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THE LOGIC BEHIND SECONDARY BUYOUTS

Empirical evidence from Finland

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ABSTRACT

The purpose of this thesis is to study the logic behind the secondary buyouts in Finland between 2002 and 2014 using the hand-collected sample of buyouts. The thesis investigates whether the secondary buyouts are motivated by efficiency gains or driven by market conditions or liquidity demand. In addition, the role of collusion in secondary buyouts is examined. Finally, this thesis studies how secondary buyout are priced.

Value creation is the basis of private equity industry. Previous academic literature shows private equity buyouts has positive impact on target companies' operating performance. In the context of value creation the logic of secondary buyout is still a puzzle. This thesis investigates with year-by-year examination the development of the operating performance after secondary buyouts. In order to find out the alternative motives for secondary buyouts, probit model is used to find out how equity and debt market condition and liquidity demand effect on the exit route. To examine the role of collusion in secondary buyouts cross-participation matrix is built to identify possible trade patterns. The pricing of secondary buyouts is studied with comparable industry transaction method against first-time buyouts using the Ordinary Least Squares regression.

Evidence of the study do not show efficiency gains for target companies in secondary buyouts. Results suggests that market condition is the main driver of secondary buyouts. When debt market is favorable, the probability of exiting through secondary buyout increases significantly. On the other hand, favorable equity market is found to increase the probability of other exit routes, IPO and the selling strategic buyer, although with less significant results. In addition, results also shows that secondary buyouts are associated with higher value compared to first-time buyouts. The higher value is significantly driven by favorable debt market condition and the size of the target company.

KEYWORDS: Secondary buyout, Private equity, SBO,

1. INTRODUCTION

1.1. Background

Secondary buyout is a private equity buyout where the seller and the buyer are both private equity funds. Secondary buyouts rapidly growing and controversial field in private equity industry. Wang (2012) illustrates the pace of the growth of secondary buyouts in recent years by arguing the percentage of secondary buyouts of all the buyouts has grown from 1980s leveraged buyout boom's 13 % to 2012 approximately 35 % only in five years. Also, the economic significance of secondary buyouts can be noticed on Kaplan and Strömberg (2009) study of the evolution of private equity markets, where they present that total enterprise value of the target companies in secondary buyouts has grown from the 1980s 2 % to 25 % in the second buyout boom in mid 2010s. In Europe, the secondary buyouts are more popular than ever at the end of the year 2015. (Bain & Company 2016) Also in Finland, the exits through secondary buyout of Finnish target companies is settled around 20 % in 21st century. (FVCA 2016)

The ultimate driver of the secondary buyouts has been a puzzle among the academic world. Since the 1980s leveraged buyout boom private equity buyouts are held effective for both investors' returns and the target company's operating performance through the value creation. However, the value creation in secondary buyouts has been challenging if not impossible in a profitable way because of all the actions made in the first-time buyout. Additionally, secondary buyouts are held very high-priced and therefore unprofitable to go through. Still, the secondary buyouts tend have stable part in private equity sector.

This thesis is attempting to provide an explanation of the logic behind the secondary buyouts. This is studied by investigating the potential motives for secondary buyouts of Finnish target companies. With unique hand-collected sample of the financial statements of the target companies of secondary buyouts this thesis is investigating whether the value creation measured from operating performance is the main driver of the secondary buyouts or is there other possible explanations.

The motives for secondary buyouts are not necessarily derived on the value creation potential of the target company. The circumstances of the private equity companies on the sell-side or buy-side might effect on the decisions of exits or investments. In addition, financial environment and economic situation are meaningful when considering the possible drivers of these decisions. Also, the growth of secondary buyout volume and the distinct illogic around the secondary buyouts has aroused suspicions that private equity companies are participating in these transactions for unethical reasons towards the investors and target companies by helping other private equity companies to exit. These aforementioned possible motives for secondary buyouts are discussed and later examined in this thesis to understand the logic behind the secondary buyouts. Also, this thesis investigates how the secondary buyouts are priced, because the possible drivers of the secondary buyouts might impact on the value of the buyout compared the traditional buyout.

Most of the literature considering the private equity sector is considering the leveraged buyouts and their influence on target companies' operating performance and returns on investors. Only recently there have been released papers regarding the secondary buyouts. Achleitner and Figge (2012), Wang (2012), Bonini (2012) and Jenkinson and Sousa (2012) study the operating performance of target companies after the secondary buyout. They also presents the characteristics of the secondary buyout target companies and study possible other motives for secondary buyouts.

This thesis contributes to these previous research of secondary buyouts by providing the Finnish sample of companies gone through secondary buyout. Previous studies focused on the large both large private equity markets and financial markets as a whole like U.S. and UK. This thesis attempts to provide a point of view in small market with active secondary buyouts sector, to unite the theories and empirical analysis within the law and order of private equity industries academic research. This thesis also contributes the buyout literature as a whole, since Finnish private equity markets are not studied. The unique hand-collected sample of buyout companies also provides the important evidence in the field of study where the information is in accordance with its name private.

1.2.Purpose of the study

The purpose of the study is thesis is to investigate logic behind the secondary buyouts. To be more precisely, thesis investigates whether the secondary buyouts are motivated by the value creation in buyouts which can be measured as increased operating performance of target company, or is there other explanation of the drivers of the secondary buyouts. Therefore, the thesis examines three possible motives for secondary buyouts and the role of these motives in the pricing of the transactions.

The first motive for secondary buyout discussed in this thesis is the efficiency gains, which is led by increased operating performance of the target company of secondary buyout. This motive is consistent with the motives for first-time buyouts. The first-time buyout targets have shown to increase their operating performance and efficiency after the buyout.

The second possible motive for secondary buyouts in this thesis is the liquidity-based market timing, which suggests that market condition is the driver that conduct the exit choices of buyout investments. The exit through the IPO might be more attractive in times of favorable equity markets. On the contrary, the alternative exit route like secondary buyout could be the first priority in favorable debt market. Additionally, the times hot debt market can lead to over investing and therefore increase the secondary buyouts. Also, the target company's seller's demand of liquidity is a possible explanation why exit through secondary buyout is an attractive option. The demand of liquidity is assumed to have effect in way that the duration of the investment period in target company increases the probability of exiting through secondary buyout because the private equity fund feel the pressure to remove the company in its portfolio in the case it has been held for longer than expected. Other liquidity matter is the nearby fundraising of private equity fund, which can be a motive for remove the older target company in portfolio quickly, as a signal of success of the investments and exit routes of earlier fund.

The third possible motive for secondary buyout this thesis consider is the collusion. The idea of this motive is that private equity companies help each other when in need of quick exiting

of the older portfolio companies. The light regulation in private equity industry and the limited amount of private equity companies operating around has aroused suspicions that secondary buyouts are private equity companies' collusion to remove bad assets in portfolio and therefore boost the future fundraising. Also, it is assumed that due to a buyer's motive only to help the seller in exit the prices of the secondary buyouts are artificially high. (Wang 2012.)

The last purpose of the study is to investigate how the secondary buyouts are priced. If secondary buyouts are driven other motive than the value creation potential, presumable the pricing is also influenced by the drivers. Secondary buyouts are suggested to be priced with higher value in comparison with first-time buyouts. Therefore, the logic behind the secondary buyouts is tightly connected with the pricing of the secondary buyouts.

1.3. Research hypotheses

The hypotheses of this thesis focus on the drivers of secondary buyouts. The logic behind the first-time buyouts is clear, the value creation potential is the basis of the private equity buyout industry. Previous literature of leveraged buyouts has shown the effect on buyouts through value creation. The value creation potential of secondary buyouts is uncertain and without comprehensive empirical evidence. This thesis is investigating the value creation potential and alternative explanation of popularity of secondary buyouts. Therefore, the first hypothesis of the thesis can be expressed as follows:

H_0: The secondary buyouts are driven by efficiency gains

H_1: The secondary buyouts are not driven by efficiency gains

The efficiency gains is the outcome of the value creation and is shown as increased operating performance of the target company. In the case null hypothesis is rejected, for examine the other possible motive for secondary buyouts the second hypothesis goes as follows:

H_2: The market condition is the driver of secondary buyouts

The second hypothesis is built around the equity market and debt market condition. These market condition are suggested to impact especially on the exit route of the first-time buyouts. To complete the investigation of the liquidity-based market timing theory, the third hypothesis is:

H_3: The seller's liquidity demand is motive for secondary buyout

The third hypothesis suggests that the holding period of the buyout company effects on the choice of exit route. That is, the longer the holding period, the bigger probability to exit through secondary buyouts.

Finally, the fourth hypothesis considering the possible motives for secondary buyouts is:

H_4: The secondary buyout are private equity companies' collusion

The fourth hypothesis therefore asks if the secondary buyouts are driven by the assist on exiting with other private equity company.

In the completing test of the thesis, the pricing of secondary buyouts is studied. Therefore, the final hypothesis goes as follows:

H_5: Pricing of the secondary buyouts do not differ from first time buyouts

Actually, the hypotheses do not rule out one another. There might be several possible motives for secondary buyouts, although if the efficiency gains is the main driver of the secondary buyouts, the examination of the latter hypotheses may not be rational.

1.4. Limitations of the study

The previous studies of private equity buyouts have suffered from the lack of data considering the buyout deals and the target companies' annual filings. This thesis provides hand-collected sample of consolidated financial statements of the companies prior and after the buyout to ensure the operating performance can be measured in reliable and the development is comparable. Due to that sorting the unconsolidated financial statements from the sample, the sample size is quite small. Also, the comprehensive buyout deal information is not announced for every deal, therefore the sample in the analysis of pricing the secondary buyouts the sample is even smaller. However, to ensure the sample to represent the whole market in chapter 4 the characteristics of final sample and the initial sample is compared. Also, in the chapter 5 the Heckman selection model is used to ensure there is no sample selection problem. However, the pricing of the secondary buyouts may suffer from the lack of announced deal information.

1.5. Structure of the thesis

The structure of the thesis is as follows. In second chapter is reviewed the private equity industry and its characteristics. Second chapter also introduces the secondary buyouts and links the research problem with the following theories in chapter three. These theories are focusing the potential motives for secondary buyouts. In addition, the chapter three presents the previous literature of value creation of leveraged buyouts and also literature of explanations and impacts of secondary buyouts. Fourth chapter presents the data used in the thesis and methodologies in analysis. Fifth chapter shows the result of analysis and discusses the results in the context of hypotheses. Finally, sixth chapter summarizes the main results and provides conclusion.

2. THEORETICAL FRAMEWORK

2.1. Private Equity

In private equity markets the private equity company provides capital to invest in private companies, or public companies which are consequently going private. Most of those capital provided to private companies is done by private equity fund. Private equity fund is a collective investment vehicle which raises fund mainly from large institutional investors for example banks, insurance companies or pension funds. This vehicle later makes investments to target companies.

Private equity investments can be separated in two categories, buyout capital and development capital. In buyout capital the private equity fund buys shares from existing shareholder whereas in development capital new shares are issued to private equity company. Also, venture capital which makes investments to early stage companies can be seen as a part of the private equity markets. For those three form of private equity capital this thesis focus on the buyout capital, more precisely buyouts where majority of company's shares is bought by private equity fund. In addition, private equity backed management buyout, where the management of the company acquires the company with finance from private equity can be seen very much alike than merely private equity company's acquisition. In most of the management buyout the private equity fund acquires the majority stake of shares and management are the minority owner. (Gilligan et al. 2010.)

It is essential to understand the nature of private equity fund. For investors of those funds the profit of the investment is made when exiting the target or portfolio company, not by dividends or interest payments. Private equity funds have usually agreed 10-year limited lifetime during that period private equity fund need to make profits by selling the investments. In this kind of investment the value creation and successful exit are the key factors. (Gilligan et al. 2010.)

In Finland, the private equity sector is relatively young. Like in the rest of the Europe the private equity industry growth strongly not until in the mid-1990s. Nowadays the private equity industry has established in Finland and the volume of the private equity investments has grown steadily excluding the financial crisis. Characteristic in Finnish private equity sector is its strong impact on early-stage target companies. However, also the buyout investments measured by both transactions number and value has grown significantly from mid-1990s. (FVCA).

2.2 Value Creation

The value creation and effects on target company's performance in leveraged buyouts have been studied quite comprehensively. In academic literature the leveraged buyout is considered to be a private equity buyout financed with high leverage. Behind most of the private equity buyouts is significant leverage, which the private equity fund must meet at the end of its life. This thesis does not separate the buyouts with higher or lower leverage, the basic nature and characteristics are the same.

The target companies are not alike and neither are the private equity companies. Therefore the investment strategies varies a lot and there is not one certain value creation solution for every investment. However, private equity companies tend to be aware of that and therefore the target companies' characteristics are many times alike. Private equity buyout funds favor mature and strong companies with stable cash flow and non-cyclical business. (Loos 2007.)

There are several sources in value creation in private equity buyouts. Academic researcher analyze these sources as in many layers. First layer is the drivers that effect directly on the operating efficiency or are connected with the optimal use of resources. These drivers are described as direct, intrinsic, and operational drivers. These drivers tend to increase the target company's free cash flow. The second layer are non-operational drivers which can be described as indirect, extrinsic, and value capturing drivers. These second layer drivers are usually not quantifiable, but these drivers lead to distension of the created value between the buyout and the exit. The academic studies have shown that approximately two third of the

value is created through the direct value drivers within the holding period. The rest one third of the value is created through the indirect drivers in the transaction of the buyout. (Loos 2007.)

As previously mentioned, direct value drivers has direct impact on the target company's free cash flow. The increment of free cash flow can be achieved by increased revenues, reduction of costs or more efficiency or with the financial engineering. (Loos 2007.)

2.3. Exit

As mentioned earlier, private equity fund's profit is made by selling the investment asset. Therefore, perhaps the most significant phase of the private equity investment is the exiting. Based on the exit the succeeding of the investment can be evaluated. In addition, the non-existence of exit is a strong judgment itself. Therefore the private equity buyouts are said to be structured with an exit in mind. Another key point about the importance of exit is the nature of private equity fund. If investors make profit mostly on exits, for private equity company remarkable profit channel is fundraising. The successful lifecycle and exit of portfolio companies of private equity fund is essential for succeeding the future fundraisings. The most important investors of private equity funds are the institutional investors who consider their future investments by the profits of the previous participation of private equity fund. In addition, if the exit non-existence, ergo the private equity fund has failed to find an exit route, the future fundraising is even more challenging. (Gilligan et al. 2010.)

Traditionally the exit choices of private equity investments have been trade sale to a strategic buyer and initial public offering (IPO). In early days of private equity sector the secondary buyout, the sale to another private equity fund was rare. In the 21st century has generalized and emerged another exit routes. In addition of secondary buyouts of portfolio companies the secondary buyout of the whole portfolio is common more often. A leveraged recapitalization and exit through bankruptcy or receiverships can be seen as other exit routes. Economically the most significant of these new wave exit routes is secondary buyout. (Gilligan et al. 2010.)

2.4 Secondary buyout

In early days of private equity sector the exit through secondary buyouts were rare. On the other hand the buy-side's willingness to make deals with another private equity company was low. During the development of the private equity sector and in a turbulence of the whole financial sector the volume of secondary buyouts have increase significantly. From 2001-2007 approximately third of the larger buyouts were secondary buyouts. The financial crisis at the end of that particular period shook the whole private equity sector strongly, and secondary buyout volume dropped. But that downturn was temporary and from 2014-2015 the secondary buyout volume has recovered almost fully and especially in Europe has grown significantly. (Bain & Company 2016; Gilligan et al 2010.)

The big proportion of private equity exits has inspire the academic world to investigate if there is hiding something other than traditional characteristics of leveraged buyouts. In other words, the interesting question is that if the leveraged buyout is effective way of value creation by itself, can another round add another layer of value? Thus, can operating performance be enhanced further by secondary buyout?

In Finland, the trend in secondary buyouts follows the European private equity markets. Hence, the secondary buyouts volume have grown remarkably and nowadays in Europe the secondary buyouts are relatively more common compared with US private equity markets.

Figure 1. Secondary buyouts as percentage of all the exits in Finnish private equity markets. Figure shows both Finnish private equity funds' exits and exits of Finnish target companies owned by foreign private equity fund. (FVCA 2016)

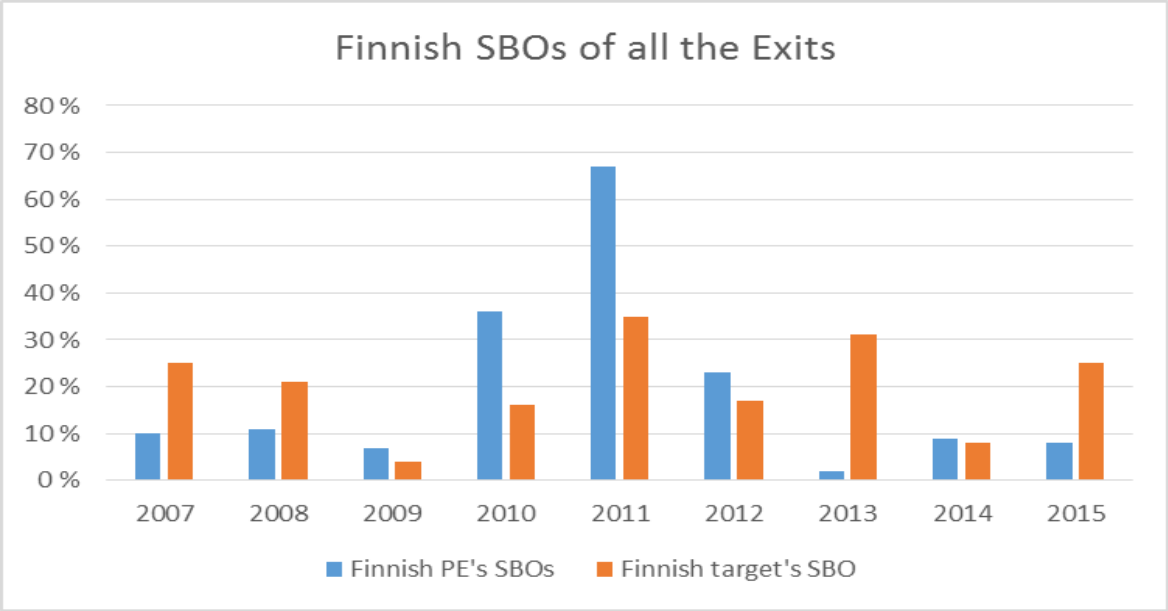

Figure 1 shows how secondary buyout percentage of all the private has developed since the financial crisis. Noticeable is the percentage in 2011 when Finnish private equity funds exit through secondary buyouts nearly 70 % of times. After 2011, the trend seems to be that significant proportion of Finnish target companies' exits happens through secondary buyouts. On the contrary, Finnish private equity funds tend to find other route of exits more often. According the statistics from Figure 1, investigation of specifically Finnish target companies is justifiable.

3. THEORIES OF MOTIVATIONS FOR SEDONDARY BUYOUTS

Basically secondary buyouts are alike first-time buyouts, and therefore the motivation behind the transaction is clear, ergo value creation and profit making. However, if the private equity sector creates value with leverage, better corporate governance, and cost reducing, what is left for a second round? There are of course footing for a strategic management and specified competence in private equity managers who could add another layer of value in company value. Nevertheless, the strong growth of secondary buyout volumes causes questions if there is something else. According to Wang (2012) possible reasons for secondary buyout are efficiency gains, liquidity-based market timing and collusion. This thesis is also built around those potential motivation for secondary buyouts. These motivations take account a point of view of both the bidder and the seller.

3.1. Efficiency gains

The value creation was covered in previous chapter. As a motivation for secondary buyout efficiency gains is quite explicit. Value creation in buyouts leads in profit when realizing the investment. The value created should therefore be seen on operating performance.

There are quite comprehensive literature considering the operating performance in leveraged buyouts. The direct value drivers is considered throughout in previous literature. Kaplan (1989) and Jensen (1989) states that target company's operating earnings increase significantly from the year prior the buyout to the third year after the buyout. They find that cash flow grows even more, and operating performance improves almost in every indicator. (Jensen 1989: Smith 1990). These improvement on operating performance are driven by high leverage, mitigation of agency problems and improved corporate governance, and operational engineering

According to Jensen (1989a) the main source of value creation in buyouts comes from the organizational changes. These changes lead to enhancement of the company's operating and the investment decisions. Baker and Wruck (1989), Kaplan (1989) and Smith (1990) also

show, that target companies with potential of high cash flows are more likely to go through buyout. Wide range of previous literature presents the results of positive influence of buyout to the target company's operating performance. Kaplan (1989) shows that management's buyouts are associated with the improvements of the target company operating performance. Smith (1990b) states that increased cash flow is correlated with the ownership structure and amount of debt originated from buyout. Lichtenberg and Siegel (1990) find that factors which have gone through the buyouts are more productive than factors which have not gone through buyout.

Other way value creation of buyouts can increase the cash flow is the more efficient use of the company's assets. Baker and Wruck (1989), Smith (1990) show that more efficient management of working capital after buyouts lead to significant increases of operating cash flow. In addition, Holthausen and Larcker (1996) presents that buyout companies also have remarkably lower working capital in comparison to non-buyout companies.

Target companies also are boosting their sales after the buyouts. Singh (1990) shows how the companies exited through IPO have significantly higher revenues in comparison with the peer group companies.

The one significant way of creating value is the financial engineering. By the financial engineering is meant that after the buyout, the private equity company guide the company in bank lending, IPOs, bond underwriting and subsequent stock sales. (Loos 2007) The target companies tend to have lower agency costs of debt and cost of financial distress. (Jensen 1989)

The indirect drivers of value creating also effect on the operating performance. Jensen (1989a) shows that buyouts create value by reducing the agency costs. Smith (1990) presents that the change of organizational structure allows the organization to take advantage of those reduction of agency costs and therefore increase the operating performance.

The use of debt also can be seen as value creation mechanism. Following agency cost theory of Jensen (1986;1989a;1989b) that large amount of debt decreases the free cash flow and therefore the management use the money wisely rather than use it inefficiently.

The value creation in buyouts can be seen on the better operating performance. Achrarya et al. (2012) shows that after buyout the target companies shows significant increase in earnings before interests, taxes, depreciations and amortizations (EBITDA). However, Guo et al. presents in a recent study that U.S. target companies of buyouts do not show significantly different operating performance in comparison with non-buyout companies.

Value creation in secondary buyouts has been studied narrowly. Jensen et al. (1989b) states that value created in secondary buyouts can only be achieved with new strategies or investments. Bonini (2012) study that secondary buyouts do not influence enhancements of target companies' operating performance after buyout. Jenkinson and Sousa (2011) study the difference in performance between companies exiting thorough IPO and secondary buyouts. The companies exiting through IPO were superior in their performance in comparison to secondary buyout targets. Wang (2012) find no evidence of efficiency gains in companies after secondary buyouts, although improvements in EBITDA, the profitability dropped and was weaker than companies after first-time buyouts. However, Achleitner and Figge (2014) find that the value creation potential in secondary buyout targets equals the first-time buyout targets, only the leverage were significantly higher with secondary buyout targets.

3.2. Liquidity-based market timing

Wang (2012) states that potential motivation for secondary buyout might not be entirely about value creation in target company. According the liquidity-based market timing the secondary buyout can be seen as a consequent of capital market conditions or the sell-side private equity company's incentives to realize the investment as quick as possible. (Wang 2012). Private equity companies make profit by creating value and realizing the value in exit. Traditionally these exit choices have been IPO and selling to strategic buyer. However, in reality the attractiveness of exit choices depends on capital market conditions. Hot public

equity markets tend to steer the financing choices and behavior. Baker and Wurgler (2002) investigates that even low-leverage companies prefer on issue equity rather than debt when their market value is high. Pagano et al. (1998) states study that companies willingness to IPOs is greater when the market-to-book values in same industry are high. In addition, Lerner (1994) find that privately-held venture-backed companies go public when equity market is peaking and rely on private equity when equity markets are in their lowest. Rhodes-Kropf et al. (2005) and Shleifer and Vishny (2003) find that market-to-book values and their misvaluation effect on merger activity. Lucas and McDonald (1990) strengthen the market timing theory by stating that company's equity issue is followed the downturn of equity markets.

These findings in public markets receive support also from private markets. Cao (2011) finds that duration of the leveraged buyout investment is significantly shorter when IPO conditions and high industry valuations are favorable, meaning that exit through IPO or selling to strategic buyer are more tempting. Giot and Schwienbacher (2007) study that stock market performance affect the possibility of venture backed companies' IPO exit; the longer the investment duration and lower the equity market performance, the weaker the IPO exit possibilities.

Liquidity-based market timing states that if the equity market is cold, the attractiveness to go public is low. The previous literature also highlights that the option to exit through selling to strategic buyer is unattractive when the equity market is cold. In these kind of market conditions the secondary buyout might be the most attractive exit route. In addition, when Axelson et al. (2009) notify that when the debt market is hot, ergo when companies prefer debt over equity issue, private equity companies tend to over-invest, thus increasing the secondary buyouts as well.

For private equity company the optimal investment strategy would be to hold the buyout target until the profit from the selling it is highest possible. But because of the nature of private equity fund, the investment period is limited and exit is inevitable, therefore the exit strategy sometimes is not optimal. Also, private equity company makes significant proportion of its profit from fundraisings, thus the attractiveness to exit quickly grows.

Private equity raises funds recurring from the same large institutional investors, therefore the new fundraising cannot be arrange until the old investments are realized. Or at least the fundraising would not be as successful. (Chung et al. 2009). According to Wang (2012), the private equity company's exit choices are also dependent on the liquidity need of the private equity company. This liquidity need can be result from the need of new fundraising or because portfolio company has been held very long. These scenarios add attractiveness of exit through non-optimal route. Wang (2012) find supporting evidence of liquidity-based market timing, secondary buyout is more likely to happen when equity market is cold or the debt market is hot. Also, they find that fundraising need and long holding period effect on probability to exit through secondary buyout. Bonini (2012) find that secondary buyout activity is influenced on the debt market condition and the reputation of the private equity companies.

3.3. Collusion

The third and final potential motivation for secondary buyout following Wang (2012) is the collusion. Because of the industry's characteristics, only a "few" player and almost nonexistent regulation, the collusion motive has lift its head concurrently with increasing secondary buyout volume. Existing collusion would be alarming to the markets and both investors and the target companies; to increase liquidity private equity companies trade their weak assets among each other and in addition do it with overprices to raise the profits excessively. Shortly, in collusion private equity companies help each other detriment to other market participants. The above-market price in buyout motivated from collusion decreases the profit of the private equity investors, and the increasing leverage due to high deal value eventually hurt the target company as well. (Wang 2012.)

The academic research of collusion motive is very narrow. That could be derived from the challenge to build a credible methodology not to mention significant results. Wang (2012) study the collusion and find no clear pattern that could prove the collusion. However, they emphasize that the finding certainly do not rule out the possible collusion, because the big private equity companies operate all over the world. On the contrary, Bonini (2010) finds

supporting evidence of collusion motive. According to their study the highly ranked private equity players deal more with each other and with higher deal values and multiples.

3.4. Deal prices of secondary buyouts

The pricing of secondary buyouts is also studied quite narrowly. Wang (2012) find that deals in secondary buyouts have higher deal value in comparison to first-time buyouts. They find that the main explanation of the higher value is the debt market condition. Also Achleitner and Figge (2014) find evidence that secondary buyouts are more expensive than first-time buyouts. They assume the market timing and private equity companies' negotiation skills are the explanations of the higher value.

4. DATA AND METHODOLOGY

The purpose of this thesis is to examine the drivers for secondary buyouts in Finland. To be more specific, the potential motives for secondary buyouts of Finnish target companies are investigated. These potential motives to be tested are efficiency gains, liquidity-based market timing, and collusion. In addition, the pricing of secondary buyouts in comparison to the first-time buyouts is tested. To execute these analyses, wide range of data is needed to gather in several sources. Description of the data and the methodology is provided in the following subchapters.

4.1. Data and sample statistics

The primary data used in this thesis is the deal information of secondary buyouts of Finnish target companies in 2002-2014. The data of deal information is from Mergermarket which provides quite comprehensive information of European mergers and acquisitions, and private equity deals. According to Mergermarket Deal Criteria the database includes information of deal value up from $ 5 million, which naturally excludes all the smallest deal from examination. However, the ideal target company for buyout is mature and strong, therefore the buyout deals usually are not among the smallest. Therefore, Mergermarket has a good coverage of deal information.

To construct the sample all the buyouts where the target company is Finnish are identified. Buyout is a deal where the buyer of the company is private equity fund. Later, the sample is restricted to completed deals where majority of the shares were acquired. The sample of Finnish target companies' buyout consist of 219 deals. Further, this sample is separated into firs-time buyouts and secondary buyouts. As defined earlier, secondary buyout is a deal where the buyer and the seller are both private equity funds. From the buyout sample 62 secondary buyout were identified.

The accounting data of the target companies to test the potential motives for secondary buyout and the pricing of secondary buyouts is hand-collected from Orbis. Because Orbis shows the accounting data only from last ten years, some of the prior buyout accounting data of the oldest deals is collected from Kauppalehti Tietopalvelut and Suomen Asiakastieto. Also, from these previous databases the possible parent companies of target companies is identified. Usually in private equity buyouts the shell company is created as parent of target company. In secondary buyouts there are obviously shell company both prior and after the buyout. Essential for the reliable evidence of the tested hypotheses is to find consolidated financial statements of target companies both prior and after buyout. All the target companies where the consolidated financial statements could not be identified were dropped out of the sample. In some cases, the target company is a business unit of larger company and the separate financial statements is being unable to identify. On the contrary, some off the buyouts are so called add-on buyout, where the target company is merged immediately to another target company. In those add-on cases also the separate financial statements non-exist. Thus, those business units and add-ons are dropped out of the sample. Altogether, out of 219 buyout 140 buyout with consolidated financial statements were identified. This final sample consists of 100 first-time buyout and 40 secondary buyout.

Table 1 shows the identified buyouts and the percentage of secondary buyouts per the year from Mergermarket. Notable is, that besides the years 2002, 2009, and 2010 the percentage of secondary buyouts stays quite high. That arouse a question that if the secondary buyouts follow some kind of cycle, ergo have relationship with macroeconomic variables, as liquidity-based market timing theory suggests.

Table 1 also illustrates the industry distribution of the target companies which are acquired through secondary buyout. In industry categorization is used the Fama-French 48 industry classification. The industry SIC codes are collected from Orbis cross checked with industry codes from Kauppalehti Tietopalvelu so that target company is in right category. The percentage of secondary buyouts in the initial sample compared to the final sample, as well as industry distribution compared between the samples show that the final sample should be representative to the secondary buyout market.

Table 1. Secondary buyout activities in Finland. Panel A shows sample of buyouts in Finland and percentage of secondary buyouts. Panel B illustrates the industry distribution of all the buyouts, secondary buyouts and the final sample of secondary buyouts categorized according to Fama-French 48 industry.

Panel A: Buyout activities during 2002-2014

Year	Number of transactions		Percentage
	All buyouts	Secondary buyouts	
2002	10	0	0 %
2003	15	3	20 %
2004	14	2	14 %
2005	14	5	36 %
2006	17	4	24 %
2007	30	16	53 %
2008	23	7	30 %
2009	8	0	0 %
2010	15	1	7 %
2011	25	8	32 %
2012	11	4	36 %
2013	10	6	60 %
2014	27	6	22 %
Total	219	62	28 %

Panel B: Industry distribution

Fama-French 48 industry classification	All buyouts		All SBOs		Final Sample SBOs	
	N	Percentage	N	Percentage	N	Percentage
Business Services	38	17,4 %	9	14,5 %	4	10,0 %
Construction materials	20	9,1 %	9	14,5 %	7	17,5 %
Wholesale	18	8,2 %	6	9,7 %	5	12,5 %
Machinery	15	6,8 %	4	6,5 %	3	7,5 %
Trasportation	15	6,8 %	2	3,2 %	2	5,0 %
Retail	11	5,0 %	4	6,5 %	0	0,0 %
Construction	9	4,1 %	1	1,6 %	1	2,5 %
Consumer goods	8	3,7 %	2	3,2 %	1	2,5 %
Healthcare	7	3,2 %	3	4,8 %	0	0,0 %
Chemicals	7	3,2 %	2	3,2 %	2	5,0 %
Personal services	7	3,2 %	2	3,2 %	2	5,0 %
Electronic equipment	6	2,7 %	1	1,6 %	0	0,0 %
Food products	5	2,3 %	3	4,8 %	3	7,5 %
Real estate	5	2,3 %	2	3,2 %	2	5,0 %
Business supplies	5	2,3 %	2	3,2 %	1	2,5 %
Steel works	5	2,3 %	1	1,6 %	1	2,5 %
Electrical equipment	4	1,8 %	2	3,2 %	1	2,5 %
Pharmaceutical products	3	1,4 %	1	1,6 %	1	2,5 %
Textiles	3	1,4 %	0	0,0 %	0	0,0 %
Printing and publishing	3	1,4 %	0	0,0 %	0	0,0 %
Communication	2	0,9 %	2	3,2 %	1	2,5 %
Apparel	2	0,9 %	2	3,2 %	2	5,0 %
Recreation	2	0,9 %	1	1,6 %	0	0,0 %
Fabricated products	2	0,9 %	1	1,6 %	1	2,5 %
Others	17	7,8 %	0	0,0 %	0	0,0 %
Total	219	100,0 %	62	100,0 %	40	100,0 %

The representativeness off the final sample is put in to test also in Table 2, where is shown the outcomes and holding period's duration of the buyout companies. By outcome it is meant the possible route of exit or on the contrary the lack of exit. The outcomes of the buyouts are hand-collected mainly from the websites' of the private equity companies. Then, the duration is calculated from the time between the sample buyout and the outcome. Again, the final sample is compared to the initial sample to ensure the representativeness off the final sample. As a result of the comparison, the outcomes are quite similar between the final sample and initial sample. The durations are quite alike between the final sample of secondary buyouts and the initial sample of secondary buyouts. The sample statistics in Table 1 and Table 2 shows that the final sample resembles the whole buyout market in Finland.

Table 2. Deal outcomes and duration. Panel A presents the outcomes of the sample of buyouts and the comparison of the outcomes of the whole sample and final sample of secondary buyouts. Panel B shows the same with the duration of the investment. Duration expressed in moths.

Outcome	Secondary buyouts				First-time buyouts	
	All		Final sample		All	
Panel A: Deal outcomes						
IPO	3	5 %	3	8 %	3	2 %
Sold to strategic buyer	11	18 %	7	18 %	30	19 %
Secondary buyout	7	11 %	5	13 %	26	17 %
Sold to management	1	2 %	1	3 %	14	9 %
Bancruptcy	1	2 %	1	3 %	7	4 %
No exit	39	63 %	23	58 %	77	49 %
Total	62	100 %	40	100 %	157	100 %
Panel B: Duration						
IPO	89		89		46	
Sold to strategic buyer	54		80		67	
Secondary buyout	38		40		48,5	
Sold to management	58		58		68,5	
Bancruptcy	40		40		72,5	
No exit	-		-		-	
Total	53		66		56	

Table 3 shows more detail information about the target companies in final sample of buyouts. Notable is, that secondary buyout target companies are significantly large measured by total assets, fixed assets sales. Also, targets of secondary buyouts create more operating cash flows when measured by EBITDA year prior the buyout. On the contrary, targets of first-time buyouts are slightly more profitable.

Table 3. Sample summary statistics. Table presents the observations, mean, median and standard deviation of the characteristics of the target companies year prior the buyout. Column *Diff (1-2)* shows the comparison between the secondary and first-time buyout. To test whether the medians are significantly different, Wilcoxon rank-sum tests are performed. *, **, and *** signify the statistical significance at the 10 %, 5%, and 1% levels, respectively.

	All				Secondary buyout (1)			First-time buyouts			Diff (1-2)
	N	Mean	Median	Std Dev.	N	Mean	Median	N	Mean	Median	
Size											
Total assets	140	66,96	14,68	160,43	40	138,45	44,38	100	38,40	11,13	33,25***
Fixed assets	140	37,46	4,28	99,11	40	84,63	19,26	100	18,60	2,96	16,30***
Sales	140	84,09	25,80	180,28	40	159,82	56,19	100	53,80	17,09	39,10***
Profits and profitability											
EBITDA	140	9,93	3,19	20,63	40	18,86	8,97	100	6,36	2,22	6,75***
EBITDA/sales	140	-0,01	0,12	1,24	40	0,14	0,12	100	-0,06	0,12	0,00
EBITDA/fixed assets	140	3,01	0,57	14,75	40	0,73	0,34	100	3,92	0,72	-0,38***
ROA	140	0,06	0,07	0,33	40	0,06	0,04	100	0,06	0,09	-0,06***

Other data used in this thesis is gathered from several sources. The industry IPO volume used in liquidity-based market timing hypothesis is from Nasdaq OMX Nordic's (2016) website, and the high yield debt issuance used in liquidity-based market timing hypothesis and on the pricing examination is from S&P Capital IQ database. Accounting information of the private companies used in industry-adjustments are from the same databases as the accounting information of the buyout target companies', from Orbis, Kauppalehti Tietopalvelu and Suomen Asiakastieto.

In the final phase of this thesis the pricing of secondary buyouts is tested. The deal information of non-buyout deals used in the secondary buyout pricing examination is also from Mergermarket. In all of the deals the deal value is not announced. Those deals are then dropped from the sample. Out of 140 buyouts with target company's consolidated financial statement there were 51 announced deal value. After dropping the target companies with negative earnings before interests, taxes, depreciations and amortizations (EBITDA) the final sample of buyout with announced deal value is 47. 16 of them are secondary buyouts and 31 first-time buyouts.

4.2. Methodology

In empirical analysis this thesis consider the three possible motives for secondary buyouts. These three motives are efficiency gains, liquidity-based market timing and collusion. The methodology of the empirical analysis follows the Wang (2012) study about secondary buyouts in UK, more precisely the target companies from UK.

4.2.1. Analysis of the efficiency gains motive

To test the efficiency gains the changes in target companies' operating performance is examined year-by-year within five-year event window [-2, +3]. These five years includes the two years prior the buyout and three years after the buyout. The event window is chosen to be long enough to discover the possible trends in changes of operating performance, on the other hand not too long to avoid the possible noise. As Wang (2012) mention, this simple year-by-year study is appropriate for detailed examination of operational changes in buyouts, when Ordinary Least Squares (OLS) is excessively sensitive to the large end points.

If the driver of the secondary buyouts is the efficiency gains, there should be found improvements in the target companies' operating performance after the buyout. To investigate the possible improvements the percentage changes in target companies' size, operating cash flow, and profitability. Only the median percentage changes in these operating performance indicators is used, mean percentage changes would overemphasize the possible very large or small changes because of the sample size. Industry-adjusted medians is also computed to control the industry-wide effect. The industry division is made according the Fama-French 48 industry. In addition, small and large companies are compared with each other to see if the economies of scale has an impact on operational performance.

The proxies used for size is sales and fixed assets. Following Wang (2012), total assets could be noisy proxy for size, because of possible write-ups of assets from mergers and acquisitions. The proxy used for operating cash flow is earnings before interests, taxes depreciations and amortization (EBITDA). Profitability is investigated through several key

ratios. These ratios are EBITDA/fixed assets, EBITDA/sales, earnings/sales, and return on assets (ROA). All of these proxies are calculated as a raw median percentage changes and industry-adjusted median percentage changes. The industry-adjusted percentage changes are calculated by subtracting from the target companies' raw value the median value of particular proxy of a sample (5) of private companies in the same industry from Finland for a given fiscal year.

There might be a problem about the industry-adjusted medians per se, thus the capital structure and debt loads are quite different between target companies and private companies. Because of that, the changes in secondary buyouts target companies' operating performance is compared to first-time buyouts target companies operating performance. Also, because some of the secondary or first-time buyout target companies are the only representative in their industry, the comparison is made by dropping those single individuals from the comparison.

4.2.2. Analysis of the liquidity-based market timing

The liquidity-based market timing as a motive for secondary buyouts is examined by analyzing how probable is the exit through the secondary buyout. This analysis is made by comparing the probability to the exits through IPO or selling to a strategic buyer, and taken the market conditions and seller's liquidity into account. Altogether 72 exits were identified from our sample of buyouts with consolidated financial statements.

Following Wang (2012) the regression model used in this thesis is the probit model. In probit model regression the dependent variable is either one zero. The probit model is a Binary Dependent Variable Model, in which the outcome of event whose probability is examined equals one and all the other possible outcomes equals zero. Therefore, in our examination the secondary buyouts equal one and the first-time buyouts equals zero.

The main explanatory variables are *Industry IPO volume* which is the logarithm of the industry IPO volume in Finland in exit year, and *High-yield market size* which is the

logarithm of the high-yield bond issuance in Europe in the year of exit. The *Industry IPO volume* is a proxy for equity market condition and the *High-yield market size* is a proxy for debt market condition. Based on the liquidity-based market timing theory the equity market condition should be negatively associated with the exit through secondary buyout. On the contrary, debt market should be positively associated with probability of exiting through secondary buyout. In addition, the control variables is added on regression to control firm characteristics. These variables are fixed assets three years after the buyout, EBITDA growth measured in the third year after the buyout, and average sales growth for all the companies in the same industry based on Fama-French 48 industry. Also, year dummy is added in regression, and variables are clustered by year.

In addition, another probit regression is run. In this another regression is added one main explanatory variable, *Log (holding period).* This variable is a logarithm of the holding period of the target company in months before the exit. The holding period is a proxy for the liquidity demand. Liquidity demand should be negatively associated with probability of exiting through secondary buyout. Other variables remain in the latter regression.

As Wang (2012) mention, there is obvious problem in the analysis; the exit route can only be identified if the exit has occurred. Thus, there is a potential sample selection problem in the analysis. This is corrected by following the Heckman (1979) two-stage selection model. At first stage the whole sample of buyouts is regressed with probit model to predict the companies which are more probable to exit. In this regression the explanatory variables are *Seller reputation* which is based on the PEI 300 listing (Private Equity International 2016) of the largest private equity companies, *Log (assets) before buyout* which is the total assets of the target company one year prior the buyout, and *Pre-buyout EBITDA/sales* which is the target company's profitability ratio one year before buyout. These are all proxies for the significance of the buyout economically. (Wang 2012) In the second stage of Heckman two-stage selection model the inverse Mill's ratio, which is the result from the first stage, is included in the probit model analysis of the sample of identified exits. From this regression the ρ-value is critical. It is the correlation between the error term for the selection and the treatment equation (first-stage of the Heckman model). If this ρ-value is not significantly different from zero and the results do not change meaningfully, the selection problem does not exist.

4.2.3. Analysis of the collusion

The analysis of third and final motive for secondary buyout is the examination of the possible trade patterns between private equity companies. As the collusion motive states, private equity companies are helping each other to exit. If that is the case, there should be some kind of trade pattern between the most active operators in private equity sector.

To find out these possible trade patterns, the secondary buyouts' sellers and buyers are put in to the cross-participation matrix. The cross-participation matrix should show the clear trade patterns. By trade pattern is meant the two-way deals between the private equity companies. Two-way deals is a pattern where two private equity companies have been both on sell-side and buy-side with each other. The collusion motive states that if the private equity company helps another private equity company to exit their bad asset, mutually the other will do the same eventually.

Following Wang (2012), if the two-way deals are found, the significance of the amount of two-way deals is then tested. The cross-participation matrix is compared to the bootstrapped sample of 100.000 cross-participation matrices based on the actual number of deals. The rationale behind the test is to examine if the random pattern based on bootstrapping is similar to the real-life patterns.

4.2.4. Pricing of secondary buyouts

As Wang (2012) stated, the three possible motives for secondary buyouts have implications on the pricing of secondary buyouts. Therefore, it is rationale to study how the secondary buyouts are priced. This study is made by using the first-time buyout pricing as an assessment for secondary buyouts.

Following Wang (2012) the first step is to define the measures to evaluate the pricing of buyouts. The first measure is *Log EV* which is the logarithm of the enterprise value. The

enterprise value is calculated by subtracting from deal value the assumed liabilities of the target company year prior the buyout and total debt excluding the cash year prior the buyout. The second measure is *EV Multiple*, which reflects the target company's fundamentals. *EV Multiple* is calculated as follows

(1) *EV Multiple = [Enterprise value / sales * Enterprise value / EBITDA] / 2*

where the *Enterprise value* is the earlier defined enterprise value calculated from deal value, and *sales* and *EBITDA* are from the target company's financial statement year prior the buyout. As Wang (2012) states, both Enterprise value / sales and Enterprise value / EBITDA are both very noisy measures, and therefore as fundamental measure is used the average of them. Using these measures the pricing of secondary buyouts can be evaluated assessed by first-time buyout.

To dig deeper the how secondary buyouts are priced, the previous measures is combined in comparable industry transaction method. In comparable industry transaction method for every target company in the sample are gathered portfolio of non-buyout mergers and acquisitions target companies from the same industry. In this part of the thesis the Fama-French 10 industry classification is used because not all of the private companies had but two digit SIC code. Also, the non-buyouts is gathered so that the transactions have occurred in three-year window preceding the buyout. From these portfolio companies the previously mentioned measures Log EV and EV Multiple are calculated and subtracted them from the buyout companies' measures. The percentage change of the Log EV and EV Multiple is now the new Log EV and EV Multiple to be used in regression. Kaplan and Ruback (1995) investigate the valuation methods and find the comparable industry transaction method more accurate than other comparable methods or "traditional" Ordinary Least Squares (OLS) regression.

To investigate how secondary buyouts are priced the regression is run where the dependent variables are the new Log EV in first regression and the new EV Multiple in second regression. Independent variables are *Secondary, Log (Assets), PE Reputation, High-yield*

market size and *Secondary * High yield market size*. *Secondary* is an indicator variable which equals zero if the buyout is first-time buyout and one if the buyout is secondary. It is the main explanatory variable which tells if secondary buyouts are associated with higher prices. The other independent variables in turn are assumed to be the drivers of that higher price.

Shortly, *Log (Assets)* is a logarithm of the total assets in year prior the buyout. *PE Reputation* is another indicator variable which equals one if the acquirer is on the PEI 300 list (Private Equity International 2016), ergo is one of the 300 largest private equity company. Otherwise it equals zero. *High-yield market size* is the high-yield market issuance in Europe in the buyout year. *Secondary * High-yield market size* is an interaction term of the previous variables.

5. EMPIRICAL ANALYSIS

The results of the empirical research are presented in the following subchapters. First three subchapters consider the potential motives for secondary buyouts, and the lastly the fourth subchapter consider the pricing of secondary buyouts.

5.1. Efficiency gains motive

Efficiency gains theory suggest that secondary buyouts are driven by the enhancements of operating performance likewise the buyouts in the first place. The efficiency gain hypothesis is tested with year-by-year examination within five-year event window. At the first stage the targets of secondary buyouts alone are under examination. Also, the comparison between small and large targets of secondary buyouts are tested. Later, the secondary buyouts and first-time buyouts are compared. In all of these phases the percentage median changes of operating performance are also adjusted by industry.

Table 4 shows the results from first two stages. Panel A illustrates the development in operating performance of the target companies. As a result, companies tend to increase their sales and operating cash flow prior the buyout. The percentage median growth of EBITDA year prior buyout is 38, 3 % and the sales 14, 5 %. What is interesting, that the growth has become in detriment of profitability.

The development after the buyout shows that the size of the companies grows significantly. The fixed assets grow at the rate 294,3 %, 274,2 %, and 248,1 % at one, two, and three year after the buyout, respectively. In the same time lapse the sales growth is 19,2 %, 27,6 %, and 41,0 %. The operating cash flow proxy EBITDA instead do not show any significant development. Therefore, the profitability of companies goes downward.

The enormous negative percentage median changes in profitability can be explain with as enormous growth in size. Therefore the results are inconsistent with the prior literature who

shows that buyouts have positive impact on company's efficiency. In addition the industry-adjusted key figures shows even worse trend.

Table 4. The effect of secondary buyouts on the target firms' operating performance**.** Panel A illustrates the raw and industry-adjusted median percentage changes in operating performance from year i to j. Panel B shows the percentage change for small and large target companies. Two-tailed Wilcoxon signed rank sum tests are performed to test if the percentage changes are significantly different from zero. *, **, and *** signify statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: All secondary -buyouts targets								
	N=40							
	-2 to -1		-1 to +1		-1 to +2		-1 to +3	
A. Size measures								
Fixed assets								
Median change	-3,9 %	***	294,3 %	***	274,2 %	*	248,1 %	*
Industry adjusted	-27,9 %	**	105,8 %	***	125,8 %	***	84,8 %	***
Sales								
Median change	14,5 %	***	19,2 %	***	27,6 %	***	41,0 %	***
Industry adjusted	19,2 %	***	12,1 %	***	18,2 %	***	10,5 %	***
B.1 Operating cash-flow								
EBITDA								
Median change	38,3 %	***	1,3 %	**	-8,1 %	**	-1,6 %	*
Industry adjusted	15,4 %	***	1,9 %	*	-38,0 %	*	-35,0 %	*
EBITDA/sales								
Median change	16,4 %	***	-21,2 %	***	-23,9 %	***	-35,0 %	***
Industry adjusted	27,4 %	*	-19,8 %	***	-46,7 %	***	-37,4 %	***
EBITDA/Fixed assets								
Median change	30,3 %	***	-65,7 %	**	-78,3 %	**	-69,9 %	***
Industry adjusted	8,6 %		-49,2 %	*	-54,5 %	***	-55,4 %	***
B.2 Profitability ratios								
Earnings/sales								
Median change	-25,5 %	**	-199,8 %	***	-217,0 %	***	-182,1 %	**
Industry adjusted	-55,9 %	**	-251,0 %	***	-277,3 %	***	-186,4 %	**
ROA								
Median change	-8,8 %	**	-153,9 %	***	-158,9 %	***	-149,0 %	***
Industry adjusted	-20,3 %	**	-202,2 %	***	-234,7 %	***	-207,0 %	***

Panel B shows the results of the same examination when companies are divided into small and large. Small companies tend to grow significantly faster than large companies. However, both large and small companies seem to have equally negative development of profitability.

Panel B: Large vs. small firms

	Small (20) from year i to year j						Large (20) from year i to year j					
	-1 to +1		-1 to +2		-1 to +3		-1 to +1		-1 to +2		-1 to +3	
A. Size measures												
Fixed assets	At year -1 4,3						At year -1 90,8					
Median change	* 448,3 %		*** 465,6 %		*** 443,8 %		*** 72,8 %		*** 66,0 %		*** 86,7 %	***
Industry adjusted	*** 229,2 %		*** 347,7 %		*** 386,5 %		*** 38,1 %		* 30,1 %		22,4 %	
Sales	At year -1 33,5						At year -1 167,0					
Median change	*** 32,1 %		*** 48,7 %		*** 62,9 %		** 14,4 %		** 17,7 %		*** 16,4 %	**
Industry adjusted	*** 37,3 %		*** 55,2 %		*** 41,2 %		** 3,4 %		0,0 %		0,0 %	
B.1 Operating cash-flow												
EBITDA	At year -1 3,7						At year -1 21,9					
Median change	8,3 %		-36,1 %		** 7,7 %		-2,3 %		-2,0 %		-8,2 %	
Industry adjusted	** 33,8 %		* 59,5 %		** 35,0 %		* -14,4 %		-16,4 %		-13,3 %	
EBITDA/sales	At year -1 0,11						At year -1 0,12					
Median change	-19,0 %		-40,2 %		* -35,1 %		* -22,5 %		-15,3 %		-30,2 %	
Industry adjusted	** -102,1 %		** -115,0 %		** -107,1 %		** -96,5 %		*** -93,4 %		*** -98,7 %	***
EBITDA/Fixed	At year -1 0,57						At year -1 0,21					
Median change	*** -76,7 %		*** -83,9 %		*** -77,9 %		*** -53,2 %		** -36,4 %		-53,7 %	*
Industry adjusted	*** -136,5 %		*** -152,0 %		*** -157,3 %		*** -151,8 %		*** -148,8 %		*** -149,5 %	**
B.2 Profitability ratios												
Earnings/sales	At year -1 0,03						At year -1 0,02					
Median change	-199,9 %		*** -271,6 %		** -182,1 %		** -197,0 %		** -202,8 %		** -106,2 %	*
Industry adjusted	-222,0 %		*** -316,1 %		** -244,8 %		*** -249,3 %		*** -228,6 %		*** -80,2 %	
ROA	At year -1 0,06						At year -1 0,03					
Median change	-140,5 %		*** -187,4 %		*** -168,0 %		*** -148,0 %		** -141,8 %		** -103,5 %	*
Industry adjusted	-204,1 %		*** -313,0 %		*** -251,8 %		*** -187,0 %		** -175,1 %		** -145,2 %	**

Table 5 shows the results of the third and final phase of testing the efficiency gains motive. The percentage differences between secondary buyouts and first-time buyouts is calculated subtracting the first-time buyout medians from secondary buyout median. Therefore the positive number means that the change has been stronger among the targets of secondary buyouts. Notable is, that after secondary buyout the size change measured by fixed assets are considerably higher. Also industry-adjusted percentage changes in sales are significantly higher after secondary buyouts.

The same trend is with operating cash flows measured by EBITDA. The percentage industry-adjusted median changes of EBITDA is remarkably high in years one and three after the secondary buyout in comparison to first-time buyouts.

The profitability ratios from the Table 5 shows that the trend is clear when compared the secondary buyouts and first-time buyouts.

Table 5. Differences in operating performance changes between secondary and first-time buyouts**.** Table illustrates the differences in median changes in operating performance for secondary and first-time buyouts. Secondary vs first-time same industry means that only industries with both SBO and FTBO occur. Wilcoxon rank-sum test is performed for the median difference between secondary and first-time buyouts. *, **, and ***signify statistical significance at the 10%, 5% and 1% levels, respectively

	Secondary vs. first-time from year i to year j						Secondary vs. first-time same industry from year i to j					
	-1 to +1		-1 to +2		-1 to +3		-1 to +1		-1 to +2		-1 to +3	
A. Size measures												
Fixed assets												
Median change	109,7 %	***	64,3 %	***	35,5 %	**	111,9 %	***	60,1 %	***	17,8 %	
Industry adjusted change	38,8 %		63,0 %	**	44,0 %	**	86,0 %	***	94,0 %	***	66,9 %	**
Sales												
Median change	-2,4 %	*	-2,8 %	*	7,1 %		-4,7 %		0,6 %		7,8 %	
Industry adjusted change	23,8 %	*	6,4 %		20,8 %	*	39,1 %	**	22,4 %	*	39,03 %	**
B.1 Operating cash-flow												
EBITDA												
Median change	-0,8 %	**	0,7 %		-18,5 %	**	2,1 %		1,7 %		-13,9 %	
Industry adjusted change	-2,8 %	*	4,3 %		-21,7 %	**	4,5 %	***	3,5 %	***	-25,5 %	***
EBITDA/sales												
Median change	4,0 %		-6,1 %		-11,2 %		1,5 %		-5,6 %		-11,7 %	
Industry adjusted change	3,6 %		1,1 %		-7,6 %		4,1 %	*	-8,6 %		-16,4 %	
EBITDA/Fixed assets												
Median change	-5,8 %		1,3 %		-14,4 %		-6,9 %		1,3 %		-14,6 %	
Industry adjusted change	4,5 %	***	5,1 %	***	-8,2 %	***	4,7 %	***	6,4 %	***	-8,4 %	***
B.2 Profitability ratios												
Earnings/sales												
Median change	104,2 %	***	120,3 %	***	65,9 %	***	101,7 %	***	120,2 %	***	73,9 %	***
Industry adjusted change	115,8 %	***	148,4 %	***	35,6 %	***	111,1 %	***	148,4 %	***	69,6 %	***
R Median change	55,7 %	***	63,5 %	***	35,6 %	***	54,9 %	***	62,9 %	***	40,3 %	*
Industry adjusted change	76,3 %	***	105,1 %	***	62,0 %	***	68,8 %	***	105,1 %	***	78,5 %	***
Number of secondary buyout targets	40						36					
Number of first-time buyout targets	157						75					

Although the EBITDA grows stronger after secondary buyouts, the target companies cannot produce enough earnings to cover the expenses of the growth in size.

In the light of the previous results, the findings are inconsistent with the previous literature considering the operating performance enhancement after buyouts. The operating performance do not seem to develop in a positive way. Actually, the efficiency crashes after the buyout. That suggests that the large debt load and the expenses of it are eating the profit. The comparison between the first-time buyouts and secondary buyouts shows that the development of the operating performance after secondary buyout is mixed. The operating cash flows tends to develop more positive way after secondary buyouts, but still the efficiency develops the reverse way. Shortly, from this sample the efficiency gains do not seem to be the motive for secondary buyout.

5.2. Liquidity-based market timing motive

In examination of liquidity-based market timing the probit model is used to discover the probability of companies exiting through secondary buyouts. The other possible exit routes in this examination are IPO and sales to a strategic buyer. Explanatory variables in the analysis are the market conditions and the demand of seller's liquidity.

Results in Table 6 show that the equity market condition is negatively associated with the exit through secondary buyouts. That says that when equity markets are hot, companies prefer the exit through the IPO or strategic buyer. Without controlling the debt conditions, the increase of IPO volume by one unit lowers the probability to exit through secondary buyouts almost five per cent. Also, debt market condition shows the reverse results when the equity market condition is not controlled, as expected.

When both equity market condition and debt market condition are added in regression, the results are statistically more significant. One unit increase of IPO volume decrease the probability to exit through secondary buyout 12,6 %. On the contrary, one per cent increase in high-yield debt issuance grows the probability to exit through secondary buyouts 155%.

Table 6 also shows the results from Heckman selection model. The ρ-value of Heckman selection model stays close to zero, and the results does not change meaningfully. Thus, the sample selection problem seem to non-exists.

The effect of holding period on firms' exit decision is also investigated. Table 7 shows the result of the probit model. Findings are that duration seems to impact the probability of exiting through secondary buyout when controlling the market condition and firm characteristics also. However, the result is not statistically significant. Thus, the seller's demand of liquidity's impact on exit choice is not verified.

Again, Table 6 shows the results of Heckman selection model. There do not seem to be a sample selection problem, ρ-value is close to zero and the results do not change meaningfully.

Table 6. The effect of market conditions on firms' exit choices. Table shows the results from probit regression model of company's exit choices. Also, it illustrates Heckman's selection model. All regressions include year dummies. Standard errrors clustered by industry are in parentheses. *, **, and *** signify statistical significance at the 10%, 5%, and 1% levels, respectively.

	Probit			Heckman selection	
	(1)	(2)	(3)	(Exiting)	(Secondary exit)
Industry IPO volume	-0,047*		-0,126**		-0,052
	(0,0736)		(0,0423)		(0,5412)
High yield market size		1,17**	1,553**		0,973
		(0,0447)	(0,0153)		(0,0133)
Log(assets) after buyout	0,937***	0,969554***	0,969***		0,209
	(0,0014)	(0,0010)	(0,0010)		(0,1611)
EBITDA growth		-0,014	-0,001		0,084
	(0,9638)	(0,9043)	(0,9965)		(0,3969)
Industry sales growth	-0,003**	-0,002**	-0,003*		-0,003*
	(0,0249)	(0,0273)	(0,0169)		(0,0662)
Seller reputation				0,526**	
				(0,0312)	
Log(assets) before buyout				0,538**	
				(0,046)	
Pre-buyout EBITDA/sales				0,746	
				(0,7324)	
ρ				0,052*	
				(0,0721)	
Year dummies	Yes	Yes	Yes	Yes	
Cluster by industry	Yes	Yes	Yes	Yes	
Number of observations		72	72	140	
McFadden R-squared		0,276338	0,274955		

The evidence of liquidity-based market timing as a motive for secondary buyout shows support the theories and previous studies, that exit choice has strong relationship with equity market condition and debt market condition. However, the evidence of the exit choice because of the liquidity demand is yet not verified.

Table 7. The effect of holding period on firms' exit decision. Table illustrates the effect of holding period duration on exit through secondary buyout. Again, also Heckman selection model presented. All regressions include year dummies. Standard errors clustered by industry are in parentheses. *, **, and *** signify statistical significance at the 10%, 5%, and 1% levels, respectively.

	Probit	Heckman selection	
	(1)	(Exiting)	(Secondary exit)
Log (holding period)	1,0578		0,587
	(0,0484)		(0,6479)
Industry IPO volume	-0,1485		-0,1227
	(0,3760)		(0,4423)
High yield market size	2,2327		1,3419**
	(0,3120)		(0,0262)
Log (assets) after buyout	0,9909***		0,9721***
	(0,0001)		(0,0017)
EBITDA growth	-0,0072		-0,004
	(0,9536)		(0,9710)
Industry sales growth	-0,0028		-0,0030*
	(0,2041)		(0,01816)
Seller reputation		0,2709*	
		(0,0584)	
Log (assets) before buyout		0,6301**	
		(0,0149)	
Pre-buyout EBITDA/sales		0,3889	
		(0,8533)	
ρ		0,007611	
Year dummies	Yes	Yes	
Cluster by industry	Yes	Yes	
Number of observations		140	
Pseudo R^2		0,249857	

5.3. Collusion motive

The third and final potential motive for secondary buyout is the collusion motive. That suggests that private equity companies help each other to exit their bad assets. The methodology of examine the collusion motive requires to identify the two-way deals between private equity companies. For this identification the cross-participation matrix is constructed to find possible trade patterns.

The evidence from Finnish secondary buyout markets are quite unambiguous. There were 62 secondary buyouts in 2002-2014, and zero two-way deals. By two-way deal is meant the trade pattern where two private equity companies both acquire and sell the target with each other. Table 8 illustrates the part of cross-participation matrix where is shown the transactions between the 12 most active buyers and sellers.

Because of the lack of two-way deals, the bootstrapped sample of trade patterns is left undone. The collusion motive do not seem to get evidence at least not among the transactions of Finnish target companies. Thus, the result is significant only concerning the trading in Finland.

Table 8. Transactions by the 12 most active buyers and sellers. Buyers is shown in x-axis and sellers in y-axis. A dash " – " means no transaction between the two private equity company, zero means only one-way deals between the two company.

	Capman	Industri Kapital	Midinvest	AAC Capital	Profita	EQT	MB Funds	Vaaka	Sponsor Capital	Helmet	Primaca	3i
Capman		2	-	-	-	-	-	-	0	-	2	1
Industri Kapital	0		-	-	-	-	-	-	-	-	-	-
Midinvest	-	-		-	-	-	-	1	1	-	-	-
AAC Capital	-	-	-		0	-	-	-	0	-	-	0
Profita	-	-	-	2		1	1	-	-	-	-	-
EQT	-	-	-	-	0		-	0	0	-	-	-
MB Funds	-	-	-	-	0	-		0	-	-	-	-
Vaaka	-	-	0	-	-	1	1		-	-	-	-
Sponsor Capital	1	-	0	1	-	1	-	-		-	-	-
Helmet	-	-	-	-	-	-	-	-	-		2	-
Primaca	0	-	-	-	-	-	-	-	-	0		1
3i	´0	-	-	1	-	-	-	-	-	-	0	

5.4. Determinants of the pricing of secondary buyouts

The potential motives for secondary buyouts should effect also in the pricing of secondary buyouts. From the three possible motives for secondary buyouts the liquidity-based market timing get support. Therefore, to test the pricing of secondary buyouts against first-time buyouts, the comparable industry transaction method is used.

Table 9 shows the results of the examination of how the secondary buyouts are priced. Panel A shows the differences in measures of deal pricing between first-time buyouts and secondary buyouts. These measures are logarithm of enterprise value and EV multiple. Finding is that as expected, the secondary buyouts are priced with higher value. The differences are significant.

Panel B shows the OLS regression of the deal pricing. Comparable industry transaction method is used to construct the new dependent variables, which represents the discount or premium of the value of secondary buyout deal. Result of the regression shows that the enterprise value is 14,6 % higher in secondary buyouts. Also, the EV Multiple is remarkably higher in secondary buyouts. However, the result in EV Multiple is significant only at the 10 % level.

The other drivers affecting on the pricing of secondary buyouts the debt market condition show some significant results. The increase of one per cent in high-yield debt issuance increases the enterprise value 10,8 %. That finding is consistent with the liquidity-based market timing theory, and previous study of Axelson et al. (2013) and Wang (2012). They find that hot debt market can lead to higher deal pricing.

The results of other drivers affecting on the deal pricing leave insignificant. The reputation of the buyer is negatively associated with deal pricing, which is inconsistent with the studies of Wang (2012) and Demiroglu and James (2010). According to them, the better reputation means better channels of financing and therefore higher deal prices.

Table 9. Determinants of deal pricing. The table shows how secondary buyouts are priced against to first-time buyouts. Panel A shows the comparison between secondary and first-time buyout. Panel B shows the results from regression adjusted with comparable industry transaction method. Comparable acquisitions within three-year window preceding the buyout. Standard errors in parentheses. *, **, and *** signify statistical significance at the 10 %, 5%, and 1% levels, respectively.

Panel A: Summary statistics

	All				Secondary buyouts (1)			First-time buyouts (2)			Diff. (1-2)
	N	Mean	Median	Std dev	N	Mean	Median	N	Mean	Median	
Log EV	47	4,72	4,78	0,69	16	5,12	5,28	31	4,51	4,30	0,98
EV Multiple	47	14,4	10,09	15,23	16	15,13	10,24	31	14,02	9,58	0,66

	EV Difference		EV Multiple difference	
	(1)	(2)	(1)	(2)
Panel B: Three-year window preceding deal announcement				
Secondary	0,1456***	0,301*	1,2977*	0,292
	(0,0045)	(0,0504)	(0,0501)	(0,9586)
Log (assets)		0,143***		0,191*
		(0,0006)		(0,0896)
PE Buyer reputation		-0,042		-0,678
		(0,5518)		(0,384)
High-yield market size		0,1087**		0,421*
		(0,01469)		(0,0867)
Secondary * high-yield market size		-0,186*		-0,309
		(0,0841)		(0,9622)
Intescept	-1,167	-0,9928	-1,357	-1,284
Cluster by year	Yes	Yes	Yes	Yes
Number of observations	47	47	47	47
Adjusted R^2	0,11	0,6542	0,0109	0,2788

6. CONCLUSIONS

In 21st century, the secondary buyouts have grown a stable and economically significant field of private equity industry. At the same time the questions have aroused. To whom are these secondary buyouts beneficial?

This thesis investigates the logic behind the secondary buyouts. Because the value creation potential is uncertain because of the earlier buyout, the other possible explanations of the growing field of private equity industry is examined. The thesis focuses on secondary buyouts of Finnish target companied between 2002 and 2014. With a unique hand-collected sample of 40 secondary buyouts and 100 first-time buyouts the possible motivation for secondary buyouts is tested.

The previous studies have shown the value creation of buyouts to effect on target companies' operating performance. The improvement of operating performance can be achieved through increased revenues, cost reducing or efficiency. Therefore the value creation potential in secondary buyouts is controversial.

This thesis find no evidence of the efficiency gains of secondary buyouts. As a result in year-by-year examination, there were no significant improvements of operating cash flow. In addition, the profitability and therefore the efficiency has dropped significantly. The main reason for dropped efficiency is the enormous growth in size measured with fixed assets. Also sales has grown, although not as significantly. The results are consistent with the previous literature of Wang (2012) and Bonini (2012).

To test the market condition's impact on probability to exit through secondary buyouts, in this thesis the liquidity-based market timing hypothesis is tested. Results show that the debt market conditions are the main driver of the probability of exit through secondary buyouts. When debt markets are favorable, the probability to exit through secondary buyouts grows.

On the contrary, the equity markets is found to have a positive relationship with the probability in secondary buyouts. This is consistent with the previous studies of Wang (2012) and Bonini (2011). In addition, the size of the target company is positively associated with the probability of secondary buyouts. Study finds no significant evidence on the holding period's effect on the probability of exit through the secondary buyouts.

The thesis also test the collusion motive for secondary buyouts. This motive suggests that the secondary buyouts are driven by the private equity companies which are helping each other to exit the bad assets. Study find no evidence of the collusion in Finland. Secondary buyouts of Finnish target companies between 2002 and 2014 does not exist any two-way deal. The lack of two-way deals means that there is not an identifiable trading patterns. Therefore the former investigations are rejected. The collusion motive is consistent with the previous studies, although the significance of the national study of collusion might be irrational in today's ever globalize world.

Finally, the thesis studies the pricing of the secondary buyouts. With the use of comparable industry transaction method the secondary buyouts pricing is investigated against first-time buy-outs. The thesis finds that secondary buyout deals are priced significantly higher value. Based on the analysis the reason behind the higher value is the size and the debt market conditions. Target companies in secondary buyouts are considerably larger, and therefore obviously more expensive. The result of debt market conditions' impact on the pricing of the secondary buyout is consistent with the previous literature and with the liquidity-based market timing hypothesis.

The logic behind the secondary buyouts is different in comparison with the first-time buyouts. The value creation potential which is realized in first-time buyouts and can be seen on the target companies' operating performance after buyout is not the main driver of the secondary buyouts. The primary mover seem to be the market conditions. In Finland the debt market conditions are the main driver of secondary buyouts. Suggestion is that with more active stock market also the equity market's impact would be more significant. The reason behind the deals with high price tag in secondary buyouts also is explained in the large size

of the targets of secondary buyouts, and the debt market condition as liquidity-base market timing theory suggested.

To sum up, the secondary buyouts are the product of the era. There do not seem to include any mystique in the secondary buyouts, rather they are the inevitable private equity companies is needed to be done to survive. What is not solved, is the main logic of the secondary buyouts from the point of view of the buyer. That is left for the future research.

REFERENCES

Acharya,V., Hahn, M., Jehoe, C., (2010). Corporate governance and value creation: evidence from private equity. *Working Paper.*

Achleitner, A., Figge, C., (2014). Private equity lemons? Evidence on Value Creation in Secondary Buyouts. *European Financial Management,* Vol. 20, Issue 2, 406-433.

Axelson, U., Strömberg, P., Weisbach, M., (2009). Why are buyouts levered: the financial structure of private equity funds. *The Journal of Finance,* Vol. 64, issue 4, 1549-1582.

Axelson, U., Jenkinson, T., Strömberg, P., Weisbach, M., (2013). Borrow cheap, Buy High? The determinants of leverage and pricing in buyouts. *The Journal of Finance,* 68 (6), 2223-2267.

Bain & Company, (2016). *Global Private Equity Report 2016*. Available from Internet: http://www.bain.com/publications/business-insights/global-private-equity-report.aspx.

Baker, M., Wurgler, J., (2002). Market timing and capital structure. *The Journal of Finance,* 57 (1), 1-32.

Baker, G., P., Wruck, K., H., (1989). Organizational changes and value creation in leveraged buyouts: The case of the O.M. Scott & Sons Company. *Journal of Financial Economics,* 25 (2): 163.

Bonini, S., (2012). Secondary buyouts. *Working paper,* Available at SSRN 2081806.

Chung, J., (2011). Leveraged buyouts of private companies. *Working paper, Available at SSRN 1904342.*

Chung, J. W., Sensoy, B.A., Stern, L., Weisbach, M. S., (2012). Pay for performance from future fund flows: the case of private equity. *Review of Financial Studies,* 25 (11), 3259-3304.

Demiroglu, C., James, C., (2010). The role of private equity group reputation in LBO financing. *Journal of Financial Economics,* 96 (2), 306-330.

FVCA, (2016). *Available from Internet:* http://fvca.fi/tietokeskus/tilastot

Gilligan, J., Wright, M., (2010). Private equity demystified: An Explanatory Guide. *ICAEW Corporate Finance Faculty.*

Giot, P., Schwienbacher, A., (2007). IPOs, trade sales and liquidations: modelling venture capital exits using survival analysis. *Journal of Banking and Finance,* 31 (3), 679-702.

Guo, S., Hotchkiss, E., Song, W. (2011). Do buyouts still create value? *The Journal of Finance,* 66 (2), 479-517.

Harris, R. S., Jenkinson, T., Kaplan, S., (2014). Private equity performance: What do we know? *The Journal of Finance,* 69 (5), 1851-1882.

Heckman, J., (1979). Sample selection bias as a specification error. *Econometrica,* Vol 47, 1, 153-161.

Holthausen, R. W., Larcker, D., F., (1996). The financial performance of of reverse leveraged buyouts. *Journal of Financial Economics,* 42 (3):293.

Jensen, M., (1986). Agency cost of free cash flow, corporate finance, and takeovers. *American Economic Review,* 76 (2).

Jensen, M., (1989a). Active investors, LBOs and the privatization of bankcruptcy, *Journal of Applied Corporate Finance,* 2 (1): 21.

Jensen, M., (1989b). Eclipse of the modern corporation. *Harvard Business Review,* 67, 61-74.

Kaplan, S., (1989a). Management buyouts: evidence on taxes as asource of value. *The Journal of Finance,* 44 (3), 611-632.

Kaplan, S., (1989b). The effects of management buyouts on operating performance and value. *The Journal of Financial Economics,* 24 (2), 217-254.

Kaplan, S., Ruback, R., (1995). The valuation of cash flow forecast: an empirical analysis. *The Journal of Finance,* 50 (4), 1059-1093.

Kaplan, S., Strämberg, P., (2008). Leveraged buyouts and private equity. *National Bureau of Economic Research,* Working paper 14207.

Lehn, K., Poulsen, A., (1989). Free cash flow and stockholder gains in going private transactions. *The Journal of Finance*, 44 (3), 771-787.

Lerner, J., (1994). Venture capitalists and the decision to go public. *The Journal of Financial Economics,* 35 (3), 293-316.

Lichtenberg, F., R.,Siegel, D., (1990). The effects of leveraged buyouts on productivity and related aspects of firm behavior." *Journal of Financial Economics,* 27(1): 165.

Loos, N., (2007). Value creation in leveraged buyouts: analysis of factors driving private equity investment performance. *Doctoral dissertation, University of St. Gallen.*

Lucas, D., McDonals, R. (1990). Equity issues and stock price dynamics. *The Journal of Finance*, 45 (4), 1019-1043.

Nasdaq OMX Helsinki, (2016). *Listings,* Available from Internet: http://www.nasdaqomxnordic.com/uutiset/listauksia

Pagano, M., Panetta, F., Zingales, L., (1998). Why do companies go public? An empirical analysis. *The Journal of Finance,* 53 (1), 27-64.

Perry, S., Williams, T., (1994). Earnings management preceding management buyout offers. *The Journal of Accounting and Economics,* 18 (2), 157-179.

Phalippou, L., (2009). Beware of venturing into private equity. *The Journal of Economic Perspectives,* 23 (1), 147-166.

Private Equity International, (2016). *PEI 300.* Available from Internet: https://www.privateequityinternational.com/pei300/.

Shleifer, A., Vishny, R., (1986). Large shareholders and corporate control. *The Journal of Political Economy,* 94 (3), 461-488.

Shleifer, A., Vishny, R., (2003). Stock market driven acquisitions. *Journal of Financial Economics,* 70 (3), 295-311.

Singh, H., (1990). Management Buyouts: Distinguishing Characteristics and Operating Changes Prior to Public Offering. *Strategic Management Journal*, 11(4): 111

Smith, A., (1990). Corporate ownership structure and performance: the case of management buyouts. *Journal of Financial Economics*, 27 (1), 143-164.

Sousa, M., Jenkinson, T., (2012). Keep taking the private equity medicine? How operating differs between secondary deals and companies that return to public markets. *Working paper*.

Strömberg, P., (2008). The new demography of private equity. *The Global Impact of Private Equity Report*, 3-26.

Wang, Y., (2012). Secondary buyouts: Why buy and at what price? *Journal of Corporate Finance*, 18 (5), 1306-1325.