Working paper.

Kim, W.S., & Lyn, E.O. (1991). Going private: corporate restructuring under information asymmetry and agency problems. Journal of Business Finance & Accounting, Vol. 18, 637-648.

Kosedag, A., & Lane, W. R. (2002). Is it Free Cash Flow, Tax Savings, or Neither? An Empirical Confirmation of Two Leading Going-private Explanations: The Case of ReLBOs. Journal of Business Finance & Accounting, 29(1 & 2), 257-271.

Lee, C. I., Rosenstein, S., Rangan, N., & Davidson, W. N. (1992). Board Composition and Shareholder Wealth: The Case of Management Buyouts. Financial Management, 21(1), 58-72.

Lee, S. D. (1992). Management Buyout Proposals and Inside Information. The Journal of Finance, 47(3), 1061-1079.

Lehn, K., & Poulsen, A. (1988). Leveraged Buyouts: Wealth Created or Wealth Redistributed? In M. L. Weidenbaum, & K. W. Chilton, Public policy toward corporate takeovers (S. 46-62). New Brunswick: Transaction Publishers.

Lehn, K., & Poulsen, A. (1989). Free Cash Flow and Stockholder Gains in Going Private Transactions. The Journal of Finance, 44(3), 771-787.

Leuz, C. (2007). Was the Sarbanes-Oxley Act of 2002 really this costly? A discussion of evidence from event returns and going-private decisions. Journal of Accounting and Economics, 44, 146-165.

Loh, L. (1992). Financial characteristics of leveraged buyouts. Journal of Business Research, 24(3), 241-252.

Lowenstein, L. (1985). Management Buyouts. Columbia Law Review, 85(4), 730-784.

Lowenstein, L. (1986). No More Cozy Management Buyouts. Harvard Business Review, Vol. 64(1), 147-156.

Luetolf, P., & Neumann, A. (2004). Going Private versus Staying Public. Der Schweizer Treuhaender, Vol. 10, 825-832.

MacKinlay, C. A. (1997). Event Studies in Economics and Finance. Journal of Economic Literature, 35(1), 13-39.

Marais, L., Schipper, K., & Smith, A. (1989). Wealth Effects of Going Private for Senior Securities. Journal of Financial Economics, 23(1), 155-191.

Marosi, A., & Massoud, N. (2007). Why do firms go dark? Journal of Financial and Quantitative Analysis, Vol. 42 (2), 421-442.

Masulis, R., & Thomas, R. (2009). Does Private Equity Create Wealth? The Effects of Private Equity and Derivatives on Corporate Governance. University of Chicago Law Review, Vol. 76, 219.

Maug, E. (2001). Ownership Structure and the Life-Cycle of the Firm: A Theory of the Decision to go Public. European Finance Review, Vol. 5(3), 167-200.

Maupin, R. J. (1987). Financial and Stock Market Variables as Predictors of Management Buyouts. Strategic Management Journal, 8(4), 319-327.

Maupin, R. J., Bidwell, C. M., & Ortegren, A. K. (1984). An Empirical Investigation of the Characteristics of Publicly-Quoted Corporations which Change to Closely-Held Ownership through Management Buyouts. Journal of Business Finance & Accounting, 11(4), 435-450.

Mehran, H., & Peristiani, S. (2010). Financial Visibility and the Decision to Go Private. The Review of Financial Studies, 23(2), 519-547.

Miller, D., & Friesen, P. H. (1984). A Longitudinal Study of the Corporate Life Cycle. Management Science, Vol. 30(10), 1161-1183.

Modigliani, F., & Miller, M. (1963). Corporate income taxes and the cost of capital: A correction. American Economic Review. Vol 53, 433-443.

Moehrle, C. (2006). Delisting - Kapitalmarktrechtliche, gesellschaftliche und umstrukturierungsrechtliche Aspekte. Dissertation, Zürich.

Opler, T., & Titman, S. (1993). The Determinants of Leveraged Buyout Activity: Free Cash Flow vs. Financial Distress Costs. The Journal of Finance, 48(5), 1985-1999.

Owen, S., & Yawson, A. (2010). Corporate life cycle and M&A activity. Journal of Banking and Finance, Vol. 34, 427-440.

Pagano, M. (1993). The flotation of companies on the stock market – A coordination failure model. European Economic Review, Vol. 37, 1101-1125.

Pagano, M., Roell, F., & Ailsa, P. (1998). The Choice of Stock Ownership Structure: Agency Costs, Monitoring, and the Decision to go Public. Quarterly Journal of Economics. Vol. 113(1), 187-225.

Plourd, K. (2009). Delisting Dilemmas. cfo.com, 14-15.

Raffel, A. (2003). Kapitalmarktbewertung und Going Private – Eigentümer-Arbitrage? Betriebswirtschaftliche Forschung und Praxis, Vol. 2, 190-198

Renneboog, L., Simons, T., & Wright, M. (2007). Why do public firms go private in the UK? The impact of private equity investors, incentive realignment and undervaluation. Journal of Corporate Finance, 13(4), 591-628.

Richard, J., & Weinheimer, S. (2002). Handbuch Going Private. Heidelberg: Verlag Recht und Wirtschaft GmbH.

Schneider, M., & Valenti, A. (2010). The Effects of Going Private Using Private Equity: The Newly Private Corporation and the Dimensions of Corporate Performance. Business and Society Review, Vol. 115(1), 75-106.

Schwichtenberg, J. (2003). Going private und Freezouts: der Rückzug von der Börse und der Ausschluss von Minderheitsaktionären nach deutschem und US-amerikanischem Recht. Hamburg: Kovac.

Servaes, H. (1994). Do Takeover Targets Overinvest? The Review of Financial Studies, 7(2), 253-277.

Shah, S., & Thakor, A.V. (1988). Private versus Public Ownership: Investment, Owner Distribution, and Optimality. Journal of Finance, Vol. 43, 41-59.

Solvin, M. B., Sushka, M. E., & Bendeck, Y. M. (1991). The Intra-Industry Effects of Going-Private Transactions. The Journal of Finance, 46(4), 1537-1550.

Thomée, M. (2009). Going Privates in Deutschland und der Schweiz: Motive, Regulierung und Handlungsempfehlungen. Master-Arbeit, St. Gallen.

Tobin, J. (1969). A General Equilibrium Approach To Monetary Theory. Journal of Money, Credit and Banking. Vol. 1, 15.

Torabzadeh, K. M., & Bertin, W. J. (1987). Leveraged Buyouts and Shareholder Returns. The Journal of Financial Research, 10(4), 313-319.

Torabzadeh, K. M., & Bertin, W. J. (1992). Abnormal Returns to Stockholders of Firms Acquired in Business Combinations and Leveraged Buyouts. Journal of Accounting, Auditing & Finance, 7(2), 231-239.

Travlos, N. G., & Cornett, M. M. (1993). Going Private Buyouts and Determinants of Shareholders' Returns. Journal of Accounting, Auditing & Finance, 8(1), 1-25.

Warga, A., & Welch, I. (1993). Bondholder Losses in Leveraged Buyouts. The Review of Financial Studies, 6(4), 959-982.

Weir, C., Laing, D., & Wright, M. (2005). Incentive Effects, Monitoring Mechanisms and the Market for Corporate Control: An Analysis of the Factors Affecting Public to Private Transactions in the UK. Journal of Business Finance & Accounting, 32(5 & 6), 909-943.

Zingales, L. (1995). Insider ownership and the decision to go public. Review of Economic Studies, Vol. 62, 425-448.

3 Factors accelerating the going private decision – A hazard model approach[24]

We characterize companies which voluntarily changed their ownership from public to private. The research question addressed is, if it is possible to characterize going private companies in earlier stages than just shortly before the announcement of their step into privacy. I examine going private companies in a lifecycle context with the Cox Hazard Model and conduct additional logistic regressions at the time of the IPO and shortly before delisting. Further, I focus on companies' fundamentals and on perceptibility and corporate governance variables. With data of 1'184 U.S. IPOs from 1990 to 2013, my results show that both, perceptibility and corporate governance variables, accelerate the going private decision.

[24] Ehn Lucia (2014): Factors influencing the going private decision – A hazard model approach. The paper has been accepted for publication at the Journal of Corporate Ownership and Control (forthcoming). Acknowledgements: I thank Andreas Grüner, Klaus Spremann, an anonymous referee, Simone Hollenwäger, Dr. Robert Gutsche and participants of seminars at the University of St. Gallen for their helpful remarks and comments.

3.1 Introduction

While observing the life of a company, after a couple of successful years, it becomes obvious that often financial capital is needed in order to grow further. Having reached an adequate size, companies may put trust in a going public step[25] to achieve such a growth goal. After the generated capital is invested, companies most often stay public. Just few of them decide to leave the public capital market and become private again[26]. In other cases, companies are forced to delist, because they don't meet the minimum requirements of a stock exchange any more or go bankrupt[27]. Turbulent developments on financial markets and more rigid accounting standards by Sarbanes-Oxley Act of 2002 on the U.S. public capital market make the step into privacy a lucrative choice for public companies[28]. As there is not a lot of empirical evidence about this issue and the topic enjoys even additional attention not only from companies' but also from investors' side, it is the motivation of the author to provide further research findings which may supplement the knowledge of researchers and practitioners and ease their decisions. This paper is focusing on factors influencing the voluntary going private decision in a lifecycle context.

Previous research provides different insights about the going private phenomenon. Researchers found evidence for abnormal returns, which can be earned by investors at the time of the announcement of the going private transaction.[29] Empirical evidence also exists about the bid premiums paid to shareholders with the aim of accomplishing the transaction.[30] In order to simplify the recognition of going private candidates among other public listed companies, researchers further conducted studies

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25 The going public decision is discussed e.g. by Zingales (1995).

26 According to Block (2004) about 20-30% of companies decide for a going private following his definition.

27 Being forced to delist is examined in the literature under the keyword IPO failure.

28 The influence of Sarbanes-Oxley Act (SOX) on the going private decision was examined by Chaplinsky and Ramchand (2012).

29 E.g. DeAngelo et al. (1984), Lehn and Poulsen (1989), Denis (1992), Easterwood et al. (1994), Renneboog et al. (2007) or Billett et al. (2010) among others.

30 E.g. DeAngelo et al. (1984), Amihud (1989), Carow and Roden (1997), Weir et al. (2005) or Geranio and Zanotti (2011) among others.

characterizing such companies[31]. These studies identify various company fundamental characteristics (e.g. small size, low growth expectations or high free cash flow) as significant factors influencing the going private decision shortly before the announcement of their step into privacy.

The research question, as seen by the author, is in the precise characterization of going private candidates as their recognition on the market is valuable for investors. The first question which arises is, whether solely company fundamentals explain the going private decision. Recent studies show that good corporate governance has a positive influence on the post-IPO performance[32]. Firms lacking good corporate governance might therefore suffer in the public capital market and decide to leave it. The influence of corporate governance factors, mainly CEO characteristics, on a going private decision has been proven by Weir and Laing (2002) for the UK public capital market, but not in a lifecycle context yet.

The second question which arises is, whether the time shortly before the announcement of a going private transaction is the only point in time which delivers useable data for the recognition of going private companies. This paper extends the view on the going private phenomenon by analyzing firm characteristics not only in one point in time, but during the whole public lifecycle of a firm. Based on an analysis of companies' characteristics, next to the point shortly before the announcement of a step into privacy, this paper adds an additional view already at the time of the IPO. Further, this paper uses a hazard model approach in order to provide insights about the length of the public life. Going privates in a lifecycle context have been examined by Mehran and Peristiani (2010), Bharath and Dittmar (2010) and Pour and Lasfer (2013). Supplementary to them, this paper focuses not only mainly on company fundamentals, but also on its perceptibility and corporate governance factors.

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31 E.g. Maupin (1987), Lehn and Poulsen (1989), Beck and Stinn (2002), Evans et al. (2005) or Gleason et al. (2007) among others.

32 See Bell et al. (2012); Krishnan et al. (2011).

3.2 Literature review

3.2.1 Going private characteristics

The first study with the aim to characterize going private companies was conducted by Maupin et al. (1984) for the U.S. market. The authors examined cash flow ratios, price-to-book ratio, the dividend yield as well as the concentration of ownership. All tested factors in their study had a significant influence on the going private decision. This study was repeated by Maupin (1987) and extended by two factors, price-to-earnings ratio and the book to initial cost of assets ratio. The results showed that the retested factors of the previous study as well as the two new factors had all a significant influence on the going private decision and therefore may be seen as characteristics of firms deciding to go private. The study of Lehn and Poulsen (1989) was based on the FCF hypothesis of Jensen (1986), which expects companies with large FCF to go private. Also tested were the factors equity, tax payments and sales growth. The FCF hypothesis of Jensen (1986), which is based on the agency theory, could be confirmed. Another study about going privates was conducted by Kieschnick (1989). His study focused on the U.S. market and the factors examined were e.g. interest expense, growth, FCF or management ownership. His findings were contrary to those of Lehn and Poulsen (1989), as Kieschnick (1989) could not find any evidence for the FCF hypothesis of Jensen (1986). A study focusing on the ownership structure was conducted by Lowenstein (1986). He found evidence for his hypothesis and also showed that companies leaving the public capital market and significantly smaller than those which do not voluntary decide for a step into privacy.

Loh (1992) focused his study on financial characteristics as possible factors to distinguish from staying public companies. He tested the profitability of the company, its capital structure, the turnover and FCF. Thus, he confirmed the findings of Lehn and Poulsen (1989) and found evidence for the FCF hypothesis. Other factors were not significant for the going private decision. Another study which was examining the FCF hypothesis was conducted by Opler and Titman (1993). The authors could proof that the hypothesis holds by testing Tobin's Q and the FCF level. Companies with a low

Tobin's Q and relatively high cash flow, characterized by authors as those with unfavorable investment opportunities, are more likely to leave the public capital market. Other significant factors found by Opler and Titman (1993) were the higher diversification and higher expectation of financial distress costs[33]. The FCF hypothesis formulated by Jensen (1986) remained the base for almost all studies also in the nineties. Carow and Roden (1997) found support for this hypothesis in their paper, testing for the high level of FCF and the low Tobin's Q. Kieschnick (1998) supports the findings of his first study and rejects the findings of Lehn and Poulsen (1989). He neither found evidence for the growth rate nor the level of FCF as significant factors influencing the going private decision. He also found no evidence for the size of the company and the tax payments. Halpern et al. (1999), also examined possible characteristics of going private companies. Consistent with previous findings of Kieschnick (1989 and 1998), no evidence was found for the level of FCF. Significant evidence however was shown for investment expenditures, stock performance and managerial stock ownership. The statistical evidence for managerial stock ownership is consistent with findings of Lowenstein (1986). Gleason el al. (2007) examined a large number of factors as possible characteristics of going private companies like e.g. the small size of the firm, the lower growth prospects, lower profitability, less debt and higher liquidity. All of their findings were similar to the previous research apart of two of their findings. Better growth prospects and greater levels of financial leverage were identified as typical characteristics of going private companies, which represents the opposite of what was expected. In a second step Gleason et al. (2007) focused on the influence of SOX. Their findings showed that companies before the passage of SOX were smaller in size with less earnings predictability. They also had higher growth prospects, liquidity, financial leverage, return to equity ratios as well as a higher potential for financial distress. The study by Boot et al. (2008) analyzed going privates with the focus on investor participation. They found empirical evidence for decreasing

[33] Opler and Titman (1993) were testing the expenditures for research and development as an example for financial distress costs.

share price and increasing volatility as significant characteristics increasing the probability of a going private decision.

Weir et al. (2005) conducted a study for the UK public capital market. Their findings do not support the FCF hypothesis of Jensen (1986). Evidence is found for poor stock market performance, higher board and institutional ownership and poor market valuation. Findings of higher institutional ownership are contrary to the financial visibility hypothesis by Mehran and Peristiani (2010), who focus on the visibility aspect of companies which decide to go private despite being solid competitors to their peers. They adapt the entire public life view and examine with an generalized, dynamic hazard model three visibility aspects, analyst coverage, institutional ownership and stock turnover as possible factors explaining the going private decision over the company's public life. Their results show, that firms with declining analyst coverage, falling institutional ownership as well as low stock turnover go more likely private and decide for such a step sooner. The study of Mehran and Peristiani (2010) is the first focusing on the entire public life of companies when explaining the going private step. A study focusing on costs and benefits of being public was conducted by Bharath and Dittmar (2010). Similarly to Mehran and Peristiani (2010), they observe a company during its whole public life. Further, they examine their sample already at the time of the IPO. Pour and Lasfer (2013) analyze voluntary delistings from the London Stock Exchange in a lifecycle context. Their results suggest that firms with high leverage, low growth opportunities, low profitability and low trading volume are more likely to go private. These studies demonstrate that various firm fundamental characteristics describe the difference between going private companies and those which remain public. Few newer studies not only examine those characteristics shortly before the announcement of the transaction, but also during the whole public lifecycle.

3.2.2 Corporate Governance

Corporate governance rules offer a framework for the management to achieve firm's objectives and at the same time not to disregard interests of various stakeholders. The role of corporate governance and its influence on post-IPO performance has already

been examined in prior research. Krishnan et al. (2011) found evidence for positively influenced post-IPO firm performance by higher levels of corporate governance. In their research, they focused on firm's reputation as a relevant part of corporate governance and showed that reputation offers various stakeholders valuable information for their decisions. Supporting evidence for this finding comes from Bell et al. (2012) who examine effects on IPO performance. Their results also suggest that higher level of corporate governance has a positive influence on IPO performance. Weir and Laing (2002) connected the research on corporate governance with the going private topic. They argue that corporate governance mechanisms may reduce the extent of the agency costs. Therefore, they imply that companies which went private have ineffective corporate governance mechanisms. Their research which focused mostly on CEO characteristics as proxies for corporate governance confirmed that low level of corporate governance is typical for going private companies shortly before their announcement for such a step.

The aim of this study is to combine literature on the voluntary going private decision in a lifecycle context with the literature on corporate governance. Prior literature shows that corporate governance has an influence on the going private decision when examining the time before the announcement of the transaction. So far, the influence of corporate governance from the time of the IPO as well as during the quotation time has an influence on the going private decision has not been examined. My study has the purpose to close this research gap.

3.3 Hypotheses

The passage of Sarbanes-Oxley Act in 2002 (SOX) increased the requirements concerning the internal control and other aspects of corporate governance on public listed companies in the U.S. Even before, public listed companies had to comply with various accounting and controlling standards. Chief financial officers of U.S. listed firms have to review their reports and certify that those are fully in compliance with the requirements. Firms having issues with fulfilling corporate governance requirements while publicly listed might increase their wish for privacy. Chaplinsky and Ramchand (2012) examined the influence of stricter governance practices on the

voluntary going private decision of firms and found out that they increase compliance costs and subsequently motivate firms to go private. Therefore, I expect companies with CFO certification to stay public, which leads to the first hypothesis.

H1: Firms with no Chief Financial Officer SOX Certification decide earlier to go private.

It is not only the firm's internal CFO certification, which plays a role when estimating the quality of corporate governance. When firm's financial statements are in accordance with the financial reporting standards and reflect a true and a fair view of the state of the firm, an auditor gives the company an unqualified opinion. If the contrary is the case and the auditor has concerns about the quality of the financial reporting, he will give a qualified opinion to the company. If the financial statements are only materially misstated, the auditor will give the company an adverse opinion report. Public companies which don't fulfill financial statement standards are negatively affected by investors' interest and therefore I expect of them to decide for a step into privacy.

H2: Firms with no unqualified auditor opinion decide earlier to go private.

The size of accruals is a measure for earnings management. The higher the accruals, the stronger are the indications of managed earnings of a firm, which is not in accordance with the true and fair view. If firms manipulate their earnings, the size of accruals may be used as a proxy of earnings quality. Earnings management has been examined by e.g. Peasnell et al. (2005), Xie et al. (2003) or Bekiris and Doukakis (2011). They found evidence for the relationship between earnings management and low level of corporate governance. The study of Chou et al. (2005) has proven that in the long-run, the performance and the returns of reverse LBOs are suffering when firms manage their earnings. Therefore, I expect firms with managed earnings, violating corporate governance rules to decide for a step into privacy.

H3: Firms with higher accruals decide earlier to go private.

Investors prefer to put trust in companies, which have high perceptibility already at the time of their IPO. Ernst and Haecker (2007) advance a view that small companies are

not getting enough attention from the investors on the public market and therefore being public has no sense for them. They also add that bigger companies with a low free float are affected by a scant attention as well. According to Modigliani and Miller (1963), low cost of capital increases the wish to become public. As the reverse must be also truth, low liquidity, which occurred due to low visibility makes a staying public too expensive. Therefore, I expect small companies to decide for a step into privacy.

H4: Firms with lower market capitalization decide earlier to go private.

According to Bharath and Dittmar (2010), investors are less informed than the issuers about the true value of the firm going public, which is a problem of adverse selection. Firms with low perceptibility on the public capital market are affected by higher adverse selection costs and might wish to avoid them. As suggested by Ackert and Athanassakos (2001), the number of analysts who follow a firm can be used as a proxy for firm's perceptibility. The visibility hypothesis of Mehran and Peristiani (2010) also corresponds with the opinion of Bharath and Dittmar (2010) and states that low analyst coverage make a company invisible. Therefore, I expect companies with low analyst coverage to decide for a step into privacy as they wish to decrease their adverse selection costs.

H5: Firms with low analyst coverage decide earlier to go private.

Another possible indicator for a firm's low perceptibility is its auditor at the IPO. Firms with an auditor from the Big 4[34] are expected to receive higher attention from investors' side due to their higher visibility on the market. Auditors' reputation and its positive influence on the IPO pricing have already been proven by Beatty (1989). His findings were confirmed by Hogan (1997) who analyzed costs and benefits of auditing quality in the IPO market. The relevance of auditor quality for investors was proven by Mansi et al. (2004) who found evidence that quality and tenure of auditors both matter to investors. As the quality of the auditor influence the perceptibility of companies already at their IPO, I expect companies who were accompanied by minor players to decide for a step into privacy.

[34] PWC, KPMG, EY and Deloitte.

H6: Firms with no Big 4 auditor at their IPO decide earlier to go private.

In order to test these hypotheses, I use control variables covering company fundamentals already tested in previous studies and mentioned in the literature review. Table 8 presents the whole set of tested variables, consisting of corporate governance variables, perceptibility variables as well as company fundamentals variables.

3.4 Data

This paper is analyzing a dataset of 1'184 IPOs of firms which went public on the three major stock exchanges NYSE, Amex and NASDAQ between 1990 and 2013 in the U.S. All IPOs were obtained from the Thomson SDC New Issues database and their data had also to be available in Compustat and CRSP database, which provided the company data and the delisting information.

Table 8: Variables description

Variables	Description
survival	Quotation time since the IPO until voluntary delisting or until the end of the observation period in years
censor	Binary variable set to one if the company is still trading at the end of the observation period and therefore the observation is right censored
Perceptibility variables	
marketcap	log of market capitalization: number of shares outstanding x share price
analyst	Binary variable set to one if the market capitalization (size as a proxy for coverage) of the company is above the median of the whole sample.
auditor	Binary variable set to one if the IPO is audited by a Big 4 auditor (Deloitte, EY, KPMG, PWC)
Company fundamentals	
roa	Return on Assets measured as Net Income over Total Assets
fcff	Free Cash Flow to the Firm measured as Free Cash Flow to the Firm over Total Assets
pe	Price-to-Earnings Ratio
pb	Price-to-Book Ratio
tlta	Total Leverage over Total Assets
capex	Capital Expenditures over Total Assets
Corporate Governance variables	
cfosox	Binary variable set to one if the filed certification document that company report fully complies with requirements of the SEC contains the CFO signature.
opinion	Binary variable set to one if the auditor opinion is non-qualified.
accruals	Accruals Ratio measured as aggregate accruals which are based on Net Operating Assets

Penny stock IPOs, ADRs, REITs as well as all financial institution are excluded from the sample accordingly to previous literature. Only IPOs with voluntary delisting due to company request are part of the sample. Companies which had to delist due to negative reasons are excluded from the sample. These modifications lead to the final sample of 1'184 IPOs of which 188 went voluntary private during the examined period until Dec. 31 2013. The sample therefore includes only companies which went voluntary private between 1990 and 2013. Companies which were still trading during this period are part of the control group.

Table 8 explains all variables which are examined in this study. Perceptibility variables are obtained either from Compustat or CRSP database. I calculate the natural logarithm of market capitalization (*marketcap*) of each company in order to proxy the size. As no precise data about analyst coverage (*analyst*) is available, I construct a binary variable to set one if the absolute market capitalization of a firm is above median. Bigger companies are expected to be more covered than smaller ones according to O'Brien and Tan (2015).

Further variable contributing to the perceptibility hypothesis is the auditor at the IPO (*auditor*). I construct a binary variable set to one if one of the Big 4 was auditor at the IPO. CRSP database provides the auditor information. Big 4 auditors are indicated with signs from 01 to 09. All other auditors have a sign above 09. Therefore, I set all companies with a sign from 01 to 09 one and all others with zero.

In order to examine the influence of corporate governance on the voluntary going private decision, I acquire data about the quality of companies' reports. For calculating the CFO filings (*cfosox*) I hand collect data from SEC's EDGAR database. The Chief Financial Officer SOX Certification variable identifies whether a company has filed Certification Documents as required by Sarbanes-Oxley Act of 2002 (SOX). These Certification Documents certify that the CFO of the company has reviewed the 10Q and 10K reports and that these reports report fairly and are fully in compliance with the requirements of the SEC. I construct a binary variable set to one if the CFO has signed the Certification Documents otherwise the variable is set to zero. Auditor's opinion (*opinion*) is a binary variable based on hand collected data also from SEC's EDGAR database. An opinion of an external auditor can be unqualified, qualified or

adverse and is considered essential when reporting financial information to various stakeholders.

Table 9: Going private companies over time

Time	Total number of companies	Going private companies	Survivor function
1	1’184	22	.9814
2	1’162	14	.9696
3	1’147	18	.9544
4	1’122	6	.9493
5	1’111	14	.9373
6	1’049	9	.9293
7	1’017	8	.9220
8	980	11	.9116
9	902	10	.9015
10	836	11	.8896
11	775	8	.8805
12	702	11	.8667
13	666	5	.8602
14	641	6	.8521
15	600	8	.8407
16	504	7	.8291
17	463	7	.8165
18	397	2	.8124
19	291	2	.8068
20	235	3	.7965
21	181	4	.7789
22	121	2	.7661
23	71	0	.7661
24	38	0	.7661
188 (16%)			

An unqualified opinion indicates the auditor's endorsement of the accuracy and correctness of the disclosed information. A qualified opinion is not considered as negative, but it might indicate that the auditor was unable to verify certain information and misstatements might occur in the audited statements. An adverse opinion indicates serious reporting problems as the auditor states that the financial statements do not fairly present the financial situation of the company. Only an unqualified opinion is a sign of fairly presented financial statements and hence of a high level of corporate governance. I therefore set the binary variable to one only when the auditor's opinion is unqualified, otherwise I set it to zero. Management of earnings is a sign for low level of corporate governance (Xie et al., 2003). The measurement of aggregate accruals compared to previous periods is used to measure company's earnings quality. If overall earnings don't increase by actual cash earnings, but by accrual accounting manipulation, then the company has less persistent earnings with lower quality. Thus, the higher the accruals (*accruals*) of a company, the more managed its earnings might be. I calculate the accruals ratio, as it is used to compare companies of different sizes, based on net operating assets and acquire the necessary data from Compustat:

$$Accruals\ Ratio = \frac{NOA_t - NOA_{t-1}}{NOA_t + NOA_{t-1}/2} \quad (1)$$

where

$$Net\ Operating\ Assets = (Total\ Assets - Cash) - (Total\ Liabilities - Total\ Debt) \quad (2)$$

All accounting variables are used from the year before the company's IPO and are obtained from Compustat. The calculation of accruals ratio using the NOA approach uses data from the balance sheet. This approach is criticized by Collins and Hribar (2002), who prefer the cash flow approach using data from cash flow statements. Due to the fact that going private companies are mainly small firms the availability of their historical cash flow statements is poor. In order to be able to include accruals into this analysis, I decided to use the NOA approach. Main criticism of Collins and Hribar (2002) is that with the occurrence of M&A, discontinued operations or foreign currency conversion from subsidiaries abroad, it can be concluded that earnings

management exists when there is none. Therefore, the results of this study concerning accruals need to be interpreted carefully.

Table 10: Descriptive statistics

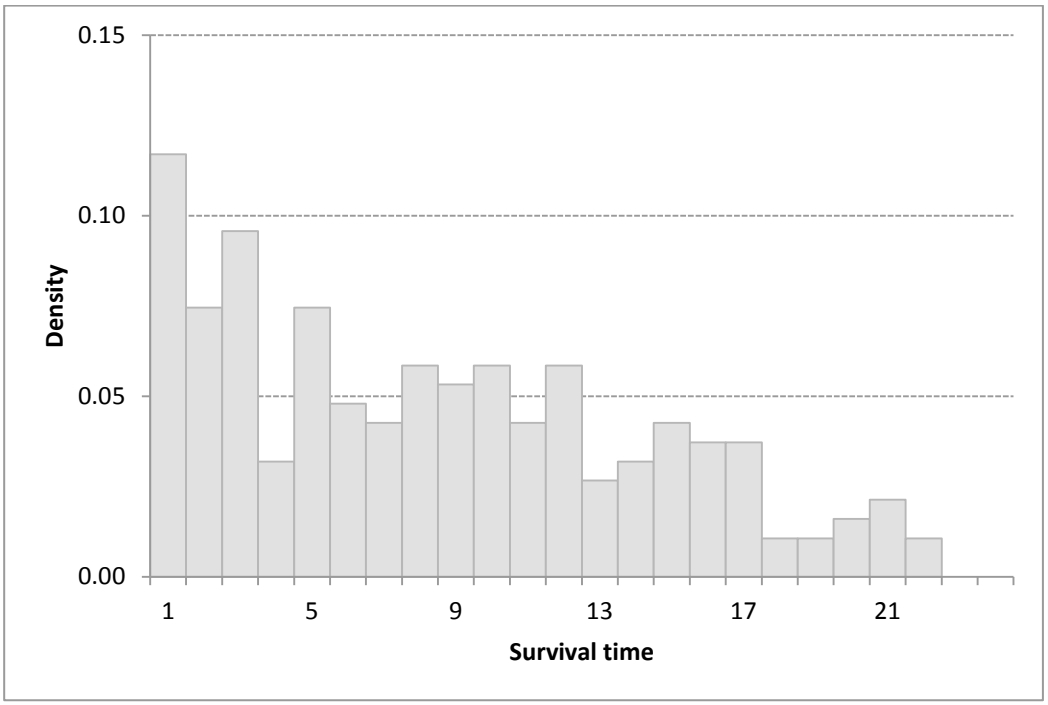
Variable	**Total Sample**			**Surviving IPOs**	**Going Privates**	**t-Test**
	Mean	Min	Max	Mean	Mean	
marketcap	5.424	-2.422	11.371	5.885	3.498	-58.636***
analyst	0.462	0	1	0.517	0.184	-36.155***
auditor	0.829	0	1	0.846	0.662	-17.170***
roa	-0.126	-32.932	1.220	-0.047	-0.201	-6.756***
fcff	-0.039	-4.626	0.750	-0.024	-0.122	-8.409***
pe	3.049	-1870	2890	1.145	20.113	2.035**
pb	4.946	-397.9	1422	2.999	3.776	0.750
tlta	0.542	0	19.513	0.518	0.556	1.793*
capex	-0.576	-162.2	142.2	-1.202	2.119	2.833***
cfosox	0.477	0	1	0.499	0.249	-24.633***
opinion	0.214	0	1	0.574	0.270	-29.419***
accruals	0.198	-33.1	154.3	0.035	0.119	0.552
survival	13.541	0	24			

The majority of examined variables are highly significant on 1% level. This means that there are significant differences in these factors representing companies' characteristics between the going private companies and the control group which is still trading until the end of the observation period. */**/*** shows statistical significance at the 10%/5%/1% level.

Table 9 presents the survivor function of examined going private companies and well as the number of going private companies per quotation year. 22 companies were only one year public before they decided to return into privacy. 14 companies remained two years public. The longer the companies are public, the lower the probability of going private. So went only two companies private which have been on the public capital market for 19 years. During the observation period, almost 16% of companies decided for a voluntary step into privacy on the three major U.S. stock exchanges.

Table 10 provides the descriptive statistics and the results of the t-tests. The average survival time (*survival*) of examined companies on the public capital market is 13.5 years. Figure 1 makes obvious that the majority of going privates occur within the first years of privacy. More than a half of the examined going private companies went private within their first eight quotation years. Based on this fact, I conclude that company characteristics already at the time of its IPO influence the survival time on the public capital market until a voluntary going private decision.

Figure 1: Survival time of going private companies



Then, I calculate the time between the issue date and the delisting date for going private companies[35]. For the control sample a similar computation was done. As there is no delisting date for companies from the control sample, the duration of being public was calculated as the difference between the issue date and the last day in December 2013, when the data collection ends. Next to it, companies from the control sample were identified with 0 in order to be recognized as still trading in contrary to the going private group which was noted with 1.

3.5 Methodology[36]

To examine factors influencing the going private decision of firms in the lifecycle context, I follow previous literature (e.g. Mehran and Peristiani, 2010 and Bharath and Dittmar, 2010) and use a survival analysis model. I analyze the expected survival time of going private companies and the factors, which accelerate their voluntary decision to go private. If T is a random variable representing the time until the occurrence of a voluntary going private decision, then the cumulative distribution function of T is

$$F(t) = P(T<t),\ t>0 \quad (3)$$

It is expressing the probability that the event has occurred by duration t. The survival function gives the probability that the event has not occurred by duration t and is given by

$$S(t) = P(T>t) = 1 - F(t) \quad (4)$$

A conditional probability express that the event will occur in the interval t until t+h given that it has not occurred up to time t. Divided by the width of the interval, a rate of event occurrence per unit of time results. Limiting the interval to zero, a hazard function with an instantaneous rate of occurrence is then given by

$$\lambda(t) = \lim_{h\to 0} \frac{P(t<T<t+h|T>t)}{h} = \frac{f(t)}{S(t)} \quad (5)$$

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35 Data from Compustat.

36 The methodological approach and description is inspired by Peller (2013), who used the Cox Hazard Model in order to analyse survivability of IPOs.

For the first analysis of the survival data, I use a non-parametric model of Kaplan-Meier. For right censored data[37], the Kaplan-Meier survivor function is

$$\hat{S}(t) = \prod_{t_i=1}^{t} \left[\frac{\left(n_{t_i} - d_{t_i}\right)}{n_{t_i}} \right] \quad (6)$$

where d_i is the number of going privates until $t_{(i)}$ an n_i the number of public companies just before $t_{(i)}$.

To estimate the cumulative hazard of censored data, I apply the Nelson-Aalen estimator, which is defined as

$$\hat{\Lambda}\left(t_{(i)}\right) = \sum_{j=1}^{i} \frac{d_j}{n_j} \quad (7)$$

where the cumulative hazard until t is the sum of the hazards up to t and can be interpreted as the number of voluntary going privates during the interval 0 to t. (Rodriguez, 2010)

To examine the impact of firm characteristics on the voluntary going private decision during the public lifecycle I use a Cox proportional hazard model (Cox, 1972) of the instantaneous probability of voluntary delisting. The model of Cox is a methodological approach which allows identifying explanatory variables on longevity or entity. Although the model has been mostly used in the previous research to explain e.g. bankruptcy[38], it will be transferred in this study and used for a "positive"[39] outcome calculation.

The model is semi-parametric and compares survival between two groups. Its advantage is that it can handle long event sequences and a large number of events according to Fox (1997). A further advantage is its strength, as it can handle censored data and no specification of the underlying hazard function is needed. When analyzing the going private phenomenon, it is reasonable to use this model as two groups (going

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37 Due to the fact that for some companies the going private event has not occurred at the time the data is analyzed, some of the observations are right censored.

38 Shumway (2001) used e.g. this hazard model to forecast bankruptcy.

39 In this thesis, the going private step is seen as positive, because the companies do not go bankrupt, but just leave the public capital market.

private and staying public) are compared. Data is analyzed in order to find about survival. Further censored data is included in the sample, as some companies might still be public and decide for a going private after the analyzed period. The hazard function describes the probability that an individual firm will experience a going private event. However, the model also has disadvantages. Machin, Cheung & Parmar (2006) state that even if the model has a large flexibility, if the assumption of the underlying distribution can be done, fully parametric hazard models should be used as they lead to smaller standard errors. This is addressed in the second part of the analysis, when Gompertz, log-logistic and further models are used. Li et al. (2005) describe the advantage of the model as follows:

"The strength of the model lies in its ability to model and make inferences on the timing of delisting without making any specific assumptions about the distribution form of life expectancy (Li et al., 2005)."

The Cox proportional hazard model (Cox, 1972) can be expressed as:

$$h(t) = h_0(t) * \exp(\beta_1 X_1 + ... + \beta_n X_n) \quad (8)$$

This model is providing estimates of β with a partial likelihood method, but provides no estimate of the baseline hazard $h_0(t)$. Some of the observations are right censored due to the fact that for some companies the going private event has not occurred at the time the data is analyzed. Cox hazard model is flexible enough to control for this fact.

In order to address heterogeneity concerns, I not only use the semi-parametric Cox hazard model, but also use more robust parametric models to verify the results. Even if the baseline hazard is not necessary for estimation of hazard ratio in the Cox model, the distribution of survival time is unknown. Thus, I assume a parametric form for the distribution of survival time and use four parametric models. When (1) T~ Weibull (λ, p) with survivor function

$$S(t) = \exp\{-(\lambda t)^p\} \quad (9)$$

where p>0 and λ>o, then the hazard function is given by

$$\lambda(t) = \lambda^p \, pt^{p-1} \quad (10)$$

where p is a shape paramenter according to Rodriguez (2010). When p>1 the hazard increases and vice versa. If p = 1, then the hazard is constant and leads to an exponential model (2) which is a special case of the Weibull distribution. In an exponential distribution the survivor function is

$$S(t) = \exp\{-\lambda t\} \quad (11)$$

and the density function of an exponential distribution is

$$f(t) = \lambda \exp\{-\lambda t\} \quad (12)$$

Another robust parametric hazard model is the Gompertz model (3), which is characterized by the fact that the log of the hazard is linear in t. Thus, Gompertz is a log-Weibull distribution with the hazard

$$\lambda(t) = \exp\{\alpha + \beta t\} \quad (13)$$

Further, I presume the baseline hazard function follows a log-logistic distribution. Then the log-logistic hazard function (4) is defined as

$$\lambda(t,x) = \frac{\exp(\beta x)\alpha t^{\alpha-1}}{[1+\exp(\beta x)t^{\alpha}]} \quad (14)$$

where α>1 indicates an increasing hazard and vice versa. (Rodriguez, 2010)

Finally, I also conduct a logistic regression in order to find out how much of the voluntary going private decision can be explained already first at the time of the IPO as well as second at the time of the announcement of the going private decision. This probability can be expressed as (Pampel, 2000):

$$p(going\ private) = \frac{1}{1-e^{\alpha+\Sigma_{i=1}^{8}\beta_i * factor_i}} \quad (15).$$

The data sample consisting of two groups (going private and staying public) is analyzed with help of statistic program STATA in order to find out which factors accelerates the going private decision. First, the survival function is estimated with the Kaplan-Meier method, providing the information about the probability of surviving in time. Nelson-Aalen method is applied to find the same information in cumulative manner. Second, the duration analysis is conducted with Cox hazard model using yearly data from the whole public life of every company included in the sample. It provides with the information, which factors significantly accelerate the decision to go

private. To control for the robustness of these results, Weibull, Gompertz, log-logistic and exponential models are applied. Lastly, logistic regression is conducted using adjusted data basis. For the first logit regression, only yearly data from one year at the time of the IPO is used. For the second logit regression only yearly data from the year shortly before the announcement of going private is used. These different stages (at IPO – logit 1, during the whole lifecycle – Cox, and before the announcement – logit 2) provide deep insights on the characteristics of going private companies.

3.6 Empirical results

This paragraph contains the results of the empirical analysis on voluntary going privates. In the first subchapter, the estimation of the survival function using the Kaplan-Meier method and the cumulative survival function using the Nelson-Aalen method are presented. The second subchapter presents the results of the duration analysis using the Cox proportional hazard model as well as the parametric hazard models of Weibull, Gompertz, the log-logistic model and the exponential one. The third subchapter presents the results from the logistic regressions.

Kaplan-Meier and Nelson-Aalen Survival Functions

In the first step, I estimate the non-parametric survival functions using the Kaplan-Meier and the Nelson-Aalen method. Figure 2 shows the Kaplan-Meier survivor function. The probability of surviving during the observation period shows that in t = 25 almost 25% of all companies from the whole sample undergo a voluntary going private and 75% stay public. Figure 3 shows the first derivative of the survival function, which is the hazard rate. Hazard rate describes the behavior of the probability during the observation period. Between the fifth and the 16^{th} listing year the probability of a voluntary going private is given. After the fifth public year this probability increases abruptly, decreases on the contrary steadily after the 16^{th} year of being public. The Nelson-Aalen method in figure 4 shows the cumulative hazard estimate. In t = 0 the whole sample is public and in t = 25 more than 25% companies went voluntary private. Around 6% of all companies decide for a voluntary delisting already during their first five years on the public capital market, which strengthens the

fact that firm characteristics at the time of the IPO already have a significant influence if a company decides to go private or stay public.

Figure 2: Kaplan-Meier survival estimate

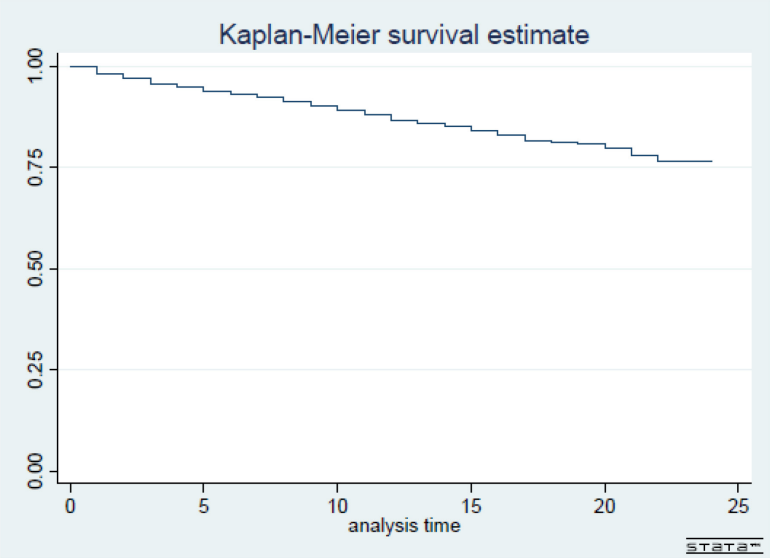


Figure 3: Smoothed hazard estimate

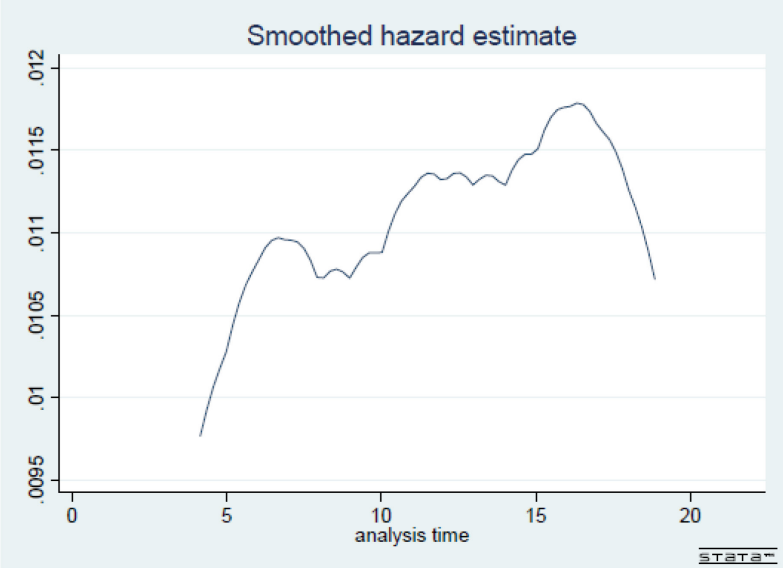
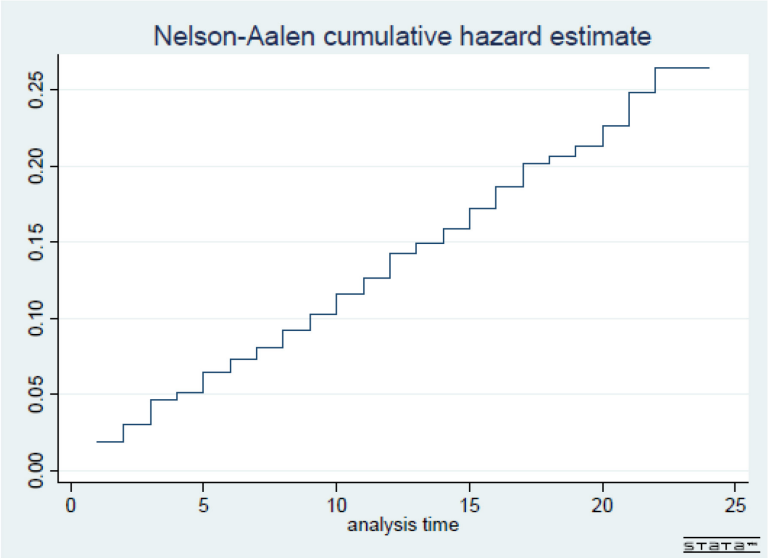


Figure 4: Nelson-Aalen cumulative hazard estimate



Duration Analysis Results[40]

Table 11 shows the results of the duration analysis using the semi-parametric Cox proportional hazard model. The coefficients represent the effect on the hazard rate when an independent variable increases by one unit.

The hypotheses 4-6 suggest that perceptibility measured as market capitalization, analyst coverage and the auditor at IPO accelerates the voluntary going private decision of public companies. The results shown in table 11 confirm this influence of perceptibility factors on the survival time. The results of the Cox model suggest that market capitalization (*marketcap*) has a very strong significant influence on the hazard rate. Due to the negative sign of the coefficient, the higher the market capitalization, the longer a company stays public or vice versa, the smaller the company measured by market capitalization, the earlier it might decide to voluntary leave the public capital market. This result shows that market capitalization has an influence on the voluntary going private decision and therefore confirms *H4*.

[40] The description format of the duration analysis results and of tables 11 - 14 is inspired by Peller (2013).

Table 11: Regression results of Cox proportional hazard model

Variables	Coeff	t-stat
marketcap	-0.424***	-11.25
analyst	-1.147***	-4.84
auditor	-0.704***	-4.15
roa	-0.216*	-1.78
fcff	-0.311*	-1.62
pe	0.001	1.02
pb	0.003***	3.24
tlta	-0.001	-0.03
capex	0.020*	1.60
cfosox	0.182	1.01
opinion	0.319*	1.76
accruals	-0.062*	-1.60
Observations	1068	
Likelihood ratio (chi)	287.38***	

The sample includes 1'184 IPOs going public between 1990 and 2013 on NASDAQ, NYSE or AMEX. The independent variable is *survival_time*, measured as the difference between the IPO date and the date of going private or end of observation period which is Dec 31 2013. If the IPO continues to be listed through the end of the observation period, the observation is right-censored. *marketcap* is the logarithm of market capitalization calculated as number of shares outstanding multiplied by the share price, *analyst* is a binary variable set to one if the market capitalization of the company is above the median of the whole sample, *auditor* is a binary variable set to one when the IPO is audited by a Big 4 auditor, *roa* is the return on assets measured as net income over total assets, *fcff* is the free cash flow to the firm measured as free cash flow to the firm over total assets, *pe* is the price-to-earnings ratio, *pb* is the price-to-book ratio, *tlta* is the amount of leverage calculated as total leverage over total assets, *capex* are the capital expenditures calculated over total assets, *cfosox* is a binary variable set to one if the certification document fully complies with SEC requirements and is signed by the CFO, *opinion* is a binary variable set to one if the auditor opinion is non-qualified, *accruals* is the accruals ratio measured as aggregate accruals based on net operating assets. For ties, the Breslow method is applied. ***/**/* indicates statistical significance at the 1%/5%/10% level.

An explanation might be that smaller companies are less visible for investors and therefore receive less attention from them. Lacking investors' attention might lead to lower liquidity and undervaluation, which encourages companies for a voluntary step into privacy. For analyst coverage (*analyst*) the results also suggest a very strong significant influence on the hazard rate. The lower the analyst coverage, the earlier a company decides for a voluntary going private. This confirms *H5* and shows that companies with lower analyst coverage get less attention from investors and therefore decide earlier to leave the public capital market. A further factor significantly accelerating the voluntary going private decision is the Big 4 auditor at the IPO (*auditor*). According to the results, if the auditor at the IPO was one of the Big 4, than the survival time at the public capital market is longer. On contrary, if the auditor is less known, it accelerates the voluntary going private decision. This finding supports *H6*.

Findings on hypotheses 1-3 about corporate governance measured as CFO SOX certification, auditor opinion and the amount of accruals are similar to those of perceptibility, even if the statistical significance is lower. *H1* suggest that firms with no CFO SOX certification (*cfosox*) which would certify that their accounting is fully in compliance with the requirements decide earlier to go private. The results suggest that CFO SOX certification has no statistical influence on the hazard rate and therefore companies with reports lacking certification do not earlier decide for a step into privacy. Further firms not only need to confirm their report quality internally, but also receive an auditor opinion. *H2* suggest that firms with no unqualified auditor opinion decide earlier to go private. The results confirm this hypothesis on a low significance level. The effect of accruals (*accruals*) on the hazard rate is also given on a low significance level. The lower the accruals, the earlier this company decides for a voluntary step into privacy. This stands in contrary to the expectations in *H3*. A possible explanation might be, that interpretation of accruals is highly dependent on investors' financial sophistication and therefore not an ideal measure for the level of

corporate governance. In addition, the NOA approach[41] while calculating accruals ratio might be a reason.

Further results on control variables mostly confirm findings from previous researches about going privates. Price-to-book ratio (*pb*) influences significantly the hazard rate but only with a low impact. The higher the price-to-book ratio, the earlier a company goes private. No evidence is found for price-to-earnings ratio (*pe*) and leverage (*tlta*). According to the results, they have no influence on the hazard rate. A low statistical significance is found for return on assets (*roa*). The lower ROA, the earlier a company might voluntary decide for privacy. Weak evidence is also found for free cash flow (*fcff*). Other than in previous findings where high free cash flow has a strong influence on a going private step and supports the agency theory, my results suggest that a lower free cash flow accelerates the voluntary going private decision. My findings are consistent with those of e.g. Kieschnick (1998) or Halpern et al. (1999).[42] Also capital expenditures (*capex*) provide weak evidence about the influence on hazard rate. The results suggest that companies with lower capital expenditures stay longer public and vice versa.

In order to test the robustness of these results, I perform further analyses using the Weibull, Gompertz, the log-logistic and the exponential model, which are other than the semi-parametric Cox model fully parametric and therefore more robust. Tables 12 and 13 present the results from these four additional robustness models. They mainly confirm the findings of the Cox hazard model. The perceptibility hypothesis is also confirmed in the Weibull model, as all three perceptibility factors market capitalization *(marketcap)*, analyst coverage *(analyst)* and auditor at IPO *(auditor)* are highly significant. The log-logistic model shows identical results for the perceptibility hypothesis. The lower the market capitalization of a public company, the higher is the probability of an earlier voluntary step into privacy. The lower the size of analysts covering a public company, the higher is the probability of its earlier voluntary going

41 See subchapter 3.4.

42 Both studies analyzed going privates shortly before the announcement of their step into privacy and not in a lifecycle context.

private. If the auditor at the IPO was not one of the Big 4, the higher is the probability that such a company will decide earlier to leave the public capital market. These findings confirm the hypotheses 4-6. Similar to the Cox hazard model, the Weibull and the log-logistic model also couldn't find any evidence for the CFO SOX certification influencing the voluntary going private decision. The log-logistic model shows high significance for auditor's opinion *(opinion)* and confirms *H2*. Based on this finding, firms with no unqualified opinion from their auditor decide earlier for a voluntary step into privacy. The Weibull model confirms this finding on a lower significance level. Higher accruals are a sign of earnings management and therefore an indication of a lower level of corporate governance. The Weibull model finds weak evidence for higher accruals accelerating the voluntary going private decision. The log-logistic model shows no empirical evidence. For the controlling variables the Weibull model shows strong significance of the price-to-book ratio *(pb)*, which confirms that undervaluation accelerates the decision for a step into privacy. On a low significance level the Weibull model finds evidence for return on assets *(roa)*, free cash flow *(fcff)* as well as for capital expenditures *(capex)*. This confirms the robustness of the results from the Cox hazard model. Companies with lower return on assets, lower free cash flow and with higher capital expenditures are those which might earlier decide to leave the public capital market. Low return as well as not efficiently spent capital might lead to lower interest from investors' side and accelerate the company's decision for a voluntary going private step. The log-logistic model confirms the capital expenditures hypothesis on a weak significance level only.

Table 12: Robustness test of the Weibull and the log-logistic survival model

Variables	(I)	t-stat	(II)	t-stat
marketcap	-0.427***	-11.37	0.398***	9.22
analyst	-1.155***	-4.87	0.822***	4.45
auditor	-0.707***	-4.17	0.641***	4.19
roa	-0.218*	-1.81	0.162	1.16
fcff	-0.322*	-1.70	0.218	1.13
pe	0.001	1.05	-0.001	-1.02
pb	0.003***	3.85	-0.002***	-3.15
tlta	0.005	0.09	-0.001	-0.01
capex	0.022*	1.76	-0.017*	-1.64
cfosox	0.186	1.03	-0.152	-1.00
opinion	0.333 *	1.84	-0.374**	-2.41
accruals	-0.062*	-1.63	0.052*	1.54
constant	-2.615***	-8.35	1.469***	6.90
Observations	1068		1068	
Likelihood ratio (chi)	294.90***		293.43***	

The sample includes 1'184 IPOs going public between 1990 and 2013 on NASDAQ, NYSE or AMEX. The independent variable is *survival_time*, measured as the difference between the IPO date and the date of going private or end of observation period which is Dec 31 2013. If the IPO continues to be listed through the end of the observation period, the observation is right-censored. *marketcap* is the logarithm of market capitalization calculated as number of shares outstanding multiplied by the share price, *analyst* is a binary variable set to one if the market capitalization of the company is above the median of the whole sample, *auditor* is a binary variable set to one when the IPO is audited by a Big 4 auditor, *roa* is the return on assets measured as net income over total assets, *fcff* is the free cash flow to the firm measured as free cash flow to the firm over total assets, *pe* is the price-to-earnings ratio, *pb* is the price-to-book ratio, *tlta* is the amount of leverage calculated as total leverage over total assets, *capex* are the capital expenditures calculated over total assets, *cfosox* is a binary variable set to one if the certification document fully complies with SEC requirements and is signed by the CFO, *opinion* is a binary variable set to one if the auditor opinion is non-qualified, *accruals* is the accruals ratio measured as aggregate accruals based on net operating assets. For ties, the Breslow method is applied. ***/**/* indicates statistical significance at the 1%/5%/10% level.

Table 13: Robustness test of the Gompertz and the exponential survival model

Variables	(I)	t-stat	(II)	t-stat
marketcap	0.651***	-11.39	0.656***	-11.14
analyst	0.312***	-4.91	0.326***	-4.73
auditor	0.494***	-4.15	0.493***	-4.18
roa	0.799*	-1.87	0.812*	-1.70
fcff	0.727*	-1.68	0.754*	-1.48
pe	1.000	1.05	1.000	0.96
pb	1.003***	3.57	1.003***	3.30
tlta	1.002	0.03	1.000	0.01
capex	1.021*	1.66	1.020*	1.59
cfosox	1.207	1.04	1.202	1.02
opinion	1.389*	1.81	1.387*	1.81
accruals	0.940*	-1.63	0.941*	-1.54
constant	0.108***	-9.20	0.152***	-8.89
Observations	1068		1068	
Likelihood ratio (chi)	294.28***		285.50***	

The sample includes 1'184 IPOs going public between 1990 and 2013 on NASDAQ, NYSE or AMEX. The independent variable is *survival_time*, measured as the difference between the IPO date and the date of going private or end of observation period which is Dec 31 2013. If the IPO continues to be listed through the end of the observation period, the observation is right-censored. *marketcap* is the logarithm of market capitalization calculated as number of shares outstanding multiplied by the share price, *analyst* is a binary variable set to one if the market capitalization of the company is above the median of the whole sample, *auditor* is a binary variable set to one when the IPO is audited by a Big 4 auditor, *roa* is the return on assets measured as net income over total assets, *fcff* is the free cash flow to the firm measured as free cash flow to the firm over total assets, *pe* is the price-to-earnings ratio, *pb* is the price-to-book ratio, *tlta* is the amount of leverage calculated as total leverage over total assets, *capex* are the capital expenditures calculated over total assets, *cfosox* is a binary variable set to one if the certification document fully complies with SEC requirements and is signed by the CFO, *opinion* is a binary variable set to one if the auditor opinion is non-qualified, *accruals* is the accruals ratio measured as aggregate accruals based on net operating assets. For ties, the Breslow method is applied. ***/**/* indicates statistical significance at the 1%/5%/10% level.

The Gompertz model also confirms the results of the Cox hazard model. Hazard ratios of the Gompertz model shows the influence on the time until a voluntary going private occurs. Low market capitalization *(marketcap)* significantly accelerates the going private decision. An increase in the market capitalization by one standard deviation decreases the likelihood of a going private by almost 35%, in line with *H4*. Statistical significance is also found for *H5* and *H6*. An increase in the analyst coverage *(analyst)* by one standard deviation reduces the public life by about 68% and an increase in Big 4 auditor at IPO *(auditor)* reduces it by almost 51%. The results on influence of corporate governance on the voluntary going private decision are less consistent than those on perceptibility. The effect on hazard rate of CFO SOX certification *(cfosox)* is positive but without statistical significance. Therefore *H1* cannot be confirmed. In contrary, auditor's opinion *(opinion)* shows significance. An increase in auditor's opinion by one standard deviation increases the probability of a going private which is in accordance with *H2*. Firms with no unqualified auditor opinion suffer under their low level of corporate governance and may therefore decide earlier to go private. Only weak evidence was found for the influence of accruals. An increase in the accruals by one standard deviation reduces the probability of a going private by almost 6%. This finding is contrary to the expectation in *H3*. This finding might be explained by the unclear interpretation of accruals as shown by Louis and Robinson (2005). Their findings show that accruals might not be always interpreted as managers' opportunism, but in some cases also as their optimism. The Gompertz model confirms the findings of the Cox hazard model for the control variables. Highest empirical evidence is again found for price-to-book ratio *(pb)*. An increase in the price-to-book ratio by one standard deviation increases the likelihood of an earlier going private. The results of the exponential model show similar results to those of the Gompertz model. The highest evidence is again found for the perceptibility hypothesis. For the corporate governance hypothesis weak evidence is found for auditor's opinion *(opinion)*, confirming *H2*. An increase in the auditor's opinion by one standard deviation increases the probability of an earlier step into privacy.

Table 14: Logit regression at the time of the IPO and before the announcement of a going private

Variables	(I)	t-stat	(II)	t-stat
marketcap	-0.690***	-7.31	-0.712***	-10.67
analyst	-3.125***	-3.62	-1.167***	-4.40
auditor	-1.258***	-3.44	-1.289***	-5.40
roa	-0.278	-0.92	-0.807***	-3.03
fcff	-0.373	-1.29	-0.819**	-2.29
pe	0.037***	3.31	0.001	0.69
pb	0.033**	2.69	0.001	0.71
tlta	1.049***	3.65	0.389*	1.63
capex	-0.004	-0.35	0.016	1.23
cfosox	-3.002***	-3.22	0.277	1.16
opinion	-5.138***	-10.64	0.497*	2.00
accruals	0.043	0.66	-0.087*	-1.64
constant	6.426***	8.53	2.454***	6.29
Observations	1077		1077	
Likelihood ratio (chi)	741.45***		342.48***	
R^2	72.29%		35.59%	

The sample includes 1'184 IPOs going public between 1990 and 2013 on NASDAQ, NYSE or AMEX. The independent variable is set to one if the company went private and zero if it is part of the control group. Data for the first analysis were collected one fiscal year before the IPO and data for the second analysis were collected from the fiscal year before the announcement of the voluntary step into privacy. *marketcap* is the logarithm of market capitalization calculated as number of shares outstanding multiplied by the share price, *analyst* is a binary variable set to one if the market capitalization of the company is above the median of the whole sample, *auditor* is a binary variable set to one when the IPO is audited by a Big 4 auditor, *roa* is the return on assets measured as net income over total assets, *fcff* is the free cash flow to the firm measured as free cash flow to the firm over total assets, *pe* is the price-to-earnings ratio, *pb* is the price-to-book ratio, *tlta* is the amount of leverage calculated as total leverage over total assets, *capex* are the capital expenditures calculated over total assets, *cfosox* is a binary variable set to one if the certification document fully complies with SEC requirements and is signed by the CFO, *opinion* is a binary variable set to one if the auditor opinion is non-qualified, *accruals* is the accruals ratio measured as aggregate accruals based on net operating assets. ***/**/* indicates statistical significance at the 1%/5%/10% level.

Logit Regression Results

As the results of the Kaplan-Maier and Nelson-Aalen survival function show, around 6% of all companies decide for a voluntary delisting already during their first five years on the public capital market, which strengthens the fact that firm characteristics at the time of the IPO already have a significant influence if a company decides to go private or stay public.

Therefore, I conduct a logistic regression with the aim to show if future going private companies can be already recognized by investors at the beginning of their public life. Table 14 presents the results of the logistic regression. Strong empirical evidence is found for the perceptibility hypothesis. Companies, which later decide for a voluntary step into privacy are at the time of their IPO significantly of smaller size measured by market capitalization *(marketcap)*, have lower analyst coverage *(analyst)* and their auditor at IPO was not one of the Big 4 *(auditor)* compared to the control group. Strong evidence is also found for two of the three corporate governance factors.

Companies which later decide for a going private have no CFO SOX certification *(cfosox)* and no unqualified auditor opinion *(opinion)* compared to the control group. No evidence is found for the amount of accruals.

Regarding the control variables, high empirical evidence is found for price-to-earnings ratio *(pe)*, price-to-book ratio *(pb)* as well as for leverage *(tlta)*. Firms with higher price-to-earnings ratio, with higher price-to-book ratio as well as with higher leverage at the time of their IPO decide later more likely for a step into privacy. Valuation multiples like the price-to-book and the price-to-earnings ratio are industry-dependent and therefore an industry-specific analysis would be needed in order to describe their impact on going privates more precisely. Previous studies found diverging evidence for valuation multiples. My results are consistent with those of Maupin (1987). No significant results are found for return on assets *(roa)*, free cash flow *(fcff)* and for capital expenditures *(capex)* at the time of the IPO. The tested factors in logistic regression at the time of the IPO explain 72.3% of the going private decision measured by R^2.

The majority of previous studies, as shown in in the literature review, focused their analyses on explaining the going private step by firms' characteristics shortly before the announcement of this step. I conduct a logistic regression with data shortly before the announcement. The results are presented in table 14. The R^2 of the regression is 35.6%. Characteristics tested in this study seem to explain less of the going private decision shortly before the delisting than at the time of the IPO. Still, strong evidence is again found for the perceptibility hypothesis. Firms characterized by lower market capitalization *(marketcap)*, low analyst coverage *(analyst)* and with no Big 4 auditor *(auditor)* are more likely to decide to go voluntary private. Empirical evidence is also found for auditor's opinion *(opinion)*. Firms with no unqualified auditor's opinion are more likely to go private. For control variables, empirical evidence is found for return on assets *(roa)* and free cash flow *(fcff)*. Firms with lower return on assets and with less free cash flow than the control group decide more likely for a going private. These results are consistent with the findings of e.g. Kieschnick (1998), Kosedag and Lane (2002) and Weir et al. (2005).

3.7 Concluding remarks

The aim of this study is to explore the relationship of perceptibility and corporate governance factors on the voluntary going private decision. Previous studies mostly focused on various company characteristics which distinguish them from companies which stay public. This characterization was conducted shortly before the announcement of a going private step. Only few studies analyzed the whole public lifecycle and characterized the companies not only shortly before their going private, but also earlier. This study complement these findings by adding perceptibility and corporate governance factors, which were analyzed not only shortly before the announcement of a step into privacy, but also already at the time of the IPO with a logistic regression and during the whole public lifecycle with a Cox proportional hazard model. Using a sample of 1'184 IPOs in the U.S. between 1990 and 2013, I find that the voluntary step into privacy is influenced by perceptibility as well as corporate governance variables. Small size of a company together with low analyst coverage and with no Big 4 auditor at the IPO decreases the perceptibility of a

company at the public market and increases the likelihood of a voluntary step into privacy. The results further show that firms with no unqualified opinion from their auditor decide more likely for a voluntary step into privacy. I cannot find evidence for the missing CFO SOX certification as well as for the high amount of accruals accelerating the voluntary going private step. These results of the Cox hazard model are confirmed by the Weibull, exponential, log-logistic and Gompertz model. The results from the logistic regression at the time shortly before the announcement of a going private step confirm the perceptibility hypothesis as well as the influence of auditor's opinion. The results further show that future going private companies strongly differ from companies which stay public already at the time of their IPO in perceptibility as well as corporate governance variables.

Overall, the results show that investors shouldn't take only fundamental variables into account when identifying future going private companies at the public capital market. Important roles play also the perceptibility and corporate governance variables. According to the results companies differ in these variables already at the time of their IPO and during their whole public lifecycle from companies which stay public. Investors who are able to recognize future going private companies may earn higher returns when these companies are buying their shares back, making them a lucrative investment. Further research should focus on further variables explaining the going private phenomenon as well as on the question if these companies should have ever gone public.

References

Ackert, L.F., & Athanassakos G. (2001). Visibility, Institutional Preferences and Agency Considerations. Journal of Psychology and Financial Markets, 2(4), 201-209.

Amihud, Y. (1989). Leveraged Management Buyouts and Shareholders' Wealth. In Y. Amihud, Leveraged management buyouts: causes and consequences (pp. 3-34). Homewood: Dow Jones-Irwin.

Beatty, R. P. (1989). Auditor Reputation and the Pricing of Initial Public Offerings. The Accounting Review, 64(October 1989), 693-709.

Beck, R., & Stinn, D. (2002). Börsenrückzugs-Gesellschaften in Deutschland. Coroprate Finance biz, 4(11), 653-660.

Bekiris F. V. & Doukakis L. C. (2011). Corporate Governance and Accrual Earnings Management. Managerial and Decision Economics, 32, 439-456.

Bell, R. G., Moore, C. & Filatotchev, I. (2012). Strategic and institutional effects on foreign IPO performance: Examining the impact of country of origin, corporate governance, and host country effects. Journal of Business Venturing, 27(2), 197-216.

Bharath, S. T., & Dittmar, A. K. (2010). Why Do Firms Use Private Equity to Opt Out of Public Markets? Review of Financial Studies, 23, 1771-1818.

Billett, M. T., Jiang, Z., & Lie, E. (2010). The effect of change-in-control covenants on takeovers: Evidence from leveraged buyouts. Journal of Corporate Finance, 16(1), 1-15.

Block, S. B. (2004). The Latest Movement to Going Private: An Empirical Study. Journal of Applied Finance, 1, 36-44.

Boot, A. W., Gopalan, R., & Thakor, A. V. (2008). Market Liquidity, Investor Participation, and Managerial Autonomy: Why Do Firms Go Private? The Journal of Finance, 63(4), 2013-2059.

Carow, K. A., & Roden, D. M. (1997). Determinants of the Stock Price Reaction to Leveraged Buyouts. Journal of Economics and Finance, 21(3), 49-59.

Chaplinsky, S., & Ramchand, L. (2012). What drives delistings of foreign firms from U.S. Exchanges? Journal of International Financial Markets, Institutions & Money, 22(2012), 1126-1148.

Chou, D., Gombola, M. & Liu, F. (2005). Earnings Management and Stock Performance of Reverse Leveraged Buyouts. Journal of Financial and Quantitative Analysis, Forthcoming. Available at SSRN: http://ssrn.com/abstract=684426

Collins, P., & Hribar, D. W. (2002). Errors in Estimating Accruals: Implications for Empirical Researcch. Journal of Accounting Research, 40, 105-134.

Cox, D. R. (1972). Regression Models and Life Tables. Journal of the Royal Statistical Society, Series B: 34, 187-220.

DeAngelo, H., DeAngelo, L., & Rice, E. M. (1984). Going Private: Minority Freezouts and Stockholder Wealth. Journal of Law and Economics, 27(2), 367-401.

Denis, D. J. (1992). Corporate Investment Decisions and Corporate Control: Evidence from Going-Private Transactions. Financial Management, 21(3), 80-94.

Easterwood, J. C., Singer, R. F., Seth, A., & Lang, D. F. (1994). Controlling the Conflict of Interest in Management Buyouts. Review of Economics & Statistics, 76(3), 512-522.

Ernst, D., & Haecker, J. (2007). Applied International Corporate Finance. München: Verlag Franz Vahlen.

Evans, J., Poa, M., & Rath, S. (2005). The Financial and Governance Characteristics of Australian Companies Going Private. International Journal of Business Studies, 13, 1-24.

Fox, J. (1997). Applied Regression Analysis, Linear Models, and Related Methods. Sage Publications, Inc.

Geranio, M., & Zanotti, G. (2011). Equity Markets Do Not Fit All: an Analysis of Public-to-Private Deals in Continental Europe. European Financial Management, Forthcoming 2011.

Gleason, K., Payne, B., & Wiggenhorn, J. (2007). An Empirical Investigation of Going Private Decisions of U.S. Firms. Journal of Economics and Finance, 31(2), 207-218.

Halpern, P., Kieschnick, R., & Rotenberg, W. (1999). On the Heterogenity of Leveraged Going Private Transactions. The Review of Financial Studies, 12(2), 281-309.

Hogan, C. E. (1997). Costs and Benefits of Audit Quality in the IPO Market: A Self-Selection Analysis. The Accounting Review, 72(1), 67-86.

Jensen, M. C. (1986). Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. American Economic Review, 76(2), 323-339.

Kieschnick, R. L. (1989). Management Buyouts of Public Coroprations: An Analysis of Prior Characteristics. In Y. Amihud, Leveraged management buyouts: causes and consequences (pp. 35-70). Homewood: Dow Jones-Irwin.

Kieschnick, R. L. (1998). Free Cash Flow and Stockholder Gains in Going Private Transactions Revisited. Journal of Business Finance & Accounting, 25(1), 187-202.

Krishnan, C., Ivanov, V., Masulis, R. and Singh, A. (2011). Venture Capital Reputation, Post-IPO Performance and Corporate Governance. Journal of Financial and Quantitative Analysis, 46(5), 1295-1333.

Lehn, K., & Poulsen, A. (1989). Free Cash Flow and Stockholder Gains in Going Private Transactions. The Journal of Finance, 44(3), 771-787.

Li, J., Zhang, L., & Zhou, J. (2005). Earnings Management and Delisting Risk: The Case of IPO Firms. Working paper.

Loh, L. (1992). Financial characteristics of leveraged buyouts. Journal of Business Research, 24(3), 241-252.

Louis, H, & Robinson, D. (2005). Do managers credibly use accruals to sign private information? Evidence from the pricing of discretionary accruals around stock splits. Journal of Accounting and Economics, 39(2), 361-380.

Lowenstein, L. (1986). No More Cozy Management Buyouts. Harvard Business Review, 64(1), 147-156.

Machin, D., Cheung, Y. B., & Parmar, M. (2006). Survival Analysis: A Practical Approach. John Wiley & Sons.

Mansi, S. A., Maxwell, W. F. & Miller, D. P. (2004). Does Auditor Quality and Tenure Matter to Investors? Evidence from the Bond Market. Journal of Accounting Research, 42(4), 755-793.

Maupin, R. J. (1987). Financial and Stock Market Variables as Predictors of Management Buyouts. Strategic Management Journal, 8(4), 319-327.

Maupin, R. J., Bidwell, C. M., & Ortegren, A. K. (1984). An Empirical Investigation of the Characteristics of Publicly-Quoted Corporations which Change to Closely-Held Ownership through Management Buyouts. Journal of Business Finance & Accounting, 11(4), 435-450.

Mehran, H., & Peristiani, S. (2010). Financial Visibility and the Decision to Go Private. The Review of Financial Studies, 23(2), 519-547.

Modigliani, F., & Miller, M. (1963). Corporate income taxes and the cost of capital: A correction. American Economic Review, 53, 433-443.

O'Brien, P. C., & Tan, H. (2015). Geographic proximity and analyst coverage decisions: Evidence from IPOs. Journal of Accounting and Economics, 59, 41-59.

Opler, T., & Titman, S. (1993). The Determinants of Leveraged Buyout Activity: Free Cash Flow vs. Financial Distress Costs. The Journal of Finance, 48(5), 1985-1999.

Pampel, F. C. (2000). Logistic regression: A primer. Thousand Oaks, Calif.: Sage Publications.

Peasnell, K. V., Pope, P. F. & Young, S. (2005). Board Monitoring and Earnings Management: Do Outside Directors Influence Abnormal Accruals? Journal of Business Finance and Accounting, 32(7-8), 1311-1346.

Peller, A. (2013). Survivability and Intra-Industry Effects of Initial Public Offerings: An Empirical Analysis. Dissertation, St. Gallen.

Pour, E. K. & Lasfer, M. (2013). Why do companies delist voluntarily from the stock market? Journal of Banking and Finance, 37(2013), 4850-4860.

Renneboog, L., Simons, T., & Wright, M. (2007). Why do public firms go private in the UK? The impact of private equity investors, incentive realignment and undervaluation. Journal of Corporate Finance, 13(4), 591-628.

Rodriguez, G. (2010). Parametric Survival Models. Woodrow Wilson School, Princeton University, NJ.

Shumway, T. (2001). Forecasting bankruptcy more accurately: A simple hazard model. The Journal of Business, 74(1), 101-124.

Weir, C. & Laing, D. (2002). Going Private Transactions and Corporate Governance in the UK. Available at SSRN: http://ssrn.com/abstract=345820.

Weir, C., Laing, D., & Wright, M. (2005). Incentive Effects, Monitoring Mechanisms and the Market for Corporate Control: An Analysis of the Factors Affecting Public to Private Transactions in the UK. Journal of Business Finance & Accounting, 32(5 & 6), 909-943.

Xie, B., Davidson, W. & DaDalt, P. J. (2003). Earnings Management and Corporate Governance: The Role of the Board and the Audit Committee. The Accounting Review, 76(3), 357-373.

Zingales, L. (1995). Insider ownership and the decision to go public. Review of Economic Studies, 62, 425-448.

4 The firm lifecycle as a determinant of going private decisions[43]

We examine the impact of corporate lifecycle on the likelihood of becoming a voluntary going private firm. We apply the firm's capital mix as a measure for the stage in a firm's lifecycle. In doing so, we provide a framework and we provide evidence on firm characteristics of going private firms. We find that the decision to go private depends on the firm's lifecycle. Young firms, with low retained earnings are more likely to go private than mature or old firms. We also find that relative firm characteristics of going private and non-going private firms are consistent with the findings on relative firm characteristics in M&A activity research for acquirers (bidders, non-targets) vs. non-acquirer (non-bidders, and targets) and that these relative firm characteristics of going private and non-going private firms stay constant throughout all stages of the corporate lifecycle.

[43] Ehn Lucia, Gutsche Robert (2014): The firm lifecycle as a determinant of going private decisions. The paper has been accepted for review at the Journal of China-USA Business Review.

4.1 Introduction

This paper analyses the going private phenomenon in a lifecycle context. Since their establishment, companies develop and pass through different lifecycle stages. Having reached an adequate size, they may decide for a going public step. Due to various reasons explained in the previous paper, after a while, they may choose to delist and become private again. The aim of this paper is to find out, if the lifecycle stages influence the point in time when a company decides for a voluntary step into privacy. Similar research has been conducted for M&A companies. The research contribution of this paper is the respond to this research question for going privates. In order to measure lifecycle stages, Owen and Yawson (2010) use retained earnings to total assets as proxy for lifecycle when they examine M&As. The amount of retained earnings of each company represents its lifecycle stage. We differ between three lifecycle stages (young, mature and old) following the research of Owen and Yawson (2010). We find that companies decide to go voluntarily private when their retained earnings are low, which indicates that these companies are young and leave the public market in their early lifecycle stages.

A going-private transaction is a deal where a privately held entity buys out the shareholders of a public firm and delists it from the stock exchange (Boubaker, Cellier, & Rouatbi, 2014; Gaughan, 2011). Hence, this transaction can be considered as an acquisition of a firm (or a part of a firm) through private equity or/and debt investors. Therefore, a going private firm is a target firm. A huge amount of studies (Bae, Chang, & Kim, 2013; Belkaoui, 1978; K. Palepu, 1982; Powell, 2004; Sorensen, 2000; Stevens, 1973; Tsagkanos, 2008; Weir, Laing, & Wright, n.d.; Wi Saeng Kim & Lyn, 1991) show that target firms are different from acquiring firms, target firms or non-target firms, and that acquirers, target, and non-targets have particular differing firm characteristics (Gutsche, 2013). Moreover, similar differences between going-private and non-going private firms have been identified in the literature that analyzes the relative firm characteristics of going private firms (shortly before the going private transaction) and a non-going private control group (Boot, Gopalan, & Thakor, 2008;

Gleason, Payne, & Wiggenhorn, 2007; Halpern, Kieschnick, & Rotenberg, 1999; Kieschnick, 1998; Lehn & Poulsen, 1989; Loh, 1992; Maupin, 1987).

A recent finding in M&A activity research additionally suggests that the firm's lifecycle is an important determinant of M&A activity (Owen & Yawson, 2010). Firms in their early stage grow rather internally (organic growth) than externally (by mergers and acquisitions) (Stubbart & Knight, 2006) and internal growth firms are attractive takeover targets (Carow, Heron, & Saxton, 2004). Mature firms have sometimes difficulties to grow internally and consider external growth opportunities (Christensen & Montgomery, 1981; Rumelt, 1982; Stimpert & Duhaime, 1997). However, the opportunities for external growth depend largely on their financial resources: Younger firms are often smaller and have only limited financial resources. In contrast, mature firms are mostly larger than firms in an early stage of their lifecycle, which makes it difficult for others to acquire them (G. Bhabra, 2008; Gaver & Gaver, 1993). As a consequence, a connection between lifecycle and M&A activity is often suggested (Owen & Yawson, 2010; Ritter & Welch, 2002; Rydqvist & Högholm, 1995).

The going private firm when acquired by a private investor has remarkable similarities to an M&A target firm (here the acquirer/bidder is typically a publicly held firm). However, it is still an open empirical question whether this relationship between firm lifecycle and M&A activity also exists for a going private transaction. Therefore, in this paper, we apply the organizational theories lifecycle approach for M&A activity (Adizes, 1979; Greiner, 1997; Miller & Friesen, 1984) and the findings from related research (the above mentioned finding in M&A activity studies) to voluntary going private transactions. We hypothesize that going private firms have characteristics, which are very similar to target firms, and that the going private transaction depends on the firms' lifecycle. Going private firms are younger and they have more growth opportunities than non-going private firms. Therefore, we examine (1) the impact of corporate lifecycle on the likelihood of becoming a voluntary going private firm. Further, we examine (2) if there is an indication of the stage the firm has reached in its lifecycle when it voluntarily decides for a going private step.

The stage in a firm's lifecycle can be determined by the firm's capital mix (retained earnings to total equity or total assets). In corporate lifecycle studies the capital mix

served as a good indicator for firm lifecycle (DeAngelo, DeAngelo, & Stulz, 2006; Owen & Yawson, 2010). Main proposition of these studies is the significant positive relation between firm lifecycle and M&A activity. This also is in line with the general findings on M&A activity: Undistributed profits allow firms to make larger investments (like the acquisition of another firm). Therefore we adapted the capital mix lifecycle approach in this study.

We collect the sample for this analysis on the same basis as it was collected in the previous paper. We only extend the observation period. We find 1'501 IPOs of firms, which went public between 1985 and 2013 on the three major stock exchanges[44] in the US in the Thomson SDC New Issues database. They data had also to be available in Compustat and CRSP. CRSP provided the information, which of these companies went private voluntarily. We identify 201 going private firms according to their delisting code[45]. All other firms that stay public[46] we call non-going private firms and they represent the control group.

We apply various logit models to answer our research questions. To apply a logit model is reasonable, as we are comparing two groups of companies, the going private and the staying public (non-going private) one. The aim of our research is to find out, if there are significant differences between these two groups.

4.2 Framework

M&A research suggests that M&A activity is driven by the target firm's performance, its financial resources and its growth potential, the potential agency conflicts within the target firm, and the target firm's market value (Bae et al., 2013; Belkaoui, 1978; K. Palepu, 1982; Powell, 2004; Sorensen, 2000; Stevens, 1973; Tsagkanos, 2008; Weir et al., n.d.; Wi Saeng Kim & Lyn, 1991).

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44 NYSE, Amex and NASDAQ.
45 We assume all delistings with the codes 570 and 573 as positive.
46 According to CRSP these firms have code 100.

The **inefficient management hypothesis** suggests that M&A activity is a control mechanism to discipline self-interested managers (Fama & Miller, 1972; K. G. Palepu, 1986). This implies that target firms are less profitable than non-target firms and may imply for going private firms a negative relationship between going private firms and non-going private firms (Maupin, 1984, 1987).

The **growth resource mismatch hypothesis** addresses the growth potential and the resources available to realize internal or external growth and suggests that high growth firms with low financial resources are attractive takeover targets, and that low growth (or mature) firms with high financial resources are more likely the acquiring firms (Harris & Stewart, 1982; K. G. Palepu, 1986; Powell, 2004; Shim & Okamuro, 2011). Hence, the financial resources and growth might be relevant for determining going private firms and non-going private firms (Evans, Poa, & Rath, 2005; Kieschnick, 1998; Lehn & Poulsen, 1989).

Smaller firms might lack the available resources to acquire larger firms. Hence, smaller firms will have a much higher likelihood of becoming a target firm. This so called **size hypothesis** may apply also for going private firms (Ambrose & Megginson, 1992; J. W. Bartley & Boardman, 1986; Dietrich & California, 1984; Hasbrouck, 1985; K. G. Palepu, 1986; Singh, 1975; Trahan & Shawky, 1992). We, therefore, expect going private firms to be smaller than non-going private firms.

Agency problems may result from managers maximizing their own benefits more than the benefits of the company. Agency problems are indicated by an increased level **of free cash flow**. Free cash flow as defined by Jensen is the "cash flow in excess of that required to fund all of a firm's projects that have positive net present values when discounted at the relevant cost of capital" (Jensen, 1986, 1987, 1988). Hence, takeovers are external control mechanisms that alleviate agency problems (Company, Jensen, & Meckling, 1976; Jensen & Ruback, 1983). However, even though several studies identified the free cash flow as an important determinant, the free cash flow as described by Jensen can hardly be identified due to a lack of information. Nevertheless, most studies suggest a positive relationship with regard free cash flow (from published financial statements) between target and non-target firms (G. S. Bhabra, 2008; Davis & Stout, 1992; Sorensen, 2000). A similar relationship for going

private and non-going private firms is suggested. Therefore, we hypothesize that the proportion of free cash flow will have a positive impact on the going private decision.

According to research on going private determinants and M&A activity in general, the most important factors in distinguish going private firms from non-going private firms are profitability, financial resources, growth, and importantly size.[47]

The **valuation hypothesis** describes that target firms are often undervalued (J. Bartley & Boardman, 1990; Hasbrouck, 1985; Marris, 1964; K. G. Palepu, 1986; K. Palepu, 1982; Tobin, 1969) or the acquirer overvalued when paying with shares (Bi & Gregory, 2011; Shleifer & Vishny, 2003). We presume that going private does not occur very frequently when the firm is overvalued.

With regard to M&A activity, for going private firms also **corporate governance** variables have been of interested. So far, research identified various factors, which might be used to measure the level of corporate governance of a firm. Owen & Yawson (2010) measure corporate governance e.g. with a governance index, which proxies for the level of shareholder rights and at the same time is an aggregate of 24 governance provisions. They further use an entrenchment index, which aggregates six governance provisions. They also construct a dummy variable to distinguish between classified board or not. Following their findings, we expect firms with low level of corporate governance to decide to leave the public capital market.

Corporate lifecycle studies show that firms develop over time and that the firms organizational structure evolves and the firm's strategy changes from each stage in corporate life (Greiner, 1997; Miller & Friesen, 1984). M&A activity provides evidence that the corporate lifecycle determines acquisition activity (Owen & Yawson, 2010). However, only few studies investigate corporate lifecycle and the going private decision. Some studies examine firm characteristics over the whole quotation life and provide new insights how some factors might accelerate the going private decision

[47] The going private (again similar to the M&A) research is often amended by studies that analyze the ability of gaining abnormal returns through going private transactions (Billett, Jiang, & Lie, 2010; DeAngelo, DeAngelo, & Rice, 1984; Denis, 1992; Lehn & Poulsen, 1989; Renneboog, Simons, & Wright, 2007).

(Bharath & Dittmar, 2010; Mehran & Peristiani, 2010). However, the stage of corporate life at which listed firms voluntarily go private is still not explored. Hence, the approach in this study is to examine corporate lifecycle as a determinant of going private transactions. The stage in a corporate lifecycle can be approximated by the capital mix which is the proportion of retained earnings to total equity and retained earnings to total assets (DeAngelo et al., 2006; Grabowski & Mueller, 1975; Owen & Yawson, 2010). According to these studies, we distinguish between old, mature and young stage of corporate lifecycle: We divide all examined firms into groups with the highest 25% of RE/TE respectively RE/TA, with the lowest 25% of RE/TE (TA) and those firms in-between with midsize amount of RE/TE (TA). Firms with high RE/TE (TA) are considered to be old, firms with midsize amount to be mature and those with the lowest amount of RE/TE (TA) as young. We expect firms with low amount of RE/TE (TA) to have a higher probability of becoming a voluntary going private firm.

4.3 Methodology and statement of hypothesis

According to the findings in the M&A activity and going private literature, we hypothesize that the going private activity is determined by the stage of the lifecycle of a firm (measured as the proportion of retained earnings to total equity RE/TE or to total assets RE/TA) as well as other firm characteristics that typically drive M&A activity. In our analysis we, therefore, test for the stage of the lifecycle (by RE/TE and RE/TA), for profitability (*roa*, measured as return on assets), Free Cash Flow (*fcff*), financial resources (*leverage*, measured as the level of leverage), the firm's market value valuation (*pe* and *pb*: price-earnings ratio and price-to-book ratio), firm size (*marketcap* in terms of the firms' market capitalization), analysts' coverage (*analyst*), the firms' capital expenditure (*capex*), and other factors that refer to the firms' corporate governance (CFO SOX certification (*cfo sox*), auditors' opinion (*auditor*), level of accruals (*accruals*).

Table 15 summarizes our expectations as follows:

Table 15: Summary of hypotheses

Lifecycle stage	Stage in the firms' lifecycle measured as retained earnings to total assets or total equity. We expect young firms with low accumulated retained earnings to decide to go private.	-
roa	The lower return on assets, the higher the probability of a going private.	-
fcff	The higher free cash flow to the firm, the higher the going private probability according to Jensen (1986). Kieschnick's (1998) findings are contrary.	+/-
marketcap	The smaller the market capitalization, the higher the going private probability.	-
analyst	The lower the analyst coverage, the higher the going private probability.	-
auditor	If no Big 4 auditor at the IPO, the more likely a going private.	-
leverage	The higher the leverage, the higher the going private probability.	+
pe and pb	The lower price-to-earnings and price-to-book ratios, the higher the going private probability.	- -
corp gov	The lower the level of corporate governance, the higher the going private probability.	-

We construct logit models with the aim to test (1) for the impact of corporate lifecycle on the going private probability, (2) for the impact of lifecycle stages on going private decision and (3) for the test of robustness including corporate governance variables into our sample. We set all going private firms one and all non-going private firms zero. Our basic model[48] has the formula:

[48] The model construction is inspired by Gutsche (2013).

$$\text{Ln}\,[p_i/(1-p_i)] = \alpha_0 + \alpha_1\, RE/\bar{TA}(TE)_i + \alpha_2\, \bar{marketcap}_i + \alpha_3\, \bar{analyst}_i + \alpha_4\, \bar{auditor}_i + \alpha_5\, \overset{+/-}{fcff}_i + \alpha_6\, \overset{+}{tlta}_i + \alpha_7\, \bar{roa}_i + \alpha_8\, \bar{pe}_i + \alpha_9\, \bar{pb}_i + \alpha_{10}\, \overset{+/-}{capex}_i + \alpha_{11}\, \bar{corpgov}_i + \varepsilon_i \quad (16)$$

We additionally control for the impact on years, since the environment of the firm could have been impacted by a particular year (e.g. changing accounting requirements during the years and new standards of SOX).

The usage of logit models in order to answer our research questions is reasonable as our sample is divided into two groups. Logit model is able to compare two samples and find if there are significant differences among them. In order to characterize going privates and to find out if a particular lifecycle stage has an significant impact on them, the logit model can distinguish the best this group from the staying public one.

4.4 Results

The following chapter presents the results of our empirical analysis. First, we present the descriptive statistics results. Second, we describe the results of our first logit model focusing on the influence of corporate lifecycle on the going private decision. Third, we show the results of the logit model investigating the role of lifecycle stage. Last, we test for robustness including corporate governance variables into our sample.

4.4.1 Data set and sample firms

Our sample consists of 1'501 IPOs, which went public between 1985 and 2013 on the three U.S. major exchanges NYSE, AMEX and Nasdaq. We use the Thomson SDC New Issues database in order to obtain all IPOs during this period. We exclude penny stock IPOs, ADRs, REITs as well as firms from the financial sector according to previous literature. The number of analyzed IPOs is further reduced by the data availability in Datastream, Compustat and CRSP database. We divide our sample into voluntary going private firms and staying public firms (non-going private). We use

delisting codes from CRSP database in order to find out which companies went private voluntary[49]. We assume all delistings with the codes 570 and 573 as positive. Firms, which stay public, are non-going private firms (control group) with code 100. We identify 201 voluntary going private firms and 1'300 staying public (or non-going private) firms. For all firms we collect data from their last public fiscal year and include them into our analysis. Table 16 contains descriptive statistics (mean, median and standard deviation) of going privates and non-going privates firms with regard to market capitalization (*marketcap*), retained earnings (*RE*), total assets (*TA*) and total equity (*TE*).

Table 16: Descriptive statistics

	Going private firms			**Staying public (Non-going private firms)**		
	N = 201			N = 1'300		
	mean	median	standard deviation	mean	median	standard deviation
marketcap	3.423	3.141	1.850	5.831	5.926	1.777
total assets	473.261	63.596	1'639.452	3'540.777	568.364	27'692.530
total equity	118.324	18.456	438.390	1'062.111	251.693	3'698.692
retained earnings	-96.236	-16.001	434.403	61.751	0	3'942.103

4.4.2 Impact of lifecycle on the likelihood of becoming a going private

Our first empirical model is a binomial logit model evaluating the impact of firm's lifecycle on the likelihood of becoming a voluntary going private firm. The dependent variable is set to one if the firm became private during the observation period and zero

[49] Same data selection was chosen in the previous paper with the title "Factors accelerating the going private decision – A hazard model approach". The only difference is in the analysed years. This paper uses data from 1985 to 2013, however the previous paper from 1990 to 2013.

if it is part of the control group. Table 17 presents the results of the impact of RE/TE and RE/TA as proxies for a firm's lifecycle on the likelihood of becoming a going private. The table includes results for both measures of the lifecycle whilst controlling for years. The results reported in both models show a significant negative relationship between the firm's lifecycle and the likelihood of becoming a voluntary going private. This finding supports our hypothesis that lifecycle of a firm is a relevant factor influencing the timing of the going private decision. These findings imply that firms with lower amounts of RE/TE (or RE/TA) are more likely to leave voluntarily the public capital market in order to become private again. In model (1), firm size measured as market capitalization (*marketcap*), analyst coverage (*analyst*), auditor at IPO (*auditor*), return on assets (*roa*), free cash flow to the firm (*fcff*), total leverage to total assets (*leverage*) as well as price-to-book ratio (*pb*) and capital expenditures (*capex*) are all also significantly related to the possibility of becoming a going private. Leverage, price-to-book ratio and capex are positively related to the probability. All other factors influence the probability negatively. These findings are consistent with those from previous studies (e.g. Mehran & Peristiani, 2010) and suggest that small firms with low analyst coverage, no Big 4 auditor at their IPO and low returns are more likely to go private. The findings do not support the agency theory of Jensen (1986), who expects large free cash flows to be one of the reasons for a voluntary delisting. On contrary, our results show that firms with low free cash flow might rather go private, which confirms the finding of e.g. Kieschnick (1998).

Further, our findings suggest firms with more leverage, higher price-to-book ratio and higher capital expenditures are more likely to go private. However, our findings of leverage are consistent with those of Gleason, Payne, & Wiggenhorn (2007). We expect undervalued firms to have a higher probability to go private. Our findings suggest the contrary, as the price-to-book ratio influence the going private step positively.

Our findings in model (2) are similar to those of model (1). RE/TA as a proxy for firm's lifecycle has a negative significant impact on the likelihood of becoming a going private firm. The less accumulated retained earnings a firm has, the higher is the probability that it will go private.

Table 17: Logit regressions for the going private probability

Variables	(1)	t-stat	(2)	t-stat
RE/TE	-0.009**	-1.81		
RE/TA			-2.464***	-4.85
marketcap	-0.617***	-6.20	-0.710***	-5.77
analyst	-0.747**	-1.90	-0.138	-0.29
auditor	-1.264***	-3.26	-0.655	-1.21
roa	-0.810***	-2.90	0.928*	1.70
fcff	-0.847**	-1.89	0.638	0.68
tlta	0.691***	2.71	-0.735	-1.41
pe	0.001	1.34	0.002**	2.22
pb	0.004***	3.99	0.001	0.28
capex	0.027***	3.42	0.034***	3.25
constant	7.657***	5.90	8.847***	6.88
Observations	1241		1255	
Wald	154.02***		145.49***	
R^2	67.43%		76.90%	

The table reports the relationship between firm's lifecycle and the going private step. The sample includes 1'501 IPOs going public between 1985 and 2013 on NASDAQ, NYSE or AMEX. The independent variable is set to one if the company went private and zero if it is part of the control group. RE/TE and RE/TA is the ratio of retained earnings to total equity and total assets, respectively. *marketcap* is the logarithm of market capitalization calculated as number of shares outstanding multiplied by the share price, *analyst* is a binary variable set to one if the market capitalization of the company is above the median of the whole sample, *auditor* is a binary variable set to one when the IPO is audited by a Big 4 auditor, *roa* is the return on assets measured as net income over total assets, *fcff* is the free cash flow to the firm measured as free cash flow to the firm over total assets, *pe* is the price-to-earnings ratio, *pb* is the price-to-book ratio, *tlta* is the amount of leverage calculated as total leverage over total assets, *capex* are the capital expenditures calculated over total assets. We also control for years, which is not included in the table. ***/**/* indicates statistical significance at the 1%/5%/10% level.

In this model, the influence of return on assets has a reverse effect on the going private likelihood as in model (1). A possible explanation for this contrasting finding might be due to the correlation between RE/TA and return on assets in model (2). Both models explain a large part of the voluntary going private decision. While model (1) has a R^2 of more than 67%, model (2) explains almost 77%.

4.4.3 Lifecycle stage and the likelihood of becoming a going private

Findings from the first regression models showed that lifecycle plays a significant role in determining the probability of a voluntary going private step. However, these two models did not answer the question about the lifecycle stage in which a company might decide for such a step. We, therefore, apply the modified model of Miller & Friesen (1984), which Owen & Yawson (2010) also use in their study and distinguish between young, mature and old companies according to the amount of their accumulated retained earnings divided by total assets. We divide our sample into these three subsamples, in which firms with the 25% lowest retained earnings to total assets belong to the young ones, those with 25% highest retained earnings to total assets to the old ones and all companies in-between have the classification mature. Table 18 presents the findings of the lifecycle stage analysis. The probability of becoming a voluntary going private firm is significantly higher in firms with low retained earnings to total assets. This finding is consistent with our expectation that firms with lower amount of retained earnings to total assets correspond in this characteristic with typical target companies. We also find significant evidence that the higher the amount of retained earnings to total assets, the less likely a company will decide for a voluntary step into privacy. Both mature and old companies show negative relationship to the going private probability. Other tested variables show mostly significant influence on the going private probability. The smaller a company is, the higher the probability of a voluntary delisting. This finding is consistent with e.g. Mehran & Peristiani (2010). In contrasst to Jensen's free cash flow hypothesis (1986), we expected low free cash flow to the firm to influence the going private probability (Kieschnick, 1989, 1998). Our findings are consistent with those of Kieschnick (1989, 1998) and are statistically significant at 5% level. We find no statistical significance for analyst coverage.

However, if the auditor at the IPO was not one of the Big 4, but only a minor player, the higher the probability that a firm decides for a voluntary going private. We further expect companies with lower profit, measured as return on assets, to be more likely to go private. Our findings are significant and consistent with our expectation. They are in line with the findings of M&A activity literature.

We find weak evidence for the impact of leverage. The more debt a firm has, the more likely it might decide for privacy. Surprisingly, there is reverse effect of valuation factors. Both, the price-to-earnings ratio and the price-to-book ratio show significant positive influence on the going private probability. However, their impact measured by the coefficient is extremely low. The impact of capital expenditures is also low, which might be due to the fact that typical going private firms are similar to typical target firms and their expenses are rather high, which confirms our expectations. Furthermore, we also control for years and find significant evidence.

Table 18: Logit regression models for different lifecycle stages

Variables	(1)	t-stat	(2)	t-stat	(3)	t-stat
young	2.510***	6.55				
mature			-1.478***	-3.75		
old					-1.950***	-2.62
marketcap	-0.643***	-5.79	-0.622***	-6.25	-0.649***	-6.09
analyst	-0.490	-1.18	-0.617	-1.51	-0.543	-1.43
auditor	-1.144***	-2.74	-1.239***	-3.26	-1.288***	-3.19
roa	-0.652**	-2.04	-0.687**	-2.14	-0.744***	-2.76
fcff	-0.878**	-2.17	-0.904**	-1.98	-1.075***	-3.08
tlta	0.296	1.06	0.487**	1.98	0.612**	2.03
pe	0.002***	3.08	0.002**	1.96	0.002*	1.73
pb	0.004**	2.55	0.005***	2.60	0.004***	3.38
capex	0.031***	3.64	0.030***	3.53	0.022***	3.09
constant	6.505***	5.83	8.045***	6.45	8.434***	6.88
Observations	1255		1255		1255	
Wald	160.75***		163.40***		144.89***	
R^2	73.03%		69.26%		69.02%	

The table reports lifecycle stage and the probability of a going private step. The sample includes 1'501 IPOs going public between 1985 and 2013 on NASDAQ, NYSE or AMEX. The independent variable is set to one if the company went private and zero if it is part of the control group. Young, mature and old are dummy variables set to one if the firms RE/TA lie in the lower 25%, in the middle 50% or in the higher 25%, respectively. RE/TA is the ratio of retained earnings to total assets. *marketcap* is the logarithm of market capitalization calculated as number of shares outstanding multiplied by the share price, *analyst* is a binary variable set to one if the market capitalization of the company is above the median of the whole sample, *auditor* is a binary variable set to one when the IPO is audited by a Big 4 auditor, *roa* is the return on assets measured as net income over total assets, *fcff* is the free cash flow to the firm measured as free cash flow to the firm over total assets, *pe* is the price-to-earnings ratio, *pb* is the price-to-book ratio, *tlta* is the amount of leverage calculated as total leverage over total assets, *capex* are the capital expenditures calculated over total assets. We also control for years, which is not included in the table. ***/**/* indicates statistical significance at the 1%/5%/10% level.

4.4.4 Robustness control for the effect of corporate governance

Following Bell, Moore, & Filatotchev (2012) and Krishnan et al. (2011), who both examined the post IPO performance and its dependence on corporate governance variables, we expect that the level of corporate governance has also an influence on the going private decision of a firm. Corporate governance plays a relevant role for various stakeholders, especially investors. Investors on the public capital market often avoid companies with bad corporate governance. We therefore expect firms with low level of corporate governance to be more likely to decide voluntarily to leave the public capital market and become private. Hence, we evaluate the robustness of our results including corporate governance variables into our model. The first corporate governance variable we control for is CFO Sarbanes-Oxley Act certification (*cfo sox*). We expect firms with no SOX certification from their CFO, confirming their financial statement is in line with the requirements of SEC to be more likely to go private due to their low level of corporate governance. We also include auditor's opinion into our corporate governance variables. External auditor gives a firm an unqualified opinion if its financial statements are in accordance with the requirements. We expect firms with no unqualified opinion from their auditor to be more likely to go private. Further, we include accruals as a corporate governance measure into our model as we expect firms with high accruals might be managing their earnings and therefore hurt corporate governance standards.

The results reported in table 19 indicate that firm's lifecycle has still a significant negative relationship to the probability of a voluntary going private also when including corporate governance factors. RE/TE and RE/TA are both still significant determinants of going private probability. The lower the retained earnings to total assets or to total equity respectively are, the higher is the probability of a firm to leave the public capital market. These finding confirms the results from the previous regressions.

Corporate governance variables influence the going private probability. We found significant evidence for CFO SOX certification (*cfo sox*) as well as for the level of

accruals (*accruals*). No evidence is found for the influence of auditor's opinion (*auditor*) on the going private probability. Surprisingly, our results suggest that CFO SOX certification (*cfo sox*) has a positive significant influence on the likelihood of the voluntary step into privacy. This finding is contrary to our expectations. A possible explanation for this finding might be the point in time in which we analyzed firms. In order to be able to distinguish between going private and non-going private firms we conducted a logit regression at the time shortly before the announcement of this step. This means, that we collected our data from the last public fiscal year of going private firms. Because these firms decide to leave the market voluntarily, it might be their aim to present transparent and true information in their financial statements as many financial markets participants make their observations.

We further find a significant negative relationship between the amount of accruals (*accruals*) and the voluntary going private decision. This means that the lower the amount of accruals is, the higher is the probability to leave the public capital market. This finding was not expected. A possible explanation for our finding might be in the role and interpretation of accruals. According to Louis & Robinson (2005) is the interpretation of accruals unclear. We expected high level of accruals to be an indication for managed earnings. Firms, which manage their earnings, would therefore have a low level of corporate governance, which would increase the going private probability.

Table 19: Logit regressions for lifecycle controlling for corporate governance

Variables	*cfo sox* Coefficient (t-stat)	*opinion* Coefficient (t-stat)	*accruals* Coefficient (t-stat)	*cfo sox* Coefficient (t-stat)	*opinion* Coefficient (t-stat)	*accruals* Coefficient (t-stat)
RE/TE	-0.008**	-0.008*	-0.009*			
	(-2.07)	(-1.78)	(-1.77)			
RE/TA				-2.501***	-2.504***	-2.442***
				(-4.37)	(-4.78)	(-4.73)
marketcap	-0.623***	-0.616***	-0.609***	-0.721***	-0.709***	-0.696***
	(-6.04)	(-6.26)	(-6.11)	(-5.73)	(-5.78)	(-5.63)
analyst	-1.632***	-0.717*	-0.838**	-1.031**	-0.148	-0.240
	(-3.62)	(-1.81)	(-2.07)	(-1.98)	(-0.32)	(-0.49)
auditor	-1.536***	-1.266***	-1.293***	-0.984*	-0.627	-0.710
	(-3.67)	(-3.28)	(-3.32)	(-1.76)	(-1.16)	(-1.32)
roa	-0.720**	-0.786***	-0.807***	0.952**	0.818	0.876
	(-2.31)	(-2.83)	(-2.86)	(2.06)	(1.54)	(1.62)
fcff	-0.677	-0.779*	-0.882**	0.858	0.504	0.620
	(-1.38)	(-1.73)	(-1.98)	(0.86)	(0.59)	(0.66)
tlta	0.482*	0.647**	0.687***	-1.273**	-0.764	-0.769
	(1.84)	(2.50)	(2.65)	(-2.09)	(-1.45)	(-1.44)
pe	0.002	0.001	0.001	0.002**	0.002**	0.002**
	(1.54)	(1.21)	(1.09)	(2.27)	(2.46)	(2.09)
pb	0.003***	0.004***	0.004***	-0.001	0.001	0.001
	(3.64)	(4.00)	(3.90)	(-0.43)	(0.27)	(0.29)
capex	0.020***	0.026***	0.026***	0.025**	0.032***	0.032***
	(2.76)	(3.44)	(3.29)	(2.36)	(3.05)	(3.09)
corp gov	2.390***	0.318	-0.109***	2.400***	-0.475	-0.010**
	(4.34)	(0.89)	(-3.33)	(3.39)	(-0.82)	(-2.54)
constant	8.195***	7.614***	7.625***	9.389***	8.997***	8.800***
	(5.23)	(5.87)	(5.97)	(5.89)	(7.37)	(6.91)
Obs.	1241	1241	1237	1255	1255	1251
Wald	138.35***	155.12***	160.53***	148.67***	146.96***	150.56***
R^2	71.36%	67.51%	67.24%	79.61%	76.99%	76.74%

The table reports the relationship between firm's lifecycle and the going private step controlling for corporate governance. The sample includes 1'501 IPOs going public between 1985 and 2013 on NASDAQ, NYSE or AMEX. The independent variable is set to one if the company went private and zero if it is part of the control group. RE/TE and RE/TA is the ratio of retained earnings to total equity and total assets, respectively. *marketcap* is the logarithm of market capitalization calculated as number of shares outstanding multiplied by the share price, *analyst* is a binary variable set to one if the market capitalization of the company is above the median of the whole sample, *auditor* is a binary variable set to one when the IPO is audited by a Big 4 auditor, *roa* is the return on assets measured as net income over total assets, *fcff* is the free cash flow to the firm measured as free cash flow to the firm over total assets, *pe* is the price-to-earnings ratio, *pb* is the price-to-book ratio, *tlta* is the amount of leverage calculated as total leverage over total assets, *capex* are the capital expenditures calculated over total assets. *corp gov* refers to *cfo sox*, *opinion* or *accruals*. *cfo sox* is a binary variable set to one if the certification document fully complies with SEC requirements and is signed by the CFO, *opinion* is a binary variable set to one if the auditor opinion is non-qualified, *accruals* is the accruals ratio measured as aggregate accruals based on net operating assets. We also control for years, which is not included in the table. ***/**/* indicates statistical significance at the 1%/5%/10% level.

Louis & Robinson (2005) argue that the role of accruals is vague. According to them, accruals might be interpreted as managers' opportunism but also as their optimism. In addition, our analysis contains accruals of firms from their last fiscal year before their announcement of a going private. Again, it might be the case that firms pursue clear and transparent financial statements so shortly before their ownership change. They might therefore lower their level of accruals in order to increase their level of corporate governance.

Our test for corporate governance not only focuses on CFO SOX certification (cfo sox) and the level of accruals (accruals), but also on auditor's opinion (*opinion*). In both tested models, presented in table 19, we only found weak evidence for the influence of auditor's opinion on the going private probability. We further find higher significance for analyst coverage (*analyst*). The fewer analysts cover a firm, the higher is the probability that this firm decides voluntary to leave the public capital market. All other tested variables are consistent with findings from the previous models.

4.4.5 Robustness control for corporate governance during lifecycle stages

Table 20 presents results from three logit regression models in which we control for CFO SOX certification (*cfo sox*) with the aim to find out which stage of the corporate lifecycle is the one with the highest probability for a step into privacy. Our findings suggest that firms with low retained earnings to total assets (RE/TA), which corresponds to young firms, are those with the highest probability for a voluntary step into privacy. Mature and old firms with higher accumulated retained earnings, respectively, are less likely to decide for a going private. Our finding is consistent with our previous models presented in table 18. Including CFO SOX certification (*cfo sox*) into our sample, we obtained similar results also for further tested variables. In addition, we find negative significant influence for analyst coverage (*analyst*). Our finding suggests that firms covered by fewer analysts are more likely to decide to leave the public capital market voluntarily. This finding is consistent for all three models presented in table 20. For young firms, we still could not find any evidence for the influence of leverage. We expected firms with higher amount of debt to total assets to

be more likely to go private. Our finding suggest this positive relationship but with no empirical evidence.

According to our results, young firms (*young*) measured by the amount of their retained earnings to total assets as a proxy for their lifecycle stage with small size measured as market capitalization (*marketcap*), low analyst coverage (*analyst*), no Big 4 auditor at their IPO (*auditor*), with low return on assets (*roa*), low free cash flow (*fcff*), with high valuation (*pe, pb*), high capital expenditures (*capex*) and a certification from their CFO about the accordance of their financial statements to SOX (*cfo sox*) are those with the highest probability of a voluntary delisting. We consider our control variables findings as robust as their not only confirm our previous analysis, but are also in line with previous findings of other researchers of the M&A activity studies and studies on going private transactions (e.g. Kieschnick, 1989, 1998). As there is no previous study about the lifecycle stage of going privates firms, we could compare our results to; we refer to the study of Owen & Yawson (2010), who examined lifecycle stages and M&A transactions. According to them, a typical bidder firm is one, measured by retained earnings to total assets, which in its last lifecycle stage and therefore old. This confirms also our findings, because a typical going private firm correlate in its characteristics with a typical target firm, as showed in the theoretical part of our paper above. Hence, we can assume the reverse, when a typical bidder is old measured by retained earnings to total assets, then a typical target is young. As going private firms are alike to target firms, our findings are also consistent with those of Owen & Yawson (2010).

Table 21 presents results from three logit regression models in which we control for the amount of accruals (*accruals*) with the aim to find out which stage of the corporate lifecycle is the one with the highest probability for a step into privacy. Our findings confirm the results from the previous models presented in table 20, in which we are controlling for CFO SOX certification (*cfo sox*). Again, firms in the early corporate lifecycle stage named young firms (*young*) are those, which decide for a voluntary step into privacy with the highest probability compared to non-going private firms.

Table 20: Logit regressions controlling for corporate governance during lifecycle stages I/II

Variables	(1)	t-stat	(2)	t-stat	(3)	t-stat
young	2.456***	6.09				
mature			-1.153***	-2.98		
old					-2.737**	-2.54
marketcap	-0.667***	-6.02	-0.636***	-6.07	-0.694***	-5.76
analyst	-1.311***	-2.85	-1.472***	-3.22	-1.546***	-3.62
auditor	-1.302***	-3.19	-1.411***	-3.44	-1.743***	-3.79
roa	-0.570*	-1.79	-0.634*	-1.88	-0.642**	-2.29
fcff	-0.794*	-1.78	-0.766	-1.52	-0.920**	-2.31
tlta	0.047	0.20	0.277	1.12	0.344	0.99
pe	0.003***	2.84	0.002**	1.98	0.002**	1.96
pb	0.003**	2.47	0.004**	2.17	0.004**	2.47
capex	0.025***	3.13	0.023***	2.83	0.015**	2.20
cfo sox	2.283***	3.89	2.230***	4.03	2.785***	4.51
constant	6.848***	4.62	8.514***	5.38	9.193***	6.16
Observations	1255		1255		1255	
Wald	136.88***		143.66***		113.77***	
R^2	76.11%		72.43%		73.77%	

The table reports lifecycle stage and the probability of a going private step controlling for corporate governance. The sample includes 1'501 IPOs going public between 1985 and 2013 on NASDAQ, NYSE or AMEX. The independent variable is set to one if the company went private and zero if it is part of the control group. Young, mature and old are dummy variables set to one if the firms RE/TA lie in the lower 25%, in the middle 50% or in the higher 25%, respectively. RE/TA is the ratio of retained earnings to total assets. *marketcap* is the logarithm of market capitalization calculated as number of shares outstanding multiplied by the share price, *analyst* is a binary variable set to one if the market capitalization of the company is above the median of the whole sample, *auditor* is a binary variable set to one when the IPO is audited by a Big 4 auditor, *roa* is the return on assets measured as net income over total assets, *fcff* is the free cash flow to the firm measured as free cash flow to the firm over total assets, *pe* is the price-to-earnings ratio, *pb* is the price-to-book ratio, *tlta* is the amount of leverage calculated as total leverage over total assets, *capex* are the capital expenditures calculated over total assets, *cfo sox* is a binary variable set to one if the certification document fully complies with SEC requirements and is signed by the CFO. We also control for years, which is not included in the table. ***/**/* indicates statistical significance at the 1%/5%/10% level.

Table 21: Logit regressions **c**ontrolling for corporate governance during lifecycle stages II/II

Variables	(1)	t-stat	(2)	t-stat	(3)	t-stat
young	2.622***	6.61				
mature			-1.611***	-3.94		
old					-1.907***	-2.61
marketcap	-0.634***	-5.66	-0.612***	-6.15	-0.641***	-6.00
analyst	-0.634	-1.47	-0.729*	-1.74	-0.623	-1.60
auditor	-1.208***	-2.86	-1.265***	-3.30	-1.311***	-3.26
roa	-0.664**	-2.12	-0.688**	-2.18	-0.742***	-2.67
fcff	-0.934**	-2.32	-0.933**	-2.05	-1.106***	-3.20
tlta	0.276	0.95	0.470*	1.87	0.605**	1.97
pe	0.002***	3.01	0.002*	1.78	0.002	1.46
pb	0.004**	2.56	0.005***	2.61	0.004***	3.41
capex	0.030***	3.60	0.030***	3.51	0.021***	3.01
accruals	-0.132***	-3.43	-0.041***	-2.60	-0.085**	-2.40
constant	6.479***	5.91	8.014***	6.58	8.407***	6.86
Observations	1251		1251		1251	
Wald	159.49***		173.54***		147.51***	
R^2	73.22%		69.27%		68.73%	

The table reports lifecycle stage and the probability of a going private step controlling for corporate governance. The sample includes 1'501 IPOs going public between 1985 and 2013 on NASDAQ, NYSE or AMEX. The independent variable is set to one if the company went private and zero if it is part of the control group. Young, mature and old are dummy variables set to one if the firms RE/TA lie in the lower 25%, in the middle 50% or in the higher 25%, respectively. RE/TA is the ratio of retained earnings to total assets. *marketcap* is the logarithm of market capitalization calculated as number of shares outstanding multiplied by the share price, *analyst* is a binary variable set to one if the market capitalization of the company is above the median of the whole sample, *auditor* is a binary variable set to one when the IPO is audited by a Big 4 auditor, *roa* is the return on assets measured as net income over total assets, *fcff* is the free cash flow to the firm measured as free cash flow to the firm over total assets, *pe* is the price-to-earnings ratio, *pb* is the price-to-book ratio, *tlta* is the amount of leverage calculated as total leverage over total assets, *capex* are the capital expenditures calculated over total assets, *accruals* is the accruals ratio measured as aggregate accruals based on net operating assets. We also control for years, which is not included in the table. ***/**/* indicates statistical significance at the 1%/5%/10% level.

Also in this model, we approximate corporate lifecycle with retained earnings to total assets (RE/TA) following DeAngelo, DeAngelo, & Stulz (2006) and Owen & Yawson (2010). Our results further suggest that firms with higher amount of accumulated retained earnings, which we name mature (*mature*) and old (*old*) firms are those, which stay with higher probability public. All our results show significant evidence. In contrary to the regression model presented in table 20, the model in table 21 show no or just low significance for the influence of analyst coverage. Nonetheless, our finding still suggests that low analyst coverage is an indicator for a voluntary step into privacy. Our findings further imply that young firms with low amount of accruals are more likely to go private. This result is consistent with our analysis in table 19. Our results might be explained either through the unclear role of accruals (Louis & Robinson, 2005) or through the point of time of the analysis. We conducted our analysis with data from the last public fiscal year in which firms might have already been focusing on a good level of their corporate governance due to the fact that they will soon change their ownership from public to private. All remaining variables tested in this model confirm the robustness of our previous results.

4.5 Constraints

Our study focus only on U.S. firms which went public during 1985 and 2013. Although it is a long examination period, it does not provide the overall picture. We further focus only on three major stock exchanges NYSE, AMEX and NASDAQ and neglect minor ones. Our empirical data is limited to the time when the examined firms have been public and had to disclose their financial statements. Our observation period starts already in 1985. Several companies decided for a step into privacy already some years after their IPO, which makes it difficult for us to find this historical data. This fact reduced our sample. In the previous decades, not only accounting standards, but also disclosure requirements changed. For our empirical study, we needed various fundamental and other quantitative data in order to describe firms and be able to test if they differ in their characteristics from firms that stay public. As only few data is available about firms, which were publicly listed a couple of years ago, data that we could use for characterization was also limited. In addition, we conduct our logit

regressions only at a certain point in time and this is shortly before the announcement of the intention of firm to leave the public capital market. Accordingly, we collected data from the last public fiscal year. Even though our study is limited through various matters, the results of our logit regressions show remarkable high R^2, which confirms that not only our approximation of lifecycle through accumulated retained earnings, but also the choice of further variables was not wrong.

4.6 Summary

This paper focuses on corporate lifecycle theories with the aim to further explain the going private phenomenon. Our main proxy for firm lifecycle is the relationship of retained earnings to total equity or assets, respectively. Our sample consists of 1'501 IPO firms, which went public on major U.S. exchanges between the years 1985 and 2013. Out of these IPO firms, 201 are voluntary going private firms and all others non-going privates firms, which represent the control group. We first examine whether corporate lifecycle has an impact on the likelihood of becoming a voluntary going private firm. Our findings suggest that approximations of retained earnings, once divided by total equity and once by total assets, both significantly influence the going private decision of firms. The lower is the amount of accumulated retained earnings the higher the probability of a voluntary delisting. Second, we analyze whether a particular lifecycle stage has the highest probability when a company decides to voluntary leave the public capital market. Our findings suggest that young firms identified as those with low amount of retained earnings to total assets are those with the highest likelihood to go private. Mature and old firms are significant more likely to stay public. Third, we control for the robustness of our results including corporate governance variable into our sample. We use three variables in order to measure for the corporate governance impact. CFO SOX certification (*cfo sox*) as well as the amount of accruals (*accruals*) are both significantly influencing the going private probability. We find no empirical evidence for the impact of auditor's opinion (*auditor*). Our findings are significant for both approximations with retained earnings to total equity as well as to total assets. Fourth, we examine the robustness of our results including the corporate governance variable CFO SOX certification (*cfo sox*)

into our model and analyze its influence on lifecycle stages. We confirm our results from previous models, as on the one hand CFO SOX certification (*cfo sox*) highly significantly influences the going private decision and on the other hand increases the probability of young firms to decide to leave the public capital market voluntarily. Last, we examine influence of the second significant corporate governance variable, which is the amount of accruals (*accruals*). We find significant evidence for the negative influence of accruals on the going private decision. Our findings also confirm the results from previous models, as young firms are more likely to decide for a voluntary going private and mature and old firms mostly stay public.

References

Adizes, I. (1979). Organizational passages—Diagnosing and treating lifecycle problems of organizations.

Ambrose, B. W., & Megginson, W. L. (1992). The Role of Asset Structure, Ownership Structure, and Takeover Defenses in Determining Acquisition Likelihood. The Journal of Financial and Quantitative Analysis, 27(4), 575–589. doi:10.2307/2331141

Bae, S. C., Chang, K., & Kim, D. (2013). Determinants of target selection and acquirer returns: Evidence from cross-border acquisitions. International Review of Economics & Finance, 27, 552–565. doi:10.1016/j.iref.2013.01.009

Bartley, J., & Boardman, C. (1990). The relevance of inflation adjusted accounting data to the prediction of corporate takeovers. Journal of Business Finance & …, 17(1), 53–72. doi:10.1111/j.1468-5957.1990.tb00549.x

Bartley, J. W., & Boardman, C. M. (1986). Replacement-Cost-Adjusted Valuation Ratio as a Discriminator Among Takeover Target and Nontarget Firms, (Meade 1968), 41–55.

Belkaoui, A. (1978). Financial ratios as predictors of Canadian takeovers. Journal of Business Finance & Accounting, 1(March 1977), 93–109.

Bell, R. G., Moore, C. B., & Filatotchev, I. (2012). Strategic and institutional effects on foreign IPO performance: Examining the impact of country of origin, corporate governance, and host country effects. *Journal of Business Venturing*, *27*, 197–216. doi:10.1016/j.jbusvent.2010.11.001

Bhabra, G. (2008). Potential targets: An analysis of stock price reactions to acquisition program announcements. Journal of Economics and Finance, 32(2), 158–175. doi:10.1007/s12197-007-9009-z

Bhabra, G. S. (2008). Potential targets: An analysis of stock price reactions to acquisition program announcements. Journal of Economics and Finance, 32(2), 158–175. doi:10.1007/s12197-007-9009-z

Bharath, S. T., & Dittmar, A. K. (2010). Why do firms use private equity to opt out of public markets? Review of Financial Studies, 23, 1771–1818. doi:10.1093/rfs/hhq016

Bi, X. G., & Gregory, A. (2011). Stock Market Driven Acquisitions versus the Q Theory of Takeovers: The UK Evidence. Journal of Business Finance & Accounting, 38(5-6), 628–656. doi:10.1111/j.1468-5957.2011.02234.x

Billett, M. T., Jiang, Z., & Lie, E. (2010). The effect of change-in-control covenants on takeovers: Evidence from leveraged buyouts. Journal of Corporate Finance, 16(1), 1–15. doi:10.1016/j.jcorpfin.2009.09.005

Boot, A. W. A., Gopalan, R., & Thakor, A. V. (2008). Market Liquidity, Investor Participation, and Managerial Autonomy: Why Do Firms Go Private? The Journal of Finance, 63(4), 2013–2059. doi:10.1111/j.1540-6261.2008.01380.x

Boubaker, S., Cellier, A., & Rouatbi, W. (2014). The sources of shareholder wealth gains from going private transactions: The role of controlling shareholders. Journal of Banking & Finance, 43, 226–246. doi:10.1016/j.jbankfin.2014.03.025

Carow, K., Heron, R., & Saxton, T. (2004). Do early birds get the returns? An empirical investigation of early-mover advantages in acquisitions. Strategic Management Journal, 25(6), 563–585. doi:10.1002/smj.404

Christensen, H. K., & Montgomery, C. A. (1981). Corporate economic performance: Diversification strategy versus market structure. Strategic Management Journal, 2(4), 327–343. doi:10.1002/smj.4250020402

Company, P., Jensen, C., & Meckling, H. (1976). THEORY OF THE FIRM : MANAGERIAL BEHAVIOR , AGENCY COSTS AND OWNERSHIP STRUCTURE I . Introduction and summary In this paper WC draw on recent progress in the theory of (1) property rights , firm . In addition to tying together elements of the theory of e, 3, 305–360.

Davis, G. F., & Stout, S. K. (1992). Organization Theory and the Market for Corporate Control: A Dynamic Analysis of the Characteristics of Large Takeover Targets,

1980-1990. Administrative Science Quarterly, 37, 605–633. doi:10.2307/2393474

DeAngelo, H., DeAngelo, L., & Rice, E. M. (1984). Going Private: Minority Freezeouts and Stockholder Wealth. The Journal of Law and Economics. doi:10.1086/467070

DeAngelo, H., DeAngelo, L., & Stulz, R. (2006). Dividend policy and the earned/contributed capital mix: a test of the life-cycle theory. Journal of Financial Economics, 81(2), 227–254. doi:10.1016/j.jfineco.2005.07.005

Denis, D. (1992). Corporate investment decisions and corporate control: Evidence from going-private transactions. Financial Management, 21(3), 80–94. Retrieved from http://www.jstor.org/stable/3666021

Dietrich, J. K., & California, S. (1984). An Application of Logit Analysis to Prediction of Merger Targets, 10017, 393–402.

Evans, J., Poa, M., & Rath, S. (2005). The Financial and Governance Characteristics of Australian Companies Going Private. International Journal of Business Studies, 13(1), 1–24.

Fama, E., & Miller, M. (1972). The theory of finance. Retrieved from http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:The+Theory+of+Finance#0

Gaughan, P. (2011). Mergers, acquisitions, and corporate restructurings (5th. ed.).

Gaver, J. J., & Gaver, K. M. (1993). Jennifer J. Gaver and Kenneth M. Gaver, 16, 125–160.

Gleason, K., Payne, B., & Wiggenhorn, J. (2007). An empirical investigation of going private decisions of US firms. Journal of Economics and Finance, 31(2), 207–218. Retrieved from http://link.springer.com/article/10.1007/BF02751643

Grabowski, H. G., & Mueller, D. C. (1975). Life-Cycle Effects on Corporate Returns on Retentions. The Review of Economics and Statistics, 57(4), 400–409. doi:10.2307/1935899

Greiner, L. (1997). Evolution and revolution as organizations grow. 1972. Harvard business review, 76(3), 55–60, 62–6, 68.

Gutsche, R. (2013). Determinants of M&A Activity and Control Concept—Firm Characteristics as Economic Indicators for Control in Business Combinations. Available at SSRN 2205914.

Halpern, P., Kieschnick, R., & Rotenberg, W. (1999). On the heterogeneity of leveraged going private transactions. Review of Financial Studies, 12, 281–309. doi:10.1093/rfs/12.2.281

Harris, R., & Stewart, J. (1982). Characteristics of acquired firms: fixed and random coefficients probit analyses. Southern Economic, 49(1), 164–184.

Hasbrouck, J. (1985). q and Other Measures, 9, 351–362.

Jensen, M. C. (1986). The Free Cash Flow Theory of Takeovers : A Financial Perspectfve on Met ’ gets and Acq uisitions and ~ he Economy.

Jensen, M. C. (1987). The Free Cash Flow Theory of Takeovers : A Financial Perspective on Mergers and Acquisitions and the Economy. In The Merger Boom; Proceedings of a Conference Held in October 1987 (pp. 102–143). doi:http://dx.doi.org/10.2139/ssrn.350422

Jensen, M. C. (1988). Takeovers: Their causes and consequences. The Journal of Economic Perspectives, 2(1), 21–48.

Jensen, M. C., & Ruback, R. S. (1983). The market for corporate control: The scientific evidence. Journal of Financial Economics, 11(1–4), 5–50. doi:10.1016/0304-405X(83)90004-1

Kieschnick, R. L. (1989). Management Buyouts of Public Coroprations: An Analysis of Prior Characteristics. In Y. Amihud, Leveraged management buyouts: causes and consequences (pp. 35-70). Homewood: Dow Jones-Irwin.

Kieschnick, R. L. (1998). Free cash flow and stockholder gains in going private transactions revisited. Journal of Business Finance & Accounting, 25(March 1998), 187–202. Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/1468-5957.00183/abstract

Krishnan, C. N. V., Ivanov, V. I., Masulis, R. W., & Singh, A. K. (2011). Venture Capital Reputation, Post-IPO Performance, and Corporate Governance. *Journal of Financial and Quantitative Analysis*. doi:10.1017/S0022109011000251

Lehn, K., & Poulsen, A. (1989). Free cash flow and stockholder gains in going private transactions. The Journal of Finance, 44(3), 771–787. doi:Article

Loh, L. (1992). Financial characteristics of leveraged buyouts. Journal of Business Research, 24(3), 241–252. doi:10.1016/0148-2963(92)90021-3

Louis, H., & Robinson, D. (2005). Do managers credibly use accruals to signal private information? Evidence from the pricing of discretionary accruals around stock splits. Journal of Accounting and Economics, 39, 361–380. doi:10.1016/j.jacceco.2004.07.004

Marris, R. (1964). The economic theory of managerial capitalism. The Economic Journal, 75, 403–404. doi:10.2307/2229434

Maupin, R. (1984). n Empirical Investigation of the Characteristics of Publicly-Quoted Corporations which Change to Closely-Held Ownership through Management Buyouts. Journal of Business Finance & Accounting, 11(4), 435–450. doi:10.1111/j.1468-5957.1984.tb00762.x

Maupin, R. (1987). Financial and stock market variables as predictors of management buyouts. Strategic Management Journal, 8(4), 319–327. doi:10.1002/smj.4250080403

Mehran, H., & Peristiani, S. (2010). Financial visibility and the decision to go private. Review of Financial Studies, 23(2), 519–547. doi:10.1093/rfs/hhp044

Miller, D., & Friesen, P. (1984). A longitudinal study of the corporate life cycle. Management science, 30(10), 1161–1183. doi:10.1287/mnsc.30.10.1161

Owen, S., & Yawson, A. (2010). Corporate life cycle and M&A activity. Journal of banking & finance, 34(2), 427–440.

Palepu, K. (1982). A probabilistic model of corporate acquisitions. Retrieved from http://dspace.mit.edu/handle/1721.1/15688

Palepu, K. G. (1986). Predicting takeover targets: A methodological and empirical analysis. Journal of Accounting and Economics, 8(1), 3–35. doi:10.1016/0165-4101(86)90008-X

Powell, R. G. (2004). Takeover Prediction Models and Portfolio Strategies : A Multinomial Approach, 8(1), 35–72.

Renneboog, L., Simons, T., & Wright, M. (2007). Why do public firms go private in the UK? The impact of private equity investors, incentive realignment and undervaluation. Journal of Corporate Finance, 13(4), 591–628. doi:10.1016/j.jcorpfin.2007.04.005

Ritter, J. A. Y. R., & Welch, I. V. O. (2002). A Review of IPO Activity , Pricing , and Allocations, LVII(4), 1795–1828.

Rumelt, R. P. (1982). Diversification strategy and profitability. Strategic Management Journal, 3(4), 359–369. doi:10.1002/smj.4250030407

Rydqvist, K., & Högholm, K. (1995). Going public in the 1980s: Evidence from Sweden. European Financial Management, 1(3), 287–315. doi:10.1111/j.1468-036X.1995.tb00021.x

Shim, J., & Okamuro, H. (2011). Does ownership matter in mergers? A comparative study of the causes and consequences of mergers by family and non-family firms. Journal of Banking & Finance, 35(1), 193–203. doi:10.1016/j.jbankfin.2010.07.027

Shleifer, A., & Vishny, R. W. (2003). Stock market driven acquisitions. Journal of Financial Economics, 70(3), 295–311. doi:10.1016/S0304-405X(03)00211-3

Singh, A. (1975). Take-overs, Economic Natural Selection, and the Theory of The Firm: Evidence from the Postwar. The Economic Journal, 85(339), 497–515.

Sorensen, D. E. (2000). Characteristics of merging firms. Journal of Economics and Business, 52(5), 423–433. doi:10.1016/S0148-6195(00)00028-X

Stevens, D. (1973). Financial characteristics of merged firms: A multivariate analysis. Journal of Financial and Quantitative Analysis, 8, 149–158.

Stimpert, J., & Duhaime, I. (1997). Seeing the big picture: The influence of industry, diversification, and business strategy on performance. Academy of Management Journal, 40(3), 560–583.

Stubbart, C. I., & Knight, M. B. (2006). The case of the disappearing firms: empirical evidence and implications. Journal of Organizational Behavior, 27(1), 79–100. doi:10.1002/job.361

Tobin, J. (1969). A general equilibrium approach to monetary theory. Journal of money, credit and banking, 1(1), 15–29. doi:10.2307/1991374

Trahan, E., & Shawky, H. (1992). Financial characteristics of acquiring firms: an industry specific approach. Review of Financial Economics. Retrieved from http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Financial+characteristics+of+acquiring+firms+An+industry+specific+approach#0

Tsagkanos, A. (2008). Identification of Greek takeover targets and coherent policy implications. Review of Development Economics, 12(1), 180–192.

Weir, C., Laing, D., & Wright, M. (n.d.). Incentive effects , monitoring mechanisms and the market for corporate control : an analysis of the factors affecting public to private transactions in the UK, 1–51.

Wi Saeng Kim, & Lyn, E. O. (1991). Going Private: Corporate Restructuring Under Information Asymmetry and Agency Problems. Journal of Business Finance & Accounting, 18(5), 637–648.

5 Conclusion

This dissertation analyzes a company's voluntary withdrawal from the public capital market by focusing on the factors and firm characteristics influencing the decision to go private. The analysis is composed twofold. Firstly, companies, which are a potential future delisting candidate, should be identified at the point when they are initially listed, and shortly before they leave the public capital market. Secondly, a dynamic approach assesses the possibility to disclose a potential delisting over the course of the public life by examining the stage of the respective company in the corporate lifecycle.

Initially, the first part sheds light on the definitions and motives of a voluntary going private. Furthermore, financial implications of going private transactions are presented. The development of research on the going private topic emerged from the examination of traditional motives to delist such as free cash flow theory, liquidity, undervaluation and ownership to visibility aspects, takeover and growth considerations as well as corporate governance. The empirical review of motives and firm characteristics shows that less visibility, low liquidity and a homogenous ownership structure increase the probability to go private. Nevertheless, the synopsis could only rely on minor historic evidence regarding lifecycle theory.

The second part shows the influence of perceptibility and corporate governance factors on the voluntary withdrawal from the stock market. In contrast, to previous studies, this research project broadened the set of explanatory factors from only fundamental characteristics of a company with criteria representing visibility and governance. In addition, earlier studies mainly concentrated on the period shortly before the delisting in order to qualify a company as a going private respectively inferred from the data at this point in time that a company qualifies as a typical going private candidate. So far, only few studies analyzed the whole public lifecycle and the point when firms get initially listed. Analyzing data at the point of public market entry and at the point of market exit, both examinations accomplished by a logistic regression, the results show that from a sample of 1'184 IPOs in the U.S. between 1990 and 2013 the voluntary step into privacy is influenced by perceptibility as well as corporate governance variables. Small companies, which are neglected by research analysts and which are

audited by a non-Big 4 auditor are less visible and hence are more likely to delist voluntarily. External views on corporate governance, financial soundness and accurate representation of the financial situation such as embodied in the opinion of an auditor are driving factors for the decision to go private. Firms with no unqualified opinion from their auditor decide more likely for a voluntary step into privacy. Corporate governance factors defined from within the firm such as the CFO SOX certification could not be confirmed as significant neither could be the amount of accruals as an accelerating force to the voluntary going private step. The empirical evidence on the factors holds for both the IPO and delisting point in time. For the lifecycle examination a Cox hazard regression was applied and robustness was completed by the Weibull, exponential, log-logistic and Gompertz model.

Investors should therefore consider fundamental characteristics such as firm size but also corporate governance variables when identifying future going private companies at the public capital market. Based on the overall results, companies differ in both variable groups – perception as well as corporate governance – already at the time of their IPO and during their whole public lifecycle from companies which stay public.

The third part analyses the role of corporate lifecycle within the going private phenomenon. As a proxy for corporate lifecycle retained earnings to total assets and total equity respectively are used. In this part not only the impact of corporate lifecycle on the going private probability is examined, but also the role of lifecycle stages in the going private decision process. The study uses a sample of 1’501 U.S. IPOs, which went public between 1985 and 2013. 201 of these IPOs went private during the analyzed period. Various logit models are used to analyze the data. The findings suggest that the lower the amount of retained earnings to total assets is, the higher is the probability of a voluntary delisting. Further, young firms measured by the amount of their retained earnings as a proxy for the lifecycle stage decide more likely to leave the public capital market as they are similar in their characteristics to target companies in an M&A transaction. Mature and old firms are more likely to stay public. In addition, robustness tests in which corporate governance variables are included into the sample, confirm these results. Internal corporate governance factors such as the CFO SOX certification and the amount of accruals influence the going private decision. The

overall findings suggest that lifecycle is a determinant of going private and that M&A theory is consistent with going private decisions.

To conclude, this dissertation supports the view that going private firms can be distinguished from firms, which stay public when analyzing their characteristics. The results suggest that not only company fundamentals, but also further variables like perceptibility and corporate governance characteristics have to be examined as their also significantly influence the going private probability. In order to identify possible going private firms the most precisely, not only the point in time shortly before the going private announcement should be taken into account, but also the point of the initial listing as well as the whole public lifecycle. Such a complete view allows investors to identify possible going private companies and to earn excess returns when the firms withdraw by a share buyback program. In addition, this dissertation extends the findings on going privates in lifecycle context by merging the M&A activity literature with the going private one. Corporate lifecycle influences significantly the going private decision. The stage of the corporate lifecycle also plays a significant role. As going private companies might be seen as typical targets, they decide for a voluntary step into privacy mostly when they are young. Mature and old firms most likely stay public.

The findings of this thesis did not only extend the current state of research, but also provided practical usage for capital market participants. Deeper knowledge about the going private phenomenon allows to understand better the decision making process of major stakeholders. Other capital market participants, in particular minor shareholders, can follow their strategic decisions when it should come to a going private and act in the right way. The insights about the going private characteristics during various stages of the public lifecycle from the first empirical paper of this thesis ease their investment decisions. Furthermore, the findings about the increased probability of a going private during the early lifecycle stage from the second empirical paper provide them with a further hint while taking investment decisions. On the US capital market, voluntary

going privates enjoy a high popularity among investors due to abnormal returns[50], which they can earn when it comes to the transaction. Various studies provided evidence of abnormal returns earned from past going private transactions. The more an investor knows about the characteristics of a going private, the more precise can be his decision. It allows him to invest money short term and to pick the potential going private candidates with a higher certainty. Still, risk is included that a transaction will not take place, but as long as the focus is on voluntary delistings, there should be only a minimal probability of losing due to e.g. bankruptcy. Earning positive abnormal returns during short-term holding periods thanks to recognition of future going private candidates shorty before they decide for a step into privacy, is a goal of many investors.

Still, the conducted research has its limitations. The period analyzed in this thesis is limited from 1985/1990 respectively to 2013. Even if this period is relatively long, there is still the limitation to only major stock exchanges of the US. The selection process of IPOs and thereof going privates is consistent in this thesis, but researchers showed various other possibilities how to identify going privates. This paper solely focuses on voluntary delistings and not to all withdrawals from the public capital market. Due to data availability, only a limited number of factors could be analyzed in this thesis. All highly relevant factors are included in the study, but still further factors might have been relevant for the characterization of going private companies. Further, factors analyzed in this study are only referring to the public life of a company, again due to no data availability from the private period. This applies not only for the period before the IPO, but also for the period after the going private. Each of the factors included in this research is measured in the best possible way based on the data availability. Still, criticism may arise on the measurement of e.g. accruals, which have been calculated with the NOA method, again due to data availability. For future research, when possible, more appropriate methods should be chosen. In case of accruals it is the cash flow method. The interpretation of results could be even more precise after collection of additional information. If data is available, then a split

[50] Findings from previous studies about abnormal returns are presented in table 2 and 3 of this thesis.

between various voluntary reasons should be done. Such a differentiation might lead to even more accurate results and thus to a more precise going private characterization. Furthermore, an additional differentiation can be done. Voluntary delistings can be clustered by the buyout type (e.g. private equity, management buyout, major stakeholder). There might be differences in characteristics among voluntary going privates when this differentiation is done. Due to all these reasons, results of this thesis need to be interpreted carefully, even if their statistical significance is given.

The limitations of this thesis show that further research is needed in order to characterize the going private phenomenon more accurate. Additional factors, which might describe typical private companies from the perceptibility and corporate governance field should be identified and analyzed. Moreover other factor groups, which might contribute to the characterization of going private companies and help to distinguish them from companies, which stay public, should be tested. Because the voluntary step into privacy cannot be explained with just one main reason, but only with a combination of more of them, moderator variables might be also included in future analysis. These variables affect and alter the effect of an independent variable on a dependent one. Future research should further focus on the complete public lifecycle and not just analyze the point shortly before the going private announcement. Various studies as well as this thesis showed that the time at the IPO as well as the whole public life already influence the going private decision. Therefore, for further research, it might be also worthwhile to include the lifecycle context when analyzing further topics concerning a firm's voluntary delisting. If private information from the time before the IPO and after the going private is available, it should be included into future studies. Such information would clearly increase the knowledge about the going private phenomenon. Researchers could further focus on the differentiation of various voluntary reasons. Currently, research has only been done either for all delistings or for the voluntary ones as a whole group. If additional information from the time before the going private about the particular voluntary reason is known, subgroups should be tested. This might lead to an even more precise going private characterization. Additionally, subgroups should be built according the buyout type. It might make a difference if a voluntary going private was initiated by a private equity company, a

single major stakeholder or by the management. An overall view on various factors in lifecycle context as well as the focus on subgroups should lead to an even better understanding of the going private phenomenon.

Curriculum Vitae

2009 – 2015	Doctoral program in Management at the University of St.Gallen, Switzerland
2009 – 2015	Research and teaching assistant of Prof. Dr. Andreas Grüner at the School of Finance at the University of St.Gallen, Switzerland
2010 - 2012	Teaching assistant for Finance during the Asia Term at the Singapore Management University, Singapore
2006 – 2009	Master of Arts in Banking and Finance at the University of St.Gallen, Switzerland
2008	Master semester abroad at the BI Norwegian School of Management, Oslo, Norway
2003 – 2006	Bachelor of Arts in Business Administration at the University of St.Gallen, Switzerland
2005	Bachelor semester abroad at the Singapore Management University, Singapore
1999 – 2003	Kantonsschule Sursee, Switzerland