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## **Value creation in leveraged buyouts**

Empirical evidence from the operational performance of Finnish LBOs  
(2010-2024)

School of Accounting and Finance  
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**UNIVERSITY OF VAASA****School of Accounting and Finance**

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**ABSTRACT:**

This thesis investigates the effects of Finnish leveraged buyouts (LBOs) on the post-acquisition operational performance of acquired companies, based on a sample of 52 Finnish LBO transactions completed between 2010 and 2024. The thesis seeks to provide empirical evidence on the impact of LBOs on target companies' operating performance during the private equity firm's ownership period, comparing these results with those of a control group of non-LBO companies using a difference-in-differences (DiD) estimation. The study measures operational performance changes across five key dimensions: (i) sales growth, (ii) profitability margins, (iii) capital efficiency, (iv) working capital and (v) the number of personnel. The purpose of this thesis is to evaluate the extent to which LBOs influence operational performance relative to the peer group and to improve understanding of the key drivers of post-buyout value creation strategies of Finnish PE sponsors.

Existing academic research on the impact of buyouts on company-level operational performance has predominantly focused on U.S. companies, with samples typically comprising larger firms and a higher proportion of public-to-private LBOs. This thesis contributes to the literature by providing evidence from a country-specific sample of Finnish LBOs and by examining a comprehensive set of company-level performance metrics to provide a comprehensive view of the effect of PE ownership on a target company.

The findings suggest that LBOs lead to a notable and statistically significant abnormal increase in revenue growth, total and fixed assets, and headcount in each year over the first three years following the buyout. In contrast, buyout companies experience statistically significant declines in both EBIT and EBITDA margins. The overall effect on working capital remains broadly unchanged, as the cash-flow impact of higher accounts payable is offset by an increase in inventory. Taken together, the results suggest that the primary value-creation lever used by Finnish private equity sponsors has been scaling the volume and size of business operations, rather than improving operational performance.

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**KEYWORDS:** leveraged buyout, LBO, buyout, private equity, operational performance, value creation

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**VAASAN YLIOPISTO****School of Accounting and Finance**

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**TIIVISTELMÄ:**

Tämä pro gradu -tutkielma tarkastelee suomalaisten velkavivutettujen yritysostojen (leveraged buyouts, LBO) vaikutuksia ostettujen yhtiöiden yritysoston jälkeiseen operatiiviseen suorituskykyyn 52 suomalaisen vuosina 2010–2024 toteutetun LBO-transaktion aineistolla. Tutkielman tavoitteena on tuottaa empiiristä näyttöä LBO:iden vaikutuksista kohdeyhtiöiden operatiiviseen suorituskykyyn pääomasijoittajan omistuskauden aikana. Tuloksia verrataan verrokkiryhmään, joka koostuu ei-LBO-yhtiöistä, ja vaikutuksia arvioidaan difference-in-differences (DiD) -menetelmällä. Operatiivista suorituskykyä mitataan: (i) liikevaihdon kasvulla, (ii) kannattavuusmarginaalien kehityksellä, (iii) pääoman käytön tehokkuudella, (iv) muutoksella käyttöpääomassa ja (v) muutoksella henkilöstömäärässä. Tutkielman tarkoituksena on arvioida, missä määrin LBO:t vaikuttavat operatiiviseen suorituskykyyn suhteessa verrokkiryhmään, sekä syventää ymmärrystä suomalaisiin pääomasijoittajiin liittyvien yritysoston jälkeisten arvonluontialoitteiden taustalla olevista ajureista.

Aiempi akateeminen tutkimus pääomasijoitusten vaikutuksista yritystason operatiiviseen suorituskykyyn on painottunut erityisesti yhdysvaltalaisiin yhtiöihin, joissa otokset ovat tyypillisesti koostuneet suuremmista yrityksistä ja joissa julkisiin yhtiöihin kohdistuvat (public-to-private) LBO:t ovat olleet suhteellisesti yleisempiä. Tämä tutkielma täydentää kirjallisuutta tarjoamalla tutkimustuloksia suomalaisista LBO:ista sekä tarkastelemalla kattavaa joukkoa yritystason suorituskykymittareita, jotta pääomasijoittajaomistuksen vaikutuksesta kohdeyhtiöön saadaan mahdollisimman kokonaisvaltainen kuva.

Tulokset osoittavat, että LBO:t johtavat huomattavaan ja tilastollisesti merkitsevään kasvuun liikevaihdossa, taseen loppusummassa ja käyttöomaisuudessa sekä henkilöstömäärässä jokaisena vuotena yritysoston jälkeisten kolmen ensimmäisen vuoden aikana. Sen sijaan buyout-yhtiöiden EBIT- ja EBITDA-marginaalit ovat heikentyneet tilastollisesti merkitsevästi. Käyttöpääoman kokonaisvaikutus säilyy kuitenkin suhteellisen muuttumattomana, sillä ostovelkojen kasvun positiivinen kassavirtavaikutus kumoutuu varastojen kasvun myötä. Kokonaisuutena tulokset viittaavat siihen, että suomalaisten pääomasijoittajien keskeisin arvonluonnin metodi on ollut keskittyminen kohdeyhtiön liiketoiminnan kasvattamiseen, eikä niinkään operatiivisen tehokkuuden parantamiseen.

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**AVAINSANAT:** Leveraged buyout, LBO, pääomasijoittaminen, operatiivinen performanssi, arvonluonti

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## 1 Introduction

As Jensen (2007) observes, since their emergence in the late 1970s, leveraged buyouts (LBOs) have transformed the private equity (PE) industry from a small, niche asset class into a major international force. The current scale of buyout volumes underscores their growing significance for the global economy. As of 2023, buyout funds' assets under management (AUM) reached USD 3.9 trillion, representing 47% of PE funds' AUM (McKinsey & Company, 2024). LBO transaction volumes have surged in recent years, driven by a steady inflow of capital seeking the high returns that buyout funds have historically generated relative to public equity, as reported by Cressy et al. (2007) and Kaplan (1989). Currently, buyout funds also hold considerable uninvested capital, or "dry powder." Bain & Company (2024) reports that buyout funds have USD 1.2 trillion in capital calls awaiting investment, indicating that LBO activity will likely remain high, especially if favourable economic conditions, particularly in credit markets, persist.

Buyout funds have consistently delivered superior returns relative to public equity across different time periods and geographies. Furthermore, Gompers et al. (2015) report gross outperformance exceeding 8% annually, while Acharya et al. (2009) found net IRRs of around 23.9% for Western European buyouts. More precisely, buyout funds have been a highly profitable sub-asset class within PE. According to McKinsey and Company (2024), the median IRR for global buyout funds between 2011 and 2020 was 18.1%, underscoring solid performance across various market conditions and reinforcing earlier findings of abnormal returns. According to Harris et al. (2014), the average weighted IRR of buyout funds from 1984 to 2008 was 15.7% based on the Burgiss database and 16.9% based on the Preqin database, suggesting abnormally high performance over a long period.

In addition to examining investors' returns, academic interest in LBOs' effects on company-level operational performance began after the success of large-scale LBOs in the 1980s. Kaplan (1989) demonstrated that the LBO structure is a fundamental driver of operational performance improvements, resulting in increased profitability,

reductions in working capital, workforce optimisation, and enhanced capital efficiency, which have been integral levers for investors' returns throughout the history of LBOs. Early studies on LBOs in the 1970s and 1980s, such as Jensen (1986), consistently show that buyouts enhance company-level financial performance, primarily by reducing agency costs between managers and owners, thereby increasing operational performance. Jensen (1989) even suggested that LBOs could become a dominant organisational form, replacing public corporations that often suffer from inherent inefficiencies arising from agency problems between management and shareholders. In contrast, LBOs offer a more effective organisational structure for improving operational performance, driven by the disciplining effect of high leverage, active ownership, professional management, and performance-based incentives for management, establishing a superior foundation for managing the company in a value-maximising way.

As noted, since the dawn of early LBOs in the 1970s, and especially in contemporary buyouts, improving target companies' operational performance during the holding period has been a critical lever for value creation. In addition, empirical evidence consistently indicates that operational improvements are a major driver of equity holders' returns in modern LBOs. Bergström et al. (2007) reported that post-buyout operational improvements accounted for approximately 40% of total equity value creation.

However, more recent studies present mixed results regarding post-buyout operational performance changes, raising questions about whether LBOs continue to create value through operational improvements or whether investors' returns are driven by financial engineering and multiple expansions. Despite recent studies reporting limited change in post-buyout operational performance, the prevailing view in academic research on LBOs' effect on operational performance is positive. However, changes in post-buyout operational performance in recent years have not been as significant as those observed during the early buyouts of the late 1980s. Weir et al. (2015) and Jensen (2007) suggest that improving operational performance is now more challenging than before, as

modern companies are better managed. The techniques that explain the impact of LBOs on operational performance are already widely implemented across all companies, unlike in the 1980s, indicating that there are no more 'low-hanging fruit to pick' by acquiring and streamlining poorly managed companies.

## **1.1 Background and motivation of the thesis**

LBOs are distinctive financial transactions characterised by substantial leverage, private ownership, a fixed ownership period, equity control, and professional management supported by performance-based compensation structures. These unique attributes fundamentally differentiate a buyout company from a publicly traded or family-owned business. Therefore, understanding how an LBO's distinct organisational structure impacts a company's operational performance is critical. Prior research on LBO value creation intersects with corporate finance, microeconomics, and corporate governance, forming the theoretical background for the thesis.

Existing academic research on LBO value creation has predominantly focused on investors' returns rather than on the effects of LBOs on company-level performance. Achleitner et al. (2010) noted that studies on the impact of LBOs on value creation can be categorised into those analysing value creation at the fund and company levels.

However, relatively few studies examine post-LBO changes in company-level operational performance that affect the entire enterprise value. Early notable research addressing this gap has been conducted by Smith (1990), Lichtenberg and Siegel (1990), and Kaplan (1989). Furthermore, Achleitner et al. (2011) highlight the limited research investigating the mechanisms driving operational value creation at the company level.

Moreover, most academic research on LBO value creation is based on U.S. buyout samples, with few studies focusing on European, and especially Nordic, LBOs. To date, no studies have examined Finnish LBOs exclusively. Finland's economic, cultural, and regulatory environments differ significantly from those of the U.S., influencing how LBOs

affect post-buyout operational performance. For example, Finnish LBO targets are typically smaller, with enterprise values often below 50 million euros, compared to the \$50-250 million range Jenkinson and Sousa (2015) described as the mid-market range for U.S. buyouts. Furthermore, while a substantial portion, 14% according to Renneboog and Simons (2005) and 34% according to Kaplan and Strömberg (2009), of U.S. LBOs are public-to-private transactions, 90% of the buyouts covered in this study are private-to-private. Additionally, Finland's regulatory environment, including stricter labor laws, contracts with the more flexible U.S. legislative landscape, limiting the possibilities for executing certain post-buyout strategic value-creation strategies. Furthermore, debt capital markets in the Nordics are less liquid than in the U.S., potentially resulting in lower debt ratios in Finnish LBOs.

## **1.2 Hypothesis development**

The primary goal of this thesis is to improve understanding of how LBOs affect company-level operational performance. More importantly, the thesis addresses the key research question: whether Finnish LBOs conducted between 2010 and 2024 have been value-creating; specifically, whether they have resulted in improved profitability and free cash flow in the post-buyout period.

Revenue growth is recognised as an important driver of post-buyout value-creation. Kaplan (1989) and Smith (1990) found a modest post-buyout increase in overall revenue, while sales per employee increased notably. More recent studies by Berg and Gottschalg (2003), Cressy et al. (2007), and Boucly et al. (2011) found that revenue growth remains a key strategy to post-buyout value creation. Similarly, Perembetov et al. (2014) found that revenue growth accounts for 27% of total post-buyout increase in equity value based on a sample of global buyouts and up to 38% in European mid-market buyouts. Additionally, Bain and Company (2024) identified revenue growth as the most important value driver in LBOs, contributing 53% of the post-buyout increase in enterprise value. Berg and Gottschalg (2003) highlight that post-LBO revenue growth is mainly driven by organic growth from cross-selling, pricing optimisation, and improved distribution, while

Wright et al. (2001) remark that inorganic growth plays an important role in holding-period revenue growth. Accordingly, the first hypothesis is:

H1: Buyout companies achieve higher revenue growth compared to their comparable peer group.

Since the emergence of LBOs, researchers have found that buyouts improve company-level operational performance. Improvements in profitability margins, often measured by the gross profit, EBITDA and EBIT margin, are a key driver of LBOs' value creation. Perembetov et al. (2014) found that increases in profit margins have a material effect on returns, with EBITDA improvements accounting for up to 9% of total value creation. Furthermore, Jensen (1989) reported a 10% increase in post-buyout operational profitability margins during the 1980s. Consequently, the second hypothesis is:

H2: Buyout companies achieve higher average gross profitability, EBITDA, and EBIT margins over the holding period than comparable peer firms.

Kaplan (1989) found a 26% post-buyout decrease in CAPEX-to-sales ratios in U.S. LBOs of the 1980s, while Guo et al. (2011) reported a more modest 0.7% reduction based on a sample of more recent U.S. buyouts. Similarly, Lichtenberg and Siegel (1990) and Weir et al. (2008) reported reductions in post-buyout CAPEX. However, given that growth is a key value-creation lever and often requires an asset base and greater investment, the asset base is expected to increase post-buyout. Consequently, the third hypothesis is:

H3: Total assets and fixed assets remain unchanged after the LBO

Reductions in working capital following buyout are widely documented, driven by PE sponsors' efforts to accelerate cash conversion and support debt repayment. Guo et al. (2011), Holthausen & Larken (1996) and Wilson et al. (2012) have reported post-buyout reductions in working capital in relation to revenue. Therefore, the fourth hypothesis is:

H4: inventory and accounts receivable relative to sales decrease, while accounts payable relative to sales increase relative to the peer group

Since growth is an integral source of value creation in contemporary LBOs, as highlighted in H1, and because employment termination regulations in Finland are considered relatively stringent, the total number of employees is expected to increase post-buyout:

H5: Buyout firms expand headcount relative to their peer group.

### **1.3 Intended contribution**

This thesis provides company-level empirical evidence on changes in operational performance across all Finnish LBO target companies acquired between 2010 and 2024, providing insights on the impact of LBOs on company-level performance and enhancing understanding of how recent LBOs have influenced the operational performance of Finnish companies throughout the holding period.

Buyout funds represent a rapidly growing sub-asset class, and in Finland, PE-owned companies currently account for 6% of the country's total revenue. Consequently, understanding the effects of LBOs on Finnish companies is increasingly relevant to a wide range of stakeholders beyond PE professionals and target company management teams, including employees, lenders, suppliers, customers, competitors, and local communities, all of whom are directly or indirectly affected by the operational performance of LBO target firms. A greater understanding of the effects of LBOs on company-level performance enables more accurate predictions of buyouts' broader impact for a wide range of stakeholders.

## **1.4 Structure of the study**

This study is structured as follows: Chapter 2 introduces the characteristics of PE as an asset class, the key features of the LBO model, and the past and present states of the global and Finnish buyout industries. Chapter 3 reviews the academic literature on value creation in LBOs, outlining the levers and methods for operational improvement and their underlying drivers. Chapter 4 describes the buyout sample and the sample selection process, and presents the metrics used to assess company-level operational performance. Chapter 5 introduces the research methodology, and Chapter 6 presents empirical results on the impact of LBOs on operational performance, along with their statistical significance. Finally, Chapter 7 presents the conclusion and suggestions for further research on the topic.

## **2 Theoretical background**

The theoretical background chapter introduces the characteristics of PE as an asset class and the operating model of buyout funds. The chapter covers the LBOs transaction cycle, capital structure, economic rationale for buyout investing, and the mechanisms by which buyout funds generate returns for investors and the owners of the PE firms. This chapter aims to provide an understanding of the key concepts addressed in the thesis. Additionally, the chapter provides an overview of the Finnish LBO market, presenting its historical development and current state.

### **2.1 Overview of private equity**

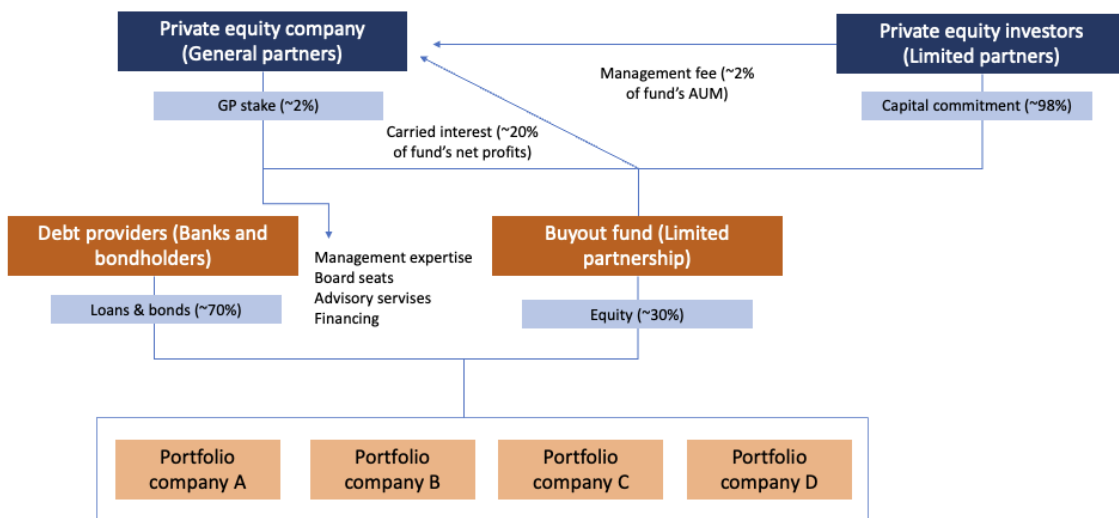
Jurek and Stafford (2015) define PE as an alternative asset class that provides long-term capital to private or public companies that remain private during the PE firm's ownership period. Similarly, Sharp (2001) describes PE as the provision of equity capital for privately held companies. Thus, PE is generally understood to encompass all investments in companies that remain privately held during the ownership period, encompassing a diverse range of investment strategies.

#### **2.1.1 Structure of the PE funds**

PE firms allocate capital through funds, which are standalone investment vehicles managed by the PE firm on behalf of investors. Each fund is established as a separate legal entity, meaning its legal and financial liabilities are confined to that fund and do not extend to the PE firm itself, as Sorensen et al. (2014) highlight. The primary role of PE firms is to raise capital and provide advisory services to the funds through which investments are made.

PE firms' senior employees are referred to as General Partners (GPs), who oversee the fund's day-to-day operations and investments, which include identifying opportunities, executing transactions, and managing portfolio companies.

PE investors are referred to as Limited Partners (LPs). Their primary responsibility is to supply the majority of the fund's capital while remaining passive investors. Given the extended investment horizon in PE, the illiquidity of investments, and the substantial administrative expenses associated with managing PE investments, the minimum capital commitment is typically considerable. Sensoy et al. (2014) highlight that LPs are predominantly professional institutional investors.



**Figure 1.** Structure of a PE firm and buyout fund. Own contribution based on Zeisberger, Prah & White (2017: 13)

## 2.2 Fundamentals of LBOs

Leveraged buyouts (LBOs), also referred to as buyouts, are acquisitions by a PE sponsor, financed with substantial debt to acquire a controlling equity stake. As Kaplan and Strömberg (2009) note, in LBOs, PE firms acquire majority control of mature companies by financing a substantial portion of the purchase price with debt. According to Zeisberger et al. (2017), the key characteristics of LBOs are equity control, use of leverage, and economic alignment, which are covered in more detail.

**Equity control:** A majority voting interest is a key characteristic of buyout investments, distinguishing them from purely financial, passive minority investments. Jensen (1989) notes that equity control grants GPs the authority to replace underperforming executives and reshape the board of directors, enabling PE sponsors to execute holding-period value-creation strategies efficiently. Equity control also enables the exit process to be executed faster and more flexibly.

**Leverage:** There is no universally agreed-upon definition specifying the exact debt-to-equity ratio required for an acquisition to qualify as an LBO. Axelson et al. (2007) find that debt generally accounts for approximately 60% to 70% of the total capital structure in more recent LBO transactions, reflecting a shift toward more moderate leverage ratios compared to the earlier buyouts.

**Economic Alignment:** Reducing agency costs between portfolio companies' managers and LPs through financial incentives, particularly by increasing managerial equity, is a typical feature of LBOs. Jensen and Murphy (1990) found that the median equity ownership of a CEO in an LBO company is 6%, considerably higher than the median equity stake held by the CEOs of publicly traded U.S. corporations. Similarly, Kaplan and Strömberg (2009) report comparable findings, showing that the average CEO's post-buyout equity ownership is 5.4%.

### 2.2.1 Capital structure in LBOs

As the term *leveraged* buyout suggests, debt has an important role in LBO investments. The economic rationale for using substantial leverage in buyout investing is to enhance investor returns by reducing the equity capital required to finance the transaction. Assuming a fixed enterprise value for the acquisition, a higher debt-to-equity ratio increases equity holders' returns, provided the company remains solvent.

In their updated research, Modigliani and Miller (1963) recognised the effect of taxes on capital structure by showing that the tax deductibility of interest payments increases

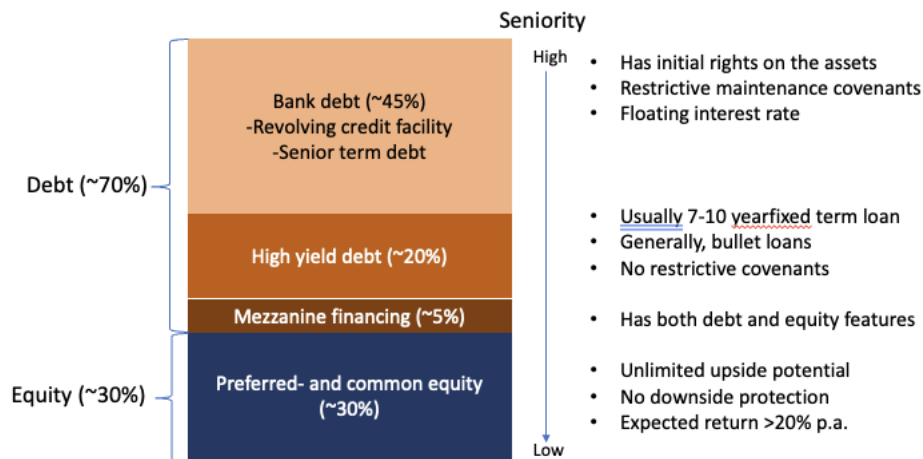
equity value through the tax shield, a key justification for the highly leveraged capital structures of LBOs.

Moreover, Myers and Majluf (1984), building on Donaldson's (1961) earlier work, challenged the trade-off theory by arguing that the hierarchy of financing options determines the optimal capital structure and that asymmetric information between managers and investors regarding a company's prospects allows value creation through optimising capital structure.

Superior information is a particularly important determinant of capital structure in management buyouts (MBOs), where incumbent management can access private information and has a better understanding of the company's prospects.

Generally, the capital structure of an LBO comprises multiple tranches of debt and equity instruments with varying maturities and seniorities, combining senior debt, subordinated debt, and equity. The capital structure of a typical LBO comprises three main components:

1. **Equity Contributions:** Equity typically accounts for 20-40% of total financing and serves as a risk buffer (Kaplan & Strömberg, 2009).
2. **Senior Debt:** Representing 50-70% of the capital structure, the senior target company's specific assets are collateralised against senior debt, and it carries the lowest cost of capital, including restrictive covenants to ensure financial discipline (Axelson et al., 2013).
3. **Junior Debt:** Including subordinated loans or mezzanine financing, junior debt typically represents 10-20% of the capital structure. It offers greater repayment flexibility at a higher cost, filling the gap between senior debt and equity (Guo et al., 2011).



**Figure 2.** Illustration of a typical LBO capital structure. Own contribution based on Talmor and Vasvari (2011: 263)

### 2.2.2 Characteristics of an ideal LBO target company

Given the highly leveraged capital structure of LBOs, companies with specific characteristics are particularly well-suited as LBO targets. Kaplan and Strömberg (2009) identify ideal candidates as mature firms in slow-growing industries with stable cash flows, moderate growth prospects, low capital expenditure requirements, and opportunities for operational enhancements. According to previous academic literature, the characteristics of an optimal LBO target company have been identified as:

1. Strong and predictable free cash flow: Kaplan and Strömberg (2009) note that generating substantial, and more importantly, stable free cash flow is crucial for an LBO target company to reliably meet its fixed debt repayment schedule while minimising the risk of default.
2. Operational enhancement opportunities: Jensen's (1989) agency cost hypothesis highlights operational inefficiencies as opportunities for value creation. Firms with cost-cutting and growth potential are considered ideal targets for LBOs.
3. Low capital expenditure requirements: Opler and Titman (1993) posit that companies with low ongoing capital expenditure requirements make ideal LBO

targets, as free cash flow can be allocated toward debt repayments rather than investing in the company.

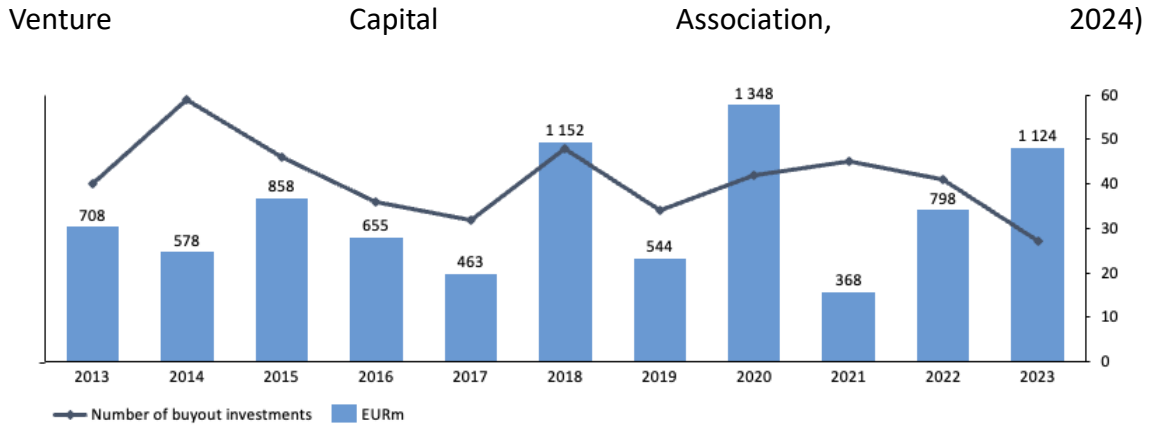
4. Favorable industry dynamics: Acharya et al. (2013) note that companies operating in industries with stable or growing demand, low cyclicalities, and high barriers to entry are ideal targets for buyouts.

In addition, Axelson et al. (2013) note that low existing debt levels provide greater borrowing capacity and, thus, offer flexibility in structuring additional debt, a favourable feature for a potential LBO target. However, companies are typically acquired without net debt, as the debt is refinanced at the time of acquisition, allowing the new owner to determine the capital structure and cash balance.

### **2.3 PE and LBOs in Finland**

This chapter provides a brief overview of the Finnish PE industry, focusing on the development and current state of buyout investing in Finland. Following global trends, the PE industry has grown significantly in Finland in the 21st century, becoming an important asset class for Finnish institutional investors.

In 2023, Finnish buyout and growth equity funds raised 261 million euros to invest in Finnish companies and made new investments totalling 349 million euros in 54 Finnish companies. Foreign buyout and growth funds are also significant investors in Finland, with investments amounting to 1.15 billion euros. The average investment made by a Finnish buyout fund is approximately 10 million euros per target company. (Finnish



**Figure 3.** Domestic and foreign buyout investments in Finnish companies in EURm. (FVCA and European Data Cooperative, 2024)

In Finland, buyout funds' portfolio companies are, on average, relatively small by international standards, with only 60% generating revenues over 20 million euros. The Finnish buyout sector is strongly oriented toward the business and industrial products and services segments, which in total account for 45% of all Finnish buyout investments. (FVCA & PwC, 2024)

Companies owned by both Finnish and foreign PE sponsors in Finland generated a combined revenue of 26 billion euros in 2023, representing 5% of the aggregate revenue of all Finnish companies. Between 2015 and 2023, half of the new companies listed on the Helsinki Stock Exchange were owned by PE sponsors. In 2023 alone, PE-backed companies created over 2,000 new jobs, increasing their personnel by an average of 70 people over five years from the investment year. (FVCA & PwC, 2024)

On average, buyout fund-backed companies achieved an annual revenue growth rate of 26% over the five years following the investment year, which is 8.6 times higher than that of peer companies. In absolute terms, these buyout-backed companies increased their revenue by an average of EUR 35 million annually during the first five years of the holding period. (FVCA & PwC, 2024)

### **3 Literature review**

This literature review covers prior research on the effects of LBOs on firm-level operating performance from the 1980s to the present day.

#### **3.1 Post-LBO operative performance**

##### **3.1.1 Increase in sales**

Research suggests that turnover growth has been an integral driver of post-buyout value creation throughout the history of LBOs. Kaplan (1989) documents a modest increase in revenues within three years following the buyout in a sample of 48 U.S. management buyouts from 1980-1986. Consistent with this, Boucly et al. (2011) find that, over the three years after the transaction, French LBO targets exhibit significantly higher revenue growth than their peers, based on a sample of 839 deals. Perembetov et al. (2014) further estimate that revenue growth accounts for 27% of total value creation, making it the single most significant lever of buyout value creation.

During the holding period, PE sponsors tend to actively pursue initiatives to accelerate top-line growth. Berg and Gottschalg (2003) find that common levers include pricing optimisation, cross-selling across portfolio companies, and improvements in distribution.

##### **3.1.2 Improving profitability margins**

According to Acharya et al. (2010), PE-backed companies reported an average increase in EBITDA margins from 3.9% to 4.2%. In addition, inorganic growth through add-on acquisitions and the integration of multiple businesses can generate cost efficiencies by spreading fixed overheads over a larger revenue base. It is typical for PE sponsors to pursue post-buyout margin improvements through operational restructuring and divestments. Muscarella and Vetsuypens (1990) report that 75% of buyout targets discontinue at least one non-core activity after the buyout in order to allocate capital to the most profitable business operations.

Conversely, although the prevailing view is that LBOs tend to lead to post-buyout margin improvements, several earlier studies have also reported opposite findings of declining post-buyout profitability. Desbrières and Schatt (2002) report that margin ratios fell relative to industry peers after the buyout. Similarly, Scellato and Ughetto (2013) find that European private-to-private buyouts generated lower operating profitability than matched non-buyout firms three years after the transaction. Wang (2017) also finds, based on a sample of UK LBOs, that both EBITDA-to-sales and profit margins declined significantly in all three years after the buyout. In conclusion, although profitability margin improvement is considered a key value creation tool for PE sponsors during the holding period, several European studies show that post-buyout operating profitability and EBITDA-type margins can also decline, especially during the first three years after the LBO. This may reflect growth-focused value creation strategies or costs associated with strategic development during the early years of the holding period.

Furthermore, some scholars found that aggressive post-buyout cost-cutting may constrain longer-term growth prospects. Long and Ravenscraft (1993) and Ayash (2019) argue that R&D spending may decline following buyouts, potentially limiting innovation, which may reduce long-term earning potential despite short-term cost savings. In addition, the fixed holding period of PE sponsors and the upcoming exit within a few years may create incentives to pursue aggressive cost-cutting at the expense of longer-term growth potential, in order to rapidly improve the target company's financial performance before exit.

In contrast, Bull (1989) and Lichtenberg and Siegel (1990) find only limited reductions in post-buyout R&D spending, suggesting that PE ownership does not necessarily lead to short-term profit maximisation. Instead, PE-backed firms may improve operating efficiency while maintaining potential for growth by avoiding underinvestment in innovation development.

### **3.1.3 Decreasing capital expenditures**

Previous studies show that capital expenditures (CAPEX) tend to decline post-buyout as PE firms aim to increase free cash flow to reduce net debt and return capital to investors to increase funds' IRR. Kaplan (1989) and Guo et al. (2011) also point out that a decrease in CAPEX shifts free cash flow away from projects with uncertain returns, which is particularly important when operating under a leveraged capital structure. Kaplan (1989) found that the post-LBO CAPEX-to-sales ratio decreased, on average, by 26%. Conversely, Guo et al. (2011) observed a median decrease of 0.7% in CAPEX-to-sales ratios post-buyout, based on a sample of 192 US LBOs completed between 1990 and 2006. Kaplan (1989) noted that buyout companies typically delay CAPEX after the exit to artificially inflate holding-period cash flow.

Similarly, Lichtenberg and Siegel (1990) and Weir et al. (2008) documented declines in CAPEX in the U.S. and U.K. markets, further supporting the notion that PE-backed firms prioritise streamlining operations through CAPEX reductions, indicating increased discipline in capital allocation decisions under PE ownership. Moreover, Kaplan (1989) remarks that typical LBO target companies generate high free cash flow but have limited growth opportunities, suggesting that these companies lack positive NPV projects to invest in, encouraging the allocation of excess free cash flow toward debt repayment rather than capital investments.

Ultimately, while LBOs generally reduce capital expenditure to increase free cash flow, the broader effect of CAPEX reductions on value creation depends on whether the returns on the investments exceed the cost of capital.

### **3.1.4 Decreasing working capital**

Easterwood et al. (1989) and Singh (1990) found that post-LBO working capital is reduced primarily through tighter control over inventory and improved receivables management. Holthausen and Larcker (1996) corroborated these findings, noting that

buyout firms tend to maintain lower working capital levels than their publicly traded peers, mainly due to smaller inventories and faster sales collections. Guo et al. reported an average 10% reduction in working capital, driven by improved accounts receivable turnover and better inventory management. In addition, Smith (1990) found that post-buyout firms reduced their net working capital by 50% relative to sales. More modest results were reported by Kaplan (1989), who noted an average 1.9% reduction in net working capital.

Furthermore, Guo et al. (2011) note that post-LBO working capital reductions are most significant in firms with high initial working capital levels, suggesting that PE firms seek out buyout targets with opportunities to create value by reducing working capital. Boucly et al. (2011) observed a similar trend in a sample of French LBOs, indicating that companies with a high pre-buyout working capital-to-sales ratio tend to experience a larger post-buyout reduction in working capital.

### **3.2 Indirect sources for operative performance improvements in LBOs**

Indirect or secondary value drivers, as defined by Berg and Gottschalg (2005), are drivers of post-buyout value creation that do not directly target the target company's financial performance, but instead create the conditions and incentives that enable post-buyout performance improvements to be achieved. Berg and Gottschalg (2003) identify two indirect value drivers: agency cost reduction and the parenting effect. Loos (2006) expanded this view by categorising the indirect value drivers in more detail as (i) incentive alignment, (ii) improved governance, (iii) leverage effects, and (iv) cultural improvement, aligning closely with the findings of Berg and Gottschalg (2003).

#### **3.2.1 Reduction in the agency costs**

Eisenhardt (1989) defines *agency conflict* as a divergence of interests between principals, shareholders, and agents, such as managers, in which agents may pursue personal goals

rather than than principal's' goals. These conflicts of interest arise from information asymmetry and differing risk preferences.

Jensen (1989) and Kaplan (1990) argue that LBOs tend to improve operational performance primarily by reducing agency costs through concentrated ownership, high leverage, and by aligning the incentives of management and owners through performance-based compensation, findings further supported by Berg and Gottschalg (2003) and Scellato and Ughetto (2013). Cuny and Talmor (2007) introduce the concept of *governance arbitrage* to describe how LBO investments create value by resulting in more aligned interests of management and shareholders.

### **3.2.1.1 Decreasing agency costs related to the free cash flow**

Baker and Montgomery (1994) found that leverage used in buyout investing creates a natural monitoring mechanism: to meet fixed debt payments and covenants, managers are required to operate efficiently and focus diligently on cash flow generation. Berg and Gottschalg (2003) further argue that debt creates an outsourced monitoring mechanism, as the issuer of the debt is incentivised to oversee management's actions. This is an especially relevant feature for junior debt issued by banks and credit institutions, which is often associated with maintenance and restrictive covenants.

Empirical results support Jensen's (1986) theory that debt's disciplining effect mitigates the agency costs of free cash flow, thereby improving financial performance. Operational improvements driven by increased debt levels are generally realised through cost reductions. Guo et al. (2011) found that firms with substantial debt and high managerial ownership stakes achieved improved operational performance. Similarly, Edgerton (2012) found, that post-LBO, there was a 32% reduction in the probability of owning a jet within a year, proxy for managerial discretionary spending. This indicates that debt motivates the establishment of a culture of financial discipline. Along with cost reductions, the disciplining effect of debt also motivates improvements in operational

performance. Lichtenberg and Siegel (1990) report an 8.3% increase in productivity above the industry mean in the three years following LBO.

However, using debt also carries risks and has its downsides. While high leverage can drive operational performance, it may constrain flexibility, particularly for companies with positive NPV growth opportunities, as meeting debt repayments and covenants may stifle risk-taking essential for growth. Berg and Gottschalg (2003) and Ughetto (2012) suggest that excessive debt can bias management towards low-risk investments, potentially decreasing R&D investments with uncertain outcomes. Meuleman et al. (2009) further note that projects with higher risks generate the highest returns in the long run, indicating that management requires financial flexibility to meet the prerequisites for creating long-term profitable growth. The use of debt has the greatest potential to create value in companies with high cash flow and limited positive NPV projects in sight, especially if management is prone to discretionary spending. By contrast, for companies with high growth potential that require capital investments and R&D expenditures, constraining managerial flexibility through a debt burden may be a value-eroding decision.

Furthermore, a higher debt level exposes the company to adverse shocks, as interest and principal payments create fixed cash outflows. Singh (1990) highlights that a highly leveraged capital structure makes companies more fragile in withstanding external financial shocks, thus eroding value during economic hardships significantly more than if they were operating with a more conservative capital structure. The elevated risk of financial distress also reduces value during economically sound times, as Palepu (1990) notes, since preparing for unforeseen shocks makes management more risk-averse and short-term-oriented, potentially undermining long-term growth opportunities.

### **3.2.1.2 Improved incentive alignment**

It is common practice in LBOs for target companies' managers to invest their own capital, creating a long-term financial incentive for management, including upside potential and

downside risk. Baker and Montgomery (1994) note that the management team is often required to contribute their own capital to the buyout company, as this establishes a powerful incentive mechanism, especially in a buyout context characterised by an increased risk of default and the pursuit of notable operational improvements.

In addition, as Baker and Montgomery (1994) and Kaplan and Strömberg (2008) show, the PE model, characterised by the illiquidity of equity during the holding period, aligns managers' interests with those of shareholders by shifting focus on long-term value creation. On the contrary, in public firms, managers may be incentivised to make decisions based on their impact on quarterly performance and stock prices rather than on long-term value creation. Furthermore, Kaplan and Strömberg (2008) illustrate that the limited timeframe of the PE ownership period instils a sense of urgency that may be lacking in family-owned private companies, a driver for operational performance. The foreknown exit, typically within 4-6 years, ensures that changes in company value achieved during the holding period are realised within a limited timeframe, making management accountable for their actions.

Furthermore, while it is generally acknowledged that the performance-based compensation structure, coupled with equity ownership, incentivises them to act in a for the best interest of shareholders and maximise value, Phalippou (2009) argues that the highly performance-based compensation structure of GPs creates agency conflicts between GPs and LPs, as the 20 and 2 fee structure typical for PE funds grants GPs significant upside potential with limited downside risk, thereby incentivising excessive risk-taking.

### **3.2.1.3 Improved monitoring and control**

Buyouts are control investments, allowing the PE firm, as a majority voting owner, to influence governance practices and individual managerial appointments. Jensen and Ruback (1983) propose that LBOs are initially vehicles for acquiring companies with inefficient management and, as a result, are trading at low valuations. Jensen (1986)

argues that the most important mechanism of post-buyout value creation is the reduction of agency costs associated with the monitoring and governance problems arising from the public ownership of the target company.

According to Jensen (1989), shareholders often lack both the incentive and the ability to supervise the management of a publicly traded firm effectively. Similarly, Cotter and Peck (2001) find that widely dispersed ownership, without significant anchor shareholders, reduces shareholders' motivation to actively monitor management. Easterbrook and Fischel (1983) refer to shareholders' lack of interest in monitoring management in firms with fragmented ownership as the free-rider problem, which arises because monitoring costs are high relative to an individual shareholder's stake and because shareholders are willing to leave monitoring responsibilities to others. Fixing the agency problems associated with public ownership and a dispersed shareholder base is unlikely to be a significant source of value creation in the buyouts analysed in this thesis, as the sample consists mainly of private-to-private buyouts.

### **3.2.2 Parenting effect**

The concept of parenting advantage, developed by Campbell and Goold (1995), refers to the value that a corporate parent adds to its subsidiaries through oversight, resource allocation, and cost synergies from sharing services with subsidiaries, along with providing them with specialised expertise that could not be generated by the subsidiaries operating independently. Initially, the concept of parenting advantage was developed for conglomerates and other multi-business organisations; however, it has also been utilised in the buyout context since the first LBOs in the early 1980s. Jensen (1989) notes that PE firms do not merely act as passive owners overseeing portfolio companies but also provide strategic and operational expertise. However, Landau and Bock (2013) suggest that, unlike traditional multi-business corporations seeking synergies across subsidiaries, PE firms generally do not aim for cross-company synergies.

Research on parenting advantage in the LBO context has evolved alongside the growth of the PE industry and now recognises various mechanisms of value creation. Baker and Smith (1998) and Acharya et al. (2011) highlight the significance of access to the managerial and operational expertise of PE companies as an integral source of value creation. Wright et al. (2001) introduced the concept of restoring entrepreneurial spirit as a parenting effect arising from PE ownership, referring to the establishment of performance-oriented innovativeness and proactive decision-making. Furthermore, Boucly et al. (2011) noted that improved access to capital, resulting from PE ownership, is a parenting advantage. However, views on the parenting effect in the PE context are fragmented, and there is no generally accepted framework for classifying the mechanisms of the parenting effect. Berg and Gottschalg (2003) categorise the parenting effect into three aspects: restoring entrepreneurial spirit, advising, and enabling, to which Loos (2006) further adds culture and communication. Building on the views expressed in the existing literature, this thesis structures the parenting effect into three categories: advising and enabling, restoring entrepreneurial spirit, and alleviating financial constraints.

### **3.2.2.1 Advising and enabling**

Considering the key role of operational performance improvement as a driver of value creation in contemporary LBOs, leveraging the industrial and operational expertise alongside the human and social capital of PE sponsors for portfolio companies plays an integral role in value creation. Kester and Luehrman (1995) note that PE owners generally avoid micromanaging day-to-day operations, instead, they focus on providing strategic guidance and support management in decision-making through board work.

Hite and Vetsuypens (1989) highlight that PE sponsors can create value by sharing expertise and best practices learned across their portfolio companies, referred to as cross-utilisation of expertise. This involves leveraging resources and knowledge across the portfolio companies. Wright et al. (2001) note that, in addition to their internal

operational and managerial expertise, PE firms maintain extensive networks of industry professionals, including consultants, bankers and business executives. Meuleman et al. (2009) argue that, in addition to the internal expertise of the PE company, access to industry experts through GPs' networks is a driver for holding-period value creation. Bergström et al. (2007) further demonstrate that PE firms' industry contacts may help them source potential acquisition targets when pursuing M&A-driven growth during the holding period.

As operational improvements are a significant value-creation strategy in contemporary LBOs that require extensive industry expertise, several funds have focused on specific industries. Cressy et al. (2007) report that portfolio companies of industry-specific buyout funds achieved 8.5% higher profitability within three years of the buyout than those of generalist funds. Kaplan and Strömberg (2009) corroborate these findings, underscoring the specialised industry expertise of GPs achieved through industry focus as a source of operational value creation.

### **3.2.2.2 Restoring entrepreneurial spirit**

Restoring the entrepreneurial spirit, as initially defined by Berg and Gottschalg (2003), refers to the post-buyout shift in company culture, including agile decision-making, reduced bureaucracy, enhanced accountability, and encouragement for proactive risk-taking. Mature companies operating in stagnant industries, non-core divisions of larger conglomerates, or large public companies may lack an entrepreneurial culture, resulting in a company culture that is suboptimal for value creation.

The underlying reasons for the absence of an entrepreneurial culture vary across companies. Wright et al. (2001) observe that the peripheral divisions of multi-business conglomerates are frequently overlooked by management, resulting in insufficient resources that limit their growth

The direct impact of restoring the entrepreneurial spirit on post-buyout operational performance presents measurement challenges. Nonetheless, earlier studies have documented alterations in firms' operational activities that may be attributed to changes in corporate culture following the buyout. Specifically, Bull (1989) and Achleitner et al. (2010) have reported increased R&D expenditures post-buyout, signalling enhanced innovativeness, potentially resulting from the restored entrepreneurial spirit.

### **3.2.2.3 Alleviation of financial constraints**

LBOs can support target companies' growth by alleviating financial constraints by leveraging the PE sponsor's networks and expertise to secure capital from financial markets.

Boucly et al. (2011) observe that PE sponsors generally do not provide direct financing to portfolio companies; instead, they assist them in securing financing by leveraging their expertise and capital market contacts. PE firms can be seen as vehicles that provide portfolio companies with access to capital on more favourable terms, thereby enabling them to use it as an engine of growth. Thus, Boucly et al. (2011) suggest that LBOs can be described as a 'substitute for weak capital markets'. Additionally, DeAngelo and DeAngelo (1984) point out that PE sponsors are active participants in debt capital markets and thus have established relationships with lenders and debt investors. Moreover, Boucly et al. (2011) suggest that, due to long holding periods, banks consider PE firms to be more stable borrowers. In addition, Chung (2011) notes that PE firms are generally considered reliable lenders who actively monitor their portfolio companies, thereby reducing information asymmetry between lenders and their portfolio companies, making PE firms preferable borrowers.

In addition to securing financing, PE sponsors can negotiate better loan terms than firms operating on a standalone basis, as highlighted by Baker and Smith (1998). Beyond bank

loans, PE sponsors facilitate their portfolio companies' access to the debt and equity capital markets.

Previous research on LBO value creation predominantly focuses on US or UK buyouts (Kaplan, 1989; Smith, 1990; Guo et al., 2011), where the credit market is considered more liquid compared to the Nordics. Additionally, Kaplan and Strömberg (2009) highlight that 34% of US buyouts are public-to-private transactions, and the sample consists exclusively of large-scale buyouts, as studied by Lichtenberg and Siegel (1990), Kaplan and Stein (1993), and Axelson et al. (2013). Consequently, these companies are noted to have adequate access to external capital on favourable terms, even before the buyout. Conversely, small- and mid-sized family-owned companies, particularly in Europe, may be more credit-constrained and thus benefit more from alleviating credit constraints.

## **4 Data**

This section presents the sample data of the LBO companies and the control companies used in the study, as well as the selection process for the data.

### **4.1 Buyout sample**

#### **4.1.1 Sample selection process**

The sample of this thesis covers all Finnish LBO investments completed between 1 January 2010 and 31 December 2024 that meet certain pre-determined criteria and for which financial data are available for the study period. In this study, Finnish LBO transactions are defined as buyouts by Finnish PE sponsors in which the target company is also headquartered in Finland. The sample includes both exited investments and companies that remained in PE portfolios as of the end of the study period, which covers the three years following the buyout (t+1, t+2, and t+3).

The sample buyouts and transaction data were initially retrieved from the Mergermarket database using the following filters: completed deals within the above period, targets headquartered in Finland, acquirers headquartered in Finland, and transactions classified as buyouts. To expand coverage and ensure that all LBO investments meeting the criteria were included in the sample, the list of buyouts retrieved from Mergermarket was manually cross-checked against disclosed acquisitions on the websites of all Finnish PE sponsors engaged in buyouts during the period: Intera Partners, Vaaka Partners, Sponsor Capital, MB Funds, Sentica Partners, Korona Invest, Saari Partners, and Juuri Partners. In addition, transaction press releases were reviewed where necessary to verify deal completion dates and post-buyout legal entity names.

The following transactions were excluded from the initial buyout sample:

1. Non-PE acquirers, for example family offices, development companies, and PE transactions that were minority or otherwise non-control investments.
2. Growth equity and distressed/restructuring investments.
3. Industry-consolidation buyouts in which multiple companies were merged at or immediately after closing, and carve-outs of corporate divisions, when pre-buyout, stand-alone financials for the focal entity were unavailable.
4. Cases with insufficient financial reporting to construct a balanced event window, specifically when consolidated financial statements were missing for one fiscal year before or three after the buyout (t-1, t+1, t+2, t+3), for example, because the legal entity was created at closing, group accounts were not consolidated, or the organisational structure was too complex to map reliably.
5. Targets that entered bankruptcy within the first three post-buyout years, which prevents the construction of the post-buyout window on a comparable basis.
6. Firms for which no adequate control counterparts could be identified for the study's benchmarking design.

Scellato and Ughetto (2012) note that, in LBO investments, it is typical for PE sponsors to establish a holding company (HoldCo) to acquire the target. This practice often results in part of the acquired company's post-buyout financials being reported under the HoldCo, meaning that legal names and business IDs frequently change after the buyout. Therefore, the real pre- and post-buyout operating legal entity of each sample company was identified by cross-checking sponsor disclosures, press releases, and registry information. Consistent with Boucly et al. (2011), this study uses the consolidated financial statements of the real operating parent company conducting the actual business activities, rather than those of non-operative acquisition vehicles, even if the latter may be the ultimate parent company.

The financial data of the sample companies were initially collected from Orbis, a global financial information database covering ownership details and financial information on private and public companies, and were cross-checked against data from Valu8, a

Sweden-based financial database covering privately held European companies, in order to mitigate potential data validity issues arising from database-specific adjustments and differences in reporting standards. In addition, all sample transactions were cross-checked against PE sponsors' websites and press releases, where sponsors sometimes disclosed key financial figures of the acquired company, typically revenue and EBITDA, which were used as additional validity checks.

Applying these procedures in compiling the raw buyout sample yielded a list of 95 buyouts, which was reduced to 89 after excluding transactions that did not qualify as LBOs, such as acquisitions of minority stakes and transactions in which the acquirer was not in fact a PE sponsor. The sample was then further reduced by excluding companies due to missing financial data, unconsolidated financial statements, or the unavailability of suitable matching control companies. The final study sample comprises 52 buyouts.

However, the number of treated buyout companies varies slightly across the research period from  $t+1$  to  $t+3$ , as the financial data of some sample companies were missing for certain years. As a result, the sample size may decline by a few observations depending on the year and the variable examined. In particular, data on inventory and employee count were missing for several sample companies, and therefore the sample sizes for these variables are clearly below 52. The number of treated sample companies included in each year throughout the study period from  $t+1$  to  $t+3$  is reported in the result tables presented in Chapter 6.

Financial statements for Finnish limited-liability companies are publicly filed with the Finnish Trade Register and are subject to a statutory audit. In addition, the financial data of the buyout firms were cross-checked between Valu8 and Orbis and compared with any financial information disclosed on the PE firms' websites to ensure that the figures reported in the databases accurately correspond to the correct legal entity.

#### 4.1.2 Descriptive characteristics of the buyout sample

As noted, the final study sample comprises 52 Finnish LBOs completed between 2010 and 2024. Table 1, presented below, summarises the financial characteristics of the sample companies in the year prior to the buyout (t-1). A distinctive feature of the study sample is the relatively small size of the buyout companies, especially when compared with studies on U.S. buyouts. Several earlier studies on LBOs apply minimum size thresholds and exclude smaller firms measured by post-buyout revenue. Importantly, in this study, sample companies are not excluded on the basis of financial performance thresholds; instead, target companies of varying size and profitability are included. By contrast, many prominent studies in the LBO literature examine substantially larger targets and apply explicit size thresholds to exclude smaller firms. For example, Guo, Hotchkiss, and Song (2011) exclude firms with pre-buyout revenue below \$100 million, and Acharya et al. (2013) exclude transactions with an enterprise value below €50 million.

However, the sample's median pre-buyout revenue is €8.7 million, which is broadly consistent with Boucly et al. (2011), who report a median revenue of €13.1 million for a sample of 839 French LBOs.

When it comes to profitability, the sample of this study is more consistent with previous research. The median pre-buyout EBITDA margin of the sample is 11%, which may be considered a typical profitability level for mature-stage Finnish businesses across industries and is in line with earlier studies: Andrade and Kaplan (1998) report a median EBITDA margin of 9.8%, Nikoskelainen (2006) reports 12%, and Haque (2021) reports 11.34%. The sample's return on capital employed (ROCE) is 24%, which is slightly higher than the 18% reported by Boucly et al. (2011).

<b>Financial metric</b>	<b>Min</b>	<b>Max</b>	<b>Average</b>	<b>Median</b>	<b>Std. Dev</b>	<b>n</b>
Sales (EURt)	228	76 890	15 092	8 673	15 490	52
Gross margin (%)	-56 %	99 %	60 %	58 %	29 %	51
EBITDA margin (%)	-56 %	42 %	10 %	11 %	14 %	52
Total assets (EURt)	167	41 618	7 645	4 691	8 401	51
ROCE (%)	-106 %	149 %	30 %	24 %	39 %	49
Net debt / EBITDA (x)	-2,81	6,83	0,14	-0,09	1,67	44
NWC / sales (x)	-0,29	11,57	0,36	0,08	1,65	49
Employees (#)	2	1 052	118	70	177	39
Sales / employees (EURt)	20	2 563	237	131	401	39

**Table 1.** Financial overview of the sample buyouts

A substantial share of the buyouts in the sample of target firms, 31%, are classified under technical services -industry based on their NACE codes, while 17% are classified as manufacturing firms. The industry distribution of the sample is broadly consistent with Finland's economic structure, excluding agriculture and forestry (Statistics Finland, 2024). Technical services and software development are overrepresented in the buyout sample, suggesting that PE investors favour relatively stable sectors with asset-light business models and solid growth potential.

<b>Industry</b>	<b>Number of buyouts</b>	<b>Share of the sample</b>
Technical services	16	31 %
Manufacturing	9	17 %
Software development	5	10 %
Food & beverages	3	6 %
Healthcare	3	6 %
Recycling	4	8 %
Construction	2	4 %
Professional services	3	6 %
Education	2	4 %
Other services	2	4 %
Retail	2	4 %
Hospitality and leisure	1	2 %
<b>Total</b>	<b>52</b>	<b>100 %</b>

**Table 2.** Distribution of the sample buyouts by industry

In contrast to the prominent literature on the impact of LBOs on operating performance, most of which examines large economies of U.S., as an example, Kaplan, (1989), Lichtenberg & Siegel (1990), Davis et al., (2014) or U.K. buyouts such as Harris et al. (2005), Meuleman et al. (2009) and Amess & Wright, (2007), where the study samples are sizeable and include transactions executed by a broad set of PE firms, this thesis is focused on Finland, where the PE industry is less developed and relatively immature. Consequently, the sample is smaller and more concentrated, with a greater share of sample buyouts attributable to a few notable PE firms. Specifically, the three largest PE firms account for 54% of the sample buyouts, suggesting that post-buyout operating performance may be disproportionately influenced by the actions and value-creation strategies of these firms. In addition, it is worth noting that all PE firms whose buyout investments are examined in this study can be characterised as generalist investors, with no pronounced industry specialisation or emphasis on unconventional value-creation strategies.

<b>PE sponsor</b>	<b>Number of buyouts</b>	<b>Share of the sample</b>
Vaaka Partners	9	17 %
Juuri Partners	10	19 %
Korona Invest	9	17 %
Sentica Partners	7	13 %
MB Funds	5	10 %
Intera Partners	5	10 %
Sponsor Capital	4	8 %
Saari Partners	3	6 %
<i>Total</i>	<i>52</i>	<i>100 %</i>

**Table 3.** Distribution of the sample buyouts by PE sponsor

Consistent with Davis et al. (2019), the buyouts in the sample are classified by acquisition type into four categories: (i) acquisitions of independent privately held companies

(private-to-private), (ii) acquisitions from another PE firm (secondary buyouts), (iii) acquisitions of carved-out divisions or business units (divisional buyouts), and (iv) acquisitions of publicly listed companies (public-to-private). Notably, the sample contains no public-to-private buyouts.

In this sample, the share of private-to-private buyouts is relatively high compared with studies of U.S. and U.K. buyouts, where target firms are also larger. For example, private-to-private transactions account for 52% in Strömberg's (2008) sample and 40% in Chung's (2010) sample.

<b>Buyout type</b>	<b>Number of buyouts</b>	<b>Share of the sample</b>
Private-to-private	47	90 %
Secondary buyout	4	8 %
Divisional buyout	1	2 %
<i>Total</i>	<i>52</i>	<i>100 %</i>

**Table 4.** Distribution of the sample by buyout type

The median holding period for the buyouts in the sample is 4.5 years, which is somewhat shorter than the 6.70 years reported by Kaplan (1991), based on a sample of 183 large U.S. LBOs completed between 1979 and 1986. The shorter median holding period observed in this study, focused on small and mid-sized targets, may reflect differences in value-creation dynamics and exit opportunities depending on the size of the target company. As smaller targets may face a broader group of potential acquirers, particularly strategic buyers, this can increase the likelihood of an earlier exit, compared with the more complex process of exiting a large corporation.

<b>PE Sponsor</b>	<b>Average length (years)</b>	<b>Median length (years)</b>	<b>n</b>
Sentica Partners	6,3	6,3	7
Intera Partners	5,5	5,4	5
Vaaka Partners	6,0	6,0	9
MB Funds	4,5	4,4	5
Sponsor Capital	4,8	4,3	4
Korona Invest	4,7	4,4	9
Saari Partners	4,0	4,0	3
Juuri Partners	3,4	3,0	10
<i>Total sample</i>	<i>4,8</i>	<i>4,5</i>	<i>52</i>

**Table 5.** Length of the buyout companies' holding period by PE sponsor

The exit-route distribution of the sample buyouts is skewed towards trade sales, with 58% of exited companies acquired by a strategic buyer. By comparison, Kaplan and Strömberg (2009) report that trade sales account for 38% of exits in their study of 17,171 worldwide LBOs. Similarly, Degeorge et al. (2015) document a 38% share for trade sales, and Zhou et al. (2014) find that trade sales represent approximately 40% of buyout exits.

<b>Exit type</b>	<b>Number of buyouts</b>	<b>Share of the sample</b>
Still in portfolio	24	46 %
Acquired by strategic buyer	14	27 %
Secondary buyout	10	19 %
IPO	2	4 %
Acquired by management	1	2 %
Acquired by private investors	1	2 %
<i>Total</i>	<i>52</i>	<i>100 %</i>

**Table 6.** Distribution of the sample buyouts by exit route

## 4.2 Control group sample selection process

Consistent with Kaplan (1989) and Smith (1990), the control sample in this study is formed using a direct matching strategy, in which the control group is constructed on the basis of the similarity of pre-buyout characteristics to those of the sample companies. The process for building the control group closely follows Boucly et al. (2011). For each buyout firm, the control group is compiled from companies that meet the following criteria:

(i) Industry matching: Control firms must operate in the same industry as the sample firm. In line with Barber and Lyon (1996), industry matching is based on the same first two digits of the NACE code, which is the EU's standard industry classification system used to describe a company's primary activity. Barber and Lyon (1996) argue that four-digit codes do not materially improve matching accuracy, while using the first two digits makes it possible to identify a larger number of relevant control firms. Similarly, Kaplan (1989) and Guo et al. (2011) select control firms based on SIC codes, which are the U.S. equivalent of NACE for industry classification.

(ii) Country matching: All control firms are headquartered in Finland, like the sample companies. Boucly et al. (2011) also use country matching in the selection of the control sample.

(iii) Size and profitability matching: The similarity of the control companies' financial profiles to those of the sample companies is ensured by matching the size and profitability of the control firms to those of the sample companies. Control firms' revenue and ROCE must fall within  $\pm 50\%$  of the corresponding values of the buyout firms in the pre-buyout fiscal year ( $t-1$ ). The  $\pm 50\%$  threshold is chosen as a trade-off between matching accuracy and ensuring a sufficient number of eligible control firms for each buyout, similarly to Boucly et al. (2011). By contrast, Boucly et al. (2011) use revenue and employee count as the criteria for selecting the control group, arguing that profitability may revert over time and is therefore a less relevant matching characteristic.

Companies with limited or inconsistent financial statements are removed from the initial control company sample, as are the buyout firm itself and its subsidiaries. In addition, firms owned by another PE sponsor are excluded from the initial sample. If no eligible control firm is identified for a given sample company, that company is removed from the final study sample. To reduce concerns related to control sample selection, all firms meeting the criteria are first included in the preliminary control company sample, and if more than five suitable control firms are identified for a given sample firm, only the five closest peers are included in the final control sample, consistent with Boucly, Sraer, and Thesmar (2011). The closeness of the control companies to the sample companies is defined as the sum of squared deviations between the buyout firm and the control firm in pre-buyout ( $t-1$ ) revenue and ROCE. Consistent with Barber and Lyon (1996), the selected control group is then held constant over the study window ( $t+1$ ,  $t+2$ , and  $t+3$ ). Ultimately, the final control sample comprises 211 firms, representing an average of 3.7 control firms per sample company, which is slightly higher than the 3.3 reported by Cressy et al. (2007).

## 5 Methodology

In this section, the applied research methodology is presented, including the research variables used to measure operating performance and the statistical tests employed to analyse and interpret the results.

### 5.1 Difference-in-difference estimation

The study is performed with the Difference-in-Differences (DiD) method, a widely used method in prior studies examining the effects of LBOs on operating performance, as applied by Kaplan (1989), Lichtenberg and Siegel (1990) and Davis et al (2014).

According to Ashenfelter and Card (1978), the DiD method estimates the causal effect of an event by comparing changes in outcomes over time between a treated group and a comparable control group. Ashenfelter and Card (1978) note that the DiD approach assumes that, in the absence of the external event, the two groups would have followed parallel trends. Thus, the difference in the changes in outcomes between the two groups can be interpreted as the effect of the event affecting the treated group but not the control group. In this thesis, the DiD method is applied to measure the effect of the buyout on the operating performance of the target firms during the first three years following the LBO transaction.

$$DiD = (\bar{y}_{post.LBO} - \bar{y}_{pre.LBO}) - (\bar{y}_{post.control} - \bar{y}_{pre.control}) \quad (1)$$

As stated by Ashenfelter and Card (1978), the DiD methodology relies on the parallel trends assumption, according to which the operating performance of LBO target firms and their matched peer firms would have followed similar trends in the absence of the buyout. Therefore, the control firms in this study are selected as close peers of the buyout companies in order to establish a theoretical trajectory for the financial development of the buyout companies had the buyout not taken place.

The results of the DiD estimation are reported using medians rather than means, consistent with Kaplan (1989) and Harris (2005), in order to improve the robustness of the analysis, as extreme observations can have an excessive effect on averages.

## **5.2 Operative performance measurements**

No universally accepted framework exists for measuring post-buyout changes in operating performance. However, prior research on the effect of LBOs on operating performance has often relied on certain standard performance measures. Accordingly, in order to provide a broad view of the effect of LBOs on operating performance and to maintain comparability with prior research, the operating performance metrics examined in this thesis are selected on the basis of established studies on the topic.

The effect of the buyout on growth is measured through the log change in revenue, comparing revenue in each post-buyout year ( $t+1$ ,  $t+2$ , and  $t+3$ ) with revenue in the year prior to the buyout ( $t-1$ ). The effect on profitability is assessed using multiple profitability measures, as different profitability measures reflect different underlying drivers. Consequently, this thesis examines post-buyout percentage changes in gross margin, EBITDA margin, and EBIT margin, following Nikoskelainen (2006), Guo et al. (2011), and Boucly et al. (2011). According to Kaplan (1989), EBITDA is a relevant profitability measure in a buyout context because it is unaffected by capital structure. However, post-buyout changes in EBIT margin are also examined, in line with Desbrières and Schatt (2002), Cressy et al. (2007), and Nordström (2015), as EBIT margin is affected by depreciation and amortisation, which provide a proxy for replacement investment and, particularly in more capital-intensive businesses, a more realistic view of cash flow.

Finally, gross margin is included to indicate whether changes in profitability arise at the gross profit level. Although less common than EBITDA- or EBIT-based measures in buyout studies, gross margin has been examined by scholars, including Muscarella and Vetsuypens (1990) and Fox and Marcus (1992).

Next, the buyout's impact on the asset base is examined, as free cash flow generation and firm value are also influenced by changes in capital invested in operations. Accordingly, the log change in total assets is measured using the approach of Guo et al. (2008) and Scellatto and Ughetto (2013). In addition, to capture potential post-buyout changes in investment intensity, the log change in fixed assets is analysed, consistent with Boucly et al. (2011).

The thesis also covers Post-buyout changes in working capital. Weir et al. (2011) and Boucly et al. (2011) analyse changes in aggregate working capital; this thesis adopts a more detailed, item-level approach to measuring changes in operating working capital. Specifically, changes in trade receivables, inventories, and trade payables are measured relative to revenue. This more detailed specification is used to better identify the practical channels through which PE ownership affects a buyout target's working capital requirements.

Finally, post-buyout effects on employment are examined, as workforce outcomes are a central variable in several prior studies of buyout impacts. Employment effects have been analysed, for example, by Lichtenberg and Siegel (1990), Nikoskelainen (2006), and Amess and Wright (2007). In this study, the post-buyout change in employment is measured as the log change in average full-time equivalents (FTEs).

<b>Variable</b>	<b>Definition</b>
<b>Growth</b>	
Sales growth(CAGR)	The compound annual growth rate of sales over a period nn years
<b>Profitability</b>	
Gross profit / Sales	Sales minus cost of goods sold divided by sales
EBITDA / Sales	Earnings before interest, taxes, depreciation and amortization divided by sales
EBIT / Sales	Operating profit (earnings before interest and taxes) divided by sales
<b>Capital efficiency</b>	
Total assets (log change)	The change in total assets measured as a log difference
Fixed assets (log change)	The log difference in fixed (tangible) assets
<b>Working capital</b>	
Receivables / revenue	Trade receivables divided by revenue
Payables / revenue	Trade payables divided by revenue
Inventory / revenue	Inventory divided by revenue
<b>Personnel</b>	
Number of personnel (log change)	Log difference in full-time equivalents (FTEs)

**Table 7.** Selected variables for measuring operative performance

### 5.3 Study window

A three-year post-buyout window (t+1, t+2, t+3) is adopted, consistent with prior literature, including Kaplan (1989), Smith (1990), Opler (1992) Chung (2011) and Scellato & Ughetto (2013). Conversely, Diller et al. (2009) has noted that buyout investments frequently display a firm-level J-curve, whereby profitability and cash flow decline in the early post-acquisition years as value-creation programs are implemented but not yet realized. However, to ensure comparability with the previous literature, a three-year post-buyout window is selected as the study period.

In line with Kaplan (1989), Opler (1992), and Scellato and Ughetto (2013), the transaction year, t0, is excluded from the study window, as the financial statements for the buyout year generally include non-recurring transaction-related costs, such as M&A and legal fees, as well as integration and restructuring costs. In addition, the length of the fiscal year may be non-standard if a new legal entity is formed after the buyout. However,

excluding the transaction year ( $t_0$ ) does not fully eliminate transaction-related distortions in the post-buyout financial statements, as the  $t+1$  financials may still be affected by buyout-related costs.

#### **5.4 Statistical method**

The statistical significance of the median DiD post-buyout changes in operative performance is assessed using the Wilcoxon signed-rank test. This approach is consistent with Kaplan (1989), Barber and Lyon (1996) and Glasfors and Malmros (2000).

The Wilcoxon signed-rank test is a non-parametric method for evaluating whether the median of the differences between paired observations equals zero (Wilcoxon, 1945). A non-parametric test is preferred in the study because operating-performance changes are often non-normally distributed and may contain extreme outliers, which can significantly affect parametric  $t$ -statistics. Moreover, Meek et al. (2007) note that the Wilcoxon signed-rank test is an appropriate choice when a study is conducted with small sample sizes, as this study was conducted with a sample of 52 buyout firms.

#### **5.5 Limitations**

Taking into account the inherent nature of buyout investments, as well as the selected sample, research methodology, and research setting, certain limitations arise that affect the validity of the results of this thesis and should be considered when interpreting the findings.

First, research on the company-level effects of LBOs is inherently subject to endogeneity bias. According to Roberts and Whited (2013), endogeneity bias refers to a situation in which the explanatory variable is correlated with the regression error term, causing the estimated coefficients to capture not only the causal effect of interest but also the influence of omitted variables, reverse causality, measurement error, or self-selection. LBO research is particularly exposed to this bias because PE sponsors do not acquire

target firms randomly, but instead selectively choose firms based on characteristics considered attractive in a buyout target, such as strong free cash flow, a stable business model, high growth potential, and a strong management team. As a result, the sample may be skewed toward companies with particular characteristics that may also influence post-buyout performance. In this thesis, the potential influence of endogeneity bias is mitigated by constructing a control group of non-buyout firms that closely resembles the target firms. To make the control group as similar as possible to the target firms prior to the buyout, the matching criteria used in this thesis, following prior research, include industry and country matching as well as size and profitability matching. However, these measures do not eliminate endogeneity entirely. The sample selection process is described in more detail in Chapter 4.2.

In addition, research on LBOs is typically affected by survivorship bias. As noted by Groh and Gottschalg (2008), survivorship bias refers to a sample selection problem in which the observed outcomes are disproportionately based on firms that remain observable or survive throughout the research period. In LBO research, the automatic exclusion of companies that go bankrupt may bias the results upward, as highlighted by Ljungqvist and Richardson (2003). Survivorship bias is an especially relevant limitation in buyout research because, due to their highly leveraged capital structures, buyout-backed companies face an elevated risk of bankruptcy. Kaplan and Strömberg (2009), for example, found that 11% of LBO targets experience bankruptcy during the holding period.

Furthermore, the context of an LBO transaction may bias the financial statements of the target companies. Metrick and Yasuda (2010) note that the earnings of buyout companies often follow a J-curve, as PE sponsors' value creation initiatives frequently involve front-loaded costs during the early years of the holding period. As a result, profitability in the early post-buyout years may appear artificially weak. In addition, Kaplan (1998) and Chung (2011) emphasise that a target company's total assets may increase as a result of the LBO due to the goodwill created in the transaction. Therefore,

post-buyout growth in total assets may partly reflect purchase price allocation rather than genuine expansion in the company's operating asset base.

LBO target companies may also be subject to earnings manipulation before and after the buyout. DeAngelo (1986) notes that PE sponsors may have incentives to manage earnings upward, particularly near exit. Nevertheless, because the financial statements of every sample company in the study are audited and Finnish accounting data are widely considered reliable, the risk of material earnings manipulation is considered limited in this study.

Finally, the effects of the COVID-19 pandemic on the financial performance of the target companies should be taken into account when interpreting the results. Due to the use of the DiD methodology, the effect of the pandemic is partly controlled for, as the control firms were equally exposed to the macroeconomic shock caused by the pandemic. However, the pandemic affected industries unevenly. Several sample firms, including LIWLIG Group Oy, HopLop Oy, Picnic Finland Oy, Smoothie Heaven Oy, and Coptersafety Oy, were particularly severely affected by the pandemic. Therefore, part of their observed post-buyout underperformance may be attributable to sector-specific pandemic effects rather than to buyout ownership itself.

## 6 Empirical results and analysis

The findings of the study are presented in this chapter in Tables 8–17, which report the median peer-adjusted abnormal post-buyout change for each selected operating performance variable over the study period (t+1, t+2, and t+3) following the buyout. The result data presented in the following tables include:

**N:** Number of buyout firms analysed.

**Median DiD:** Median peer-adjusted percentual abnormal post-buyout change.

**IQR:** A robust measure of variation across sample statistics, defined as the difference between the 75th and 25th percentiles and presented in percentages.

**Z (Wilcoxon, two-sided):** Test statistic adjusted for continuity from the Wilcoxon signed-rank test.

**p-value (two-sided):** The probability of observing a result at least as extreme as the one obtained under the null hypothesis that the median DiD equals zero. Significance markers appended to the median DiD estimates (\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ ) indicate the statistical significance of the results based on the corresponding p-values of the test statistic. Furthermore, p-values below 0.001 are reported as “< 0.001”

**Effect size  $r$ :** Summarises the magnitude of the results of Wilcoxon signed-rank test, independent of sample size, by indicating how large the median effect is in standardised terms.

### 6.1 LBOs effect on revenue

LBO target companies show strong and increasing outperformance in revenue growth during the first three years after the LBO compared with their matched peer firms. This

peer-adjusted abnormal revenue growth is statistically significant in each post-buyout year, with two-sided p-values below 0.001 throughout.

In the first year following the LBO, the median abnormal increase in revenue is 48.9%, suggesting that PE ownership is associated with an immediate increase in turnover. The outperformance then intensifies over time, indicating that the effect of value-creation initiatives continues to scale in the years following the transaction.

<i>Year from buyout</i>	<i>t+1</i>	<i>t+2</i>	<i>t+3</i>
<b>N</b>	52	51	51
<b>Median DiD</b>	48,9 %***	54,8 %***	73,4 %***
<b>IQR</b>	52,4 %	81,8 %	94,4 %
<b>Z, (Wilcoxon, two-sided)</b>	4,86	4,99	5,44
<b>p-value, two-sided</b>	< 0,001	< 0,001	< 0,001
<b>Effect size r</b>	0,67	0,76	0,76

**Table 8.** The effect of LBO on revenue growth

## 6.2 LBOs' effect on profitability

Compared with their peers, the sample shows no statistically significant median change in gross margin across the three post-buyout years. This suggests that PE ownership did not result in an increase in pricing or improvements in procurement terms.

<i>Year from buyout</i>	<i>t+1</i>	<i>t+2</i>	<i>t+3</i>
<b>N</b>	50	49	50
<b>Median DiD</b>	-1,1 %	0,9 %	-0,3 %
<b>IQR</b>	13,4 %	18,6 %	17,1 %
<b>Z, (Wilcoxon, two-sided)</b>	0,91	1,03	0,98
<b>p-value, two-sided</b>	0,36	0,30	0,32
<b>Effect size r</b>	0,13	0,15	0,14

**Table 9.** The effect of LBO on gross margin

Furthermore, LBO targets show a statistically significant decline in EBITDA margin of 2.9 percentage points at t+1 ( $p = 0.02$ ) and t+2 ( $p = 0.01$ ), followed by a smaller, marginally significant decline by t+3 ( $p = 0.09$ ). Taken together with the flat gross-margin results, these findings suggest that the early post-buyout compression in EBITDA margin is more likely to reflect increases in operating expenses rather than changes in pricing power or cost of goods sold.

<i>Year from buyout</i>	<i>t+1</i>	<i>t+2</i>	<i>t+3</i>
<b>N</b>	51	50	51
<b>Median DiD</b>	-2,9 %**	-3,3 %***	-2,7 %*
<b>IQR</b>	10,5 %	8,2 %	11,4 %
<b>Z, (Wilcoxon, two-sided)</b>	2,29	2,44	1,71
<b>p-value, two-sided</b>	0,02	0,01	0,09
<b>Effect size r</b>	0,32	0,35	0,24

**Table 10.** The effect of LBO on EBITDA margin

LBO target companies experienced a decline in EBIT margin in each of the first three years following the buyout. The persistence of this compression throughout the study period suggests that, in the Finnish context, PE sponsors' post-buyout value-creation efforts have been more strongly oriented towards increasing turnover, while operating profitability, as measured by EBIT margin, has weakened.

The peer-adjusted post-buyout decline in EBIT margin observed at t+1, t+2, and t+3 is generally larger than the corresponding post-buyout decline in gross margin and EBITDA margin. The relatively greater decline in EBIT margin may result from higher post-buyout depreciation and amortisation expenses, potentially arising from the amortisation of intangible assets following the acquisition. In addition, Kaplan (1989) notes that inventory write-ups following an LBO transaction may reduce post-buyout operating profitability. However, as both gross margin and EBITDA margin also weakened after the buyout, the decline in profitability is unlikely to be explained solely by purchase price

allocation and amortisation effects. Instead, the findings suggest that LBOs' results genuinely decrease profitability margins during the first years of the holding period.

<i>Year from buyout</i>	<i>t+1</i>	<i>t+2</i>	<i>t+3</i>
<b>N</b>	46	45	46
<b>Median DiD</b>	-3,7 %**	-4,4 %***	-4,3 %**
<b>IQR</b>	15,7 %	8,8 %	10,9 %
<b>Z, (Wilcoxon, two-sided)</b>	2,09	3,12	2,36
<b>p-value, two-sided</b>	0,04	< 0,001	0,02
<b>Effect size r</b>	0,31	0,46	0,35

**Table 11.** The effect of LBO on EBIT margin

### 6.3 LBOs' effect on assets

In line with revenue, the asset base of the sample companies also increased notably and statistically significantly in all three years following the buyout. The median DiD estimates were +57.6% in t+1, +76.3% in t+2, and +75.2% in t+3, with p-values below 0.001 throughout the study period.

The magnitude of the abnormal post-buyout increase in total assets closely follows the corresponding abnormal post-buyout revenue growth. The results supports the interpretation that value creation in Finnish buyouts is mainly driven by focusing on growth, either through scaling existing operations or through inorganic expansion via add-on acquisitions, rather than by streamlining operations through capital-efficiency improvements, cost-cutting programmes, or price increases.

<i>Year from buyout</i>	<i>t+1</i>	<i>t+2</i>	<i>t+3</i>
<b>N</b>	50	47	49
<b>Median DiD</b>	57,6 %***	76,3 %***	75,2 %***
<b>IQR</b>	67,2 %	91,2 %	95,8 %
<b>Z, (Wilcoxon, two-sided)</b>	5,48	5,20	5,34
<b>p-value, two-sided</b>	< 0,001	< 0,001	< 0,001
<b>Effect size r</b>	0,78	0,76	0,76

**Table 12.** The effect of LBO on the change in total assets

The peer-adjusted abnormal increase in fixed assets is notable and statistically significant throughout the first three years following the buyout, with median DiD estimates of 57% in t+1, 76% in t+2, and 75% in t+3, while p-values remain consistently below 0.001. Moreover, the median DiD estimate for post-buyout growth in fixed assets is substantially larger than the corresponding post-buyout change observed in total assets. Taken together, these findings suggest that Finnish PE sponsors tend to pursue post-buyout value creation particularly through investment-led capacity scaling and add-on acquisitions, resulting in an expansion of the asset base and, most notably, strong growth in fixed assets.

<i>Year from buyout</i>	<i>t+1</i>	<i>t+2</i>	<i>t+3</i>
<b>N</b>	50	49	50
<b>Median DiD</b>	80,3 %***	97,1 %***	90,6 %***
<b>IQR</b>	118,5 %	172,8 %	205,2 %
<b>Z, (Wilcoxon, two-sided)</b>	4,72	4,80	4,28
<b>p-value, two-sided</b>	< 0,001	< 0,001	< 0,001
<b>Effect size r</b>	0,67	0,69	0,60

**Table 13.** The effect of LBO on fixed assets

## 6.4 LBOs effect on working capital

There was no statistically significant peer-adjusted change in trade receivables relative to revenue in any of the first three years following the buyout. The median DiD estimates are small and positive, at 2.1% in t+1, 0.9% in t+2, and 1.6% in t+3, but the results are not statistically significant. Considering the strong post-buyout revenue growth observed in the sample, these findings suggest that PE ownership did not generally lead to a loosening of customer payment terms.

<i>Year from buyout</i>	<i>t+1</i>	<i>t+2</i>	<i>t+3</i>
<b>N</b>	45	45	44
<b>Median DiD</b>	2,1 %	0,9 %	1,6 %
<b>IQR</b>	11,2 %	8,8 %	6,1 %
<b>Z, (Wilcoxon, two-sided)</b>	1,59	1,11	1,24
<b>p-value, two-sided</b>	0,11	0,27	0,21
<b>Effect size r</b>	0,24	0,16	0,19

**Table 14.** The effect of LBO on trade receivables in relation to revenue

Sample buyout companies show a peer-adjusted increase in trade payables relative to revenue in the first two years after the LBO. The median DiD is +1.7% at t+1 and +1.4% at t+2, and both changes are statistically significant. However, the effect decreases by the third year: at t+3, trade payables relative to revenue show a smaller abnormal increase of +0.9%, which is not statistically significant ( $p = 0.19$ ).

<i>Year from buyout</i>	<i>t+1</i>	<i>t+2</i>	<i>t+3</i>
<b>N</b>	45	46	46
<b>Median DiD</b>	1,7 %***	1,4 %***	0,9 %
<b>IQR</b>	4,4 %	5,7 %	5,1 %
<b>Z, (Wilcoxon, two-sided)</b>	3,30	2,50	1,30
<b>p-value, two-sided</b>	< 0,001	0,01	0,19
<b>Effect size r</b>	0,49	0,37	0,19

**Table 15.** The effect of LBO on trade payables in relation to revenue

Buyout companies experienced a small but statistically significant post-buyout increase in inventory relative to revenue compared with the control group throughout the first three years following the buyout. These findings suggest that tighter inventory control has not been a key value creation method in Finnish buyouts, as post-buyout inventory levels increased slightly but consistently.

<i>Year from buyout</i>	<i>t+1</i>	<i>t+2</i>	<i>t+3</i>
<b>N</b>	26	25	25
<b>Median DiD</b>	0,9 %***	1,1 %***	1,0 %***
<b>IQR</b>	6,3 %	4,8 %	5,7 %
<b>Z, (Wilcoxon, two-sided)</b>	5,70	4,91	4,86
<b>p-value, two-sided</b>	< 0,001	< 0,001	< 0,001
<b>Effect size r</b>	1,12	0,98	0,97

**Table 16.** The effect of LBO on inventory in relation to revenue

## 6.5 LBOs' effect on employees

Buyout companies had a notable and statistically significant increase in headcount consistently throughout the first three years following the LBO. The median DiD increase in the number of employees was 30.4% in t+1, 39.4% in t+2, and 52.2% in t+3. Peer-adjusted workforce growth became stronger over time, suggesting that target companies pursued a sustained post-buyout hiring ramp to support the expansion of business operations.

<i>Year from buyout</i>	<i>t+1</i>	<i>t+2</i>	<i>t+3</i>
<b>N</b>	29	30	27
<b>Median DiD</b>	30,4 %***	39,4 %***	52,2 %***
<b>IQR</b>	56,1 %	91,8 %	113,5 %
<b>Z, (Wilcoxon, two-sided)</b>	3,22	3,48	3,45
<b>p-value, two-sided</b>	< 0,001	< 0,001	< 0,001
<b>Effect size r</b>	0,60	0,63	0,66

**Table 17.** The effect of LBO on the number of employees

## 7 Conclusions

The results of the study suggests that Finnish LBO targets experienced very substantial abnormal post-buyout growth in revenue, total assets, fixed assets, and headcount relative to the peer group. At the same time, target companies showed an overall post-buyout decline in profitability, with statistically significant decreases in both the EBIT margin and the EBITDA margin. In addition, working-capital items, specifically trade payables relative to revenue and inventory relative to revenue, increased slightly but statistically significantly after the buyout.

The significant abnormal post-buyout growth in revenue, total assets, fixed assets, and the number of employees suggests that growth has been the primary value-creation lever used by Finnish PE sponsors during the holding period. The results further indicate that growth in operations began immediately after the buyout and continued systematically over the first three years of the holding period. Accordingly, H1: "Buyout companies achieve higher revenue growth compared to their comparable peer group" is accepted; H3: "Total assets and fixed assets remain unchanged after the LBO" is rejected; and H5: "Buyout companies experience an increase in the number of employees compared to their peer group" is accepted.

Conversely, the modest but statistically significant decline in profitability, together with working capital relative to revenue remaining broadly unchanged, suggests that improvements in operational performance through margin expansion or cash-flow enhancement via working-capital optimisation have not been the core value-creation approach among Finnish PE sponsors. Therefore, H2 "Buyout companies achieve higher average gross profitability, EBITDA, and EBIT margins over the holding period than comparable peer firms" is rejected, and H4 "Inventory and accounts receivable relative to sales decrease, while accounts payable relative to sales increases post-LBO compared with the peer group" is also rejected.

Overall, considering the simultaneous post-buyout effects across multiple operating performance measures, the findings strongly suggest that LBO targets experienced substantial growth in the scale of business operations, while profitability declined slightly and working capital relative to revenue remained broadly stable. The results indicate that value-creation initiatives have been strongly oriented towards growth rather than towards operational efficiency improvements.

As discussed in Chapter 1.2, the Finnish institutional context differs significantly from that of the United States, on which most prior LBO research has focused, and this is likely to influence the post-buyout value creation methods employed by PE sponsors. In Finland, bond markets are less liquid and European capital markets are more fragmented and less mature than in the United States, which means that LBO financing is more reliant on bank-based debt. This is associated with tighter lender monitoring, stricter covenant structures and greater exposure to floating-rate debt, which may encourage earlier deleveraging, tighter working-capital management and stronger cash-flow discipline, while also limiting the scope for major strategic changes during the holding period. This may partly explain why post-buyout profitability and working capital levels remained relatively unchanged in the study.

In addition, Finland's stricter employment protection and broader collective bargaining coverage may reduce the scope for rapid headcount cuts or wage-flexibility-driven margin expansion compared with the United States. As a result, Finnish LBO targets may be less likely to exhibit sharp short-term profitability improvements driven by restructuring. This interpretation is consistent with the findings of the study, in which post-buyout headcount increased significantly.

Moreover, the Finnish LBO target companies included in the thesis are significantly smaller than the buyout companies typically examined in prior U.S.-focused research. Many Finnish buyout targets are family-owned, smaller companies with considerable untapped growth potential, which professional PE sponsors may be able to accelerate.

In addition, the less developed capital-market environment and consolidation pressure in several industries may increase the importance of inorganic growth through add-on acquisitions. Because Finnish platform companies are often initially small, the relative post-buyout changes in company size resulting from acquisitions may also be substantial. These factors may help explain the significant post-buyout growth in revenue, headcount, and total and fixed assets observed in the thesis.

## **7.1 Suggestions for further research**

The results of this study open several promising avenues for further research to improve understanding of the dynamics of LBO value creation and the effects of buyouts on target companies.

The event window in this thesis covers three years after the buyout, in line with prior studies on the topic. However, in order to capture the effects of the buyout over a longer holding period and to provide a more comprehensive view of how operating performance develops over time, future studies could extend the post-buyout window beyond  $t+3$ , potentially up to six years, in line with Wright et al. (1996) and Smith (1990), or even up to ten years, as in Jelic and Wright (2011). This would be particularly relevant given that the results of this study show a systematic decline in post-buyout profitability margins. A longer study period would help assess whether the observed decline in EBIT and EBITDA margins is temporary and followed by later efficiency gains. Such an approach would also allow future research to account for the possible temporary deterioration in profitability during the early post-buyout years, which may reflect the J-curve pattern in earnings discussed by Metrick and Yasuda (2010), and to better measure the longer-term effect of buyouts on target company profitability.

Furthermore, given the strong growth observed in revenue, assets, fixed assets, and headcount, future research could distinguish between organic growth and acquisition-driven growth in order to better identify the main sources of value creation in Finnish buyouts.

In addition, further studies could examine whether changes in post-buyout operating performance differ across PE sponsors, industries, and target company size in order to improve understanding of the factors that influence post-buyout operating performance.

Another important direction for future research would be to extend the analysis beyond changes in post-buyout operating performance to include changes in entry and exit valuation multiples, in line with Axelson et al. (2010) and Achleitner et al. (2011). Combining changes in valuation multiples with changes in operating performance would provide a more comprehensive view of LBO value creation by showing how changes in operating performance during the holding period translate into changes in exit multiples, thereby allowing a more holistic assessment of the contribution of operating performance improvements to value creation.

Finally, the empirical results of this thesis differ significantly from the findings of prior LBO research, particularly the predominantly U.S.-based literature, especially with regard to peer-adjusted post-buyout changes in profitability and working capital. As discussed in Chapter 7, differences in the Nordic institutional context may partly explain these differences in the results. Therefore, to increase understanding of how legal, economic, and cultural contexts affect post-LBO operating performance, future research should examine LBOs in under-researched regions rather than extending findings from U.S. buyouts to other settings. In particular, research on the effect of LBOs on operating performance should focus on under-researched but developing buyout markets, such as Central and Eastern Europe, Southeast Asia, India, and the Middle East.

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## Appendix 1– List of LBO companies in the study sample

### Private equity sponsor: Intera Partners

Company name	Business description	Time of investment	Investment type	Seller	Time of exit	Exit type	Acquiror
Tilipalvelu Rantalainen Oy	Accounting and auditing services	5/2018	Private-to-private	Founders	1/2023	Secondary buyout	Norvestor
Roima Intelligence Oy	Software development	4/2018	Secondary buyout	Korona Invest	8/2024	Secondary buyout	Corten Capital
Sitowise Oy	Infrastructure engineering	7/2016	Private-to-private	Founders	3/2021	IPO	n.a.
Leos Hoplolo Oy	Children's indoor play parks	10/2015	Private-to-private	Founders	3/2021	Secondary buyout	CapMan Special Situations
Tamtron Oy	Manufacturing of weighing systems	9/2011	Private-to-private	Founders	12/2017	Acquired by private investors	Aito Capital Oy

### Private equity sponsor: Juuri Partners

Company name	Business description	Time of investment	Investment type	Seller	Time of exit	Exit type	Acquiror
Kamrock Oy	Crushed stone and mining services	11/2020	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.
Nitor Creations Oy	Digital engineering and software development	10/2020	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.
Imagon Oy	Illuminated signs manufacturer	5/2019	Private-to-private	Founders	11/2021	Acquired by management	Existing management
Finelcomp Oy	Electrical enclosures manufacturer	4/2018	Secondary buyout	Sievi Capital	11/2021	Acquired by strategic buyer	KAMIC Group AB
Omnigym Oy	Outdoor gym equipment manufacturing	12/2017	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.
Destaclean Oy	Construction waste recycling and processing	6/2017	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.
N-Clean Oy	Cleaning services	7/2016	Private-to-private	Founders	1/2019	Acquired by strategic buyer	MIAB Group
Oy Valioravinto Ab	Health and nutrition products	6/2016	Private-to-private	Founders	8/2021	Acquired by strategic buyer	Midsona Ab
Attido Oy	Business automation and ERP consulting	12/2016	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.
KAS-Telineet Oy	Scaffolding and weather protection solutions	10/2015	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.

### Private equity sponsor: Korona Invest

Company name	Business description	Time of investment	Investment type	Seller	Time of exit	Exit type	Acquiror
Epic Autokoulu Oy	Driving school	3/2020	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.
Enmac Oy	Engineering services	11/2020	Private-to-private	Founders	4/2024	Acquired by strategic buyer	Prevas
Leanware Oy	Software and consultancy services	12/2019	Private-to-private	Founders	4/2024	Acquired by strategic buyer	Elisa Oyj
MV-Jäähdytys Oy	HVAC repair services	6/2018	Private-to-private	Founders	9/2022	Acquired by strategic buyer	Nordic Climate Group Ab
Normiopaste Oy	Traffic guidance and safety products	6/2017	Private-to-private	Founders	11/2021	Acquired by strategic buyer	Söderbergföretagen J AB
Vaihtolavacom Oy	Construction waste management services	2/2017	Private-to-private	Founders	11/2020	Acquired by strategic buyer	Sortera Group
Oma Rakennus Oy	Facade and renovation works	3/2016	Private-to-private	Founders	12/2020	Secondary buyout	Korpi Capital
Ecolan Oy	Recycled materials producer	5/2015	Private-to-private	Founders	7/2021	Acquired by strategic buyer	Yara Suomi Oy
Roima Intelligence Oy	Software development	12/2014	Private-to-private	Founders	4/2018	Secondary buyout	Intera Partners

### Private equity sponsor: MB Funds

Company name	Business description	Time of investment	Investment type	Seller	Time of exit	Exit type	Acquiror
Suvia Group Oy	Electrical and building technology services	7/2019	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.
A-Katsastus Oy	Vehicle inspection and drivers' examination services	6/2019	Secondary buyout	Bridgepoint	6/2020	Acquired by strategic buyer	Tradeka-Yhtiöt Oy
Liwlig Group Oy	Event and experience production services	5/2019	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.
Deborra Oy	Home care services	7/2017	Private-to-private	Founders	12/2021	Acquired by strategic buyer	Mehiläinen Oy
Dieta Oy	Professional kitchen equipment retailer and manufacturer	2/2015	Private-to-private	Founders	3/2023	Acquired by strategic buyer	WestStar Oy

### Private equity sponsor: Saari Partners

Company name	Business description	Time of investment	Investment type	Seller	Time of exit	Exit type	Acquiror
Bo LKV Oy	Real estate brokerage services	10/2019	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.
Cervi Oy	Air ventilation maintenance services	11/2018	Private-to-private	Founders	11/2022	Secondary buyout	Intera Partners
Safetum Oy	Property safety and risk management services	9/2018	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.

### Private equity sponsor: Sentica Partners

Company name	Business description	Time of investment	Investment type	Seller	Time of exit	Exit type	Acquiror
Picnic Finland Oy	Café and fast casual restaurant chain	5/2019	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.
Hammas Hohde Oy	Private dental care services	11/2018	Secondary buyout	Nordia Management	Still in portfolio	Still in portfolio	n.a.
Huld Oy	Technology and design consultancy	6/2017	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.
Purkupiha Group Oy	Demolition and recycling services	12/2017	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.
TerraWise Oy	Infrastructure construction	12/2015	Private-to-private	Founders	5/2024	Secondary buyout	CapMan Special Situations
Coptersafety Oy	Helicopter pilot training and simulator services	11/2015	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.
Puulo Oy	Discount retail chain	10/2011	Private-to-private	Founders	12/2015	Secondary buyout	Adelis Equity Partnes

### Private equity sponsor: Sponsor Capital

Company name	Business description	Time of investment	Investment type	Seller	Time of exit	Exit type	Acquiror
Fluo Group Oy	Marketing and brand development services	9/2020	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.
Nordic Lights Oy	Lighting solutions	12/2018	Private-to-private	Founders	7/2022	IPO	n.a.
Kymsol Oy	Industrial insulation and scaffolding services	9/2015	Private-to-private	Founders	12/2019	Acquired by strategic buyer	Saimaa Eristys Oy
Haltija Group Oy	Healthcare devices manufacturing	7/2015	Private-to-private	Founders	12/2021	Acquired by strategic buyer	Berner Oy

## Private equity sponsor: Vaaka Partners

Company name	Business description	Time of investment	Investment type	Seller	Time of exit	Exit type	Acquiror
Staria Oyj	Financial software and ERP solutions	6/2020	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.
Ains Group Oy	Construction consultancy and project management	12/2020	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.
Lytyi Oy	Event management software	7/2019	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.
Foreship Oy	Ship design and engineering consultancy	10/2019	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.
Framery Oy	Soundproof office pod manufacturing	3/2018	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.
Cloudpermit Oy	Software development	1/2018	Divisional buyout	Solita Oyj	9/2024	Secondary buyout	The Riverside Company
Smoothie Heaven Oy	Smoothie and health food bar chain	7/2017	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.
Tietokeskus Finland Oy	IT infrastructure and cloud services	10/2016	Private-to-private	Founders	Still in portfolio	Still in portfolio	n.a.
Kotikatu Oy	Property maintenance services	2/2015	Private-to-private	Founders	6/2020	Secondary buyout	Norvestor